

# Catalog Home

## Undergraduate Academic Catalog 2013-2014

### Southern Polytechnic State University in the University System of Georgia

1100 South Marietta Parkway  
Marietta, Georgia 30060-2896

Southern Polytechnic State University is a comprehensive university in the University System of Georgia. Our academic, professional, outreach, and service programs embrace all aspects of technology, including the practical applied skills (**techné**) needed to solve today's real-world problems and the theoretical knowledge (**logos**) necessary to meet tomorrow's challenges. SPSU graduates are well prepared to lead the scientific and economic development of an increasingly complex state, nation, and world.

Our mission is to serve both traditional and non-traditional students at the undergraduate, graduate, and continuing education levels, in engineering and engineering technology, the sciences, applied liberal arts, business and professional programs. We work to develop the broader community's intellectual, cultural, economic, and human resources. Facilitated by our innovative faculty, dedicated staff, and supportive campus environment, our learning community empowers SPSU students with the ability and vision to transform the future.

## About This Catalog

**The statements set forth in this catalog are for informational purposes only and should not be construed as the basis of a contract between a student and this institution.**

While the provisions of this catalog will ordinarily be applied as stated, Southern Polytechnic State University reserves the right to change any provision listed in this catalog, including but not limited to academic requirements for graduation and various fees and charges without actual notice to individual students.

Every effort will be made to keep students advised of such changes. It is especially important to note that it is the responsibility of the student to keep apprised of current graduation requirements for a particular degree program and current academic procedures.

Southern Polytechnic State University is an equal educational and employment opportunity institution and does not discriminate on the basis of race, color, sex, religion, creed, national origin, sexual orientation, age, or disability.

## President's Message

*Welcome to Southern Polytechnic*

Southern Polytechnic is a place where students are educated for life and for leadership in an increasingly technological world. We prepare our students for their very first job after graduation, with the skills that make them highly

marketable and successful. We feel it is just as important that a Southern Polytechnic education also prepares students for the last job in their careers. Thus, our courses and programs are structured to enable men and women to adapt, grow, and continue to learn over the years, developing the leadership skills needed to implement the vision of a technological future.

Our vision statement describes us well:

"Southern Polytechnic State University is a comprehensive university with a unique purpose. Through a fusion of technology with the liberal arts and sciences, we create a learning community that encourages thoughtful inquiry, diverse perspectives, and strong preparation of our graduates to be leaders in an increasingly technological world."

"The university - faculty, staff, students, and graduates - aspires to be the best in the world at finding creative, practical, and sustainable solutions to real-world problems and improving the quality of life for people around the globe."

Students at SPSU learn skills beyond the essential technological and scientific knowledge that qualifies our graduates to contribute to some of the fastest growing fields in the nation. They also learn traditional liberal arts skills that enable them to think critically, communicate clearly and persuasively, solve problems collaboratively, and develop an international perspective in an increasingly global marketplace.

At Southern Polytechnic, we are proud of our faculty and staff. We are motivated and challenged by our students. We are excited for our graduates. We appreciate the positive, participatory relationships we enjoy with our community and with prominent leaders in business and industry who help shape the nature of our educational vision. We also appreciate your interest in our university.

Again, welcome to Southern Polytechnic. We invite you to make your next visit a personal one to our campus.

Dr. Lisa A. Rossbacher  
President

## General Information

## Calendar

### Fall 2013

14 August	Classes Begin
2 September	Labor Day Holiday
27-29 November	Thanksgiving Holiday (Faculty, Students)
2 December	Last Day of Classes
4-10 December	Final Exams
14 December	Commencement

### Spring 2014

6 January	First Day of Classes
20 January	Martin Luther King, Jr. Holiday
2-8 March	Spring Break
28 April	Last Day of Classes for Spring
30 April - 6 May	Final Exams
10 May	Commencement

## Summer 2014

19 May	First Day of Classes
26 May	Memorial day Holiday
4 July	Holiday

For a more detailed calendar, point your web browser to <http://www.spsu.edu/registrar/calendarpointer.html>

## For Your Information

Admissions	678/915-7281
Dean of Students	678/915-4102
Financial Aid	678/915-7290
President	678/915-7230
Registrar	678/915-4200
University Relations	678/915-7351
Vice President for Academic Affairs	678/915-7206
Vice President for Business and Finance	678/915-7232
Vice President for Student and Enrollment Services	678/915-3720
Continuing Education	678/915-7240

For additional phone numbers and contacts, see the online Campus Directory

**From outside the Atlanta Metro area (For Admissions Information Only) 800-635-3204**

Southern Polytechnic State University  
1100 South Marietta Parkway  
Marietta, Georgia 30060-2896

## Campus Directory

Southern Polytechnic State University has an online Campus Directory available to contact offices on campus. This directory is available online at [directory.spsu.edu](http://directory.spsu.edu).

## **Student Rules and Regulations**

The rules and regulations for Southern Polytechnic State University students are contained in catalog sections on Academic Regulations and Student Life Regulations. Rules and regulations governing student conduct may also be found in the Student Handbook. Each student is expected to be familiar with these rules and regulations. The student is also expected to be a law-abiding citizen and to obey the laws of the City of Marietta, Cobb County, the State of Georgia, and the United States.

## **Responsibility for Notices**

Students are expected to be aware of the contents of all general notices. Students are also expected to keep the university apprised of their current mailing address and to check their SPSU e-mail frequently. All official notifications to the student body, groups of students, or individual students are issued by way of e-mail.

## **University Police and Crime Statistics**

Southern Polytechnic is committed to a safe, healthy environment in which our students, faculty and staff can grow professionally and personally. The University promotes strong safety policies and prompt reporting and investigation of any actions or events that would harm the well being of any student, employee, or faculty member.

The University Police employs police officers who comply with certification, training, and all other requirements of the Peace Officers Standards and Training Council of Georgia. Our officers have arrest powers on Southern Polytechnic property and on any public or private property within five hundred yards of property under the control of the Board of Regents. Our officers conduct preventive patrols on campus including the residence halls, secure University-owned property, investigate reported crimes at the university, conduct educational programs and workshops to promote personal safety, and actively work to prevent and detect crime throughout the Southern Polytechnic community. Our disclosure report can be found at [police.spsu.edu](http://police.spsu.edu).

## **Accreditation**

Southern Polytechnic State University is an accredited, coeducational, residential university offering associate, baccalaureate and master's degrees.

Southern Polytechnic State University is regionally accredited by the Southern Association of Colleges and Schools Commission on Colleges (SACSCOC). Southern Polytechnic State University is accredited to award associate, baccalaureate and master's degrees. Contact the Commission on Colleges at [www.sacscoc.org](http://www.sacscoc.org).

The Civil, Computer, Electrical, Industrial, Mechanical, and Telecommunications Engineering Technology programs are accredited by the Technology Accreditation Commission of Accreditation Board for Engineering and Technology (ABET) at [www.abet.org](http://www.abet.org).

The Construction Engineering and Software Engineering programs are accredited by the Engineering Accreditation Commission of ABET ([www.abet.org](http://www.abet.org)).

The Bachelor of Science with major in Surveying and Mapping is accredited by the Applied Science Accreditation Commission of ABET ([www.abet.org](http://www.abet.org)).

The Bachelor of Science with major in Computer Science, Bachelor of Science with a major in Information Technology, and the Bachelor of Science with a major in Computer Game Design and Development are accredited by the Computing Accreditation Commission of ABET ([www.abet.org](http://www.abet.org)).

The Bachelor of Architecture program is accredited by The National Architectural Accrediting Board, Inc. (NAAB) at [www.naab.org](http://www.naab.org).

The Bachelor of Science program in Construction Management is accredited by The American Council for Construction Education (ACCE) at [www.acce-hq.org](http://www.acce-hq.org).

The Master of Business Administration, B.S. in Management, B.A.S. in Management, and B.A. in Management are accredited by The Association of Collegiate Business Schools and Programs (ACBSP) at [www.acbsp.org](http://www.acbsp.org).

## Degrees and Certificates Offered

Southern Polytechnic State University offers a broad range of programs of study. In addition to the degree programs, SPSU also offers certificates in the following areas. Admissions requirements vary, depending on the certificate.

### **Bachelor of Arts**

- • Computer Science, BA
- • English and Professional Communication, BA
- • Management BA
- • Mathematics, Education Track, BA
- • New Media Arts, BA

### **Bachelor of Architecture**

- • Bachelor of Architecture

### **Bachelor of Apparel and Textiles Technology**

- • Bachelor of Apparel and Textiles

### **Bachelor of Applied Science**

- • Business Management, BAS
- • Information Technology, BAS
- • Information Technology, BAS-HIT
- • Manufacturing Operations, BAS
- • Supply Chain Logistics, BAS

### **Bachelor of Science**

- • Accounting, BS
- • Biology, B.S.
- • Biology, Education Track, BS
- • Business Administration, BS
- • Chemistry, BS
- • Chemistry, Education Track, BS
- • Civil Engineering Technology, BS
- • Civil Engineering, BS
- • Computer Engineering Technology, BS
- • Computer Game Design and Development, BS
- • Computer Science, BS

- • Construction Engineering, BS
- • Construction Management, BS
- • Electrical Engineering Technology, BS
- • Electrical Engineering, BS
- • Entrepreneurship Minor
- • Environmental Engineering Technology, BS
- • Environmental Science, B.S.
- • Industrial Engineering Technology, BS
- • Information Technology, BS
- • Information Technology, BS (Online) WebBSIT
- • International Business Minor
- • International Studies, BS
- • Marketing Minor
- • Mathematics, BS
- • Mechanical Engineering Technology, BS
- • Mechanical Engineering, BS
- • Mechatronics Engineering, BS
- • Physics, BS
- • Physics, Electrical Engineering Concentration, BS
- • Physics, Mechanical Engineering Concentration, BS
- • Physics, Teacher Education Concentration, BS
- • Political Science, BS
- • Psychology, BS
- • Software Engineering, BS
- • Structural Engineering Technology, BS
- • Surveying and Mapping, BS
- • Systems Engineering, BS
- • Technical Communication, BS
- • Telecommunications Engineering Technology, BS

**Associate of Science Transfer Degree**

- • General Studies, A.S.

**Non-Degree**

- • Accounting Minor
- • Aerospace Engineering Minor
- • Apparel and Textiles Minor
- • Architecture Minor
- • Biology Minor
- • Business Minor
- • Chemistry Minor
- • Computer Game Design and Development Minor
- • Computer Science Minor
- • Construction Minor
- • Engineering Design Graphics Minor
- • Environmental Science Minor
- • Finance Minor
- • Global Communication Minor

- • History Minor
- • Industrial Engineering Technology Minor
- • Information Technology Minor
- • International Studies Minor
- • Latin American Studies Minor
- • Leadership and Organizational Communication Minor
- • Logistics Minor
- • Management Information Systems minor
- • Management Minor
- • Management of Operations and Technology Minor
- • Manufacturing Engineering Technology Minor
- • Mathematics Minor
- • Nuclear Engineering Minor
- • Physics Minor
- • Political Science Minor
- • Pre-Law Minor
- • Professional Writing Minor
- • Psychology Minor
- • Public Policy Minor
- • Quality Principles Minor
- • Software Engineering Minor
- • Spanish Minor
- • Technical Communication Minor

#### **Certificate**

- • Apparel Product Development Certificate
- • Geographical Information Systems Certificate
- • Highway Project Management Certificate
- • Land Development Certificate
- • Land Surveying Certificate
- • Logistics Certificate
- • Production Design Certificate
- • Project Management Construction Certificate
- • Quality Principles Certificate
- • Spanish Professional Certificate (Undergraduate)

Other certificates may be available. Check our web site for additional information.

## **Admissions Information**

### **General Information**

Admission to Southern Polytechnic State University (SPSU) is made without regard to race, color, national origin, sex, sexual orientation, disability or age. Admission is based on a number of factors depending upon your admissions type of entry and previous educational experience. The admission requirements for the University have been developed in accordance with the rules and regulations of the Board of Regents for the University System of Georgia.

## Falsification

Approval for admission is valid only for the term specified at the time of acceptance and does not imply that approval will be granted for a term not specified. The University reserves the right to withdraw admission prior to or following enrollment if the student becomes ineligible as determined by the standards of the University of the Board of Regents or if the student has falsified application materials.

## Other Admission Requirements

SPSU reserves the right to require any applicant for admission to take appropriate standardized tests in order that the institution may have information bearing on the applicant's ability to pursue successfully the program of study for which the applicant wishes to enroll.

## Special Students

Special students and all other students of classifications not covered in these policies shall be expected to meet all admission requirements prescribed by Southern Polytechnic State University.

## Appeals

Appeals of the University's formal admission decision may be filed with SPSU's Director of Admission. Contact the Office of Admission for additional instructions on the appeal process.

## Admission Procedures and Deadlines

### General Information

All applications for admission to Southern Polytechnic State University must have all required credentials on file in the Admission Office by the application deadline date for the semester in which the applicant plans to enroll. The application deadline dates for each semester are as follows:

Semester	Priority Deadline Date
Summer	April 1
Fall	June 1
Spring	October 1

All international applicants are required to submit all admissions documents to the Office of Admission at least **three months before** the registration date of the semester in which the student plans to enroll.

## Required Documents



Unless otherwise noted for a specific admission type/category, the application file is complete and ready for review when the Office of Admission (Southern Polytechnic State University, 1100 South Marietta Parkway, Marietta, Georgia 30060-2896) has received the following:

- A completed Undergraduate Application for Admission to Southern Polytechnic State University
- A \$40.00 non-refundable application processing fee (check or money order made payable to Southern Polytechnic State University)
- Official scores on required college entrance tests (typically SAT or ACT. Some applicants may also be required to present TOEFL scores, or COMPASS scores)
- Official high school and college transcripts (mailed directly from those institutions)

Applicants with international credentials may be required to send their educational credentials to an approved SPSU professional evaluation service before being considered for admission.

Note: All new accepted applicants must submit a valid Certificate of Immunization to the SPSU Office of Admission.

## Verification of Lawful Presence

In accordance with Board of Regents Policy 4.3.4 any student applying for in-state tuition will be required to provide validation of their lawful presence in the United States and proof of Georgia residency in order to be granted in-state tuition status.

## Special Accommodations

SPSU does not discriminate on the basis of an individual's disability and is committed to providing students with full and equal enjoyment of services, facilities and goods on campus as required by law. If you are a student with a qualified disability and are in need of a reasonable accommodation, you must contact the Office of Disability Services. That office will provide you the necessary information and assistance to make your accommodation request.

## Admission from High School

The Required High School Curriculum (RHSC), SAT/ACT scores, and the high school academic grade point average are all key factors considered in freshman admission decisions.

## Required High School Curriculum

In order to be admitted, freshmen are required to complete the University System of Georgia's Required High School Curriculum (RHSC) requirements at either:

- A regionally accredited high school
- Or a University System recognized high school

*A minimum of 17 RHSC units are required in the following subject areas:*

Course	Units	Required Course Emphasis
English	4	Literature (American, English, World) integrated with Grammar and Usage and Advanced Composition Skills

Mathematics	4	Algebra I, Algebra II, and Geometry (Math 1, 2, and 3 for students who graduate from a Georgia Public School in 2012 or later) and a fourth year to include courses such as Advanced Algebra and Trigonometry, Algebra III, Pre-calculus, Discrete Mathematics, Calculus, AP Calculus, Statistics, IB Mathematics, Analysis
Science	4	Must include at least one lab course from Life Science and one lab course from the Physical Sciences
Social Science	3	Must include U.S. History and World History
Foreign Language	2	Must be in the same language and must emphasize speaking, listening, reading, and writing

## Regular Freshman Admission Standards (Full Admission)

Regular freshmen are applicants who are recent high school graduates and who will be attending college for the first time.

SPSU's minimum requirements for admission as a regular freshman include the following:

- Graduation from
  - A regionally accredited high school
  - Or from a high school accredited by the Georgia Accreditation Commission
  - Or from a high school accredited by an approved University System of Georgia agency
  - Or from a public school under the authority of the State Department of Education
- Completion of the 17 required RHSC units.
- An academic High School GPA of at least a 2.5

Minimum scores on the ACT or SAT as follows:

Test	Minimum Score
SAT I Critical Reading	500
SAT I Math	500
ACT-English	21
ACT-Math	21

## Limited Freshman Admission Standards

## Limited Admission

The University System permits SPSU to admit a limited number of traditional freshmen each year who do not meet all the minimum requirements listed above, but whose records are sufficiently strong enough to show promise for success at the University.

SPSU's minimum requirements for limited freshman admission include the following:

- Graduation from:
  - A regionally accredited high school
  - Or from a high school accredited by the Georgia Accreditation Commission
  - Or from a high school accredited by an approved University System of Georgia agency
  - Or from a public school under the authority of the State Department of Education
- Completion of the 17 required RHSC units
- Have an academic High School GPA of at least a 2.5
- Minimum scores on the SAT or ACT as follows, and a combined score of 950:

Test	Minimum Score
SAT I Critical Reading	450
SAT I Math	450
ACT-English	18
ACT-Math	18

A freshman applicant may apply as early as the end of his or her junior year in high school. After the receipt of all required documents, (juniors should include their planned senior year subjects on their high school transcript), the Admission Office will notify the applicant of his or her admission status.

## Alternatives for Home Schooled Applicants and for Others

Applicants, including home schooled students, who have not graduated from an approved or accredited high school, may validate the RHSC requirement in an alternative way. These students should submit a portfolio of high school level work that substantiates completion of required high school curriculum courses equivalent to those listed in the RHSC table above. Please see the admissions office for further information about the portfolio. Minimum SAT or ACT test scores for these students are (valid for admission during the 2012-2013 school year only).

Test	Score
SAT I – Critical Reading	500
SAT I – Math	500

SAT I – Total	1120
ACT English	21
ACT Math	21
ACT Composite	24

## Joint Enrollment/Early Admission/The ACCEL Program

Southern Polytechnic State University recognizes the need to provide academically talented high school students with opportunities for acceleration of their formal academic programs. There are three programs available to talented students:

### Joint Enrollment

A joint enrollment student continues his/her enrollment in high school as a junior or senior and enrolls in courses for college credit.

### Early Admission

An early admission student enrolls as a full-time college student following completion of the junior year in high school.

### The ACCEL Program

The ACCEL Program is a joint enrollment program that allows high school, typically juniors and seniors, to take approved college courses. Courses earned through the ACCEL Program carry both college credit and high school Carnegie unit credit. ACCEL is a state funded program that provides dual enrollment tuition assistance for qualified public and private high school students. Students must be at least 16 years old, meet a certain set of requirements and submit necessary paperwork to participate. Students interested in this program should contact their High School Counselor to obtain the necessary paperwork.

### Admission Requirements

- Admission requirements for joint enrollment or early admission are:
- Minimum scores of 500 on the SAT I Critical Reading (21 ACT-English) 500 on the SAT I Math (21 ACT-Math)
- Minimum academic high school GPA of 3.0
- On-track for completion of RHSC requirements by the end of the senior year in high school
- Written consent of the parent or guardian (if student is a minor)

A college course may not be used to fulfill the University System of Georgia's RHSC requirements except:

- English Minimum required score of 530 on the SAT I Critical Reading (23 ACT-English)
- Social Studies Minimum required score of 530 on the SAT I Critical Reading (23 ACT-English)
- Mathematics Minimum required score of 530 on the SAT I Math (22 ACT-Math)

Students who do not necessarily meet all of the above criteria but who demonstrate very high academic abilities through their SAT performance may be permitted to enroll in appropriate college courses. Specifically:

- Students with a score of at least 700 on the SAT I Critical Reading (31 ACT-English) may be permitted to enroll in courses that require advanced verbal ability.
- Students with a score of at least 700 on the SAT I Math (31 ACT-Math) may be permitted to enroll in courses that require advanced mathematics ability.
- Students with a total score of 1370 (math and critical reading) on the SAT I (31 ACT-Composite) may be permitted to enroll in appropriate courses.

## Advanced Placement Opportunities

Southern Polytechnic State University welcomes students who have pursued accelerated academic course work while in high school or through recognized national standardized programs. Such programs include:

- College Level Examination Program (CLEP)
- College Board's Advanced Placement (AP)
- International Baccalaureate (IB)
- DANTES (D.S.S.T.)

Students may receive college credit for certain courses based on scores received in the above tests. The criteria for credit awarded under these testing programs is available on this site:

[www.spsu.edu/undergraduate/admission/apclepibcourses.htm](http://www.spsu.edu/undergraduate/admission/apclepibcourses.htm). Please contact the academic department that sponsors the course before taking a any exam not listed to ensure that the exam has been approved for credit. Official score reports for AP and IB must be sent from the testing agency to SPSU to be considered for credit.

Please note that in order to receive credit for HIST 2111, HIST 2112 or POLS 1101 and satisfy the legislative requirements for graduation, the student must also complete HIST 2911 with a grade of "C" or better.

## Admission from Other Colleges

### General Information

Transfer applicants for admission are students who have earned college credit at regionally accredited collegiate institutions and wish to transfer to SPSU to pursue a degree.

Students planning to transfer from another college must have transcripts sent directly from all colleges attended to our admissions office without regard to the applicant's wishes concerning transfer credit for courses.

The application deadline dates for each semester are as follows:

Semester	Deadline Date
Summer	April 1

Fall	June 1
Spring	October 1

## Required Documents

Unless otherwise noted for a specific admission type/category, the application file is complete and ready for review when the Office of Admission (Southern Polytechnic State University, 1100 South Marietta Parkway, Marietta, Georgia 30060-2896) has received the following:

- A completed Undergraduate Application for Admission to Southern Polytechnic State University
- A non-refundable application processing fee (check or money order made payable to Southern Polytechnic State University)
- Some applicants may be required to present TOEFL scores, or COMPASS scores
- College transcripts (mailed directly from colleges attended)

High school transcripts and SAT I or ACT scores are generally not required for applicants with 30 or more semester hours of acceptable transfer credit. If there is any doubt that you have the required transfer work, you should submit these documents as well.

Transfer applicants with international credentials may be required to send their educational credentials to an approved SPSU professional evaluation service before being considered for admission.

## Transfer Admission

### Transfer Freshman Admission Standards

Applicants with fewer than 30 semester hours of acceptable transfer credit will be considered under the following policies:

- Applicants must meet the same admission requirements as freshman admitted from high school.
- Applicants must have completed and exited all required remedial courses at their previous institution.
- Applicants must be in good standing.
- Applicants must have at least a 2.0 cumulative college GPA.

### Transfer Admission Standards for Sophomores and Upperclassmen

Transfer applicants with sufficient transferable hours to be classified as a sophomore, junior or senior at SPSU will be considered under the following policies:

- Applicants must have completed and exited all required remedial courses at their previous institution.
- Applicants must be in good standing.
- Applicants must have at least a 2.0 cumulative college GPA.

# Award of Transfer Credit

## Transfer Credit, Policy for Acceptance of

Transfer credit is awarded in accordance with the policies of the University System of Georgia, accrediting agencies, and SPSU. Courses under consideration for transfer credit are evaluated by the department chair whose department is primarily responsible for the course.

Transfer credit should not be confused with course substitutions. A course might not be equivalent to any course offered at SPSU, but still have enough content to be considered as a substitute for a course within a degree program. In this case, transfer credit would be awarded for free elective hours and a course substitution petition would be initiated and processed through the curriculum committee.

### To be considered for transfer credit, courses must normally:

- Represent college or university-level work
- Have been completed with a grade of "C" or better
- Have been taken at institutions holding college-level accreditation by a United States regional accrediting authority.
- Be equivalent to courses at SPSU with regard to
  - Credit hours
  - Course content
  - Level of instruction
- Not have been in a subject for which the student received a failing grade at SPSU

### Special considerations for transfer of University System of Georgia (USG) Core Curriculum courses:

Students transferring from one USG institution to another are protected by USG policy governing the transfer of core courses. See section 2.4.9 of the USG academic affairs handbook for details. Students completing courses in areas A, B, C, or E will be given full credit when transferring to a different institution. Students completing courses in areas D or F will be given full credit when transferring to a different institution if the major field of study remains the same.

### Grades of "D" are transferable for all USG core courses except:

- ENGL 1101 requires "C" or better
- ENGL 1102 requires "C" or better
- MATH 1111 requires "C" or better
- MATH 1113 requires "C" or better

If students transfer the entire USG Core (60 semester hours) for a given major (without changing majors), the total credit hours required for the transfer student's baccalaureate degree at SPSU will not exceed the total credit hours required for a student who completed the USG Core at SPSU in that same major. Students who feel they have not been given appropriate consideration for the transfer of USG core courses should appeal to the core chief transfer officer.

## Evaluation of Courses for Transfer Credit

In order for SPSU to perform an evaluation of transfer credits, the student

- must provide official transcripts containing all the courses being considered,
- must be accepted for admission to SPSU,

- must provide course descriptions, syllabi, or other documentation on course content if requested by SPSU, and
- may be tested for proficiency in courses that were not USG Core courses.

**The amount of transfer credit awarded can be limited by:**

- Residency requirements defined in Academic Regulations
- The applicability of transferring courses to the chosen major
- Performance of the student during proficiency evaluations

**Responsibility for transfer credit decisions at SPSU:**

The Student has responsibility for providing complete and correct information (including course descriptions, syllabi, and other required documents).

The Chair of the department at SPSU in which the subject is taught has responsibility for determining whether transfer credit will be awarded.

The Chair of the student's major program of study has responsibility for determining whether transfer courses are applicable to that degree program.

The Registrar is responsible for determining restrictions and limits on amounts of transfer credit that can be granted.

The Registrar has final authority in checking compliance with university-wide academic standards and graduation requirements.

The core chief transfer officer is the contact person for students, faculty, advisors, records and admissions personnel, and academic administrators when problems related to transfer of Area A–F course work across USG institutions occur.

## **Additional Information for Students Transferring from Outside the University System of Georgia**

All undergraduate students must successfully complete course work or satisfactorily pass examination(s) on the history of the United States, history of Georgia, United States Constitution and Georgia Constitution prior to receiving a degree from a USG institution. SPSU satisfies this requirement by embedding an examination in certain core courses. Students who transfer to SPSU from an institution located outside the University System of Georgia and who have completed U.S. History or American Government must complete HIST 2911 to satisfy the United States and Georgia history and Constitution requirements.

## **Transfer Credit for Courses Earned Outside the United States**

Transfer credit for courses completed at institutions of higher learning outside the United States shall be subject to the same criteria as those courses earned in the United States, but outside the University System of Georgia.

In addition, the student is also responsible for the following:

- International transcripts must be evaluated by an evaluation service. Evaluation services must be a current member of the National Association of Credential Evaluation Services (NACES).
- International course descriptions must have been translated by a recognized translation service and certified as a true and correct translation.



The institution at which the credit was earned:

- Must have been evaluated and endorsed/certified/accredited by a nationally-known evaluation agency, or have a well-established international reputation for quality instruction
- Must be offering degrees and course work at the college or university level

## **Technical College System of Georgia (TCSG) Transfer Program**

Southern Polytechnic implemented a system-wide articulation with the Technical College System of Georgia (TCSG). This articulation will provide the opportunity for SPSU to offer a range of B.S. and B.A.S. level technological programs on a statewide basis, with the TCSG institutions as our partners. The initial set of programs were made available in Fall 2009 and include pathways from approximately thirty TCSG Associates degrees into Information Technology (B.A.S.), Manufacturing Operations (B.A.S.), Business Management (B.A.S.), Supply Chain Logistics (B.A.S.), Electrical Engineering Technology (B.S.), Industrial Engineering Technology (B.S.), Mechanical/Electromechanical Engineering Technology (B.S.), and Surveying and Mapping (B.S.). (Future offerings are being considered in Health Information Technology (B.A.S.)).

In this articulation, the TCSG institution will offer roughly the first two years of the programs including some of the USG core, and SPSU will offer the second two years of the programs. The TCSG portion will be offered mainly "live" on their campuses, with some online offerings. The SPSU portion will be offered in a format where most of the content is offered online with laboratories being offered low-residency. In a low-residency laboratory, students will take groups of laboratory experiments on two or three Saturdays during a semester, either on the SPSU or at a designated TCSG campus. The curricula of the TCSG institutions will be aligned with the SPSU curriculum to allow the maximum degree possible of direct transferability.

Articulation agreements have been signed by all of the SACS-COC accredited TCSG college presidents as well as the leadership at the TCSG system office.

If you would like more information on admission, program offerings and participating TCSG's, see [tcsg.spsu.edu](http://tcsg.spsu.edu). Current majors include:

- Business Management
- Manufacturing Operations
- Supply Chain Logistics
- Information Technology
- Mechanical Engineering Technology
- Electrical Engineering Technology
- Industrial Engineering Technology

## **Special Admission Categories**

SPSU has a number of special categories other than those for freshman and transfer applicants.

## **Nontraditional Freshman Admission Standards**

Nontraditional freshman are those students who:

- Have not attended high school or college within the previous five years
- Have earned fewer than 30 transferable semester hours of credit
- Hold a high school diploma from an accredited secondary school or a GED certificate which satisfies the minimum requirement of the State of Georgia

Applicants eligible for review in this category are exempted from the SAT/ACT and Required High School Curriculum requirements; however, all other admission requirements must be met. These students will be required to take the COMPASS Exam and score 80 on the Reading, 74 on the Writing and 43 on the Algebra exams. The COMPASS Exam is given on the campus of SPSU.

## Transient Students

Transient students are those students attending Southern Polytechnic State University for a limited period of time, usually one semester, and who are expected to return to their previous college at the beginning of the next semester.

Transient credit earned at Southern Polytechnic State University may not be applied toward the residency requirement.

A transient applicant must submit to the Admission Office:

- A completed Undergraduate Application for Admission to Southern Polytechnic State University
- A transient letter from the Registrar of his or her college (good for the semester of application only)
- The transient letter must indicate that the applicant is in good standing and eligible to return to the home institution
- A non-refundable application processing fee (check or money order made payable to Southern Polytechnic State University)

It is the responsibility of the transient applicant to determine (with assistance from his or her home college) the course(s) he or she should take on the SPSU campus.

## Post-Baccalaureate/Non-Degree

The non-degree category exists for those students who have previously earned a baccalaureate degree from a regionally accredited institution and who wish to enroll in undergraduate courses for personal or professional reasons instead of degree completion.

Students applying for this non-degree status must submit to the Admission Office:

- A completed Undergraduate Application for Admission to Southern Polytechnic State University
- A non-refundable application processing fee (check or money order made payable to Southern Polytechnic State University)
- An official transcript from the institution that awarded the initial degree

Students who are admitted under this category and later decide to pursue a degree must furnish official transcripts from all colleges attended and meet transfer admission requirements.

## Audit Students

Persons not seeking a degree from Southern Polytechnic State University yet wishing to gain knowledge from courses taught here may apply for admission as audit students.

An audit student is required to file:

- A completed Undergraduate Application for Admission to Southern Polytechnic State University

- A non-refundable application processing fee (check or money order made payable to Southern Polytechnic State University)
- Official proof of graduation or official copy of scores on the GED test

An auditor will receive grades of "V" and will not receive transferable credits. In order to become a regular student, auditors must meet regular entrance requirements. An audit student may not change to regular student status after beginning a course as an auditor. The audit grade "V" may never be used as a basis for gaining credit in any course.

## **Students Sixty-two Years of Age or Older**

Citizens of the State of Georgia who are 62 years of age or older may attend Southern Polytechnic State University without payment of fees (except for supplies and laboratory or shop fees) **when space is available** in a course scheduled for resident credit.

To be eligible for participation under this amendment to the Georgia Constitution, such persons:

- Must present a birth certificate or other comparable written documentation of age to the Registrar's Office at the time of registration
- Must meet all University System and Southern Polytechnic State University admission requirements,
- Must meet all University System, Southern Polytechnic State University, and legislated degree requirements if they are degree-seeking students

## **Undergraduate Certificate Program Admission Requirements**

Applicants applying for Undergraduate Certificate programs must meet the same admissions requirements as those who are seeking an undergraduate degree.

## **International Students**

### **Admission of Students with Non-U.S. Academic Credentials**

Admission of students whose secondary education was completed outside of the United States system of education may be considered for admission with:

- Acceptable foreign credentials
- English language proficiency as described below

### **Academic Admissibility of Freshman Students Foreign Credentials**

Students seeking to gain admission as freshmen must have:

- Academic performance as described by a certificate, diploma, or other documents generally equivalent to U.S. college preparatory studies
  - Official or certified true copies of all secondary school records, with a certified English translation
- (The University reserves the right to require foreign credentials to be evaluated by an approved professional foreign credential evaluation service at the expense of the applicant.)

## English Proficiency

Students whose first language is not English and whose language of instruction throughout secondary school was not in English are required to demonstrate English proficiency.

Non-native speakers of English who:

- Transfer from institutions of higher education outside of the U.S. where English was not the language of instruction
- Have less than 30 semester hours of college credit

May be exempted from the SAT requirements; however, they must take the following tests with minimum scores as indicated:

Test	Minimum Score
Paper-based TOEFL or	550
Computer-based TOEFL or	213
Internet-based TOEFL	79
IELTS	6.5
AND	
COMPASS	80 Reading
	74 Writing
	43 Algebra

The COMPASS examination is administered on the campus of SPSU.

## Academic Admissibility of Transfer Students Foreign Credentials

Students seeking to gain admissions as transfer students must have:

- Academic performance equivalent to a 2.0 transfer grade point average from all colleges/universities previously undertaken by the student
- Official or certified true copies of all secondary school records, with a certified English translation is required

(The University reserves the right to require foreign credentials to be evaluated by an approved professional foreign credential evaluation service at the expense of the applicant.)

## Additional Requirements for International Applicants

In addition to meeting the regular admission requirements, international applicants needing a student visa (F-1 or J-1) must complete a Financial Affidavit. The Financial Affidavit must show ability to meet the financial obligations of tuition, fees and living expenses before an I-20 or acceptance letter will be issued.

Current (less than one year old) letters of financial support must accompany the Financial Affidavit. Financial Affidavit forms are available in the Admission Office.

All international students must purchase medical insurance made available through Southern Polytechnic State University.

## Sources for Test Scores and Required Forms

<b>SAT I and II Tests</b>	<b>ACT Tests</b>
College Entrance Examination Board Box 6200 Princeton, NJ 08541 or register online at <a href="http://www.collegeboard.com">http://www.collegeboard.com</a> SPSU's Institutional Code: 5626	American College Testing Program P.O. Box 414 Iowa City, Iowa 52243 or register online at <a href="http://www.act.org">http://www.act.org</a> SPSU's Institutional Code: 0865
<b>SAT I and II Tests</b>	<b>ACT Tests</b>
College Entrance Examination Board Box 6200 Princeton, NJ 08541 or register online at <a href="http://www.collegeboard.com">http://www.collegeboard.com</a> SPSU's Institutional Code: 5626	American College Testing Program P.O. Box 414 Iowa City, Iowa 52243 or register online at <a href="http://www.act.org">http://www.act.org</a> SPSU's Institutional Code: 0865
<b>Admission Application &amp; Immunization Forms</b>	<b>TOEFL Exams</b>
SPSU Office of Admission 1100 South Marietta Parkway Marietta, GA 30060 or on SPSU's Website: <a href="http://www.spsu.edu">http://www.spsu.edu</a>	Educational Testing Services P.O. Box 6151 Princeton, NJ 08541, USA or <a href="http://www.toefl.org">http://www.toefl.org</a> SPSU's Institutional Code: 5626

## Financial Aid Information

# Steps to Apply for Financial Aid and Cost of Attendance

Usually, step one in applying for financial aid is to fill out the Free Application for Federal Student Aid (FAFSA), which is available online at [www.fafsa.ed.gov](http://www.fafsa.ed.gov)

Although applications are processed until all federal funds are expended, students who apply by the March 1st deadline have a greater chance of receiving financial aid than those who apply late.

Aid awarded to a student one year does not mean that he or she is eligible to receive aid in a subsequent year, unless the student continues to demonstrate need as defined by the U.S. Department of Education. An application, each year, is required to continue to receive financial aid.

Information concerning financial aid may be obtained by writing to:

**Director of Financial Aid**  
Southern Polytechnic State University  
1100 South Marietta Parkway  
Marietta, Georgia 30060-2896

or by calling the Office of Scholarships and Financial Aid at 678/915-7290 or 800/635-3204, or email at [finaid@spsu.edu](mailto:finaid@spsu.edu).

## Cost of Attendance

Average first-time-full-time Cost of Attendance for an on campus student 2013-2014

Cost of Tuition and Mandatory Fees:

Tuition and Fees \$6,810  
Room and Board \$8,530

Cost determined by Lifestyle:

Books and Supplies \$1,700  
Personal Expenses \$1,700  
Transportation \$1,200  
Loan Fees \$60

Total Estimated Cost of Attendance: \$20,000

## Types of Financial Aid

- The Federal Pell Grant
- The Federal Supplemental Educational Opportunity Grant (FSEOG)
- The Federal Work Study Program (FWSP)
- The Federal Direct Loan Program

Depending on financial need, the maximum that a student may borrow from the combined Subsidized and Unsubsidized Direct Loan Program is:

Class	Dependent	Independent
Freshman	\$5,500	\$9,500
Sophomore	\$6,500	\$10,500
Junior/Senior	\$7,500	\$12,500

The total undergraduate loan amount is \$31,000 for Dependent students and \$57,500 for Independent students.

The PLUS Direct Loan Program enables parents with good credit histories to borrow funds for each child who is enrolled at least half-time and is a dependent student. Students whose parents are denied a parent plus loan are eligible for additional loan funds.

The HOPE Scholarship Program provides financial assistance to students attending Georgia post-secondary institutions who achieve academic excellence throughout their high school studies.

To be eligible for HOPE, a student must:

- Be a Georgia resident
- Have graduated from a Georgia High School in 1993 or later
- Have earned a cumulative grade point average of at least 3.0 in all academic classes
- And meet other regulatory requirements

Payment for Non-credit Courses

For a student to receive financial aid funds for remedial work, the course work must be necessary for the student to pursue the eligible post secondary program. Students may not receive financial aid funds to pay for courses that they audit.

## Satisfactory Academic Progress

Federal law requires students receiving federal student aid to maintain satisfactory academic progress as defined by the institution. The Satisfactory Academic Progress (SAP) requirements are separate from the regulations governing academic probation and suspension.

Southern Polytechnic State University's SAP requirements include:

- a maximum time frame requirement,
- a completion rate requirement, and
- a cumulative grade point average requirement.

Aid recipients must meet each of the three in order to be considered to be making SAP and to continue to receive financial aid.

### Maximum Time Frame Requirement

Financial aid recipients must complete their program within 150% of the published length of the program. To figure the maximum time frame:

- First check the catalog to determine the number of credit hours required for graduation in a particular major.
- Second, multiply the required number of credit hours by 150%.
- Third subtract the number of credits transferred in toward the major.

Example: A student majoring in Construction transfers in 50 semester credit hours. It takes 128 semester hours to earn a degree; therefore, the student's maximum time frame is  $(128 \times 150\%) - 50 = 142$ . This student's financial aid eligibility is exhausted once he or she has attempted 142 semester hours at SPSU.

### **Completion Rate Requirement**

In order to complete a program of study within the required time frame, the aid recipient must complete 67% of the hours attempted to date at SPSU. Credit hours attempted will be cumulative and will include all hours in which the student was enrolled at the end of the official drop/add period each academic term and received a grade of A, B, C, D, F, W, WF, I, IP, S, and U.

### **Cumulative Grade Point Average Requirement**

Undergraduate students receiving financial aid must maintain a cumulative grade point average (GPA) at or above the 2.00 minimum required for graduation. Graduate students receiving financial aid must maintain a cumulative grade point average at or above the 3.00 minimum required for graduation. The cumulative grade point average will be computed by dividing the number of quality points earned by the total credit hours attempted for which the student received grades of A, B, C, D, F, WF, or I. No quality points are earned for an F, WF, or I.

### **How Often Will SAP Be Checked?**

Percentage completion rates and cumulative GPA requirements will be monitored at the end of each semester. If a student is not making SAP at the end of any term, they will be placed in one of two categories:

#### **Financial Aid Probation**

Students with a GPA of less than the required 2.00 and/or Students with a completion rate less than the required 67%.

#### **Financial Aid Suspension**

Any student on financial aid probation and still not making SAP.

Students on Financial Aid Probation may receive financial aid. If the student does not achieve the required completion rate and cumulative GPA requirement by the end of the probationary term, he/she will be placed on Financial Aid Suspension until the requirements are met. Students on Financial Aid Suspension may not receive financial aid.

## **Financial Information**

## **Registration and Fee Payment**

SPSU offers multiple registration periods, each with an assigned fee payment deadline, for currently enrolled students to give them the opportunity to secure a schedule for a coming term.

The registration process is not complete until payment of tuition and fees is completed. Students who have signed an official award letter, (which signifies acceptance of the financial aid) and have registered for classes are assumed to be students who will attend classes.

The fee payment deadlines for each registration period are published each term in the academic calendar and on the SPSU website at [www.spsu.edu/tuitionfees](http://www.spsu.edu/tuitionfees).



Failure to pay tuition and fees by the published deadline date can cause the cancellation of your registration.

Payment of fees and other charges may be made with:

- Cash
- Checks
- Approved financial aid
- Approved Credit cards

Registration fees may be paid on the SPSU web site using credit cards (except VISA). On-line transactions are fully encrypted for the safety of both the student and the university.

Students who register for courses and pay appropriate fees using any acceptable method of payment are considered enrolled and space is reserved in the class(es) for the duration of the term.

Students are encouraged to register and pay tuition and fees as early as possible to avoid the risk of losing their schedules.

All payments returned to the University due to insufficient funds are subject to a \$30.00 or 5% of the face value returned check fee. Any outstanding returned check payments will be turned over to either a collection agency or the State Attorney General's Office for further legal collection action. All accounts turned over to a third party for legal collections will be subject to an additional collection cost (in addition to the original debt owed to the University).

## **Other Fees**

## **Tuition and Fees**

Tuition and fees vary according to a student's starting term and status. For a complete listing of current tuition and fees, please visit [www.spsu.edu/tuitionfees](http://www.spsu.edu/tuitionfees). At times, additional fees can be charged over and above the fees listed in this catalog.

## **Academic Credit by Examination**

Students who wish to attempt academic credit by examination shall be charged a testing fee of \$50.00. An official receipt from the Business Office must be presented prior to taking the examination. Acceptance of the fee from a student does not imply that the credit by examination has been approved by the university. All requests for credit by examination are subject to approval by the academic department and by the Registrar.

## **Transportation Fee**

Students who are currently enrolled are charged a transportation fee to cover the cost of the maintenance of the transportation infrastructure including parking lots, sidewalks, overhead covers, and other amenities, and may register a vehicle for parking on campus without further cost. For additional information and a copy of university parking regulations, contact the University Transportation.

## **Graduation Fee**

Every student receiving a degree must pay a graduation fee of \$40.

# **International Student Health Insurance**

Based on the guidelines provided by the American College Health Association and NAFSA: the Association of International Educators, Southern Polytechnic State University requires international students on F-1 and J-1 visas to purchase the endorsed SPSU International Student Insurance policy. Payment of this fee is mandatory and should be paid directly to the Business Office along with payment of tuition and miscellaneous fees. Purchase of this insurance policy is mandatory each semester.

## **Refunds**

The Board of Regents of the University System of Georgia and the Department of Education establishes the refund policy for the university. The refund schedule is published on the Tuition & Fees site at [www.spsu.edu/tuitionfees/refundinfo.htm](http://www.spsu.edu/tuitionfees/refundinfo.htm).

Refunds of fees and charges will be made only upon official withdrawal from all classes through the Registrar's Office. A student who partially withdraws (withdraws from some classes, but is still registered in other classes) after the official drop/add period does not receive a refund.

Where applicable, any refunds resulting from unearned financial aid will first be returned to the Title IV programs, other sources of aid, and/or finally to the student. The student must repay all funds to the university that are determined to be "unearned financial aid" that resulted from the calculated refund.

## **Residency Classification for Fee Payment Purposes**

A person's legal residence is his or her permanent dwelling place. It is the place where he or she is generally understood to reside with the intent of remaining there indefinitely and returning there when absent. There must be a concurrence of actual residence and of interest to acquire a legal residence.

Because a proportion of financial support for the operation of public institutions of higher education in Georgia comes from the citizens through the payment of taxes, the determination of whether a student is classified as a resident or a nonresident of the state is a significant matter. The fees paid by resident students cover only a portion of the total cost of their education in the University System. Therefore, Georgia taxpayers are contributing part of the necessary funds to provide quality education for the citizens of the state.

Students are responsible for registering under the proper residency classification. Any student classified as a nonresident who believes that he or she would like to be reclassified as a legal resident may petition to the Registrar's Office for a change of status.

The Board of Regents establishes all rules regarding residency classification. For additional information visit this site: [www.usg.edu/regents/policymanual/400.phtml](http://www.usg.edu/regents/policymanual/400.phtml)

## **Student Services**

### **Athletics**

Southern Polytechnic State University is a member of the National Association of Intercollegiate Athletics (NAIA) and the Southern States Athletic Conference (SSAC). The University competes in four intercollegiate sports, including men's soccer in the fall, men's and women's basketball during the winter, and baseball in the spring. All four of the Southern Polytechnic teams have enjoyed much success over the years. The squads use the nickname "Hornets" and the school colors are forest green, white and black.

## Athletic Facilities

Southern Polytechnic features several on-campus athletic facilities. An athletic training room located in the Hornets Nest, the University's gymnasium, serves the medical needs of all student-athletes.

The men's soccer team plays at Neusoft Technologies Field, located on the far west side of campus. Locker room space and a building for storage are near the field.

Serving as the home court for the Southern Polytechnic men's and women's basketball squads is the Hornets Nest, located on the south side of campus. The athletic training room is just a few steps from the court and locker room space for Southern Poly's teams, visiting squads and game officials is nearby.

Sir Walter J. Kelly Sr. Memorial Field, located near the gymnasium on the far south end of campus, is where the Hornets play baseball. The facility features new seating, a new scoreboard and a new press box. An indoor facility, located down the left-field line just a few steps from SPSU's dugout, includes two full-size batting cages, two soft-toss areas, a bullpen with a mound and weight training equipment. There is locker room space and buildings for storage near the field.

For more information, please visit us at [www.SPSUHornets.com](http://www.SPSUHornets.com).

## Bookstore

The Southern Polytechnic State University bookstore is located on the lower level of the Student Center. In addition to new and used textbooks, you can also purchase software, reference books, school supplies, engineering supplies, calculators, SPSU apparel, greeting cards, health and beauty aids, drinks, and snacks.

On the last day of registration and the first week of classes, the bookstore is open for extended hours.

Please visit us to find more information and purchase your books online at [www.spsu.edu/bookstore](http://www.spsu.edu/bookstore).

## Career and Counseling Center

### Counseling Services

The Career and Counseling Center offers a variety of counseling services to help students succeed. The Center provides counseling for personal, academic, and career concerns.

Personal concerns such as anxiety, depression, relationship problems, low self-esteem, low self-confidence, and communication issues can make it very difficult for students to gain the most from the university and from their classes. Professional counselors provide time limited **individual and/or group sessions for students** seeking confidential assistance with these and other personal issues.

Part of the career development process involves increasing self-understanding in such areas as values, life goals, interests, and skills. **Counselors can help students increase their self-understanding and learn how to match their personal characteristics with the work environments that a university education makes possible for them.**

Academic concerns center on more effective time management, study skills and dealing with test anxiety. Counselors can assist students in identifying deficiencies in these areas to make the overall academic experience more successful. Many students find university work more difficult than they expected and find that it strains their abilities.

**Counselors can assist students in developing skills** to manage stress, overcome test anxiety, improve test-taking strategies, enhance memory and better understand their learning style. The Career and Counseling Center provides a variety of assessments to assist students in clarifying and/or confirming their goals.

**Counselors provide outreach programs on many topics**, including stress management, anxiety, depression, relationship building, procrastination and other student concerns (a detailed list can be found on the Center's website at [www.spsu.edu/counselingservices/index.htm](http://www.spsu.edu/counselingservices/index.htm).)

All counseling services are **free of charge**, confidential, and **are available by appointment**. Counseling staff members are also available for consultation with SPSU faculty and staff who are concerned about specific situations and/or individuals.

## Career Services

The Career and Counseling Center provides job search assistance for graduates and for students seeking full-time, part-time, temporary and on-campus employment. The Center provides assistance to students in preparing for the job search and obtaining employment suited to their career goals and aspirations, but can never guarantee employment for any student or graduate. Services offered include:

- Assisting in resume preparation
- Offering career search workshops and mock interviews
- Access to Jobs and career database (Career Link)
- On-campus interviews **and/or information sessions**

Students are encouraged to make use of career services as early as possible during their stay at Southern Polytechnic. **Degree candidates should begin the job search process at least two semesters prior to their graduation.**

## On-Campus Employment

There are two kinds of on-campus positions for students: College Work Study (from funds awarded by the Financial Aid Office) and Student Assistants (from funds that are allocated to the department). Undergraduate students seeking on-campus employment should begin their search by registering in the Career Link database. International students should begin the job search process in the ATTIC.

Alumni assistance: Job search assistance for alumni includes web registration in the **CAREER LINK** (jobs) database on the Center's web page. Alumni may attend any skillshop sessions offered by the Center and career fairs sponsored by the Center.

## Experiential Education (Cooperative Education and Internship)

Southern Polytechnic State University offers its students the opportunity to gain valuable work experience directly related to their academic majors through a University sponsored experiential education program. Students interested in either program should attend an orientation session or should complete the online orientation session (dates and links posted on the Career and Counseling Center's website).

Benefits of participating in Cooperative Education or an Internship include:

- Providing career related hands-on work experience
- Earning a competitive salary for school and tuition expenses
- Learning the company culture
- Networking with professionals in your field
- Helping get your foot in-the-door for full-time employment
- Developing self-confidence
- Establishing valuable contacts for letters and references
- Gaining practical experience in the work environment
- Helps students in their career decision making process
- Provides substantial support for education expenses

#### *Cooperative Education (Co-op)*

Co-op is founded on the principle that learning takes place through practical experience as well as through academic achievement. Students participating in the co-op program alternate school and work.

Co-op students are required to follow all guidelines set forth by the Career and Counseling Center, as well as the rules and regulations of the University. In addition to university requirements, students must meet any additional co-op requirements set forth by the co-op employer. Students unable to maintain university or company co-op requirements may be given one probationary term to correct deficiencies before being withdrawn from the co-op program.

The Career and Counseling Center refers students to employers after they have been approved as a co-op applicant (Note that acceptance as a co-op applicant does not guarantee a student's employment in a co-op position). The employer has the final decision regarding offering co-op employment. Upon acceptance of a co-op position, the student is expected to remain with their co-op employer for a minimum of three (3) co-op work terms. In addition to Career Services referrals, co-op participation can also be started through student self-referral. Students and employers must meet program requirements and guidelines (contact program coordinator for details).

Students with metro-Atlanta co-op assignments may live in Southern Polytechnic State University housing. In addition, students with local co-op work assignments are eligible to participate in all co-curricular, intramural, and health service activities on campus with the payment of the regular student athletic, activity, and health fees. Although no credit is awarded (students receive a grade of 'S' or 'U'), the university views co-op students as active, continuing, full-time students during their periods of approved work experience.

Although neither the student nor the employer makes a commitment for full-time employment upon completion of the co-op program, many SPSU co-op students are offered career employment with their co-op employers. Satisfactory completion of both requirements for graduation and co-op guidelines make an undergraduate student eligible to receive recognition for participation in the co-op program on their Southern Polytechnic State University diploma and academic record.

#### *Internship Program*

The Southern Polytechnic State University Internship program is a short-term or time-limited work experience in a professional environment. It is designed to enhance academic, personal, and professional development and will assist students in making a smooth transition from the classroom to the world of work, and to provide students with insight

about potential careers. Usually, an internship is a one-time experience for a student who has attained at least some academic preparation in a professional field.

#### Co-op and Internship Eligibility and Requirements for Undergraduate Students

- Be a registered, full-time student at the time of application to the program and during the semester prior to going to work (i.e., carry at least 12 hours fall and spring and 6 hours during the summer)
- Have and maintain a minimum 2.00 GPA (many employers require higher averages)
- Have completed at least 24 semester hours of academic credit toward their degree
- Must have completed at least one semester at SPSU
- Attend an orientation session (can be online) and meet with the program coordinator, and
- Co-op applicants must commit to participate in a minimum of three (3) alternating co-op work terms with the same employer

Students must be fully authorized to work in the United States to participate in the co-op program.

#### International Students

Must obtain written eligibility authorization from the International Services Coordinator in the ATTIC before beginning **EACH** working assignment. Due to the INS regulations, International students are not permitted to Intern more than one and a half-academic years for undergraduates and one academic year for graduates. Once an Internship is obtained, International students **MUST** return to the International Services Coordinator to complete additional paperwork. International students failing to do so will be **DROPPED** from the Internship Program.

## Dining Services

There are four food service facilities on campus. Stingers Restaurant is the home of the University's board plan operation. There are 3 retail operations on campus The Grill (located on the lower level of the student center), Mondo's Sub Shop (located on the first floor of the Atrium Building), and Spork (located near the Housing Office). Catering and Concession services are provided by Chartwells Food Service.

For more information go to [www.dineoncampus.com/spsu/](http://www.dineoncampus.com/spsu/)

## Emergency Locator Service

Emergency assistance in locating a student is provided by the Vice President of Student and Enrollment Services Office at 678/915-3720 from 8:00 a.m. until 5:00 p.m., Monday through Friday. The University Police Department provides emergency assistance in locating students on weekends and after 5:00 p.m. on weekdays at 678/915-5555.

If the University Police determine that a student (for whom a missing person report has been filed) has been missing for more than 24 hours, then within the next 24 hours they will:

- Notify the individual identified by the student to be contacted in this circumstance;
- If the student is under 18 years old, notify a parent or guardian; and
- In cases where the student is over 18 and has not identified a person to be contacted, notify appropriate law enforcement officials.

## Extended University

Extended University (EU) is an administrative unit reporting to the Vice President for Academic Affairs. The mission of EU is to provide services to SPSU, the business community and the community at large by extending, enhancing and expanding the traditional teaching, scholarship and service roles of the university to new clients, in new formats and through the infusion of new technologies. Extended University includes a variety of programs and service units that are described here below. For more information regarding these programs and services, contact the EU Dean's Office at 678/915.7338 or stop by J-377.

## **Continuing Education Center (CEC)**

The Continuing Education Center is responsible for providing all non-credit professional continuing education instruction sponsored by the university. CEC sponsors open enrollment programs in computing, engineering, business, quality, and communications. CEC also offers customized corporate training. CEC Certificate Programs feature a sequential set of courses designed to provide a body of knowledge in selected areas. Currently available certificates include:

- A+/Net+ Certificate
- AutoCAD User Certification
- CISCO Certified Network Associate (CCNA)
- E-Business Solutions in Java Certificate
- Oracle 11g Database Certificate
- Professional Project Management Certificate Program
- Lean Six Sigma Certification Training
- Accelerated Training in Healthcare Information Technology

Call 678/915-7240 for additional information or check the CEC web site at [www.spsu.edu/cec](http://www.spsu.edu/cec).

## **Southern Polytechnic Applied Research Corporation (SPARC)**

The Southern Polytechnic Applied Research Corporation (SPARC) provides support to Southern Polytechnic faculty in research, development and the application of technology within their areas of expertise. This support includes the identification of opportunities, development of proposals and the administration of grants and contracts upon award. The Applied Research Corporation is committed to providing growth opportunities for faculty and students and establishing Southern Polytechnic State University as a leading center of applied technology. For more information go to [www.spsu.edu/sparc](http://www.spsu.edu/sparc).

## **Office of Sponsored Programs (OSP)**

The Office of Sponsored Programs has overall responsibility for the administration of grants, contracts and sub-awards, as well as compliance with state and federal regulations. Pre-award services include identifying funding opportunities and working with faculty to prepare proposals for submission. Post-award activities include tracking expenses, supplying reports to faculty and interfacing with the business office. For more information call 678/915-3159, visit the web site at [www.spsu.edu/sponsoredprograms](http://www.spsu.edu/sponsoredprograms) or stop by J-354.

## **eCore**

eCore -- short for electronic core-curriculum -- allows University System of Georgia (USG) students the opportunity to complete their first two years of their collegiate careers in an online environment. eCore courses are taught entirely

online, except for the occasional proctored exam. eCore courses are designed, developed, taught and supported by faculty and staff from the USG. Extended University coordinates eCore for SPSU and is available to answer all eCore questions. For more information go to [www.spsu.edu/ecore](http://www.spsu.edu/ecore).

## English Language Services (ELS)

ELS Language Centers provide a unique opportunity for foreign students to learn English as a second language or to improve their English proficiency. ELS distinguishes itself as the finest in English language instruction by providing excellent customer service. ELS Language Centers have become the world's largest network of campus-based, English language instruction centers with over 30 locations throughout the United States. ELS provides full-time daily classes year-round in four-week terms. In addition, ELS offers specialized programs that are customized to fit your needs. For more information go to [www.els.edu/atlanta](http://www.els.edu/atlanta).

## Honor Society

Superior scholastic achievement in engineering technology is recognized by membership in the Tau Alpha Pi National Honor Society. The original chapter of this society was founded on the Southern Polytechnic State University campus in 1953, and its members have not only demonstrated high academic achievements, but have also maintained various leadership positions in campus organizations.

For further information on SPSU's local Tau Alpha Pi chapter, please visit the web site at [tap.spsu.edu](http://tap.spsu.edu).

## HornetCard

HornetCard is your university identification card. Every student, faculty and staff member at SPSU can get a HornetCard in the Campus Services office located on the 2nd floor of the student center. Your HornetCard is used for access to University facilities, events, and services. All privileges granted by the use of this card are provided solely for the person described on the card.

For more information about HornetCard and its services go to [www.spsu.edu/hornetcard](http://www.spsu.edu/hornetcard)

## Library

**General Information** – The Lawrence V. Johnson Library collection consists of some 118,000 cataloged volumes and more than 1,300 periodical and serials titles. Other formats include: Microforms, U.S. Geological Survey Maps for the State of Georgia; Professor Reserves; and Text Reserves. An increasingly popular service is e-Reserves whereby journal articles, sample tests, plus syllabi are delivered electronically to the students.

**GALILEO** – Georgia Library Learning online, popularly known as GALILEO, is an initiative funded by the University System that allows access to online databases, including full-text and full-image files. Faculty and students have access to more than 100 indexing and abstracting services and to the Internet. Additionally, students who bring their laptops will be able to access GIL, GALILEO and the Internet for research purposes in any area of the Library which has wireless access.

**Hive Search** – Hive Search integrates multiple information sources, such as our catalog, databases, publications, videos, and images, with additional sources constantly being added. It provides access to interlibrary loan services, and connects to other services from the University System of Georgia Libraries, such as GALILEO and GIL Universal Catalog.



Additional information about services offered at the Johnson Library may be accessed at [www.spsu.edu/library/library.html](http://www.spsu.edu/library/library.html); or patrons may chat with a librarian through the library main page or place queries on email at [reference@spsu.edu](mailto:reference@spsu.edu).

## **Post Office**

## **Post Office**

The Southern Polytechnic Post Office is located next to the Bookstore and is open 9:00 a.m. to 5:00 p.m. Monday through Friday. Post Office boxes are available for rental by the term.

## **Recreational Sports**

### **Mission**

The Recreational Sports Department shares in the educational mission of the university by offering opportunities to experience interpersonal growth, social development, improve physical and mental health, and to develop lifetime leisure skills for a healthier lifestyle. The Department organizes, administers, and promotes a broad program of competitive, recreational, fitness, and wellness programs for students, faculty, and staff.

The Intramural Sports program provides students with the opportunity to compete on a competitive and recreational level. The program administers over 20 different leagues/tournaments throughout the academic year. Flag Football, Basketball, Soccer, Softball, Golf, and Bowling are just some of the intramural programs offered. Students also have an opportunity to learn new skills by officiating our leagues (and earn some extra money).

A wide range of fitness and wellness classes are also programmed by the Recreational Sports Department. Aerobics, Yoga, abs, cycling, and swimming are just a few of the class offerings. Classes are free to all students.

## **Recreational Facilities**

The Recreation and Wellness Center, offers many recreational opportunities to the student. A state of the art weight room that includes free weights, machine weights, plate loaded machines, and cardiovascular equipment highlights the facility. The facility also boasts a large multipurpose gym that accommodates 2 basketball courts, 2 volleyball courts, 4 badminton courts, and a perimeter jogging/walking area. The Recreation and Wellness Center also has 2 racquetball courts, locker rooms/showers, and a pool complete with an outdoor sunbathing area. The pool can be used for recreation, lap, and competitive swimming. The Department of Recreational Sports and Campus Health Services are housed in the Recreation and Wellness Center.

The Southern Polytechnic Outdoor Recreation Complex provides 3 softball fields. The intramural sports program makes use of these fields throughout the year with flag football, soccer, and softball leagues. Also included in the complex is a half-mile jogging trail.

## **Student Center**

The Joe Mack Wilson Student Center is located in the center of campus, just west of "the Globe". The Student Center houses many student services, including Student Government Association, the Game Room, Student Life, Campus

Services, the bookstore, the Grill, and the Post Office. There are also many spaces within the student center that are available for student groups to reserve for events and meetings.

For more information about the Student Center go to [www.spsu.edu/studentcenter](http://www.spsu.edu/studentcenter)

## **Student Health Services**

The school nurse, who is on duty Monday through Friday in the clinic located in the Recreation and Wellness Center, provides limited outpatient services for minor illnesses and injuries. If further treatment is necessary, she will refer the student to an urgent care facility located near the campus. Due to the limits on the health services provided by Southern Polytechnic State University, each student is encouraged to have adequate health and accident insurance through either a personal or family insurance policy. The University offers an optional medical insurance policy. Information is available at [www.studentinsurance.com](http://www.studentinsurance.com).

International students are required to have private health insurance protection. Southern Polytechnic State University is not responsible for any medical expenses incurred by international students beyond those that are covered by the Student Health Fee.

## **Student Housing**

SPSU offers nearly 1800 on-campus student housing beds. In addition to providing a convenient and economical home for students, on-campus living also provides a great learning opportunity. Living on campus contributes to the educational development of each student through exposure to students of varied backgrounds, experiences, and personal philosophies. The Department of Housing and Residence Life is staffed by 9 full-time professionals along with 50 Resident Assistants. The primary function of the Housing and Residence Life staff is to create and maintain a desirable environment for all residents.

All students who have been accepted to Southern Polytechnic State University will need to visit the Housing and Residence Life website at [www.spsu.edu/housing](http://www.spsu.edu/housing) for application information. On-campus housing is required for all first-year students. However, this requirement may be waived if you will be living at home with a parent/guardian. Please contact our office for more information.

Howell Residence Hall and Hornet Village Suites are reserved for traditional first-year freshmen only. There is also a mandatory meal plan for all residence hall residents. Our on-campus apartments, University Courtyard and University Commons, are available to upperclassmen students. Consideration of a roommate request will be given providing the request is mutual and space is available.

For more information about student housing go to [www.spsu.edu/housing](http://www.spsu.edu/housing).

Housing payments are due in full each semester. If you have any additional questions you may contact the Department of Housing and Residence Life by calling 678/915-7335 or by sending an email to [housing@spsu.edu](mailto:housing@spsu.edu).

## **Application**

Every student interested in living on campus at Southern Poly must submit a housing application, which can be found online in Banner. Space is limited, so it is important to submit your housing application early. A mandatory, non-refundable \$200 application fee is required of everyone completing an application to live on-campus. The fee will be added to your student account and can be paid online or in person at the Business Office. Please understand that completing an application does not guarantee housing will be assigned. When the housing application and fee have been received, a notification of housing status will be sent by our office. In the case of space not being available, the reservation fee will be refunded. We will do our best to accommodate all preferences with regards to roommate

requests and building placement. Roommate requests should be so marked on the housing application by all involved students.

## **Student Life**

### **Mission**

Student Life creates a sense of place as an academic support unit that empowers, prepares, and develops students at SPSU through high-quality social, leadership, educational, and service programs. Student Life aligns with the mission and vision of the university to help our students recognize and achieve their potential to transform their lives and impact their futures.

### **About Us**

The Student Life Office is the hub of co-curricular activity on campus that includes Journey New Student Orientation, student organizations, campus activities, fraternities & sororities, student government, cultural programming, leadership development, and volunteer opportunities, we have something for everyone.

The events offered by the Student Life Office are sponsored by the Student Activity Fee which is paid by every student matriculated at Southern Polytechnic. Since the Student Activity Fee pays for these events, activities and outings, everything is FREE!

Student organizations allow our students to meet a variety of people, develop communication and leadership skills, practice the theories they learn in the classroom and create a wide web of networking possibilities that could lead to friendships, an internship, or even ultimately a job!

Our number one goal is to get each student connected, involved, develop a sense of community, and HAVE FUN!

For more information visit us at [www.spsu.edu/studentlife](http://www.spsu.edu/studentlife)

### **The ATTIC**

The ATTIC (Advising, Tutoring, Testing, International Center) provides academic support services to students at SPSU. Located in the Student Center (A-160), the ATTIC houses Advising, Testing, Tutoring, International Student Services, Disability Services, and Multi-Cultural Affairs. For more information, call 678/915-7361.

### **Joint Enrollment Advising**

The Joint Enrollment Advisor/Move On When Ready Advisor guides Joint Enrollment and Move On When Ready students in selecting courses they need for their high school graduation and for their college careers. The Advisor also works with high school counselors.

### **Tutoring**

The ATTIC provides individualized assistance and small-group study options to Southern Polytechnic students. Tutors help students with core courses in English, chemistry, biology, mathematics, and physics. Tutoring occurs in the

Student Center in rooms A-184 & A-185. The tutoring schedule can be viewed online at the ATTIC's website at [www.spsu.edu/attic/tutoring](http://www.spsu.edu/attic/tutoring).

\* Please Note: The schedule may vary from semester to semester.

## Testing

The ATTIC administers the following tests:

### Math Advisory Test (MAT)

SPSU students take the math test to determine the level of math placement. The test consists of college algebra and pre-calculus. MAT scores will determine the appropriate starting point in SPSU's math sequence. Students may obtain MAT scores from their academic advisor or a program representative during an advising session, from the Testing Coordinator, the Coordinator of Disability Services, or from Banner.

Placement is based on the following scale:

If your score is	On this test	Start in this Mathematics Course
23 or lower	MAT 1+2	MATH 1111 College Algebra
24 or higher	MAT 1+2	MATH 1113 Pre-calculus
26 or higher	MAT 1+2	MATH 2253 Calculus
AND		Or
8 or higher	MAT 3	MATH 2240 Elements of Calculus
28 or higher	MAT 1+2	MATH 1113 Pre-calculus OR
AND		MATH 2253 Calculus I OR
630 or higher	SAT	
OR		MATH 2240 Survey of Calculus
28 or higher	ACT (Math)	(MATH 1113 is recommended)

Students are eligible to take any mathematics course at SPSU for which they have met all prerequisites. The ATTIC and the Mathematics Program offer math tutoring.

## COMPASS

Non-traditional students-students should take COMPASS. The test consists of writing, reading, and math sections. A proctoring fee must be paid in advance of the test. Students may call 678/915 -7361 to make an appointment to take the COMPASS test. COMPASS testing can also be scheduled online via [www.spsu.edu/attic](http://www.spsu.edu/attic).

## **Disability Services**

SPSU does not discriminate on the basis of an individual's disability and is committed to providing students with full and equal enjoyment of services, facilities and goods on campus as required by law. If you are a student with a qualified disability and are in need of a reasonable accommodation, you must contact the Office of Disability Services. The Disability Services Advisor coordinates academic support services for students who have a permanent qualified disability.

## **International Student Services**

International Student Services advises the University's international student body, faculty, and staff on Immigration and Naturalization regulations. The coordinator provides student assistance with banking, social security, insurance, housing, employment, practical and curricular practical training, travel regulations, income tax, and the lottery.

International Student Services provides cultural, social, and educational programs. Baptist Collegiate Ministries, Friends of Internationals and AMIS (American Ministry of International Students) sponsor family and community activities.

## **The University Honors Program**

The University Honors Program of Southern Polytechnic builds upon the university's excellent reputation for providing both theoretical and applied approaches to learning. Honor students are given the opportunity to develop their talents and skills in an expanded and enriched curriculum featuring seminar-size classes and independent research opportunities.

## **Admissions**

All prospective Honors students must apply to the Honors Program. Incoming freshmen who have at least a 1200 SAT score or ACT equivalent and at least a 3.5 high school GPA will be guaranteed automatic admission to the Honors Program. Transfer students who have earned a 3.5 GPA for college-level coursework over 30 hours of credit also will be guaranteed automatic admission. Students who do not strictly meet these guidelines, but who have other achievements that show promise of academic excellence are encouraged to apply. Students may download an application from the web site [www.spsu.edu/honors/](http://www.spsu.edu/honors/). All prospective Honors students must apply to the Honors Program. Students who do not strictly meet these guidelines, but who have other achievements that show promise of academic excellence are encouraged to apply. Students may download an application from the web site [www.spsu.edu/honors/](http://www.spsu.edu/honors/).

## **Advantages**

While the main advantage of participation in the Honors Program is the intellectual rigor of the curriculum, there are other advantages as well:

- Eligibility for Honors scholarships or out-of state tuition waivers as appropriate

- Special Orientation Programs
- Priority Registration
- Honors course designation on student transcripts
- Honors advising
- Social and extracurricular opportunities
- Recognition upon graduation: in the commencement program, on the diploma, and with an honorary symbol as part of the graduation regalia.

## Program Guidelines

To earn the University Honors Scholar Diploma at Southern Polytechnic, students must complete 18 credit hours of Honors coursework and at least 6 of those hours must be upper division course-work. To earn the Departmental Honors Scholar Diploma, students must complete 6 hours of enriched upper division course-work or directed study.

The Honors Program offers several different types of honors courses so that students can meet the requirements.

- Honors Core Courses
- Honors Interdisciplinary Seminars
- Honors Research Assistant and Independent Study Opportunities.

Students must have a minimum graduation GPA of 3.4. All students must complete an Honors Paper to be bound and placed in the library. An Honors Presentation of this paper is also required.

## Probation and Dismissal

Students in the Honors program that fall below the required GPA are placed on probation for one semester. A student on probation whose GPA does not meet the requirements at the end of their next enrolled semester will be dismissed from the honors program. Students who commit acts of academic dishonesty may also be dismissed from the program.

## Additional Information

For additional information contact the University Honors Program at 678/915-3931 or email us at [honors@spsu.edu](mailto:honors@spsu.edu). You can also visit our website at [honors.spsu.edu](http://honors.spsu.edu).

## University Transportation

University Transportation manages all of the parking and transportation services at SPSU. Parking on campus is available by permit only. All students pay a mandatory University Transportation Fee each semester. Your parking permit is included as a part of this fee. Visitors must park in one of the two visitor parking lots, located adjacent to the Student Center and on the first level of the parking deck. University Transportation also provides many other services including the Poly Trolley and ZipCar.

For more information about parking on campus or other University Transportation services go to [www.spsu.edu/studentcenter](http://www.spsu.edu/studentcenter).

## Academic Regulations

# Introduction and Student Responsibility

Students are expected to have read this section of the catalog and to be generally familiar with academic rules. Students are expected to consult this section of the catalog and follow the procedures that are outlined herein when the appropriate time in their academic tenure approaches. For example, students who are within a year of graduating should review the graduation section and comply with the time table for petitioning to graduate.

In a pedagogical setting, students are expected to develop the ability to read and follow instructions as part of their educational experience. Academic advisors are available to help students interpret what they've read and to encourage appropriate actions. However, it is the student's responsibility to ask questions when in doubt, and to seek out information from official sources rather than to allow rumor to dictate actions.

## Student Records

In accordance with the policy of the Board of Regents of the State of Georgia and under the provisions of the Family Education Rights and Privacy Act of 1974 (FERPA), Southern Polytechnic State University maintains various educational records for each matriculating student.

These records are considered confidential and will not be released for use outside the institution without the written consent of the student. Exceptions as authorized by the Act are noted.

## Directory Information

Southern Polytechnic maintains student information in various forms. Students who desire that "directory information" not be released without consent should so notify the Registrar's Office in writing. The following may be included as "directory information" unless notification is received to the contrary:

- student's name
- address
- e-mail addresses
- current enrollment status/rank (e.g. undergraduate or graduate; freshman, sophomore, junior, etc.)
- dates of attendance
- major field of study
- participation in officially recognized activities and sports
- degrees, honors, and awards received
- hometown
- weight and height of members of athletic teams
- prior college(s) attended
- photograph/image

More specific information regarding FERPA has been listed on the Registrar's Office website.

## Student Email

The official means of communication between the university and students is email and that students are responsible for information sent to their email accounts.

# Grading System

## Grades

The following letter grades are used to specify the level of performance in academic courses and are computed into the grade point averages:

Grade	Definition
A	Excellent
B	Good
C	Satisfactory
D	Poor
F	Failure
WF	Withdrawal After Deadline

## Lab Grades

For subjects including class and laboratory work, both portions are considered essential and the grades on each will be combined at the end of the semester and reported as one. Failure in either class or lab may result in failure of the entire course.

## Other Grades

The following grades may be listed on the transcript. These grades are not used in grade point average calculations.

Grade	Definition
I	Incomplete
	This symbol indicates that a student was doing satisfactory work but, for <b>non-academic reasons</b> beyond his or her control was unable to meet the full requirements of the course. An Incomplete grade must be removed during the next term in which the student attends classes; otherwise, the grade will be changed to an F. If an Incomplete grade is given, the student should not re-register for the course until the Incomplete grade has been satisfied or changed to another permanent grade.



IP	In Progress
	The In Progress grade indicates that credit has not been given in a course that requires a continuation of work beyond the term for which the student signed up for the course. This symbol cannot be substituted for an Incomplete grade.
K	Credit by Exam
	The K grade indicates that a student was given credit for the course via a credit by examination program approved by the institution's faculty (CLEP, AP, etc.).
S	Satisfactory
	The S grade indicates that credit has been given for the completion of degree requirements other than academic course work. The use of this symbol is approved for dissertation and thesis hours, student teaching, clinical practicum, internship, and proficiency requirements in graduate programs.
U	Unsatisfactory
	The U grade indicates unsatisfactory performance in an attempt to complete degree requirements other than academic course work. The use of this symbol is approved for dissertation and thesis hours, student teaching, clinical practicum, internship, and proficiency requirements in graduate programs.
V	Audit
	The Audit grade is assigned when a course has been audited. No credit is given. This grade may not be used at any future date as a basis for receiving course credit.
W	Withdrawal
	A Withdrawal grade is assigned when a student officially withdraws from a course before the midpoint of the term.
WM	Withdrawal for Military Reasons
	This symbol indicates a student was permitted to withdraw under the Board of Regents policy for military service refunds.

## Grade Point Average

The grade point average or GPA is calculated by dividing the total quality points earned, by the total number of hours of credit for which grades have been received. Some courses may be excluded.

At the close of each semester, a term GPA is calculated. An overall or cumulative GPA also exists that includes all coursework taken throughout all terms of attendance at SPSU. Grades from other institutions (excluding coursework completed as a part of cross registration) are not included in a student's cumulative GPA at Southern Polytechnic.

Credit earned at other institutions, credit by examination, credits for which quality points are not assigned, institutional credit courses, and courses otherwise excluded by institutional policy are not considered when calculating the cumulative grade point average for graduation purposes.

<b>Grade</b>	<b>Quality Points Assigned</b>
A	Four
B	Three
C	Two
D	One
F	Zero
WF	Zero

## **Grade Changes**

Grades that have been assigned to a student by an instructor may be changed no later than the end of the third consecutive term following the term in which the grade was awarded. The instructor must initiate grade changes. Grades included in this provision are A, B, C, D, S, U, and F.

## **Grade Appeals**

Grade appeals fall into a special category. Grades are assigned by professors based on an evaluation of a student's academic performance. A student who wishes to appeal a grade must present clear evidence that a grade was assigned by some criteria other than an evaluation of academic performance. Appeals that proceed beyond the professor who issued the grade, must be in writing. The SPSU Student Handbook includes procedures for the appeal of grades.

## **Progress Reports**

All faculty members shall make available to each student in their classes each semester, an evaluation of the student's academic progress in the class on or before the mid-date of the term. The evaluation must be in the form of graded/evaluated class assignments, examinations, papers or essays, or projects returned to the students on or before the deadline stated above. Instructors will make every effort to be available during their office hours for discussion of the student's progress in the course prior to the midpoint of the total grading period.

## **Semester Honors**

## **Dean's List**

Undergraduate students who have earned 12 or more hours with a scholastic average of 3.50 or better for the current term and who are not subject to any disciplinary action shall be on the Dean's List, which is published each term by the respective dean of each school.

## **Dean's Merit List**

Undergraduate students who have earned 9 or more hours with a scholastic average of 3.50 or better for the current term and who are not subject to any disciplinary action shall be on the Dean's Merit List, which is published each term by the respective dean of each school.

## **Academic Standing**

### **Good Standing**

An undergraduate student is in good standing when he/she has a cumulative GPA of 2.00 or higher.

### **Probation**

A student whose cumulative GPA falls below 2.00 at the end of the term will be considered for placement on the probation list by the Undergraduate Student Status committee.

A student will remain on the probation list until the terms of probation are satisfied or until the student is moved to the suspension list by virtue of continued unsatisfactory academic progress or returns to good standing.

Students may register for a maximum of 13 hours while on probation.

### **Suspension**

A student who does not satisfy the terms of probation or who does not improve academic progress after having been placed on probation may be suspended at the discretion of the Undergraduate Student Status committee.

### **Reinstatement**

Students who have been suspended may appeal for reinstatement to the Undergraduate Student Status committee. A letter from the student detailing the reasons why the appeal should be considered must be submitted, along with any supporting materials (doctor's notes, support letters from faculty, etc.).

### **Repeated Courses**

Students may repeat courses as many times as they choose. However, for the purposes of calculating the institutional GPA, only the last attempt will be used. Other attempts remain on the transcript, but are not used in calculating the institutional GPA. A course must have the same subject code, course number, and title to be considered the same. Courses that have the same subject code and course number, but have varied topics may be excluded from this policy.

A student may not use the same course more than once in satisfying graduation requirements.

GPA's calculated for financial aid and other purposes may count all attempts.

## **Credit for Duplicate Courses or Dual Credit**

Credit may not be awarded for the same course twice or for courses deemed so similar as to be considered the same. For example if a student completes PHYS 1111 and PHYS 1111L (Trigonometry based Physics I), and then takes PHYS 2211 and PHYS 2211L (Calculus based Physics I), only one course may be counted as hours earned. Only one course may be used for graduation purposes.

## **Exclusion of Previous Major Courses from the Institutional GPA**

Students may request that certain courses taken for a previous major be excluded for graduation GPA and hours purposes. Students should discuss this action with their program advisor first to determine its benefit potential. All courses that were unique to the excluded program will be excluded under this rule.

For example, if a mathematics course is part of the degree requirements for a management degree, and the student requests exclusion, the mathematics course would be excluded along with all management and related courses.

In order to qualify for previous major course exclusion, the student must have officially declared the previous major at some point and submit a completed Petition to the Faculty to Exclude Previous Major Courses form to the Registrar's office.

## **Academic Renewal**

Undergraduate students who have been readmitted or reinstated after a period of absence of five (5) calendar years or longer are eligible for academic renewal, provided they have not attended any post-secondary school during the five years. Academic renewal for the student signals the initiation of a new grade point average to be used for determining academic standing.

This provision allows University System of Georgia degree-seeking students who earlier had experienced academic difficulty to make a fresh start and have one final opportunity to earn an associate or bachelor's degree.

Academic renewal applies to institutional grade point averages only and many financial aid regulations require inclusion of all attempted courses to be included in any award process. Students considering academic renewal should contact Financial Aid regarding its impact on financial aid.

## **Credit Hour**

One credit hour typically corresponds to one hour per week of classroom work for a semester, or to three clock hours or its equivalent of laboratory work per week for a semester. Certain exceptions do exist.

## **Maximum Credit Hours/Course Load**

Students may register for a maximum of 18 hours during fall and spring semesters and 12 hours during the summer. Academic department chairs can authorize up to 21 hours in fall and spring and up to 13 hours in summer. Requests for additional hours beyond what is administratively authorized must be requested as a Petition to the Faculty and approved by the Undergraduate Student Status committee.

Students who are on academic probation may only register for 13 hours.

## Auditing Courses

Auditing a course gives a student the opportunity to attend a class without penalty or risk. The student must declare an audit status before or during the drop/add period for the term in the Registrar's office. Changes in audit status cannot be made after drop/add closes.

Courses taken under the audit status carry the same tuition and fees as courses taken in the usual way. Audit courses count at full value in determining the number of credit hours for which the student is enrolled.

The grade of "V" (Visited) is assigned when a course has been audited. No academic credit will be given, and this grade has no impact on the GPA. This grade or course may not be used at any future date as a basis for receiving academic course credit or credit by examination for the same course.

## Enrollment Classification

Students are classified at the end of each term based on the number of credit hours earned. These hours include all earned college level credit at Southern Polytechnic, plus any accepted transfer credit.

Classification	Hours Earned
Freshman	0-29
Sophomore	30-59
Junior	60-89
Senior	90 and above

## Enrollment Status

Southern Polytechnic uses the following metric to determine the enrollment status of each undergraduate student enrolled. Enrollment verifications generated by the Registrar's office use the definitions below.

Part-Time	Half-Time	¾ Time	Full-Time
Less than 6 Hours	6-8 hours	9-11 hours	12 hours or more

## Continuous Enrollment

To remain continuously enrolled, a student must not have an absence of two or more consecutive terms of matriculation at Southern Polytechnic, including summer semester. Continuous enrollment is required in order to continue to use the catalog in effect at the time of admission.

## **Withdrawal from Classes**

A withdrawal is defined as discontinuing participation in a course or courses during a specified time period after the close of drop/add (or registration period) but before the midpoint of the term. Students who withdraw during this time earn a grade of W.

The grade of W does not count in the student's cumulative GPA, but the grade does count in total attempted hours. Numerous grades of W may impact eligibility for financial aid.

Refunds associated with withdrawals are made only in the case where a student withdraws completely from all classes for a term.

## **Professor Initiated Withdrawals**

In the event that a student ceases to attend classes and is beyond any reasonable chance to earn a passing grade, a professor, at his or her discretion, may withdraw the student unilaterally. If the student was already failing the class when he or she stopped attending, this policy should not be applied unless there are other mitigating circumstances. Professor initiated withdrawals are at the discretion of the professor and there is no obligation on the professor's part to initiate a withdrawal under any circumstances. Students who have decided to stop attending should initiate the withdrawal process as outlined above.

## **Withdrawals After the Midpoint**

Students who withdraw from classes after the midpoint of the term will receive grades of WF. In cases of hardship or extenuating circumstances, a Petition to the Faculty to Withdraw after the Deadline may be submitted to request that a grade of W be granted instead.

## **Military Withdrawal**

Servicemembers who are called to active duty or who are deployed during the term may be eligible to withdraw from classes and the institution for military reasons. Official orders must be presented to staff in the Registrar's office.

## **Transient Authorization**

Southern Polytechnic State University students planning to attend another institution for one semester and then return to Southern Polytechnic State University should complete a transient letter authorization form, available from the Registrar's Office.

## **Cross Registration**

Southern Polytechnic participates in the cross registration program established among the member institutions of the Atlanta Regional Consortium for Higher Education (ARCHE). The purpose of cross registration is to provide

opportunities for enriched educational programs and experiences by permitting students at any ARCHE institution to take courses at any other member institution. A student may cross-register only for:

1. Courses for which the student has met the prerequisites, and
2. Courses not offered at the home institution for the given term.

Students may not attend Southern Polytechnic and another institution concurrently for transfer purposes except under this cross registration program.

## Attendance

There are no formal institutional regulations regarding class attendance. Each classroom or laboratory instructor sets his or her own attendance policy. However, instructors should report the names of students who do not attend to the Registrar's office. Within the first calendar week of classes, or the first laboratory meeting, of the term the instructor will notify the students in writing of the attendance policy for that class. It is the prerogative of the instructor to determine and impose grade penalties for absences. Students are responsible for all course material covered and any academic consequence of their absences. In some cases, federal and state laws require that attendance be recorded and reported.

**Attendance or participation in a class for which a student has not registered and paid is strictly prohibited.**

## Engagement Status Reporting

Engagement Status Reports (or early warning grades) are reported by instructors early in the term to identify students who are not attending (for federal financial aid reporting regulations) and to identify students who could be in academic trouble. Students must attend class in order to retain financial aid for the term, and students who may be struggling academically should respond to resources offered for assistance.

## Student Activity Absence

Students who are absent because of participation in approved university activities such as field trips and athletic events will be permitted to make up the work missed during their absences. The student is responsible for reporting such absences to the instructor and for arranging with the instructor for make up work. This policy is not to be construed as blanket permission to miss classes and any excessive absence may result in failure of the class.

## Late Instructor

Should the instructor be late in meeting a class or a laboratory period, students will wait a minimum of fifteen minutes. If during the fifteen-minute waiting period no notification to remain is given, students may leave without penalty.

## Disruptive Behavior and Academic Dishonesty

A faculty member reserves the right to remove any student from his or her course if the student's behavior is of a disruptive nature or if there is evidence of academic dishonesty. In instances of disruptive behavior and/or academic dishonesty, the faculty member will discuss the circumstances with the student(s) before taking final action. In the event that the student cannot be reached, he or she will be given the grade of "Incomplete" until such time as he or she can be contacted. The student has the right to appeal the faculty member's decision following the progression below.

1. Department Chair of the faculty member
2. School Dean, as appropriate
3. Vice President for Academic Affairs (if necessary)

If a student is removed from a course under this provision, a grade of F will result. A grade of F issued under these circumstances shall not be superseded by a voluntary withdrawal, and will be included in the student's cumulative grade point average calculated for graduation purposes.

## Catalog and Curriculum Appeals

Matters requiring Petitions to the Faculty include requests for consideration for exceptions to policies published in the catalog or as formal institutional Policies and Procedures. Examples include:

- Receiving a grade of W past the withdrawal date
- Extension of the time limit for converting a grade of I
- Exceptions to residency requirements

Completed Petitions should be submitted to the Registrar's office for routing to the appropriate committee.

If the petition is approved, the matter should be resolved. If the petition is denied, and the student feels that he or she has grounds for an appeal, the following steps are followed:

- The student should discuss the petition with the Registrar to determine the basis for refusal, to be informed of the appeals procedure in his or her particular case, and to be informed of any additional information or documentation that may be desirable, helpful, and/or required.
- Upon written request for appeal to the Registrar's Office, all related information is forwarded to the Vice President for Academic Affairs for review. The Vice President may approve or refuse the appeal.
- If the Vice President for Academic Affairs denies the appeal, upon written request to the Vice President for Academic Affairs, the student may appeal to the President. All related information will at that time be forwarded to the President for review.
- The President may approve or deny the appeal. The President is the final level of appeal.

## Graduation

### Catalog for Graduation Evaluation

Each student is responsible for determining the appropriate catalog to be used for academic advisement and for evaluation of graduation requirements. Catalog selection applies only to the course requirements of that catalog; all other academic procedures and graduation requirements must be satisfied according to regulations in effect at the time of graduation.

A student may elect to be evaluated for graduation from any catalog in effect during the time he or she has been enrolled, provided that enrollment has been continuous. If a student changes majors, he/she will be evaluated for graduation using the catalog in effect at the time of the change, or any catalog in effect during subsequent periods of continuous enrollment.

Students readmitted or reinstated will be evaluated for graduation from the catalog in effect at the time of readmission or reinstatement, or any catalog in effect during subsequent periods of continuous enrollment.

For further information on the selection of an appropriate catalog, contact your major Department Chair or advisor.



# General Requirements

An undergraduate student is eligible for graduation when he or she has:

- Completed satisfactorily the required number of hours for the degree
- Passed all required courses for the degree
- Achieved the necessary scholastic average (2.00 for undergraduates)
- Paid all required fees, fines, and other financial obligations
- Filed an official "Petition of Admission to Candidacy for a Degree" through the Department Chair to the Registrar's Office
- Passed an examination on U.S. and Georgia History, and the provisions of the Constitutions of the U.S. and the state of Georgia (Credit for U.S. History, American Government, or Political Science 1101 satisfies this requirement; undergraduate degree only)
- Satisfied any program related requirements
- Merited the recommendation for the degree by the faculty and the President of the university
- Earned 25% of the major hours required for the degree in residence at SPSU
- Earned in residence at SPSU the last 20 credit hours required for an associate degree 30 credit hours required for a bachelor's degree 45 credit hours required for a bachelor of Architecture degree. Note: Coursework completed as a transient student is not included as resident work.

# Graduation Petitions

A student must submit a formal petition for "Admission to Candidacy for a Degree" to the Registrar's Office in accordance with the published deadline. The fee can be paid at the Business office with check or money order or online via Banner.

All fall semester petitions for students not in school summer should be made in the spring semester of that year, and co-op students should petition the term before a work term if the work term immediately precedes the term of anticipated graduation.

# Graduation Honors

To graduate with honors, a student must have earned a minimum of 40 hours in residence for the associates degree and a minimum of 60 hours in residence for the bachelor's degree. Honors will be awarded based on the GPAs listed below.

Honor	Minimum Scholastic GPA
Summa Cum Laude	3.90
Magna Cum Laude	3.70
Cum Laude	3.50

Graduating with honors should not be confused with participation in the Honors Program at Southern Polytechnic.

# Minor

Minors require 15-18 hours of credit and nine hours at the upper division level (3xxx-4xxx) in a specified minor area. Six hours of the upper division requirement must be completed at Southern Polytechnic. Transfer credit may be used to satisfy the other requirements for the minor.

## **Residency Requirement (Hours Earned in Residence)**

Students who wish to earn a degree from Southern Polytechnic State University must have completed 25% of the major required hours as course work in residence at the institution. "In residence" is defined as courses for which a student has registered at SPSU.

Courses for which the student registers at SPSU including cross-registration are considered to be in residence. Coursework completed as a transient student at another institution, transfer credit, credit by examination (including CLEP, AP, IB, etc.) are not considered to be in residence.

In addition to earning 25% of the major hours required for the degree in residence at SPSU, a student must earn in residence the last:

- 20 credit hours required for an associate degree
- 30 credit hours required for a bachelor's degree
- 45 credit hours required for a bachelor of Architecture degree

## **Second Bachelor's Degree or a Dual Major**

Students who complete requirements for a second bachelor's degree may either declare a dual major or earn two diplomas. Though subtle, the difference is distinct. If a student declares a dual major and completes the degree requirements for both majors, he or she would petition for graduation on a single form and would receive a single diploma with both majors listed.

If a student would rather have a second diploma, the student must apply for graduation using two separate forms and pay two graduation fees.

To obtain a second bachelor's degree from Southern Polytechnic State University:

- A student must complete all required courses for the degree
- And earn credit for a total of at least 30 hours in excess of the requirements for any previous SPSU degrees earned.

Requirements for a dual major are listed in the Curricula sections. However, in general, there are specific courses that must be completed and the above criteria must be met. Currently, only mathematics and physics offer dual majors.

## **Certificate Programs**

Students admitted to a certificate program may apply the courses completed for the certificate toward a degree program if they are accepted to a degree program. Students admitted to a degree program may be awarded a related certificate based on completion of the courses in the certificate program provided they also apply for the certificate.

Students who wish to apply for a certificate should contact their academic department or the Registrar's Office for instructions on how to proceed.

# **Credit by Examination**

## **Awarded at the Discretion of the Department Chair**

Student evaluation by standardized and/or program examinations may be used at the discretion of the Department Chair as a basis for awarding credit for some courses. These evaluations are available only to currently enrolled students. A fee will be charged before the evaluation.

In order to receive credit by examination, the student must check with the appropriate Department Chair about the applicability of credit by examination for the course(s) under consideration. If credit by exam is appropriate, the student must present a completed Request for Credit by Examination form to staff in the Business office and pay the requisite fee. The Business Office will validate the form and forward it to the Department Chair responsible for the course(s) in question.

After the evaluation, the Department Chair will make his or her recommendation for credit to the Registrar's Office. The Registrar will notify the student of the final disposition of the credit.

Credit by exam may not be awarded for a course previously failed or audited at SPSU.

## **The USG Core Curriculum**

### **The USG Core Curriculum**

#### **Core Curriculum**

The University System of Georgia has a Common Core designed to make transfer from one system institution to another as smooth as possible with a minimum of credit loss. Learning Outcomes have been established as Goals (Areas) A-F and Goals (Overlays) I-III.

#### **Curriculum Framework for the Core**

##### **Learning Goal A1: Communication Outcomes**

Students will demonstrate an ability to write and communicate effectively in various modes and media.

Students will demonstrate an ability to analyze and interpret written texts and materials.

##### **Learning Goal A2: Quantitative Outcomes**

Students will demonstrate a strong foundation in mathematical concepts, processes and structure.

## **Learning Goal B: Institutional Options**

Students will critically analyze the role in and impact of science and technology on society.

Students will demonstrate an ability to analyze and interpret oral and written arguments and materials.

## **Learning Goal C: Humanities, Fine Arts and Ethics**

Students will evaluate and synthesize information to support ideas and solve problems.

Students will demonstrate an ability to make informed aesthetic judgements about the arts and other forms of cultural expression.

## **Learning Goal D: Natural Science, Mathematics and Technology**

Students will understand and apply basic scientific principles, theories and laws.

Students will demonstrate an ability to effectively apply symbolic representations to model and solve problems.

## **Learning Goal E: Social Sciences**

Students will demonstrate a broad understanding of the history, political system, and culture of the United States.

Students will describe the historical evolution and contemporary impact of political, economic, and social relationships among multiple nations and states across several centuries.

Students will demonstrate a broad theoretical understanding of how humans behave and interact in various situations.

Students will describe and compare how political, social, economic, religious, and historical factors affect various people, cultures, and societies, primarily outside the United States.

## **Learning Goal F: Courses Related to the Program of Study**

The learning outcomes for Area F are appropriate for each program of study.

## **Learning Goal I: US Perspectives**

Students will demonstrate a broad understanding of the history, political system and culture of the United States.

## **Learning Goal II: Global Perspectives**

Students will describe and compare how political, social, economic, religious and historical factors affect various people, cultures and societies, primarily outside of the United States.

## **Learning Goal III: Critical Thinking**

Students will evaluate and synthesize information to support ideas and solve problems.

## **Core Courses**

Listed below are Southern Polytechnic State University core-curriculum courses and the credit hours for those courses.

## Learning Goal A1: Communication Outcomes

*Both courses are required.*

- ENGL 1101 - English Composition I **3 Credits**
- ENGL 1102 - English Composition II **3 Credits**

Area Total: 6 Credits

## Learning Goal A2: Quantitative Outcomes

*One course is required. See your academic advisor for information regarding course selection.*

- MATH 1111 - College Algebra **3 Credits**
- MATH 1113 - Pre-calculus **4 Credits**
- MATH 2253 - Calculus I **4 Credits**

Area Total: 3-4 Credits

## Learning Goal B: Institutional Options

*Both courses are required.*

- COMM 2400 - Public Speaking **2 Credits**
- STS 2400 - Science, Technology, and Society **2 Credits**

Area Total: 4 Credits

## Learning Goal C: Humanities, Fine Arts and Ethics

*Two courses are required. Take one course from the group Literature of the World and one course from Art and Culture of the World.*

Literature of the World

*Take one course from this group.*

- ENGL 2111 - Early World Literature **3 Credits**
- ENGL 2112 - World Literature Mid-1600s to Present **3 Credits**
- ENGL 2120 - British Literature Early to Present **3 Credits**
- ENGL 2121 - Early British Literature **3 Credits**
- ENGL 2122 - British Literature Late 1700s to Present **3 Credits**
- ENGL 2130 - American Literature Early to Present **3 Credits**
- ENGL 2131 - Early American Literature **3 Credits**
- ENGL 2132 - American Literature Mid 1800s to Present **3 Credits**
- ENGL 2141 - Early Western Literature **3 Credits**
- ENGL 2142 - Western Literature 1600s to Present **3 Credits**
- ENGL 2300 - African-American Literature and Culture **3 Credits**

## Art and Culture of the World

*Take one course from this group.*

- ARTS 2001 - Art Appreciation **3 Credits**
- ARTS 2002 - Drama Appreciation **3 Credits**
- ARTS 2003 - Music Appreciation **3 Credits**
- ARTS 2004 - History of Contemporary American Music **3 Credits**
- FREN 1002 - Elementary French II **3 Credits**
- GRMN 1002 - Elementary German II **3 Credits**
- SPAN 1002 - Elementary Spanish II **3 Credits**
- FREN 2001 - Intermediate French I **3 Credits**
- SPAN 2001 - Intermediate Spanish I **3 Credits**
- FREN 2002 - Intermediate French II **3 Credits**
- SPAN 2002 - Intermediate Spanish II **3 Credits**

**Area Total: 6 Credits**

## Learning Goal D: Natural Science, Mathematics and Technology

*A minimum of three courses is required. Take two lab science courses from the Sciences group and one course from the Mathematics group.*

### Sciences Group

*Take any two lab science courses from this group for a total of 8 hours. (Chemistry and Physics courses require the course plus the lab.)*

- ASTR 1000K - Introduction to the Universe **4 Credits**
- BIOL 2107 - Principles of Biology I **3 Credits**
- BIOL 2107L - Principles of Biology I Laboratory **1 Credits**

- BIOL 2108 - Principles of Biology II **3 Credits**
- BIOL 2108L - Principles of Biology II Laboratory **1 Credits**
- CHEM 1211 - Principles of Chemistry I **3 Credits**
- CHEM 1211L - Principles of Chemistry I Lab **1 Credits**
- CHEM 1212 - Principles of Chemistry II **3 Credits**
- CHEM 1212L - Principles of Chemistry II Lab **1 Credits**
- PHYS 1111 - Introductory Physics I **3 Credits**
- PHYS 1111L - Introductory Physics Laboratory I **1 Credits**
- PHYS 1112 - Introductory Physics II **3 Credits**
- PHYS 1112L - Introductory Physics Laboratory II **1 Credits**
- PHYS 2211 - Principles of Physics I **3 Credits**
- PHYS 2211L - Principles of Physics Laboratory I **1 Credits**
- PHYS 2212 - Principles of Physics II **3 Credits**
- PHYS 2212L - Principles of Physics Laboratory II **1 Credits**
- ENVS 2202K - Introduction to Environmental Science **4 Credits**

## Mathematics Group

*Take one course from this group for a total of 3 or 4 hours.*

- MATH 1113 - Pre-calculus **4 Credits**
- MATH 2240 - Survey of Calculus **3 Credits**
- MATH 2253 - Calculus I **4 Credits**
- MATH 2254 - Calculus II **4 Credits**

**Area Total: 11-12 Credits**

## Learning Goal E: Social Sciences

*Take one course from each group below. Four courses are required.*

### American Perspectives Group

*Take one course from this group. The course will satisfy the legislative requirements and US Perspectives overlay requirement.*

- HIST 2111 - United States History to 1877 **3 Credits**
- HIST 2112 - United States History since 1877 **3 Credits**
- POLS 1101 - American Government **3 Credits**

### Historical Perspectives Group

*Take one course from this group.*

- HIST 1111 - Survey of World Civilization pre 1500 **3 Credits**
- HIST 1112 - Survey of World Civilization post 1500 **3 Credits**

## Behavioral Science Perspectives Group

*Take one course from this group.*

- ECON 1101 - Introduction to Economics **3 Credits**
- PSYC 1101 - Introduction to General Psychology **3 Credits**
- SOCI 1101 - Introduction to Sociology **3 Credits**

## Global Perspectives Group

*Take one course from this group. This course will satisfy the Global Perspectives overlay requirement as well.*

- ANTH 1102 - Introduction to Anthropology **3 Credits**
- ES 1100 - Ethnic Studies **3 Credits**
- GEOG 1101 - Introduction to Human Geography **3 Credits**
- POLS 2401 - Global Issues **3 Credits**
- RELG 1200 - World Religion **3 Credits**

**Area Total: 12 Credits**

## Area F: Courses Related to the Major Program of Study

*Eighteen credits are required. This Area is made of lower division courses (numbered below 3000) that are related to the program of study. Courses in this Area are prerequisites to major courses at higher levels. See your academic advisor or your academic department for the required courses in this area.*

*NOTE: Additional hours from Areas A and D may carry over to Area F or general degree requirements.*

**Area Total: 18 Credits**

## Learning Goal I: US Perspectives

*One course is required. The course used in the American Perspectives group of Area E may be used for this requirement as well.*

- HIST 2111 - United States History to 1877 **3 Credits**
- HIST 2112 - United States History since 1877 **3 Credits**
- POLS 1101 - American Government **3 Credits**



## Learning Goal II: Global Perspectives

*One course is required. The course used in the Global Perspectives group of Area E may be used for this requirement as well.*

- ANTH 1102 - Introduction to Anthropology **3 Credits**
- ES 1100 - Ethnic Studies **3 Credits**
- GEOG 1101 - Introduction to Human Geography **3 Credits**
- POLS 2401 - Global Issues **3 Credits**
- RELG 1200 - World Religion **3 Credits**

## Learning Goal III: Critical Thinking

*One course is required.*

- STS 2400 - Science, Technology, and Society **2 Credits**  
This course may also be used in Area B.

## Core Total: 60 Credits

### eCore

eCore — short for electronic core curriculum — allows University System of Georgia (USG) students the opportunity to complete the first two years of their collegiate careers in an online environment. eCore courses are taught entirely online except for the occasional proctored exam. eCore offers courses in a variety of subjects that are designed, developed, taught and supported by faculty and staff from the USG.

eCore has its own calendar that varies slightly from the SPSU academic calendar. Additional information about eCore (including courses offered, course descriptions, cost, textbook information, etc.) is available online at [spsu.edu/ecore](http://spsu.edu/ecore) and [ecore.usg.edu](http://ecore.usg.edu). SPSU also has an eCore Equivalency Chart available at [spsu.edu/ecore/equivalency\\_chart.htm](http://spsu.edu/ecore/equivalency_chart.htm).

Courses taught in eCore are listed below.

- CHEM 1211K - Principles of Chemistry (ECORE) **4 Credits**
- CHEM 1212K - Principles of Chemistry II (ECORE) **4 Credits**
- COMM 1100 - Human Communications **3 Credits**
- ENGL 1101 - English Composition I **3 Credits**
- ENGL 1102 - English Composition II **3 Credits**
- ENGL 2111 - Early World Literature **3 Credits**
- ENGL 2132 - American Literature Mid 1800s to Present **3 Credits**
- ENV5 2202 - Environmental Science (ECORE) **3 Credits**
- ETEC 1101 - Electronic Technology in the Educational Environment **2 Credits**
- GEOL 1101K - Introductory Geosciences **4 Credits**
- HIST 1111 - Survey of World Civilization pre 1500 **3 Credits**

- HIST 2111 - United States History to 1877 **3 Credits**
- MATH 1101 - Introduction to Mathematical Modeling **3 Credits**
- MATH 1111 - College Algebra **3 Credits**
- MATH 1113 - Pre-calculus **4 Credits**
- MATH 1401 - Intro to Statistics **3 Credits**
- MATH 1501 - Calculus I **4 Credits**
- PHYS 1211K - Principles of Physics I (ECORE) **4 Credits**
- PHIL 2010 - Introduction to Philosophy **3 Credits**
- POLS 1101 - American Government **3 Credits**
- PSYC 1101 - Introduction to General Psychology **3 Credits**
- SOCI 1101 - Introduction to Sociology **3 Credits**
- SPAN 2001 - Intermediate Spanish I **3 Credits**
- SPAN 2002 - Intermediate Spanish II **3 Credits**

## **Areas of Study by School**

# **Southern Polytechnic State University**

## **School of Architecture and Construction Management**

### **Architecture**

### **The Architecture Program**

SPSU is the only public state institution in Georgia to offer a five-year professional degree: the Bachelor of Architecture degree. The curriculum is organized as a 2+3 program. The Design Foundation constitutes the first two years and its curriculum is designed to introduce basic skill sets, fundamentals of design and building technologies. The last three years constitute the Professional program whose curriculum is designed to enhance the students understanding of the relationship between people and the built environment, the role of technology and structures in design, the importance of history and theory to design and introduce the broader challenges of urbanism. Students must pass a portfolio and curriculum review to proceed from the Design Foundation to the Professional Program.

The Architecture Program offers unique educational opportunities for its students including: the Summer Workshop, the Focus Studio: a research based studio with an invited studio critic, and an individually structured thesis project. The Architecture Program also offers students organized travel opportunities within the U.S. and abroad, including a summer program in Dessau, Germany.

# Vision and Mission

The mission of the Architecture Department is to expand and extend the University's mission into the realm of Architecture, preparing students for professional practice in the design, planning, development and stewardship of the built environment. The Architecture Program fosters invention, creativity and craft through hands-on exploration that is the foundation of technological innovation. Moreover, knowledge of culture diversity, communication, history and criticism is seen as inseparable from the application of such innovation. This holistic process is "the making of architecture."

## The Faculty

Edwin Akins	<i>Assistant Professor</i>
Kathryn Bedette	<i>Associate Professor</i>
William J. Carpenter	<i>Professor</i>
Michael J. Carroll	<i>Assistant Professor</i>
Joseph Choma	<i>Assistant Professor</i>
C. Richard Cole	<i>Professor and Dean School of ACM</i>
Durham Crout	<i>Associate Professor</i>
Bronne Dytoc	<i>Assistant Professor</i>
Ameen Farooq	<i>Professor</i>
Mine Hashas	<i>Assistant Professor</i>
Pyo-Yoon Hong	<i>Assistant Professor</i>
Elizabeth Martin	<i>Assistant Professor</i>
Kemp Mooney	<i>Senior Lecturer</i>
Peter Pittman	<i>Associate Professor</i>
Anthony Rizzuto	<i>Associate Professor and Department Chair</i>
Ermal Shpuza	<i>Associate Professor</i>
Robert Tango	<i>Associate Professor</i>
M. Saleh Uddin	<i>Professor</i>
Manole Voroneanu	<i>Assistant Professor</i>
Christopher Welty	<i>Associate Professor</i>

Pegah Zamani                      *Assistant Professor*

## **Departmental Staff**

Cathy Smith                      *Administrative Assistant*

Mary Neely                      *School of ACM Advisor*

David Easterwood              *Media and Digital Resources Supervisor*

Dave Peebles                    *Architecture Wood Shop, Digital Fabrication Lab, and Building Operations Supervisor*

## **NAAB Accreditation**

In the United States, most state registration boards require a degree from an accredited professional degree program as a prerequisite for licensure. The National Architectural Accrediting Board (NAAB), which is the sole agency authorized to accredit U.S. professional degree programs in architecture, recognizes three types of degrees: the Bachelor of Architecture, the Master of Architecture and the Doctor of Architecture. A program may be granted a 6-year, 3-year or 2-year term of accreditation, depending on the extent of its conformance with established educational standards.

Doctor of Architecture and Master of Architecture degree programs may consist of a pre-professional undergraduate degree and a professional graduate degree that, when earned sequentially, constitute an accredited professional education. However, the pre-professional degree is not, by itself, recognized as an accredited degree.

The NAAB grants candidacy status to new programs that have developed viable plans for achieving initial accreditation. Candidacy status indicates that a program should be accredited within 6 years of achieving candidacy, if its plan is properly implemented. In order to meet the educational requirement set forth by the National Council of Architectural Registration Boards, an applicant for an NCARB Certificate must hold a professional degree in architecture from a program accredited by the NAAB; the degree must have been awarded not more than two years prior to initial accreditation. However, meeting the educational requirement for the NCARB Certificate may not be equivalent to meeting the education requirement for registration in a specific jurisdiction. Please contact NCARB for more information.

Southern Polytechnic State University, Department of Architecture offers the following NAAB- accredited degree:

5- year B. Arch (152 undergraduate credits)

Next accreditation visit for all programs: 2014

## **Areas of Study**

### **Architecture Minor**

Minor in Architecture for non-architecture majors, provides a focused exposure to the varied dimensions of design, critical thinking and application while exercising restraint on time to complete. Students who change their major from Architecture to another major or discipline of their choice can get a Minor in Architecture after fulfilling it's course

requirements. Students complete a major in a Program to be awarded with a Minor in Architecture. Minor in Architecture will not be substituted with Certificate in Architectural Studies. All studio and lecture courses must be passed with a minimum grade of "C". All studios should be taken in sequence.

## Architecture Minor

- DFN 1001 - Design Foundation I **4 Credits**
- DFN 1002 - Design Foundation II **4 Credits**
- DFN 2003 - Design Foundation III **4 Credits**
- DFN 2004 - Design Foundation IV **4 Credits**
- DFN 1241 - Design Communication I **2 Credits**
- DFN 2242 - Design Communication II **2 Credits**
- DFN 2311 - Environmental Tech I -Systems Selection and Materials **3 Credits**
- DFN 2112 - Architecture Culture II - The Renaissance through 1850 **3 Credits**
- DFN 2211 - Architecture Structures I - Introduction to Structures **3 Credits**

Minor Program Total: 29

## Bachelor of Architecture

[5 Year Professional Degree]

### Requirements

#### USG Core

- ENGL 1101 - English Composition I **3 Credits**
- ENGL 1102 - English Composition II **3 Credits**
- COMM 2400 - Public Speaking **2 Credits**
- STS 2400 - Science, Technology, and Society **2 Credits**
- Area C Group 1 Take One Course from the Literature Group [See ARCH Matrix] **3 Credits**
- Area C Group 2 Take One Course from the Art and Culture Group [See ARCH Matrix] **3 Credits**
- MATH 1113 - Pre-calculus **4 Credits**
- MATH 2253 - Calculus I **4 Credits**
- Area D Lab Sciences (Two courses with Labs) – PHYS 1111L [required] – **8 Credits Hours Total**
- Area E Group 1 American Context, One Course [See ARCH Matrix] **3 Credits**
- Area E Group 2 World History, One Course [See ARCH Matrix] **3 Credits**
- Area E Group 3 Behavioral Science, One Course [See ARCH Matrix] **3 Credits**

- Area E Group 4 Cultures and Societies, One Course [See ARCH Matrix] **3 Credits**

## Design Foundation

- SPSU 1001 - Hitch-hiker's Introduction to SPSU **1 Credits**
- DFN 1000 - Orientation to Architecture (Summer Design Workshop) **2 Credits**
- DFN 1001 - Design Foundation I **4 Credits**
- DFN 1002 - Design Foundation II **4 Credits**
- DFN 1241 - Design Communication I **2 Credits**
- DFN 2003 - Design Foundation III **4 Credits**
- DFN 2004 - Design Foundation IV **4 Credits**
- DFN 1111 - Architecture Culture I: Early Civilizations & Medieval **3 Credits**
- DFN 2112 - Architecture Culture II - The Renaissance through 1850 **3 Credits**
- DFN 2211 - Architecture Structures I - Introduction to Structures **3 Credits**
- DFN 2311 - Environmental Tech I -Systems Selection and Materials **3 Credits**
- DFN 2242 - Design Communication II **2 Credits**

## Architecture

- ARCH 3011 - Architecture Studio I **4 Credits**
- ARCH 3012 - Architecture Studio II **4 Credits**
- ARCH 3113 - Architecture Culture III - 1850 through 1945 **3 Credits**
- ARCH 3116 - Urban Planning and Design Theory **3 Credits**
- ARCH 3211 - Architecture Structures II: Steel and Wood **4 Credits**
- ARCH 3212 - Architecture Structures III: Concrete and Lateral Loads **3 Credits**
- ARCH 3313 - Environmental Technology II: Human Comfort, Sustainability and HVAC Systems: **3 Credits**
- ARCH 3314 - Environmental Technology III: Natural & Artificial Lighting, Electrical Systems & Vertical Circulation: **3 Credits**
- ARCH 4013 - Architecture Studio III **4 Credits**
- ARCH 4014 - Architecture Studio IV **4 Credits**
- ARCH 4114 - Architecture Cultures IV: 1945-Current **3 Credits**
- ARCH 4224 - Environmental Technology IV: Codes and Technical Documentation **3 Credits**
- ARCH 4411 - Design Cost Control **2 Credits**
- ARCH 5313 - Professional Practice and Ethics **3 Credits**
- ARCH 5593 - Thesis Prep/Research **2 Credits**
- ARCH 5998F - Focus Studio **4 Credits**
- ARCH 5999R - Thesis Research S/U **Credits**
- ARCH 5999T - Thesis Project **5 Credits**
- Electives **17 Credits**

Degree Program Total: 153

## **Construction Management**

### **Offering:**

The Bachelor of Science in Construction Management  
The Masters of Science in Construction Management  
Professional Certificate in Project Management  
Professional Certificate in Land Development  
Professional Certificate in Specialty Construction  
Professional Certificate in Facilities Management  
Professional Certificate in Highway Project Management  
On- Line Professional Certificate in Specialty Construction

## **Management Construction**

Minor in Construction Management

M4+T=Success

To succeed, construction professionals must manage money, materials, manpower, machinery, and time as effectively as possible. At Southern Polytechnic, students master these skills in a degree program that makes the most of their schedules and budgets.

The BS Construction Management degree program was first accredited by the American Council of Construction Education (ACCE) in February 1992. Accreditation was renewed in February 1997, February 2003, and February 2009. We are accredited to February 2016. As Georgia's senior accredited Construction Management degree program, we cover a broad range of topics, offer afternoon and evening courses, and use flexible formats. Hands-on learning and our solid reputation make our graduates market-ready for one of the nation's largest industries and one of the region's highest growth professions. In the Southeast, the drive for growth has led construction firms to branch out into new market segments by focusing on the education, health care, water, waste, and transportation markets. To compete in this booming industry, aspiring construction professionals increasingly turn to Southern Polytechnic's Bachelor and Masters of Construction Management to develop the business skills needed to complete projects on time and within budget.

## **What is Construction Management?**

Key construction management skills include scheduling, estimating and project management. These skills are utilized during the planning, design and construction of projects from inception to completion and work to control cost, time and quality, based on given drawings and specifications.

## **Concentrations in Construction Management**

General Contracting  
Land Development  
Specialty (MEP) Construction  
Facilities Management

We also offer a minor in Construction Management for students in other majors.

## What can I do with a Construction Management Degree?

Construction Management graduates work in various organizations including, but not limited to: general contracting firms, developers, specialty contractors, Fortune 500 companies, banks, highway construction and others.

### Typical job titles for Construction Management graduates are:

Construction Manager  
Project Engineer  
Project Manager  
Estimator  
Owner/Representative  
Office Engineer

Our department's growing reputation outside the U.S. attracts a high proportion of international students, creating a multi-ethnic environment that reflects the increasingly diverse workplace. Drawing on these varied backgrounds, our students learn to look at challenges from many different angles and to use ingenuity in targeting solutions with the greatest value.

Construction Management is a discipline which is designed to instill in future constructors the skills, knowledge and understanding necessary to make the critical decisions which will guide the production and management processes of the largest industry in the United States.

In CM Major the traditional areas of business, engineering, and architecture are combined with specialized courses in construction. Completion of this curriculum prepares the Construction Manager to work with other project team members in managing the construction process.

Graduates in this field will help solve the complex technical and managerial problems in the building process, and can look forward to challenging careers which provide a full range of outlets for their creative efforts.

The subjects are taught so as to develop skills as well as instill knowledge. The intent is to create a professional who works well in team situations. The course work frequently uses cases or projects to simulate the working environment. A constant effort is made to help the student develop an analytical, practical, and realistic approach to problem solving and decision-making.

Our accredited Construction program provides an opportunity for students to choose one or more of following four concentrations:

- **General** - focuses on project management and the construction process from the general contractor perspective
- **Specialty** - focuses on the mechanical and electrical managerial aspects of construction
- **Development** - focuses on the entrepreneurial and economic aspects of construction from the owner or developer perspective



- **Facilities Management** - focuses on the repair, maintenance, refurbishment and upgrade of existing facilities  
Upon graduation most students pursue careers with construction firms.

**Typical entry-level positions include:**

Project engineer  
Safety engineer  
Assistant superintendent  
Assistant project manager  
Scheduling engineer  
Assistant cost engineer  
Quality control engineer  
Assistant estimator

Opportunities are not limited to these areas, however, as many graduates start their careers with equipment or material suppliers, development firms, specialty contractors, lenders, or owners.

The demand for constructors in Georgia, and particularly in the Atlanta region, is so great that employers have been forced to recruit out-of-state to hire graduates with construction management degrees. As a result, the program at Southern Polytechnic State University was established through the seed money of the members and associate members of the Georgia Branch of the Associated General Contractors of America, Inc. Southern Polytechnic State University is a member of Associated Schools of Construction (ASC). The fundamental objective of the ASC is to establish, advance, and sustain construction education as a unique and progressive academic discipline. The establishment and nurturing of the construction program is evidence of Southern Polytechnic State University's commitment to this objective.

## The Faculty

Our faculty members belong to numerous professional organizations including the ABC, AGC, AIC, ASCE, ASEE, ASHRAE, CMAA, GUCA, MECA, NAHB, and NECA. Many students belong to student chapters of the above organizations, enabling virtually all graduates to find employment prior to graduation. The estimated average starting salary for B.S. Construction graduates is \$50,300, based on a 2008 annual salary survey. For more information on our courses and industry affiliations, visit [www.spsu.edu/cnst](http://www.spsu.edu/cnst). Our Award-winning faculty includes Dr. John Mench (retired), recipient of 2007 Georgia Society of Professional Engineer of the Year Award in Education, and SPSU Outstanding Faculty of the Year Award of the year 2010; Dr. Khalid Siddiqi, recipient of the Outstanding Educator Award (2005) from Associated Schools of Construction (ASC) and SPSU Teacher of the Year 2003 Award; and Dr. Pavan Meadati received 2013 Excellence in Teaching Award from Associated Schools of Construction (ASC).

Hussein Abaza, *Assistant Professor*  
Zuhair El-Itr, *Associate Professor*  
Maureen Weidner, *Lecturer*  
Shariar Makarechi, *Assistant Professor*  
Pavan Meadati, *Assistant Professor*  
Fwu-shiun Liou, *Professor*  
Brandi Williams, *Assistant Professor*  
Chamer Register, *Assistant Professor*  
Debra White, *Assistant Professor*  
Khalid M. Siddiqi, *Professor and Department Chair*

## Construction Management Certificate Programs

SPSU's Construction Management Department offers five Certificate programs namely:

- Project Management Certificate
- Highway Project Management Certificate
- Land Development Certificate
- Specialty Construction Certificate (also available online)
- Facilities Management Certificate

Certificate programs are offered to provide training and education for students and working professionals in various areas of construction. Students can usually complete requirements in 3 to 4 Semesters. The credits earned through the certificate programs may also be applied toward completing a B. S. degree in Construction.

## **Admission Requirements:**

Applicants must meet all SPSU admissions requirements for undergraduate admission.

## **Areas of Study**

### **Construction Management, BS**

#### **Area A:**

- ENGL 1101 - English Composition I **3 Credits**
- ENGL 1102 - English Composition II **3 Credits**
- MATH 1113 - Pre-calculus **4 Credits**

#### **Area B:**

- COMM 2400 - Public Speaking **2 Credits**
- STS 2400 - Science, Technology, and Society **2 Credits**

#### **Area C:**

- Group 1 - Take One Course from the Literature Group **3 Credits**
- Group 2 - Take One Course from the Art and Culture Group **3 Credits**

#### **Area D: Laboratory Sciences**

- Group 1 - Any Two Lab Sciences (PHYS 1111, PHYS 1111L required and CHEM 1211, CHEM 1211L recommended) \*See Note 2 for PHYS 1111, PHYS 1111L **8 Credits**
- PHYS 1111 - Introductory Physics I **3 Credits** recommended for Area D– **See Note 2**
- PHYS 1111L - Introductory Physics Laboratory I **1 Credits**
- Group 2 - MATH 2240 - Survey of Calculus **3 Credits**

## Area E: Social Sciences

- Group 1 - American Context **3 Credits**
- Group 2 - World History **3 Credits**
- Group 3 - Behavioral Science **3 Credits**
- ECON 1101 - Introduction to Economics **3 Credits** recommended for Area E– **See Note 1**
- Group 4 - Cultures and Societies **3 Credits**

## Area F:

- MGNT 3145 - Legal Environment of Business **3 Credits**
- CET 2200 - Introduction to Structures **4 Credits**
- SURV 2200 - Construction Measurements **4 Credits**
- TCOM 2010 - Technical Writing **3 Credits**
- MGNT 3205 - Management Information Systems **3 Credits**

## Major-CM Courses

- ACCT 2101 - Principles of Financial Accounting **3 Credits**
- CM 1000 - Orientation to Construction and Development **2 Credits**
- CM 2000 - Construction Graphics **3 Credits**
- CM 3000 - Computer Applications in Construction **3 Credits**
- CM 3110 - Residential and Light Construction Methods **3 Credits**
- CM 3180 - Mechanical and Electrical Building Systems **4 Credits**
- CM 3410 - Construction Quantity Surveying **3 Credits**
- CM 3500 - Building Codes **2 Credits**
- CM 4510 - Construction Scheduling **3 Credits**
- CM 4760 - Construction and Real Property Law **3 Credits**
- CM 4900 - Capstone Project **3 Credits**
- CM 3040 - Building Information Modeling Applications I **3 Credits**

## Other Major Requirements:

- MGNT 3105 - Management and Organizational Behavior **3 Credits**
- ECON 1101 - Introduction to Economics **3 Credits** (if needed)
- PHYS 1111 - Introductory Physics I **3 Credits** (if needed)
- PHYS 1111L - Introductory Physics Laboratory I **1 Credits** (if needed)

## Concentration

Choose one Concentration from below.

### General Concentration

- CM 3210 - Applied Structures **4 Credits**
- CM 3260 - Temporary Structures **3 Credits**
- CM 3420 - Construction Estimating and Bid Preparation **4 Credits**
- CM 3620 - Construction Finance and Feasibility **4 Credits**
- CM 4560 - Construction Project Management **3 Credits**
- CM 4800 - Construction Process Simulation **3 Credits**

### Development Concentration

- CM 3310 - Introduction to Development **3 Credits**
- CM 3430 - Construction Estimating for Development **3 Credits**
- CM 3710 - Site Planning **4 Credits**
- CM 4570 - Development Process I **4 Credits**
- CM 3620 - Construction Finance and Feasibility **4 Credits**
- CM 4620 - Development Process II **3 Credits**

### Specialty Concentration

- CM 3280 - Building Mechanical and Electrical Codes and Loads **4 Credits**
- CM 3190 - Sustainable Construction **3 Credits**
- CM 3480 - Mechanical and Electrical Systems Estimating **4 Credits**
- CM 4480 - Design/Build MEP Systems **4 Credits**
- CM 4560 - Construction Project Management **3 Credits**
- CM 4800 - Construction Process Simulation **3 Credits**

## Facilities Management Concentration

- CM 3190 - Sustainable Construction **3 Credits**
- CM 3620 - Construction Finance and Feasibility **4 Credits**
- CM 3290 - Facilities Management **4 Credits**
- CM 4480 - Design/Build MEP Systems **4 Credits**
- CM 4560 - Construction Project Management **3 Credits**
- CM 4620 - Development Process II **3 Credits**

Degree Program Total: 128

### Note:

*Specialty Prerequisite for CM 4800 is CM 4480 in addition to the other prerequisites.*

*If ECON 1101 was taken to satisfy Area E, Group 3, a 3-hour Construction Elective can be substituted.*

*If PHYS 1111, PHYS 1111L were taken to satisfy Area D, Lab Science, a 4-hour Construction Elective can be substituted.*

## Construction Minor

### Requirements

To be eligible for a minor in Construction Management, the student must complete the following courses:

- CM 2000 - Construction Graphics **3 Credits \***
- CM 3000 - Computer Applications in Construction **3 Credits \***
- CM 3110 - Residential and Light Construction Methods **3 Credits**
- CM 3410 - Construction Quantity Surveying **3 Credits**
- CM 4510 - Construction Scheduling **3 Credits**

### Note:

Students who have the prerequisite knowledge in these courses may substitute courses of greater or equal credit from the following list with the consent of the CM Department Chair:

- CM 3411 - Construction Estimating Software **2 Credits**
- CM 3420 - Construction Estimating and Bid Preparation **4 Credits**
- CM 4511 - Construction Scheduling Software **2 Credits**

- CM 4560 - Construction Project Management 3 Credits
- CM 4760 - Construction and Real Property Law 3 Credits

## **Highway Project Management Certificate**

The Certificate in Highway Construction Project Management provides training and education for working professionals who wish to pursue a career in highway and infrastructure construction. Prerequisites must be met prior to enrollment in certain certificate courses.

### **Required Courses:**

- CE 3701 - Geotechnical Engineering 3 Credits
- CE 3501 - Materials for Civil & Construction Engineering 3 Credits
- CM 2000 - Construction Graphics 3 Credits
- CM 3410 - Construction Quantity Surveying 3 Credits
- CM 4510 - Construction Scheduling 3 Credits
- CM 4560 - Construction Project Management 3 Credits
- CM 4760 - Construction and Real Property Law 3 Credits

**Subtotal: 21 Credits**

### **Elective Courses:**

- CM 3420 - Construction Estimating and Bid Preparation 4 Credits
- CM 3260 - Temporary Structures 3 Credits
- CM 4710 - Construction Safety 4 Credits

**Subtotal: 3 Credits (minimum)**

**Certificate Program Total: 24 Credits (minimum)**

## **Land Development Certificate**

The Certificate in Land Development provides training and education to members of the real estate and land development field in construction and land development principles and practices. Students can complete the requirements in 3-4 semesters. These courses may also be applied toward completing a B.S. degree in Construction Management upon acceptance to SPSU.

Prerequisites must be met prior to enrollment in certain certificate courses.

## Required Courses:

- CM 3310 - Introduction to Development **3 Credits**
- CM 3710 - Site Planning **4 Credits**
- CM 4570 - Development Process I **4 Credits**
- CM 3110 - Residential and Light Construction Methods **3 Credits**

**Subtotal: 14 Credits**

\*may substitute courses from electives list if competency can be demonstrated

## Elective Courses:

- CM 2000 - Construction Graphics **3 Credits**
- CM 3410 - Construction Quantity Surveying **3 Credits**
- CM 3430 - Construction Estimating for Development **3 Credits**
- CM 4510 - Construction Scheduling **3 Credits**
- CM 4620 - Development Process II **3 Credits**

**Subtotal: 7 Credits (minimum)**

**Certificate Program Total: 21 Credits (minimum)**

## **Project Management Construction Certificate**

The professional Certificate in Project management is designed for working professionals who wish to further their knowledge in Construction Project Management. The certificate will also be useful for those individuals who wish to make a career change to the construction industry, or to those people who find themselves in the construction industry without first gaining a background in construction.

Prerequisites must be met prior to enrollment in certain certificate courses.

## Required Courses:

- CM 2000 - Construction Graphics **3 Credits**
- CM 3000 - Computer Applications in Construction **3 Credits**
  
- CM 3110 - Residential and Light Construction Methods **3 Credits** OR
- CM 3160 - Commercial and Heavy Construction Methods **3 Credits**
  
- CM 4560 - Construction Project Management **3 Credits**
- CM 3620 - Construction Finance and Feasibility **4 Credits**

Subtotal: 11-12 Credits

## Elective Courses:

- CM 3410 - Construction Quantity Surveying **3 Credits**
- CM 3420 - Construction Estimating and Bid Preparation **4 Credits**
- CM 4510 - Construction Scheduling **3 Credits**
- CM 4760 - Construction and Real Property Law **3 Credits**

Subtotal: 9+ Credits

Certificate Program Total: 20+ Credits

## **School of Arts and Sciences**

### **Biology and Chemistry**

### **Biology**



# Offering:

Bachelor of Science in Biology

Visit [www.spsu.edu/biology](http://www.spsu.edu/biology) for more information.

The Bachelor of Science (BS) degree provides students a program of study in modern biology with optional tracks in biochemistry and molecular biology, pre-health professional studies, general biology, bioinformatics, and biotechnology.

The fast-moving discipline of biology is generating exciting careers, from medical scientist to genetic engineer and patent prosecution attorney. At Southern Polytechnic, you will learn in small classes and work in laboratories equipped with the newest scientific instrumentation. Faculty teach both labs and classes, including core courses offered both day and night. Bring a curious mind to our programs, and we'll help you develop a broad technical base for unlimited professional opportunities.

Balancing traditional studies with the growing emphasis on biotechnology, the Biology program gives students the knowledge and experience they need for advanced degrees or immediate employment. The general track offers the most diverse course work, and three others focus on particular interests: molecular/biochemistry, pre-professional, and bioinformatics. Students can also pursue independent research in our labs, which feature high-speed centrifuges, thermal cyclers, environmental chambers, and other modern research tools.

Today the pace of technological change doubles every 18 months, and key developments are occurring in molecular science. Collaborating on experiments will prepare you for team-based work, whether your dream job is safeguarding public health, analysis of DNA samples, or creating gene therapies for "incurable" diseases. Many of our students plan on medical school, but our program prepares you for many careers that blend science with business, law, pharmacy, and other professions.

Biology students in all tracks are strongly encouraged to avail themselves of SPSU's cooperative education or internship linkages with industry as an integral part of their educational experience.

# Faculty:

Mark Sugalski, *Ph.D., Chair of the Department of Biology and Chemistry*

Thomas Nelson, *Ph.D., Professor and Dean of Arts and Sciences*

Marcia Hesser, *Ph.D., Biology Lecturer*

Adrienne King, *Ph.D., Assistant Professor*

Jennifer Louten, *Ph.D., Assistant Professor*

Peter Sakaris, *Ph.D., Assistant Professor*

Rajnish Singh, *Ph.D., Associate Professor*

Tseng Tsai-Tien, *Ph.D., Assistant Professor*

Matthew Weand, *Ph.D., Assistant Professor*

Nicole Smith, *Biology Lab Coordinator*

## **Biology career options:**

Agribusiness expert  
Conservation manager  
Dentist  
Dietitian  
Drug design and developer  
Environmental lawyer  
High school teacher or university professor  
Laboratory technician  
Pharmacist  
Physician  
Physical or occupational therapist  
Research molecular biologist or biochemist  
Scientific editor  
Veterinarian

## **Chemistry**

### **Offering:**

Bachelor of Science in Chemistry  
Bachelor of Science in Chemistry with Teacher Education Track leading to grades 6-12 certification

Visit [www.spsu.edu/chem](http://www.spsu.edu/chem) for more information.

The Chemistry Program at Southern Polytechnic State University is part of the Department of Biology and Chemistry in the School of Arts and Sciences. The Bachelor of Science degree in Chemistry was approved by the Board of Regents in August, 2007. A minor in Chemistry is also offered. The Chemistry major offers three concentrations- General Chemistry and Materials Science, and a Teacher Education Track leading to certification.

The Chemistry major is designed to prepare students for careers in the traditional chemical sciences, as well as in biotechnology, environmental chemistry, and materials chemistry. The concentration of job growth in the pharmaceutical, medical, biotechnological, scientific and technical arenas has fueled the growth of opportunities within the chemistry industry as related to the development of new drugs and products used to combat illness and disease. Chemists are also needed to monitor and measure air and water pollutants to ensure compliance with local, state, and federal environmental regulations. Graduates trained in nanotechnology, the next frontier in material science, will likely participate in the development and manufacture of new materials that will help to solve new problems.

The Chemistry major with the Teacher Education track will provide the same strong chemistry program, plus the course work and experiences that will prepare students for a successful career in teaching high school chemistry. See Teacher Education.

### **The Faculty:**

Jack Duff, *Senior Lecturer*

Daniel Ferreira, *Ph.D., Assistant Professor*

Lu Kang, *Ph.D., Assistant Professor*

Rajnish Singh, *Ph.D., Associate Professor*

Zvi Szafran, *Ph.D., Professor and Vice President for Academic Affairs*

Wei Zhou, *Ph.D., Associate Professor*

## **Environmental Sciences**

### **Offering:**

Bachelor of Science in Environmental Science

Students completing this program will be prepared for positions in federal and state agencies, industry, or graduate and advanced professional programs in the environmental sciences. Graduates will be education in assessment and regulation of environmental pollution, sustainable management and conservation of wildlife and natural resources, and conducting environmental research. SPSU's BS degree program in Environmental Science will produce graduates that can address growing environmental needs and challenges within metro Atlanta and throughout the state of Georgia.

### **Faculty:**

Mark Sugalski, *Ph.D., Chair of the Department of Biology and Chemistry*

Thomas Nelson, *Ph.D., Professor and Dean of Arts and Sciences*

Daniel Ferreira, *Ph.D., Assistant Professor*

Adrienne King, *Ph.D., Assistant Professor*

Peter Sakaris, *Ph.D., Assistant Professor*

Matthew Weand, *Ph.D., Assistant Professor*

## **Teacher Education**

### **Offering:**

Bachelor of Science in Biology with teacher education track leading to grades 6-12 certification

Bachelor of Science in Chemistry with teacher education track leading to grades 6-12 certification

Bachelor of Science in Physics with teacher education track leading to grades 6-12 certification

Bachelor of Arts in Mathematics with teacher education track leading to grades 6-12 certification

The bachelor's degrees in mathematics or science with the Teacher Education track provides students with a strong foundation in the discipline, giving them maximum flexibility with their degrees. Adding the Teacher Education track can give students immediate job possibilities.

The Teacher Education Program at SPSU provides students with strong, mentored experiences in the schools, a thorough knowledge of the teaching strategies and research on learning science and mathematics, and a nationally renowned teacher preparation program. This program allows students to build confidence in working with a variety of

students in multiple school settings, and prepares them for a successful career in teaching mathematics or science in the middle school or high school.

Teacher certification will be provided by the Georgia Professional Standards Commission (PSC) after SPSU is approved by the PSC and accredited by the National Council for Accreditation of Teacher Education (NCATE). Approval and accreditation will follow PSC/NCATE campus visit in the winter of 2013. Therefore, SPSU's first teacher candidates will graduate in the Spring 2013. Questions should be directed to the Teacher Education Office in J-353.

Our professors are professionals with high school teaching and leadership experience, academic credentials, and experiences in teacher preparation.

## The Faculty:

Alan Gabrielli, *Professor Emeritus, SPSU Teach Co-Director*

Cassandra Mathious, Master Teacher

George W. Stickel, *Associate Professor, Teacher Education Director and SPSU Teach Co-Director*

Jan Nourollahi, Master Teacher

### Students pursuing this degree must complete:

The Core Curriculum	60
Required Courses	30
Education Courses	33

## Areas of Study

### Biology Minor

To be eligible for a minor in Biology, the student must complete:

- A minimum of 18 semester hours of BIOL or BIOC coursework
- 9 of the 18 hours in BIOL/BIOC must be above the 2199 level
- Students who use BIOL 2107/BIOL 2107L and/or BIOL 2108/BIOL 2108L to satisfy Core D requirements cannot use these courses to satisfy requirements of the minor

### Biology, B.S.

#### Area A

- ENGL 1101 - English Composition I **3 Credits**
- ENGL 1102 - English Composition II **3 Credits**
- MATH 1113 - Pre-calculus **4 Credits**

## Area B

- COMM 2400 - Public Speaking **2 Credits**
- STS 2400 - Science, Technology, and Society **2 Credits**

## Area C

- Group 1 - Literature of the World **3 Credits**
- Group 2 - Art and Culture of the World **3 Credits**

## Area D

- MATH 2253 - Calculus I **4 Credits**  
Take any 2 of the courses below (with labs):
- BIOL 2107 - Principles of Biology I **3 Credits**
- BIOL 2107L - Principles of Biology I Laboratory **1 Credits**
- BIOL 2108 - Principles of Biology II **3 Credits**
- BIOL 2108L - Principles of Biology II Laboratory **1 Credits**
- CHEM 1211 - Principles of Chemistry I **3 Credits**
- CHEM 1211L - Principles of Chemistry I Lab **1 Credits**
- CHEM 1212 - Principles of Chemistry II **3 Credits**
- CHEM 1212L - Principles of Chemistry II Lab **1 Credits**
- PHYS 1111 - Introductory Physics I **3 Credits**
- PHYS 1111L - Introductory Physics Laboratory I **1 Credits**
- PHYS 1112 - Introductory Physics II **3 Credits**
- PHYS 1112L - Introductory Physics Laboratory II **1 Credits**

## Note:

*PHYS 2211/PHYS 2211L and PHYS 2212/PHYS 2212L may be taken instead of PHYS 1111/PHYS 1111L and PHYS 1112/PHYS 1112L*

## Area E

- Group 1 - American Context **3 Credits**
- Group 2 - World History **3 Credits**

- Group 3 - Behavioral Science **3 Credits**
- Group 4 - Cultures and Societies **3 Credits**

## Area F

Take any 4 courses (with labs) from the list below. Courses used as Area D requirements may not be selected.

- BIOL 2107 - Principles of Biology I **3 Credits**
- BIOL 2107L - Principles of Biology I Laboratory **1 Credits**
- BIOL 2108 - Principles of Biology II **3 Credits**
- BIOL 2108L - Principles of Biology II Laboratory **1 Credits**
- CHEM 1211 - Principles of Chemistry I **3 Credits**
- CHEM 1211L - Principles of Chemistry I Lab **1 Credits**
- CHEM 1212 - Principles of Chemistry II **3 Credits**
- CHEM 1212L - Principles of Chemistry II Lab **1 Credits**
- PHYS 1111 - Introductory Physics I **3 Credits**
- PHYS 1111L - Introductory Physics Laboratory I **1 Credits**
- PHYS 1112 - Introductory Physics II **3 Credits**
- PHYS 1112L - Introductory Physics Laboratory II **1 Credits**

### Note:

*PHYS 2211/PHYS 2211L and PHYS 2212/PHYS 2212L may be taken instead of PHYS 1111/PHYS 1111L and PHYS 1112/PHYS 1112L*

## Common Biology Major Requirements

A grade of "C" or better must be earned in all courses (excluding core areas A-E and free electives).

- BIOL 3000K - Genetics **4 Credits**
- BIOC 3111K - Biochemistry I **4 Credits**
- CHEM 2511K - Organic Chemistry I **4 Credits**
- CHEM 2512K - Organic Chemistry II **4 Credits**
- MATH 2260 - Introduction to Probability and Statistics **3 Credits**
- TCOM 2010 - Technical Writing **3 Credits**
- A Biology major must complete one program track (see below).

## General Biology Track Requirements

- BIOL 3300K - Ecology **4 Credits**
- BIOL 4480 - Evolution **3 Credits**
- At least 5 additional BIOL or BIOC courses above 2199 (excluding track requirements), with **at least one course** from each of the **Cellular Form and Function group** and the **Organismal Form and Function group 17-21 Credits**

- Free Electives **10-14 Credits**

## Cellular Form and Function group

- BIOL 3100K - Microbiology **4 Credits**
- BIOL 3400K - Cell Physiology **4 Credits**
- BIOL 4410 - Immunology **3 Credits**
- BIOL 4470 - Plant Physiology **3 Credits**

## Organismal Form and Function group

- BIOL 3700K - Ichthyology **4 Credits**
- BIOL 4100K - Entomology **4 Credits**
- BIOL 4110 - Parasitology **3 Credits**
- BIOL 4200K - Zoology **4 Credits**
- BIOL 4400K - Human Physiology **4 Credits**
- BIOL 4440K - Botany **4 Credits**
- BIOL 4460K - Human Anatomy **4 Credits**

## Biochemistry & Molecular Biology Track Requirements

- BIOL 3200K - Applied Molecular Biology Laboratory **4 Credits**
- BIOL 3310K - Molecular Biology **4 Credits**
- BIOC 3112K - Biochemistry II **4 Credits**
- At Least 4 additional BIOL or BIOC courses above 2199 (excluding track requirements) **12-16 Credits**
- Free Electives **10 – 14 Credits**

## Bioinformatics Track Requirements

- BIOL 2500K - Bioinformatics I - Tools & Databases **4 Credits**
- BIOL 3310K - Molecular Biology **4 Credits**
- BIOL 4510K - Bioinformatics II **4 Credits**
- CSE 1301J - Programming & Problem Solving I **4 Credits**
- CSE 1302J - Programming & Problem Solving II **4 Credits**
- CSE 3153 - Database Systems **3 Credits**
- At least 3 additional BIOL or BIOC courses above 2199 (excluding track requirements) **9 – 12 Credits**

- Free Electives **3 – 6 Credits**

## Biotechnology Track Requirements

- BIOL 3100K - Microbiology **4 Credits**
- BIOL 3310K - Molecular Biology **4 Credits**
- BIOL 3400K - Cell Physiology **4 Credits**
- BIOL 4350K - Cell and Tissue Culture **4 Credits**
- BIOL 4600K - Biotechnology **4 Credits**
- At Least 3 additional BIOL or BIOC courses above 2199 (excluding track requirements) **9-11 Credits**
- Free electives **7-9 Credits**

## Pre-Health Professional Track Requirements

- BIOL 3400K - Cell Physiology **4 Credits**
- BIOL 4400K - Human Physiology **4 Credits**
- BIOL 4460K - Human Anatomy **4 Credits**
- At Least 4 additional BIOL or BIOC Courses Above 2199 (excluding track requirements) **12-16 Credits**
- Free Electives **10-14 Credits**

Degree Program Total: 120

## Biology, Education Track, BS

The bachelor's degrees in mathematics or science with the Teacher Education track provides students with a strong foundation in the discipline, giving them maximum flexibility with their degrees. Adding the Teacher Education track can give students immediate job possibilities.

The Teacher Education Program at SPSU provides students with strong, mentored experiences in the schools, a thorough knowledge of the teaching strategies and research on learning science and mathematics, and a nationally renowned teacher preparation program. This program allows students to build confidence in working with a variety of students in multiple school settings, and prepares them for a successful career in teaching mathematics or science in the middle school or high school.

## Requirements

- ENGL 1101 - English Composition I **3 Credits**



- ENGL 1102 - English Composition II **3 Credits**
- MATH 1113 - Pre-calculus **4 Credits**
- MATH 2253 - Calculus I **4 Credits**
- MATH 2260 - Introduction to Probability and Statistics **3 Credits**
- COMM 2400 - Public Speaking **2 Credits**
- STS 2400 - Science, Technology, and Society **2 Credits**
- Area C Group 1 Take One Course from the Literature Group **3 Credits**
- Area C Group 2 Take One Course from the Art and Culture Group **3 Credits**
- Area E Group 1 American Context **3 Credits**
- Area E Group 2 World History **3 Credits**
- Area E Group 3 Behavioral Science **3 Credits**
- Area E Group 4 Cultures and Societies **3 Credits**
- SPSU 1001 - Hitch-hiker's Introduction to SPSU **1 Credits**
- CHEM 1211 - Principles of Chemistry I **3 Credits**
- CHEM 1211L - Principles of Chemistry I Lab **1 Credits**
- CHEM 1212 - Principles of Chemistry II **3 Credits**
- CHEM 1212L - Principles of Chemistry II Lab **1 Credits**
- CHEM 2511K - Organic Chemistry I **4 Credits**
- CHEM 2512K - Organic Chemistry II **4 Credits**
- PHYS 1111 - Introductory Physics I **3 Credits**
- PHYS 1111L - Introductory Physics Laboratory I **1 Credits**
- BIOL 3000K - Genetics **4 Credits**
- BIOL 3300K - Ecology **4 Credits**
- BIOL 3400K - Cell Physiology **4 Credits**
- BIOL 4200K - Zoology **4 Credits**
- BIOL 4400K - Human Physiology **4 Credits**
- BIOL 4460K - Human Anatomy **4 Credits**
- BIOL 4440K - Botany **4 Credits**
- BIOL 4480 - Evolution **3 Credits**
- EDUC 1101 - UTeach Step 1 **1 Credits**
- EDUC 1102 - UTeach Step 2 **1 Credits**
- EDUC 2010 - UTeach Knowing and Learning **3 Credits**
- EDUC 2020 - Classroom Interactions **3 Credits**
- EDUC 4030 - Project Based Instruction **3 Credits**
- RSCH 3610 - Research Methods **3 Credits**
- STS 3347 - Perspectives on Science and Math **3 Credits**
- EDUC 4401 - Apprentice Teaching Seminar **1 Credits**
- EDUC 4406 - Apprentice Teaching **6 Credits**

**Degree Program Total: 126**

**Note:**

*PHYS 2211, PHYS 2211L and PHYS 2212, PHYS 2212L may be taken instead of PHYS 1111, PHYS 1111L and PHYS 1112, PHYS 1112L*

## **Chemistry Minor**

### **Requirements**

- CHEM 1211 - Principles of Chemistry I **3 Credits**
- CHEM 1211L - Principles of Chemistry I Lab **1 Credits**
- CHEM 1212 - Principles of Chemistry II **3 Credits**
- CHEM 1212L - Principles of Chemistry II Lab **1 Credits**
- CHEM 2511K - Organic Chemistry I **4 Credits**
- CHEM 2512K - Organic Chemistry II **4 Credits**
- 10 additional hours of upper division (3000 level or higher) Chemistry or Biochemistry courses.

## **Chemistry, BS**

### **Area A**

- ENGL 1101 - English Composition I **3 Credits**
- ENGL 1102 - English Composition II **3 Credits**
- MATH 1113 - Pre-calculus **4 Credits**

### **Area B**

- COMM 2400 - Public Speaking **2 Credits**
- STS 2400 - Science, Technology, and Society **2 Credits**

### **Area C**

- Group 1 - Literature of the World **3 Credits**
- Group 2 - Art and Culture of the World **3 Credits**

### **Area D**

- MATH 2253 - Calculus I **4 Credits**  
Take any 2 of the courses below (with labs):
- BIOL 2107 - Principles of Biology I **3 Credits**
- BIOL 2107L - Principles of Biology I Laboratory **1 Credits**
- BIOL 2108 - Principles of Biology II **3 Credits**
- BIOL 2108L - Principles of Biology II Laboratory **1 Credits**
- CHEM 1211 - Principles of Chemistry I **3 Credits**
- CHEM 1211L - Principles of Chemistry I Lab **1 Credits**
- CHEM 1212 - Principles of Chemistry II **3 Credits**
- CHEM 1212L - Principles of Chemistry II Lab **1 Credits**
- PHYS 2211 - Principles of Physics I **3 Credits**
- PHYS 2211L - Principles of Physics Laboratory I **1 Credits**
- PHYS 2212 - Principles of Physics II **3 Credits**
- PHYS 2212L - Principles of Physics Laboratory II **1 Credits**

## Area E

- Group 1 - American Context **3 Credits**
- Group 2 - World History **3 Credits**
- Group 3 - Behavioral Science **3 Credits**
- Group 4 - Cultures and Societies **3 Credits**

## Area F

Take any 4 courses (with labs) from the list below. Courses used as Area D requirements may not be selected.

- CHEM 1211 - Principles of Chemistry I **3 Credits**
- CHEM 1211L - Principles of Chemistry I Lab **1 Credits**
- CHEM 1212 - Principles of Chemistry II **3 Credits**
- CHEM 1212L - Principles of Chemistry II Lab **1 Credits**
- PHYS 2211 - Principles of Physics I **3 Credits**
- PHYS 2211L - Principles of Physics Laboratory I **1 Credits**
- PHYS 2212 - Principles of Physics II **3 Credits**
- PHYS 2212L - Principles of Physics Laboratory II **1 Credits**
- CHEM 2511K - Organic Chemistry I **4 Credits**
- CHEM 2512K - Organic Chemistry II **4 Credits**

## Chemistry Major Requirements

- MATH 2254 - Calculus II **4 Credits**
- CHEM 2601 - Chemical Literature **2 Credits**
- CHEM 3100K - Analytical Chemistry **5 Credits**

- CHEM 3300K - Instrumental Analysis **4 Credits**
- CHEM 4411 - Inorganic Chemistry **3 Credits**
- CHEM 4111K - Physical Chemistry I **4 Credits**
- CHEM 4112 - Physical Chemistry II **3 Credits**
- CHEM 4112L - Physical Chemistry II Lab **1 Credits**
- BIOC 3111K - Biochemistry I **4 Credits**
- TCOM 2010 - Technical Writing **3 Credits**
- A Chemistry major must complete one program track (see below).

## General Chemistry Track

- Four additional BIOC, CHEM, MATH, or Science electives at the 3000 level or higher. **12-16 Credits**
- Free electives **11-15 Credits**

## Materials Science Track

- MSCI 3101K - Introduction to Material Science **4 Credits**
- CHEM 4412 - Main Group Inorganic Chemistry **3 Credits**
- CHEM 4415 - Solid State Chemistry **3 Credits**
- Upper-level CHEM elective **3-4 Credits**
- Free electives **13-14 Credits**

## Chemistry, Education Track, BS

The bachelor's degrees in mathematics or science with the Teacher Education track provides students with a strong foundation in the discipline, giving them maximum flexibility with their degrees. Adding the Teacher Education track can give students immediate job possibilities.

The Teacher Education Program at SPSU provides students with strong, mentored experiences in the schools, a thorough knowledge of the teaching strategies and research on learning science and mathematics, and a nationally renowned teacher preparation program. This program allows students to build confidence in working with a variety of students in multiple school settings, and prepares them for a successful career in teaching mathematics or science in the middle school or high school.

## Requirements

- ENGL 1101 - English Composition I **3 Credits**
- ENGL 1102 - English Composition II **3 Credits**
- TCOM 2010 - Technical Writing **3 Credits**
- COMM 2400 - Public Speaking **2 Credits**
- STS 2400 - Science, Technology, and Society **2 Credits**
- Area C1 - Course in Literature **3 Credits**

- Area C2 - Course in Art and Culture **3 Credits**
- Area D - Two courses in Laboratory Science (Physics recommended) **8 Credits**
- Area E1 - American Perspective **3 Credits**
- Area E2 - World History **3 Credits**
- Area E3 - Course in Behavioral Science **3 Credits**
- Area E4 - Course in Cultures and Societies **3 Credits**
- SPSU 1001 - Hitch-hiker's Introduction to SPSU **1 Credits**
- BIOC 3111K - Biochemistry I **4 Credits**
- CHEM 1211 - Principles of Chemistry I **3 Credits**
- CHEM 1212 - Principles of Chemistry II **3 Credits**
- CHEM 2511K - Organic Chemistry I **4 Credits**
- CHEM 2512K - Organic Chemistry II **4 Credits**
- CHEM 3100K - Analytical Chemistry **5 Credits**
- CHEM 3300K - Instrumental Analysis **4 Credits**
- CHEM 4111K - Physical Chemistry I **4 Credits**
- CHEM 4112 - Physical Chemistry II **3 Credits**
- CHEM 4112L - Physical Chemistry II Lab **1 Credits**
- CHEM 4411 - Inorganic Chemistry **3 Credits**
- MATH 1113 - Pre-calculus **4 Credits**
- MATH 2253 - Calculus I **4 Credits**
- MATH 2254 - Calculus II **4 Credits**

## Chemistry Education

- EDUC 1101 - UTeach Step 1 **1 Credits**
- EDUC 1102 - UTeach Step 2 **1 Credits**
- EDUC 2010 - UTeach Knowing and Learning **3 Credits**
- EDUC 2020 - Classroom Interactions **3 Credits**
- EDUC 4030 - Project Based Instruction **3 Credits**
- RSCH 3610 - Research Methods **3 Credits**
- STS 3347 - Perspectives on Science and Math **3 Credits**
- EDUC 4401 - Apprentice Teaching Seminar **1 Credits**
- EDUC 4406 - Apprentice Teaching **6 Credits**
- Chemistry Electives **6 Credits**
- Free Electives **2 Credits**

Degree Program Total: 120

## Environmental Science Minor

## Requirements

- ENVS 2202K - Introduction to Environmental Science **4 Credits**
- BIOL 3300K - Ecology **4 Credits**

## Electives - Choose 7+ credits from the list below

- BIOL 3600 - Freshwater Biology **3 Credits**
- BIOL 3650 - Marine Biology **3 Credits**
- BIOL 4400K - Human Physiology **4 Credits**
- CHEM 3150K - Environmental Chemistry **4 Credits**
- ENGL 3015 - Environmental Writing **3 Credits**
- ENVS 3100K - Soil & Water Science **4 Credits**
- ENVS 3350 - Oceanography **3 Credits**
- ENVS 3000 - Environmental Science Seminar **1 Credits**
- GEOG 4101 - Geographic Information Systems **3 Credits**
- POLS 3401 - Environmental Law and Policy **3 Credits**
- STS 4300 - Environmental Ethics **3 Credits**

Minor Program Total: 15-18 Credits

## **Environmental Science, B.S.**

### Core Requirements

#### Area A

- ENGL 1101 - English Composition I **3 Credits**
- ENGL 1102 - English Composition II **3 Credits**
- MATH 1113 - Pre-calculus **4 Credits**

#### Area B

- STS 2400 - Science, Technology, and Society **2 Credits**
- COMM 2400 - Public Speaking **2 Credits**

## Area C

- Group 1 - Literature of the World **3 Credits**
- Group 2 - Art and Culture of the World **3 Credits**

## Area D

Environmental Science majors **MUST** take the courses listed below to satisfy Area D

- MATH 2253 - Calculus I **4 Credits**
- BIOL 2107 - Principles of Biology I **3 Credits**
- BIOL 2107L - Principles of Biology I Laboratory **1 Credits**
- BIOL 2108 - Principles of Biology II **3 Credits**
- BIOL 2108L - Principles of Biology II Laboratory **1 Credits**

## Area E

- Group 1 - American Context **3 Credits**
- Group 2 - World History **3 Credits**
- Group 3 - Behavioral Science **3 Credits**
- Group 4 - Cultures and Societies **3 Credits**

## Area F

- CHEM 1211 - Principles of Chemistry I **3 Credits**
- CHEM 1211L - Principles of Chemistry I Lab **1 Credits**
- CHEM 1212 - Principles of Chemistry II **3 Credits**
- CHEM 1212L - Principles of Chemistry II Lab **1 Credits**
- PHYS 1111 - Introductory Physics I **3 Credits**
- PHYS 1111L - Introductory Physics Laboratory I **1 Credits**
- GEOL 1101K - Introductory Geosciences **4 Credits**

## Environmental Science Major Requirements

- MATH 2260 - Introduction to Probability and Statistics **3 Credits**
- ENV5 2202K - Introduction to Environmental Science **4 Credits**

- BIOL 3000K - Genetics 4 Credits
- BIOL 3300K - Ecology 4 Credits
- BIOL 4200K - Zoology OR BIOL 4440K - Botany 4 Credits
- CHEM 2511K - Organic Chemistry I 4 Credits
- CHEM 2512K - Organic Chemistry II 4 Credits
- CHEM 3150K - Environmental Chemistry 4 Credits
- POLS 3401 - Environmental Law and Policy 3 Credits
- STS 4300 - Environmental Ethics 3 Credits
- SURV 3421 - Geographic Information Systems I 4 Credits
- ENVS 3100K - Soil & Water Science 4 Credits
- ENVS 4500 - Environmental Science Internship 3 Credits

### Environmental Science Electives (12 semester hours from the list below)

- BIOL 3100K - Microbiology 4 Credits
- BIOL 3250K - Ecosystem Ecology 4 Credits
- BIOL 3500 - Biostatistics 3 Credits
- BIOL 3600 - Freshwater Biology 3 Credits
- BIOL 3700K - Ichthyology 4 Credits
- CET 3130 - Applied Fluid Mechanics and Hydraulics 2 Credits
- CET 3310 - Water Treatment and Distribution 2 Credits
- CET 3320 - Wastewater Collection and Treatment 2 Credits
- CET 4310 - Stormwater Management and Erosion Control 2 Credits
- CET 4330 - Solid Waste Management 3 Credits
- CHEM 3100K - Analytical Chemistry 5 Credits
- CHEM 3200K - Atmospheric Chemistry 3 Credits
- CHEM 3300K - Instrumental Analysis 4 Credits
- SURV 2110 - Introduction to Mapping 4 Credits
- ENVS 3150K - Environmental Toxicology 4 Credits
- ENVS 3250 - Natural Resource Management 3 Credits
- ENVS 3450 - Conservation Biology 3 Credits
- TCOM 2010 - Technical Writing 3 Credits

Degree Program Total: 120

## **English, Technical Communication and Media Arts**

### **English**



# Offering:

## The Bachelor of Arts in English and Professional Communication

Our Bachelor of Arts in English and Professional Communication degree is not your typical B.A. in English. Our program emphasizes the role and place of text and image within a world increasingly dependent upon clear communication. Our project-driven courses challenge students to implement real-world applications in nearly every class. Specialized course-work and individual attention allow graduates to begin work immediately, satisfying the demand for professionals who can communicate technical, international, scientific, and computer-related information to both technical and non-technical users.

The required communication courses equip students with the most advanced communication skills in writing, editing, graphics, information design and collaboration. In addition, students study classical rhetoric, develop high-level computer skills, and produce a portfolio that demonstrates their communication proficiency to potential employers. Our literature courses help students understand the diversity of genres, cultures, and authors that contribute to literary production. With offerings in journalism, creative writing, science writing, and environmental writing, our Professional Writing and Communication concentration prepares students for careers in media writing, freelance writing, marketing, public relations, and publishing. Our new concentration in Media, Communication, and Culture combines hands-on production courses with a study of media and culture to prepare students for careers in marketing, mass communication, and entertainment, where media savvy can really pay off.

# The Faculty:

Kami Anderson, *Assistant Professor*  
Carol Barnum, *Professor*  
Terry Carter, *Professor*  
Donna Colebeck, *Lecturer*  
Laura Beth Daws, *Instructor*  
Jeff Greene, *Assistant Professor*  
Kim Haimes-Korn, *Professor*  
Kelsey Harr-Lagin, *Instructor*  
Keith B. Hopper, *Professor*  
Monique Logan, *Instructor*  
Matthew McCool, *Assistant Professor*  
Michelle Nichols, *Lecturer*  
Mark Nunes, *Professor and Department Chair*  
Betty Oliver, *Professor*  
Iraj Omidvar, *Associate Professor*  
Jeffrey Orr, *Instructor*  
Laura Palmer, *Assistant Professor*  
Ann Parker, *Lecturer*  
Cassie Race, *Instructor*  
Nancy L. Reichert, *Associate Professor*  
Cheryl Shinall, *Instructor*  
Erin Sledd, *Instructor*  
Herbert J. Smith, *Professor*  
Debora Stefani, *Instructor*  
Charlotte Stephenson, *Instructor*  
Mark K. Stevens, *Associate Professor*  
Laurie Strauss, *Instructor*  
Beth Stutzmann, *Senior Lecturer*  
Katherine Taylor, *Instructor*

Ava Werner, *Instructor*  
Jim Werner, *Assistant Professor*  
Misty York, *Lecturer*

## **The Program:**

The Bachelor of Arts in English and Professional Communication is designed to prepare students for a variety of communication careers.

### Possible positions include:

- Technical writer
- Documentation specialist
- Technical editor
- Professional writer
- Information designer
- Multimedia specialist
- Proposal writer
- Corporate communications specialist
- Public relations
- Website designer and content developer

The program also can serve as a pre-professional background for students who plan to attend graduate school.

### Students pursuing the degree must complete:

- The Core Curriculum
- Required upper-division courses in professional and technical communication
- A concentration in one area of professional communication
- Additional elective courses in the major
- Free electives

Students must make a grade of at least a C in all major courses.

## **New Media Arts**

### **Offering:**

The Bachelor of Arts in New Media Arts

The Bachelor of Arts in New Media Arts provides students with an opportunity to develop the technical and artistic skills needed to serve as practitioners in the fields of multimedia development and design, web design, and video production. As a degree that straddles two worlds--the fine and the applied arts--the degree program encourages both creativity and practical application. Students will have an opportunity to develop a strong foundation in the traditional fine arts and learn to translate these skills to new media contexts. They will also learn to approach the technical aspects of new media applications from the sensibilities of an artist as well as a technician.

With its balance between the artistic and technical aspects of new media production, the new media arts degree program should prepare students to meet a growing marketplace need for multimedia artists and to rise to the top of the pack of individuals competing for these positions. While providing an undergraduate degree option for students interested in entering careers in the fine and applied arts, it would also provide appropriate preparation for graduate study.

## **The Faculty:**

Kami Anderson, *Assistant Professor*  
Carol Barnum, *Professor*  
Terry Carter, *Associate Professor*  
Donna Colebeck, *Instructor*  
Laura Beth Daws, *Instructor*  
Jeff Greene, *Assistant Professor*  
Kim Haimes-Korn, *Professor*  
Keith B. Hopper, *Professor*  
Monique Logan, *Instructor*  
Matthew McCool, *Assistant Professor*  
Michelle Nichols, *Lecturer*  
Mark Nunes, *Associate Professor and Department Chair*  
Betty Oliver, *Professor*  
Iraj Omidvar, *Assistant Professor*  
Jeffrey Orr, *Instructor*  
Laura Palmer, *Assistant Professor*  
Ann Parker, *Lecturer*  
Cassie Race, *Instructor*  
Nancy L. Reichert, *Associate Professor*  
Cheryl Shinall, *Instructor*  
Erin Sledd, *Instructor*  
Herbert J. Smith, *Professor*  
Charlotte Stephenson, *Instructor*  
Mark K. Stevens, *Associate Professor*  
Laurie Strauss, *Instructor*  
Beth Stutzmann, *Lecturer*  
Katherine Taylor, *Instructor*  
Jim Werner, *Assistant Professor*  
Misty York, *Lecturer*

## **The Program:**

The Bachelor of Arts in New Media Arts is designed to prepare students for a variety of multimedia artist careers.

### **Possible positions include:**

- Web Design
- Video Production
- Multimedia Development and Design
- Multimedia Artist

The program also can serve as preparation for students who plan to attend graduate school.

## Students pursuing the degree must complete:

The Core Curriculum, Areas A-E  
Required core courses in the major, Area F  
Basic required courses in the major  
Additional required courses in the major  
Free electives

Students must make a grade of at least a C in **ALL** major courses.

## Arts

### Offering:

Bachelor of Science in Technical Communication – Digital Media and Graphics

(Degrees Offered: Bachelor of Science in Technical Communication—Digital Media and Graphics Concentration; Bachelor of Arts in English and Professional Communication—Media, Communication, and Culture Concentration)

Southern Polytechnic State University offers a variety of arts courses that may be used to satisfy core requirements, or as free electives. In addition, we offer a concentration track in our BS in Technical Communication program that allows students to develop the applied arts and information design skills needed in a world increasingly dominated by digital media arts. We also offer a concentration track in our BA in English and Professional Communication for students who are interested in applying these skills to careers in marketing communication, media arts, and entertainment.

### The Faculty:

Kami Anderson, *Assistant Professor*  
Carol Barnum, *Professor*  
Terry Carter, *Associate Professor*  
Jeff Greene, *Assistant Professor*  
Kim Haimes-Korn, *Professor*  
Keith B. Hopper, *Associate Professor*  
John Lindsay, *Instructor*  
Monique Logan, *Instructor*  
Matthew McCool, *Assistant Professor*  
Mark Nunes, *Associate Professor and Department Chair*  
Betty Oliver, *Professor*  
Iraj Omidvar, *Assistant Professor*  
Jeffrey Orr, *Instructor*  
Laura Palmer, *Assistant Professor*  
Ann Parker, *Lecturer*  
Nancy L. Reichert, *Associate Professor*  
Cheryl Shinall, *Instructor*  
Herbert J. Smith, *Professor*  
Charlotte Stephenson, *Instructor*  
Mark K. Stevens, *Associate Professor*  
Melissa Weaver, *Lecturer*  
Jim Werner, *Assistant Professor*

## **Program Offerings in Digital Media/Media Arts:**

The B.S. in Technical Communication—Digital Media and Graphics concentration is designed to prepare students for a variety of careers in which visual communication takes center stage.

### **Possible positions include:**

- Documentation specialist
- Visual communication specialist
- Information designer
- Multimedia specialist
- Graphics specialist
- Website designer and content developer

### **Students pursuing the BS degree with a concentration in Digital Media and Graphics must complete:**

- The Core Curriculum
- Required upper-division courses in technical communication (TCOM)
- Courses in the Digital Media and Graphics concentration
- Additional elective courses in the major
- Free electives

The B.A. in English and Professional Communication—Media, Communication, and Culture concentration combines hands-on production courses with a study of media and culture to prepare students for careers where media savvy can really pay off.

### **Possible positions include:**

- Media specialist
- Marketing communications associate
- Interactive marketing specialist
- Media production associate
- Website content developer

### **Students pursuing the BA degree with a concentration in Media, Communication and Culture must complete:**

- The Core Curriculum
- Required upper-division courses in technical communication (TCOM)
- Courses in the Media, Communication, and Culture concentration
- Additional elective courses in the major
- Free electives

Students must make a grade of at least a C in all major courses.

# Technical College System of Georgia Transfer Program

## TCSG Transfer Program

Southern Polytechnic State University has implemented a system-wide articulation with the Technical College System of Georgia (TCSG). This articulation will provide the opportunity for SPSU to offer a range of B.S. and B.A.S. level technological programs on a statewide basis, with the TCSG institutions as our partners. The initial set of programs were made available in Fall, 2009 and include pathways from approximately thirty TCSG Associates degrees into Information Technology (B.A.S.) and Manufacturing Operations (B.A.S.). Future offerings are being considered in Business Administration (B.A.S.), Electrical Engineering Technology (B.S.), Industrial Engineering Technology (B.S.), and Mechanical/Electromechanical Engineering Technology (B.S.). Also under consideration is Surveying and Mapping (B.S.).

In this articulation, the TCSG institution will offer roughly the first two years of the programs including some of the USG core, and SPSU will offer the second two years of the programs. The TCSG portion will be offered mainly "live" on their campuses, with some online offerings. The SPSU portion will be offered in a format where most of the content is offered online with laboratories being offered low-residency. In a low-residency laboratory, students will take groups of laboratory experiments on two or three Saturdays during a semester, either on the SPSU or at a designated TCSG campus. The curricula of the TCSG institutions will be aligned with the SPSU curriculum to allow the maximum degree possible of direct transferability.

Articulation agreements have been signed by all of the SACS-COC accredited TCSG college presidents as well as the leadership at the TCSG system office.

If you would like more information on admission, program offerings and participating TCSG's, see [tcsg.spsu.edu](http://tcsg.spsu.edu). Current majors include:

- Business Management
- Content Design (Technical Writing)
- Information Technology
- Laboratory Management
- Residential Construction Management
- Supply Chain Logistics
- Manufacturing Operations

## Technical Communication

### Offering:

Bachelor of Science in Technical Communication

Southern Polytechnic's degree in technical communication ranks among the best in the nation. Our faculty in Technical Communication includes two winners of the coveted Jay R. Gould award for outstanding teaching from the Society for Technical Communication. Because we are housed in a small engineering tech school, we can offer a much wider range of courses than similar programs at more traditional schools, and we have the up-to-date hardware and software to

support them. You will get a solid grounding in rhetoric as well as hands-on experience with new media tools and technologies.

With our TCOM degree, you will learn much more than just how to use words effectively—you will have opportunities to learn document design, graphics, multimedia, web design, and video production as well as science and environmental writing, proposal writing, and medical communication.

Students in other majors can minor in technical communication through a range of campus-based and online course offerings. For students interested in distance learning options, Southern Polytechnic also offers a 15-credit undergraduate certificate in technical communication delivered entirely online.

Many TCOM courses are taught using a combination of on-site and online sessions that students with jobs especially appreciate. We make sure we offer enough late-afternoon and evening courses so that working students can make steady progress toward their degree.

## The Faculty:

Kami Anderson, *Assistant Professor*  
Carol Barnum, *Professor*  
Terry Carter, *Professor*  
Donna Colebeck, *Lecturer*  
Laura Beth Daws, *Instructor*  
Jeff Greene, *Assistant Professor*  
Kim Haimes-Korn, *Professor*  
Kelsey Harr-Lagin, *Instructor*  
Keith B. Hopper, *Professor*  
Monique Logan, *Instructor*  
Matthew McCool, *Assistant Professor*  
Michelle Nichols, *Lecturer*  
Mark Nunes, *Professor and Department Chair*  
Betty Oliver, *Professor*  
Iraj Omidvar, *Associate Professor*  
Jeffrey Orr, *Instructor*  
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Erin Sledd, *Instructor*  
Herbert J. Smith, *Professor*  
Debora Stefani, *Instructor*  
Charlotte Stephenson, *Instructor*  
Mark K. Stevens, *Associate Professor*  
Laurie Strauss, *Instructor*  
Beth Stutzmann, *Senior Lecturer*  
Katherine Taylor, *Instructor*  
Ava Werner, *Instructor*  
Jim Werner, *Assistant Professor*  
Misty York, *Lecturer*

## The Program:

The Bachelor's program in Technical Communication is designed to prepare students for a variety of communication careers.

**Technical Communication - Bachelor of Science Possible positions include:**

Technical writer  
Documentation specialist  
Technical editor  
Information designer  
Multimedia specialist  
Proposal writer  
Graphics specialist  
Instructional designer or training specialist  
Website designer and content developer

The program also can serve as a pre-professional background for students who plan to attend graduate school.

**Students pursuing the degree must complete:**

The Core Curriculum  
Required upper-division courses in technical communication  
A concentration in one area of technical communication  
Additional elective courses in the major  
Free electives

Students must make a grade of at least a C in all TCOM major courses.

## Areas of Study

### English and Professional Communication, BA

Our Bachelor of Arts in English and Professional Communication degree is not your typical B.A. in English. Our program emphasizes the role and place of text and image within a world increasingly dependent upon clear communication. Our project-driven courses challenge students to implement real-world applications in nearly every class. Specialized course-work and individual attention allow graduates to begin work immediately, satisfying the demand for professionals who can communicate technical, international, scientific, and computer-related information to both technical and non-technical users.

The required communication courses equip students with the most advanced communication skills in writing, editing, graphics, information design and collaboration. In addition, students study classical rhetoric, develop high-level computer skills, and produce a portfolio that demonstrates their communication proficiency to potential employers. Our literature courses help students understand the diversity of genres, cultures, and authors that contribute to literary production. With offerings in journalism, creative writing, science writing, and environmental writing, our Professional Writing and Communication concentration prepares students for careers in media writing, freelance writing, marketing, public relations, and publishing. Our concentration in Media, Communication, and Culture combines hands-on production courses with a study of media and culture to prepare students for careers in marketing, mass communication, and entertainment, where media savvy can really pay off.

## Requirements



- ENGL 1101 - English Composition I **3 Credits**
- ENGL 1102 - English Composition II **3 Credits**
- MATH 1111 - College Algebra **3 Credits**
- MATH 1113 - Pre-calculus **4 Credits**
- COMM 2400 - Public Speaking **2 Credits**
- STS 2400 - Science, Technology, and Society **2 Credits**
- Area C1 - Course in Literature **3 Credits**
- Area C2 - Course in Art and Culture **3 Credits**
- Area D - Two courses in Laboratory Science **8 Credits**
- Area E1 - American Context **3 Credits**
- Area E2 - World History **3 Credits**
- Area E3 - Course in Behavioral Science **3 Credits**
- Area E4 - Course in Cultures and Societies **3 Credits**

### Required Area F Foundations Courses (9 Credits)

- COMM 2000 - Business Communication **3 Credits**
- TCOM 2010 - Technical Writing **3 Credits**
- TCOM 2020 - Intro to Professional & Technical Communication **3 Credits**

### Area F Required Research Methods Course (3 Credits; Choose One)

- TCOM 2030 - Research in Technical Communication **3 Credits** or
- ENGL 2030 - Research in Professional and Critical Writing **3 Credits**

### Area F Electives (6 Credits; Choose Two)

- ARTS 2020 - History and Principles of Design **3 Credits**
- ENGL 2xxx - Any 2000-level literature survey **3-6 Credits**
- COMM 2065 - Cross-Cultural Communication **3 Credits**
- COMM 2170 - Introduction to Media Studies **3 Credits**
- COMM 2150 - Ethics and Communication **3 Credits**
- Other coursework appropriate to major, as approved by the department (3 credits max) **3 Credits**
- Any foreign language, 2001 or higher **3 Credits**

### Basic Required Courses in the Major (15 Credits)

- ENGL 3030 - English Grammar for Professional Writing **3 Credits**
- ENGL 3100 - Rhetoric: History, Theory, and Practice **3 Credits**
- TCOM 3400 - Foundations of Design for the Web **3 Credits**
- TCOM 3430 - Foundations of Graphics **3 Credits**
- COMM 4100 - Small Group Communication **3 Credits**
- ENGL 4800 - Project Portfolio **3 Credits**
- English and Professional Communication Electives Take any 3000-level or higher ARTS, COMM, ENGL, or TCOM Course, or other courses (not to exceed 6 credits) as approved by the department. **12 Credits**
- Free Electives **15 Credits**
- Concentration Courses (Professional Writing and Communication or Media, Communication and Culture) or Minor Courses (International Studies or Spanish) **15 Credits**
- SPSU 1001 - Hitch-hiker's Introduction to SPSU **1 Credits**

## Professional Writing and Communication (15 Credits)

- COMM 3035 - Organizational Communication **3 Credits**
  - COMM 3040 - Health Communication **3 Credits**
  - COMM 3050 - Journalism **3 Credits**
  - COMM 3150 - Public Relations Practice **3 Credits**
  - ENGL 3010 - Science Writing **3 Credits**
  - ENGL 3015 - Environmental Writing **3 Credits**
  - ENGL 3025 - Creative Writing Workshop **3 Credits**
  - ENGL 3035 - Problems in Language **3 Credits**
  - ENGL 3040 - Article and Essay Workshop **3 Credits**
  - ENGL 3081 - Studies in Genre **3 Credits**
  - ENGL 3082 - Science & Literature **3 Credits**
  - ENGL 4010 - Publishing for New Media **3 Credits**
  - TCOM 3020 - Proposal Writing **3 Credits**
  - TCOM 4000 - Professional Editing **3 Credits**
- or

## Media, Communication, and Culture (15 Credits)

- ARTS 3000 - Visual Thinking **3 Credits**
- COMM 3060 - Media, Culture, and Society **3 Credits**
- COMM 3065 - International Communication **3 Credits**
- COMM 3160 - Media Theory and Practice **3 Credits**
- ENGL 3045 - New Media Writing **3 Credits**
- ENGL 3180 - Film as Literature **3 Credits**
- ENGL 4170 - Media and Narrative **3 Credits**
- TCOM 3145 - Social Media Integration **3 Credits**
- TCOM 4045 - Foundations of Multimedia **3 Credits**

- TCOM 4170 - Film and Video Production **3 Credits**

## Degree Program Total: 121

For additional information about the B.A. program, contact the English, Technical Communication, and Media Arts Department at 678-915-7202, or email to TCOM@spsu.edu. You can also visit our website at etcma.spsu.edu.

## Minors:

### International Studies (15 Credits)

In place of a concentration, students can choose to complete the BA in English and Professional Communication with an International Studies minor . To be eligible for a minor in International Studies, the student must complete all courses with a grade of C or better.

### Spanish (15 Credits)

In place of a concentration, students can choose to complete the BA in English and Professional Communication with a Spanish Minor . To be eligible for a minor in Spanish, the student must complete all courses with a grade of C or better.

- SPAN 2001 - Intermediate Spanish I **3 Credits**
- SPAN 2002 - Intermediate Spanish II **3 Credits**
- Additional courses in Spanish at the 3000 level **9 Credits**

## Global Communication Minor

After taking COMM 2500—Advanced Public Speaking and COMM 2150—Ethics and Communication, you will take **only 9 more hours** of coursework. If you earn a grade of "C" or better in each course, your minor credential will be designated on your SPSU transcript.

### Required Foundational Courses (6 Credits)

- COMM 2500 - Advanced Public Speaking **3 Credits**
- COMM 2150 - Ethics and Communication **3 Credits**

### Additional Courses for Minor (9 Credits)

*This minor is not available to students majoring in either Technical Communication or English and Professional Communication.*

- COMM 2065 - Cross-Cultural Communication **3 Credits**

- COMM 3065 - International Communication **3 Credits**
- COMM 3060 - Media, Culture, and Society **3 Credits**
- COMM 4100 - Small Group Communication **3 Credits**  
Students may take 2000 level or higher in Foreign Language.  
Students may count Study Abroad credits.

## Leadership and Organizational Communication Minor

After taking COMM 2500—Advanced Public Speaking and COMM 2150—Ethics and Communication, you will take **only 9 more hours** of coursework. If you earn a grade of "C" or better in each course, your minor credential will be designated on your SPSU transcript.

### Required Foundational Courses (6 Credits)

- COMM 2500 - Advanced Public Speaking **3 Credits**
- COMM 2150 - Ethics and Communication **3 Credits**

### Additional Courses for Minor (9 Credits)

*This minor is not available to students majoring in either Technical Communication or English and Professional Communication.*

- COMM 2000 - Business Communication **3 Credits**
- COMM 2065 - Cross-Cultural Communication **3 Credits**
- COMM 3035 - Organizational Communication **3 Credits**
- COMM 3040 - Health Communication **3 Credits**
- COMM 4100 - Small Group Communication **3 Credits**
- COMM 4200 - New Media Leadership Strategies **3 Credits**

## New Media Arts, BA

The Bachelor of Arts in New Media Arts provides students with an opportunity to develop the technical and artistic skills needed to serve as practitioners in the fields of multimedia development and design, web design, and video production. As a degree that straddles two worlds--the fine and the applied arts--the degree program encourages both creativity and practical application. Students will have an opportunity to develop a strong foundation in the traditional fine arts and learn to translate these skills to new media contexts. They will also learn to approach the technical aspects of new media applications from the sensibilities of an artist as well as a technician.

With its balance between the artistic and technical aspects of new media production, the new media arts degree program should prepare students to meet a growing marketplace need for multimedia artists and to rise to the top of the pack of individuals competing for these positions. While providing an undergraduate degree option for students interested in entering careers in the fine and applied arts, it would also provide appropriate preparation for graduate study.

## Requirements

- ENGL 1101 - English Composition I **3 Credits**
- ENGL 1102 - English Composition II **3 Credits**
- MATH 1111 - College Algebra **3 Credits**
- MATH 1113 - Pre-calculus **4 Credits**
- COMM 2400 - Public Speaking **2 Credits**
- STS 2400 - Science, Technology, and Society **2 Credits**
- Area C Group 1 - Take One Course from the Literature Group **3 Credits**
- Area C Group 2 - Take One Course from the Art and Culture Group **3 Credits**
- Area D - Any Two Lab Sciences **8 Credits**
- Area E Group 1 - American Context **3 Credits**
- Area E Group 2 - World History **3 Credits**
- Area E Group 3 - Behavioral Science **3 Credits**
- Area E Group 4 - Cultures and Societies **3 Credits**

### Area F Core Course in the Major (6 Credits)

- ARTS 2020 - History and Principles of Design **3 Credits**
- COMM 2170 - Introduction to Media Studies **3 Credits**

### Area F Core Studio Course in the Major (9 Credits; Choose 3)

- ARTS 2010 - Introduction to Drawing **3 Credits**
- ARTS 2110 - Introduction to Painting **3 Credits**
- ARTS 2220 - 2D and 3D Design **3 Credits**
- ARTS 2903 - Music Theory **3 Credits**

### Area F Elective Courses in the Major (3 Credits; Choose 1)

- ARTS 2001 - Art Appreciation **3 Credits**
- ARTS 2002 - Drama Appreciation **3 Credits**
- ARTS 2003 - Music Appreciation **3 Credits**

### Basic Required Courses in the Major (24 Credits)

- SPSU 1001 - Hitchhikers Guide to SPSU **1 Credits**
- ARTS 3000 - Visual Thinking **3 Credits**
- ARTS 3100 - History of New Media Arts **3 Credits**
- COMM 3160 - Media Theory and Practice **3 Credits**
- ARTS 4100 - Media Arts Studio **3 Credits**
- ENGL 3045 - New Media Writing **3 Credits**
- TCOM 3430 - Foundations of Graphics **3 Credits**
- TCOM 3400 - Foundations of Design for the Web **3 Credits**
- ARTS 4800 - Senior Portfolio **3 Credits**

## Additional Courses in the Major (18 Credits; Choose 6)

- ARTS 3170 - Digital Photography **3 Credits**
- ARTS 4600 - Directed Study **3 Credits**
- CGDD 3103 - Application Extension and Scripting **3 Credits**
- CGDD 4003 - Digital Media and Interaction **3 Credits**
- CGDD 4203 - Mobile and Casual Game Development **3 Credits**
- COMM 3060 - Media, Culture, and Society **3 Credits**
- ENGL 3180 - Film as Literature **3 Credits**
- ENGL 4170 - Media and Narrative **3 Credits**
- TCOM 4040 - Applied Graphics for Technical Communicators **3 Credits**
- TCOM 4045 - Foundations of Multimedia **3 Credits**
- TCOM 4170 - Film and Video Production **3 Credits**
- TCOM 4175 - Animation Design, 2D **3 Credits**
- TCOM 4400 - Advanced Design for the Web **3 Credits**
- Free Electives **18 Credits**

## Degree Program Total: 121

For additional information about the B.A. program, contact the English, Technical Communication, and Media Arts Department at 678-915-7202, or email to [TCOM@spsu.edu](mailto:TCOM@spsu.edu). You can also visit our website at [etcm.spsu.edu](http://etcm.spsu.edu).

## Professional Writing Minor

### Professional Writing

After taking COMM 2000, Business Communication, **take only 12 more hours**, 9 of which must be at the 3000 or 4000 level, to receive a Minor in Professional Writing. Your minor credential will be designated on your SPSU transcript provided you earn a C or better in each course.

## Requirements

- COMM 2000 - Business Communication **3 Credits**

## Additional Courses for Minor (12 credits)

*Students majoring in Business Administration are required to take COMM 2000 as part of their existing program of study. TCOM 2010 will serve as a blanket substitution for COMM 2000 for Business Administration students interested in Professional Writing minor.*

*This minor is not available to students majoring in either Technical Communication or English and Professional Communication.*

- COMM 3035 - Organizational Communication **3 Credits**
- COMM 3040 - Health Communication **3 Credits**
- COMM 3050 - Journalism **3 Credits**
- ENGL 3010 - Science Writing **3 Credits**
- ENGL 3015 - Environmental Writing **3 Credits**
- ENGL 3020 - Proposal Writing **3 Credits**
- ENGL 3025 - Creative Writing Workshop **3 Credits**
- ENGL 3040 - Article and Essay Workshop **3 Credits**
- ENGL 4010 - Publishing for New Media **3 Credits**
- TCOM 4000 - Professional Editing **3 Credits**

## Technical Communication Minor

### Technical Communication

After taking TCOM 2010 Technical Writing, you will take **only 12 more hours**, 9 of which must be at the 3000 or 4000 level. If you earn a grade of "C" or better in each course, your minor credential will be designated on your SPSU transcript.

## Requirements (6 credits)

- TCOM 2010 - Technical Writing **3 Credits**
- TCOM 2020 - Intro to Professional & Technical Communication **3 Credits**  
OR
- TCOM 2030 - Research in Technical Communication **3 Credits**

Students whose major already requires TCOM 2010 should take TCOM 2020 **and** TCOM 2030 (blanket substitution will apply).

## Additional Courses for Minor (9 credits)

Choose any class with the TCOM course prefix, 3000-level or higher.

*This minor is not available to students majoring in either Technical Communication or English and Professional Communication.*

## Technical Communication, BS

With our TCOM degree, you will learn much more than just how to use words effectively—you will have opportunities to learn document design, graphics, multimedia, web design, and video production as well as science and environmental writing, proposal writing, and medical communication.

Students in other majors can minor in technical communication through a range of campus-based and online course offerings.

Many TCOM courses are taught using a combination of on-site and online sessions that students with jobs especially appreciate. We make sure we offer enough late-afternoon and evening courses so that working students can make steady progress toward their degree.

## Requirements

- ENGL 1101 - English Composition I **3 Credits**
- ENGL 1102 - English Composition II **3 Credits**
- MATH 1111 - College Algebra **3 Credits**
- MATH 1113 - Pre-calculus **4 Credits**
- COMM 2400 - Public Speaking **2 Credits**
- STS 2400 - Science, Technology, and Society **2 Credits**
- Area C Group 1 - Take One Course from the Literature Group **3 Credits**
- Area C Group 2 - Take One Course from the Art and Culture Group **3 Credits**
- Area D - Any Two Lab Sciences **8 Credits**
- Area E Group 1 - American Context **3 Credits**
- Area E Group 2 - World History **3 Credits**
- Area E Group 3 - Behavioral Science **3 Credits**
- Area E Group 4 - Cultures and Societies **3 Credits**

## Required Area F Foundations Courses (9 Credits)

- COMM 2000 - Business Communication **3 Credits**



- TCOM 2010 - Technical Writing **3 Credits**
- TCOM 2020 - Intro to Professional & Technical Communication **3 Credits**

## Area F Required Research Methods Course (3 Credits; Choose One)

- TCOM 2030 - Research in Technical Communication **3 Credits** or
- ENGL 2030 - Research in Professional and Critical Writing **3 Credits**

## Area F Electives (6 Credits; Choose Two)

- ARTS 2020 - History and Principles of Design **3 Credits**
- ENGL 2xxx - Any 2000-level literature survey **3-6 Credits**
- COMM 2065 - Cross-Cultural Communication **3 Credits**
- COMM 2170 - Introduction to Media Studies **3 Credits**
- COMM 2150 - Ethics and Communication **3 Credits**
- Other coursework appropriate to major, as approved by the department (3 credits max) **3 Credits**
- Any foreign language, 2001 or higher **3 Credits**

## Basic Required Courses in the Major (18 Credits)

- SPSU 1001 - Hitch-hiker's Introduction to SPSU **1 Credits**
- ENGL 3030 - English Grammar for Professional Writing **3 Credits**
- TCOM 3430 - Foundations of Graphics **3 Credits**
- TCOM 3400 - Foundations of Design for the Web **3 Credits**
- COMM 4100 - Small Group Communication **3 Credits**
- ENGL 3100 - Rhetoric: History, Theory, and Practice **3 Credits**
- TCOM 4800 - Project Portfolio **3 Credits**
- Technical Communication Electives **12 Credits**
- Take any 3000-level or higher ARTS, COMM, ENGL, or TCOM Course, or other courses (not to exceed 6 credits) as approved by the department.
- Free Electives **15 Credits**
- Courses in Major Concentrations (Information Design or Digital Media and Graphics) **15 Credits**

## Major Concentrations

Choose one concentration from the following: (Information Design or Digital Media and Graphics)

### Information Design (15 Credits)

- TCOM 3020 - Proposal Writing **3 Credits**
- TCOM 3030 - Instructional Design **3 Credits**
- TCOM 3045 - Fundamentals of Information Design **3 Credits**
- TCOM 3145 - Social Media Integration **3 Credits**
- TCOM 4000 - Professional Editing **3 Credits**
- TCOM 4045 - Foundations of Multimedia **3 Credits**
- TCOM 4070 - User Documentation **3 Credits**
- TCOM 4120 - Usability Testing **3 Credits**
- TCOM 4130 - Online Documentation **3 Credits**

## Digital Media and Graphics (15 Credits)

- ARTS 2010 - Introduction to Drawing **3 Credits**
- ARTS 3000 - Visual Thinking **3 Credits**
- ARTS 3170 - Digital Photography **3 Credits**
- TCOM 3145 - Social Media Integration **3 Credits**
- TCOM 4045 - Foundations of Multimedia **3 Credits**
- TCOM 4040 - Applied Graphics for Technical Communicators **3 Credits**
- TCOM 4170 - Film and Video Production **3 Credits**
- TCOM 4175 - Animation Design, 2D **3 Credits**
- TCOM 4400 - Advanced Design for the Web **3 Credits**

## Degree Program Total: 121

For additional information about the B.S. program, contact the English, Technical Communication, and Media Arts Department at 678-915-7202, or email to [TCOM@spsu.edu](mailto:TCOM@spsu.edu). You can also visit our website at [etema.spsu.edu](http://etema.spsu.edu).

## Mathematics

### Offering:

Bachelor of Science in Mathematics

Bachelor of Arts in Mathematics with Teacher Education Track leading to grades 6-12 certification

A Bachelor of Science in Mathematics encompasses the breadth of Mathematics and its applications in a small, friendly, and supportive setting. Courses in differential equations, analysis, calculus, discrete mathematics, and linear and abstract algebra combine a theoretical and applied understanding of these areas. Additional courses in Physics and Computer Science explore how Mathematics can be used to solve real-world problems.

**Programs in Mathematics** - The programs in Mathematics are designed to prepare the student for further study in mathematics, education, or other subjects or for employment in a variety of fields.

Mathematics is the foundation upon which all other technical fields rest, and as such, is the perfect choice for students who have a profound mathematical curiosity, and a desire to apply their problem solving skills. The soaring demand for employees with specialized mathematical expertise allows graduates to follow a wide variety of career paths. Many work in fields that, while not specifically described as mathematical, require clear reasoning, logical thought, and a love and understanding of mathematics. Persons with degrees in mathematics may be found pursuing such diverse careers as actuarial science, education, consulting, systems analysis and quality control, and jobs in industry or government. Others go on to graduate work in mathematics or other mathematics-related fields, such as Computer Science.

The B.S. degree candidate will, through the nature of the mathematics electives and the opportunities offered by other programs, have a scientifically and technically oriented program which allows entry into many fields of science, engineering, and technology as well as education and business.

The B.A. candidate will have a strong background in mathematics coupled with the necessary education courses that will lead to teacher certification.

Through the second major in Mathematics and the minor in Mathematics, students in other fields may acquire a substantial background and competence in Mathematics.

Our professors are professionals with a sincere commitment to teaching. The Mathematics Department at SPSU boasts a faculty that includes a National Science Foundation grant recipient, four University System of Georgia Teaching/Learning Grant recipients, as well as several awards for outstanding teaching by the Student Government Association and the SPSU faculty.

## **The Faculty:**

Keshav Raj Acharya, *Lecturer*  
Dhruba Adhikari, *Assistant Professor*  
Zhu Cao, *Assistant Professor*  
Shangrong Deng, *Associate Professor*  
Meighan I. Dillon, *Professor*  
Steven R. Edwards, *Professor*  
Joseph N. Fady, *Professor*  
Joel C. Fowler, *Associate Professor*  
William Griffiths, *Assistant Professor*  
Sarah Holliday, *Assistant Professor*  
Yang Kang, *Lecturer*  
Maurice J. LeBlanc III, *Lecturer*  
Andrew G. McMorrان, *Associate Professor and Department Chair*  
Nicolae Pascu, *Assistant Professor*  
Laura Ritter, *Assistant Professor*  
Jennifer Vandenbussche, *Assistant Professor*  
Long L. Wang, *Associate Professor*  
Hua Xu, *Lecturer*  
Taixi Xu, *Associate Professor*

The mathematics portion of the major under the B.S. degree consists of three components: Required Courses, Mathematics Electives, and Guided Electives. Although the Required Courses provide the bulk of the mathematics in the degree, they also provide a framework for other series of Mathematics courses to be included under Mathematics Electives and Guided Electives. Students planning to attend graduate school in Mathematics are urged to select these courses carefully in consultation with an advisor. Students planning to seek employment in business or industry should consider a minor in a related field, such as computer science. A computer science minor can be completed within the Guided Electives of the Mathematics degree.

# Teacher Education

## Offering:

Bachelor of Science in Biology with teacher education track leading to grades 6-12 certification  
Bachelor of Science in Chemistry with teacher education track leading to grades 6-12 certification  
Bachelor of Science in Physics with teacher education track leading to grades 6-12 certification  
Bachelor of Arts in Mathematics with teacher education track leading to grades 6-12 certification

The bachelor's degrees in mathematics or science with the Teacher Education track provides students with a strong foundation in the discipline, giving them maximum flexibility with their degrees. Adding the Teacher Education track can give students immediate job possibilities.

The Teacher Education Program at SPSU provides students with strong, mentored experiences in the schools, a thorough knowledge of the teaching strategies and research on learning science and mathematics, and a nationally renowned teacher preparation program. This program allows students to build confidence in working with a variety of students in multiple school settings, and prepares them for a successful career in teaching mathematics or science in the middle school or high school.

Teacher certification will be provided by the Georgia Professional Standards Commission (PSC) after SPSU is approved by the PSC and accredited by the National Council for Accreditation of Teacher Education (NCATE). Approval and accreditation will follow PSC/NCATE campus visit in the winter of 2013. Therefore, SPSU's first teacher candidates will graduate in the Spring 2013.

Questions should be directed to the Teacher Education Office in J-353.

Our professors are professionals with high school teaching and leadership experience, academic credentials, and experiences in teacher preparation.

## The Faculty:

Alan Gabrielli, *Professor Emeritus, SPSU Teach Co-Director*  
Cassandra Race, *Instructor*  
Laura Speer, *Master Teacher*  
George W. Stickel, *Associate Professor, Teacher Education Director and SPSU Teach Co-Director*

## Students pursuing this degree must complete:

The Core Curriculum	60
Required Courses	30
Education Courses	33

## Areas of Study

# Mathematics Minor

To obtain a minor in Mathematics, the student must complete:

- MATH 2255
- An additional 14 semester hours of Mathematics courses at the 2300 level or higher

At least 9 of these additional 14 hours must be at the 3000 level or higher.

Courses used to fill other requirements at SPSU (excluding core areas A through E) may also be used to obtain a minor in Mathematics.

For example, if you take MATH 2306 to fulfill a requirement in the Management curriculum, you may also use it in a math minor. However, you may not use MATH 1113 to fulfill the math minor because it is in area A of the core curriculum.

# Mathematics, BS

## Requirements

- ENGL 1101 - English Composition I **3 Credits**
- ENGL 1102 - English Composition II **3 Credits**
- PHYS 2211 - Principles of Physics I **3 Credits**
- PHYS 2211L - Principles of Physics Laboratory I **1 Credits**
- PHYS 2212 - Principles of Physics II **3 Credits**
- PHYS 2212L - Principles of Physics Laboratory II **1 Credits**
- COMM 2400 - Public Speaking **2 Credits**
- STS 2400 - Science, Technology, and Society **2 Credits**
- Area C Group 1 - Take One Course From the Literature Group **3 Credits**
- Area C Group 2 - Take One Course From the Art and Culture Group **3 Credits**
- Area E Group 1 - American Context **3 Credits**
- Area E Group 2 - World History **3 Credits**
- Area E Group 3 - Behavioral Science **3 Credits**
- Area E Group 4 - Cultures and Societies **3 Credits**
- CSE 1301 - Computer Science I **4 Credits**
- CSE 1302 - Computer Science II **4 Credits**
- SPSU 1001 - Hitch-hiker's Introduction to SPSU **1 Credits**
- MATH 1113 - Pre-calculus **4 Credits**
- MATH 2253 - Calculus I **4 Credits**
- MATH 2254 - Calculus II **4 Credits**
- MATH 2255 - Calculus III **4 Credits**
- MATH 2306 - Ordinary Differential Equations **3 Credits**
- MATH 2345 - Discrete Mathematics **3 Credits**
- MATH 3310 - Introduction to Advanced Mathematics **3 Credits**
- MATH 3312 - Linear Algebra **4 Credits**

- MATH 3320 - Introductory Real Analysis I **4 Credits**
- MATH 3321 - Introductory Real Analysis II **4 Credits**
- MATH 4407 - Vector Analysis **3 Credits**
- MATH 4440 - Abstract Algebra **4 Credits**
- MATH 4451 - Capstone Mathematics Project **3 Credits**

## Mathematics Electives (9 Credits)

Any mathematics course numbered 2300 or above, excluding those for which dual credit is not allowed.

## Guided Electives (20 Credits)

May include additional mathematics courses or other courses chosen in consultation with an advisor. May not include mathematics courses numbered less than 2000, or courses for which dual credit is not allowed.

## Degree Program Total: 121

## Mathematics Second Major

A student completing the B.S. degree in a field other than Mathematics may receive a second major in Mathematics at the same time to accompany that degree by completing the following courses. Note that additional courses, which are the prerequisites to these courses, are required by implication.

## Mathematics Second Major Requirements

- MATH 2255 - Calculus III **4 Credits**
- MATH 2306 - Ordinary Differential Equations **3 Credits**
- MATH 2345 - Discrete Mathematics **3 Credits**
- MATH 3310 - Introduction to Advanced Mathematics **3 Credits**
- MATH 3312 - Linear Algebra **4 Credits**
- MATH 3320 - Introductory Real Analysis I **4 Credits**
- MATH 3321 - Introductory Real Analysis II **4 Credits**
- MATH 4407 - Vector Analysis **3 Credits**
- MATH 4440 - Abstract Algebra **4 Credits**
- MATH 4451 - Capstone Mathematics Project **3 Credits**

## Second Degree in Mathematics

Students who receive a degree from SPSU in a field other than Mathematics may receive a B.S. with a major in Mathematics by completing all the requirements for the Mathematics degree. The same courses may be used to fulfill

requirements for both degrees, but there must be at least 30 semester hours used to fulfill the requirements for the Mathematics degree which are not used to fulfill the requirements for any other degree.

## **Mathematics, Education Track, BA**

The bachelor's degrees in mathematics or science with the Teacher Education track provides students with a strong foundation in the discipline, giving them maximum flexibility with their degrees. Adding the Teacher Education track can give students immediate job possibilities.

The Teacher Education Program at SPSU provides students with strong, mentored experiences in the schools, a thorough knowledge of the teaching strategies and research on learning science and mathematics, and a nationally renowned teacher preparation program. This program allows students to build confidence in working with a variety of students in multiple school settings, and prepares them for a successful career in teaching mathematics or science in the middle school or high school.

### **Requirements**

- ENGL 1101 - English Composition I **3 Credits**
- ENGL 1102 - English Composition II **3 Credits**
- Area D - Any Two Lab Sciences **4 Credits**
- Area D - Any Two Lab Sciences **4 Credits**
- COMM 2400 - Public Speaking **2 Credits**
- STS 2400 - Science, Technology, and Society **2 Credits**
- Area C Group 1 - Take One Course From the Literature Group **3 Credits**
- Area C Group 2 - Take One Course From the Art and Culture Group **3 Credits**
- Area E Group 1 - American Context **3 Credits**
- Area E Group 2 - World History **3 Credits**
- Area E Group 3 - Behavioral Science **3 Credits**
- Area E Group 4 - Cultures and Societies **3 Credits**
- CSE 1301 - Computer Science I **4 Credits**
- MATH 1113 - Pre-calculus **4 Credits**
- MATH 2253 - Calculus I **4 Credits**
- MATH 2254 - Calculus II **4 Credits**
- MATH 2255 - Calculus III **4 Credits**
- MATH 2260 - Introduction to Probability and Statistics **3 Credits**
- MATH 2306 - Ordinary Differential Equations **3 Credits**
- MATH 2345 - Discrete Mathematics **3 Credits**
- MATH 3312 - Linear Algebra **4 Credits**
- MATH 3310 - Introduction to Advanced Mathematics **3 Credits**
- MATH 3320 - Introductory Real Analysis I **4 Credits**
- MATH 3321 - Introductory Real Analysis II **4 Credits**
- MATH 3696 - Geometry **3 Credits**
- MATH 4407 - Vector Analysis **3 Credits**
- MATH 4440 - Abstract Algebra **4 Credits**

- MATH 4451 - Capstone Mathematics Project **3 Credits**
- Math Electives - **3 Credits** (Any mathematics course numbered 2300 or above, excluding those for which dual credit is not allowed.)
- EDUC 1101 - UTeach Step 1 **1 Credits**
- EDUC 1102 - UTeach Step 2 **1 Credits**
- EDUC 2010 - UTeach Knowing and Learning **3 Credits**
- EDUC 2020 - Classroom Interactions **3 Credits**
- EDUC 4030 - Project Based Instruction **3 Credits**
- MAED 2010 - Functions and Modeling **3 Credits**
- RSCH 3610 - Research Methods **3 Credits**
- STS 3347 - Perspectives on Science and Math **3 Credits**
- EDUC 4401 - Apprentice Teaching Seminar **1 Credits**
- EDUC 4406 - Apprentice Teaching **6 Credits**

**Degree Program Total: 123**

## Physics

### Offering:

Bachelor of Science in Physics - General Concentration  
 Bachelor of Science in Physics - Electrical Engineering Concentration  
 Bachelor of Science in Physics - Mechanical Engineering Concentration  
 Bachelor of Science in Physics with a Teacher Education Track leading to 6-12 grades Certification

Visit [physics.spsu.edu](http://physics.spsu.edu) for more information.

A Bachelor of Science degree in Physics at Southern Polytechnic State University is a good choice for students desiring positions in industry that are on the cutting edge of engineering and science. These positions offer great opportunity at the entry level and a strong career path with excellent earning potential. A Physics major at SPSU can also add a Teacher Education Track leading to certification. See Teacher Education.

The flexibility afforded by a SPSU physics degree is most attractive. With the proper choice of a minor field of study, our physics majors are prepared to obtain employment in such diverse areas as science and/or engineering positions in industry, technical sales, or scientific programming.

Because most physics majors go on to graduate study, we offer a capstone review course. Those planning to work immediately after graduation may opt to do independent projects that position them competitively for the marketplace.

Physics researchers are using lasers to detect biological and chemical agents, analyzing cell-based communications to learn how heart disease occurs, and testing pigments to authenticate works of art. This science is a keystone of technological progress; it also underlies all of engineering, and it is a useful second major for those pursuing degrees in mathematics, electrical or mechanical engineering technology. All of our physics students receive job offers that put them in the front lines of fascinating careers and maximize their earnings potential.



Our graduates have been hired by respected organizations like Applied Decision Analysis, Inc., Argonne Labs, Barco Chromatics, BellSouth Mobility, Cape International Management, Inc., Flexible Products Company, Georgia Department of Agriculture, Gallet & Associates, Hulsey Seed Laboratory, Inc., Institute of Paper Science & Tech, Inc., Law Engineering & Environment Serv. Inc., Lockheed, Lucas Body Systems NA, NASA, National Science Foundation, Nortel Telecommunications, Nova Engineering & Environment, Osmose Wood Preserving, Inc., Southern Company, and VA's CDI Corporation.

SPSU physics majors meet the educational portion of requirements for registration as a professional engineer in most states. For students wishing to continue in higher education at the graduate level, additional career paths are available in teaching, research, law, medicine, and engineering. There is a strong demand for high school physics teachers. Adding the Teacher Education track will prepare students for certification to teach secondary physics.

Advisors for our physics majors work closely with students in choosing electives to meet very individual career objectives. Students may also choose to earn double majors in physics and engineering technology.

Two significant advantages of majoring in physics at SPSU are our small, personalized classes and our outstanding distinguished faculty. All physics courses for our majors are taught by faculty holding Ph.D. degrees.

## The Faculty:

David Garafolo, *Lecturer*  
R. Luminda Kulasiri, *Associate Professor*  
Russell S. Patrick, *Professor*  
Philip E. Patterson, *Assistant Professor and Department Chair*  
Kisa Ranasinghe, *Assistant Professor*  
Eric A. Smith, *Lecturer*  
Michael G. Thackston, *Professor*  
James B. Whitenton, *Professor*

## Teacher Education

### Offering:

Bachelor of Science in Biology with teacher education track leading to grades 6-12 certification Bachelor of Science in Chemistry with teacher education track leading to grades 6-12 certification Bachelor of Science in Physics with teacher education track leading to grades 6-12 certification Bachelor of Arts in Mathematics with teacher education track leading to grades 6-12 certification The bachelor's degrees in mathematics or science with the Teacher Education track provides students with a strong foundation in the discipline, giving them maximum flexibility with their degrees. Adding the Teacher Education track can give students immediate job possibilities.

The Teacher Education Program at SPSU provides students with strong, mentored experiences in the schools, a thorough knowledge of the teaching strategies and research on learning science and mathematics, and a nationally renowned teacher preparation program. This program allows students to build confidence in working with a variety of students in multiple school settings, and prepares them for a successful career in teaching mathematics or science in the middle school or high school.

Teacher certification will be provided by the Georgia Professional Standards Commission (PSC) after SPSU is approved by the PSC and accredited by the National Council for Accreditation of Teacher Education (NCATE). Approval and accreditation will follow PSC/NCATE campus visit in the winter of 2013. Therefore, SPSU's first teacher candidates will graduate in the Spring 2013.

Questions should be directed to the Teacher Education Office in J-353.

Our professors are professionals with high school teaching and leadership experience, academic credentials, and experiences in teacher preparation.

## The Faculty:

Alan Gabrielli, *Professor Emeritus, SPSUTeach Co-Director*

Cassandra Race, *Instructor*

Laura Speer, *Master Teacher*

George W. Stickel, *Associate Professor, Teacher Education Director and SPSUTeach Co-Director*

Erin Sutherland, *Physics Teacher*

## Students pursuing this degree must complete:

The Core Curriculum	60
Required Courses	30
Education Courses	33

## Areas of Study

### Physics Minor

To be eligible for a minor in Physics, the student must complete at least 15 hours of course work in physics with at least 10 hours in upper division physics courses.

### Physics, BS

#### Requirements

- ENGL 1101 - English Composition I **3 Credits**
- ENGL 1102 - English Composition II **3 Credits**
- TCOM 2010 - Technical Writing **3 Credits**
- COMM 2400 - Public Speaking **2 Credits**
- STS 2400 - Science, Technology, and Society **2 Credits**
- Area C Group 1 - Take One Course from the Literature Group **3 Credits**
- Area C Group 2 - Take One Course from the Art and Culture Group **3 Credits**
- Area D - Any Two Lab Sciences **8 Credits**
- Area E Group 1 - American Context **3 Credits**

- Area E Group 2 - World History **3 Credits**
- Area E Group 3 - Behavioral Science **3 Credits**
- Area E Group 4 - Cultures and Societies **3 Credits**
- SPSU 1001 - Hitch-hiker's Introduction to SPSU **1 Credits**
- MATH 1113 - Pre-calculus **4 Credits** (extra hour is applied to area F)
- MATH 2253 - Calculus I **4 Credits** (extra hour is applied to area F)
- MATH 2254 - Calculus II **4 Credits**
- MATH 2255 - Calculus III **4 Credits**
- MATH 2306 - Ordinary Differential Equations **3 Credits**
- PHYS 2211 - Principles of Physics I **3 Credits**
- PHYS 2211L - Principles of Physics Laboratory I **1 Credits**
- PHYS 2212 - Principles of Physics II **3 Credits**
- PHYS 2212L - Principles of Physics Laboratory II **1 Credits**
- PHYS 2213 - Introduction to Thermal and Modern Physics **2 Credits**
- PHYS 3210 - Mechanics I **4 Credits**
- PHYS 3410K - Electronics Laboratory **2 Credits**
- PHYS 3220 - Electromagnetism I **3 Credits**
- PHYS 3500K - Introduction to Computational Physics **3 Credits**
- PHYS 3710 - Modern Physics **4 Credits**
- PHYS 3720L - Modern Physics Laboratory **1 Credits**
- PHYS 4210 - Quantum Physics **4 Credits**
- PHYS 4230 - Thermal Physics **4 Credits**
- PHYS 4410K - Advanced Measurements Laboratory **2 Credits**
- PHYS 4430 - Capstone Physics Project **1 Credits**
- PHYS 4250 - Quantum Theory of Two-State Systems **2 Credits**
- Directed Electives approved by the program **9 - 15 Credits**
- Upper Division Physics Electives/Concentrations **4 - 10 Credits**

**Degree Program Total: 121**

## A Second Degree in Physics

Students who are earning B.S. degrees in other fields at Southern Polytechnic State University may also earn a second major in Physics.

SPSU students who wish to earn a second major in physics will be required to take the following 22 hours of course work:

### Second Degree Requirements

- PHYS 3210 - Mechanics I **4 Credits**
- PHYS 3220 - Electromagnetism I **3 Credits**
- PHYS 3410K - **2 Credits**

- **PHYS 3500K - Introduction to Computational Physics 3 Credits**
- **PHYS 3710 - Modern Physics 4 Credits**
- **PHYS 3720L - Modern Physics Laboratory 1 Credits**
- **PHYS 4230 - Thermal Physics 4 Credits**
- **PHYS 4410K - Advanced Measurements Laboratory 2 Credits**

## **Physics, Electrical Engineering Concentration, BS**

### **Requirements**

- **ENGL 1101 - English Composition I 3 Credits**
- **ENGL 1102 - English Composition II 3 Credits**
- **TCOM 2010 - Technical Writing 3 Credits**
- **COMM 2400 - Public Speaking 2 Credits**
- **STS 2400 - Science, Technology, and Society 2 Credits**
- **Area C Group 1 - Take One Course from the Literature Group 3 Credits**
- **Area C Group 2 - Take One Course from the Art and Culture Group 3 Credits**
- **Area D - Any Two Lab Sciences 8 Credits**
- **Area E Group 1 - American Context 3 Credits**
- **Area E Group 2 - World History 3 Credits**
- **Area E Group 3 - Behavioral Science 3 Credits**
- **Area E Group 4 - Cultures and Societies 3 Credits**
- **SPSU 1001 - Hitch-hiker's Introduction to SPSU 1 Credits**
- **MATH 1113 - Pre-calculus 4 Credits** (extra hour is applied to area F)
- **MATH 2253 - Calculus I 4 Credits** (extra hour is applied to area F)
- **MATH 2254 - Calculus II 4 Credits**
- **MATH 2306 - Ordinary Differential Equations 3 Credits**
- **PHYS 2211 - Principles of Physics I 3 Credits**
- **PHYS 2211L - Principles of Physics Laboratory I 1 Credits**
- **PHYS 2212 - Principles of Physics II 3 Credits**
- **PHYS 2212L - Principles of Physics Laboratory II 1 Credits**
- **PHYS 3220 - Electromagnetism I 3 Credits**
- **PHYS 3500K - Introduction to Computational Physics 3 Credits**
- **PHYS 3710 - Modern Physics 4 Credits**
- **PHYS 3720L - Modern Physics Laboratory 1 Credits**
- **PHYS 4210 - Quantum Physics 4 Credits**
- **PHYS 4230 - Thermal Physics 4 Credits**
- **PHYS 4240 - Solid State Physics 3 Credits**
- **EE 3301 - Circuits Analysis I 4 Credits**
- **EE 2501 - Digital Logic Design 4 Credits**
- **EE 2401 - Semiconductor Devices 3 Credits**
- **EE 3705 - Signals and Systems 3 Credits**
- **EE 3401 - Engineering Electronics 4 Credits**

- EE 4201 - Control Systems **4 Credits**
- ENGR 2214 - Engineering Mechanics – Statics **3 Credits**
- Free Electives **4 Credits**

**Degree Program Total: 121**

## **Physics, Mechanical Engineering Concentration, BS**

### **Requirements**

- ENGL 1101 - English Composition I **3 Credits**
- ENGL 1102 - English Composition II **3 Credits**
- TCOM 2010 - Technical Writing **3 Credits**
- COMM 2400 - Public Speaking **2 Credits**
- STS 2400 - Science, Technology, and Society **2 Credits**
- Area C Group 1 - Take One Course from the Literature Group **3 Credits**
- Area C Group 2 - Take One Course from the Art and Culture Group **3 Credits**
- Area D - Any Two Lab Sciences **8 Credits**
- Area E Group 1 - American Context **3 Credits**
- Area E Group 2 - World History **3 Credits**
- Area E Group 3 - Behavioral Science **3 Credits**
- Area E Group 4 - Cultures and Societies **3 Credits**
- SPSU 1001 - Hitch-hiker's Introduction to SPSU **1 Credits**
- MATH 1113 - Pre-calculus **4 Credits** (extra hour is applied to area F)
- MATH 2253 - Calculus I **4 Credits** (extra hour is applied to area F)
- MATH 2254 - Calculus II **4 Credits**
- MATH 2255 - Calculus III **4 Credits**
- MATH 2306 - Ordinary Differential Equations **3 Credits**
- PHYS 2211 - Principles of Physics I **3 Credits**
- PHYS 2211L - Principles of Physics Laboratory I **1 Credits**
- PHYS 2212 - Principles of Physics II **3 Credits**
- PHYS 2212L - Principles of Physics Laboratory II **1 Credits**
- PHYS 2213 - Introduction to Thermal and Modern Physics **2 Credits**
- PHYS 3410K - Electronics Laboratory **2 Credits**
- PHYS 3220 - Electromagnetism I **3 Credits**
- PHYS 3500K - Introduction to Computational Physics **3 Credits**
- PHYS 3710 - Modern Physics **4 Credits**
- PHYS 3720L - Modern Physics Laboratory **1 Credits**
- PHYS 4210 - Quantum Physics **4 Credits**
- PHYS 4230 - Thermal Physics **4 Credits**
- PHYS 4240 - Solid State Physics **3 Credits**

- EDG 2160 - Civil Graphics and Computer Aided Drafting **3 Credits**
- ENGR 2214 - Engineering Mechanics – Statics **3 Credits**
- ENGR 3122 - Dynamics **3 Credits**
- ENGR 3131 - Strength of Materials **3 Credits**
- ENGR 3132 - Strength of Materials Lab **1 Credits**
- ENGR 3343 - Fluid Mechanics **3 Credits**
- ENGR 3345 - Fluid Mechanics Laboratory **1 Credits**
- ENGR 2501 - Material Science **3 Credits**
- ME 3201 - Product Realization **2 Credits**
- ENGR 3125 - Machine Dynamics & Vibrations **3 Credits**
- Free Electives **2 Credits**
- ME 3501 - Dynamic Systems & Control Theory **3 Credits**
- ME 4501 - Vibrations & Controls Lab **1 Credits**

**Degree Program Total: 121**

## **Concentration in Mechanical Engineering**

- EDG 2160 - Civil Graphics and Computer Aided Drafting **3 Credits**
- ENGR 2214 - Engineering Mechanics – Statics **3 Credits**
- ENGR 3122 - Dynamics **3 Credits**
- ENGR 3131 - Strength of Materials **3 Credits**
- ENGR 3132 - Strength of Materials Lab **1 Credits**
- ENGR 3343 - Fluid Mechanics **3 Credits**
- ENGR 3345 - Fluid Mechanics Laboratory **1 Credits**
- ENGR 2501 - Material Science **3 Credits**
- ME 3201 - Product Realization **2 Credits**
- ENGR 3125 - Machine Dynamics & Vibrations **3 Credits**
- ME 3501 - Dynamic Systems & Control Theory **3 Credits**
- ME 4501 - Vibrations & Controls Lab **1 Credits**

## **Physics, Teacher Education Concentration, BS**

The bachelor's degrees in mathematics or science with the Teacher Education track provides students with a strong foundation in the discipline, giving them maximum flexibility with their degrees. Adding the Teacher Education track can give students immediate job possibilities.

The Teacher Education Program at SPSU provides students with strong, mentored experiences in the schools, a thorough knowledge of the teaching strategies and research on learning science and mathematics, and a nationally renowned teacher preparation program. This program allows students to build confidence in working with a variety of students in

multiple school settings, and prepares them for a successful career in teaching mathematics or science in the middle school or high school.

## Requirements

- ENGL 1101 - English Composition I **3 Credits**
- ENGL 1102 - English Composition II **3 Credits**
- TCOM 2010 - Technical Writing **3 Credits**
- COMM 2400 - Public Speaking **2 Credits**
- STS 2400 - Science, Technology, and Society **2 Credits**
- Area C Group 1 - Take One Course from the Literature Group **3 Credits**
- Area C Group 2 - Take One Course from the Art and Culture Group **3 Credits**
- Area D - Any Two Lab Sciences (Physics or Chemistry Recommended) **8 Credits**
- Area E Group 1 - American Context **3 Credits**
- Area E Group 2 - World History **3 Credits**
- Area E Group 3 - Behavioral Science **3 Credits**
- Area E Group 4 - Cultures and Societies **3 Credits**
- SPSU 1001 - Hitch-hiker's Introduction to SPSU **1 Credits**
- MATH 1113 - Pre-calculus **4 Credits** (extra hour is applied to area F)
- MATH 2253 - Calculus I **4 Credits** (extra hour is applied to area F)
- MATH 2254 - Calculus II **4 Credits**
- MATH 2255 - Calculus III **4 Credits**
- MATH 2306 - Ordinary Differential Equations **3 Credits**
- PHYS 2211 - Principles of Physics I **3 Credits**
- PHYS 2211L - Principles of Physics Laboratory I **1 Credits**
- PHYS 2212 - Principles of Physics II **3 Credits**
- PHYS 2212L - Principles of Physics Laboratory II **1 Credits**
- PHYS 2213 - Introduction to Thermal and Modern Physics **2 Credits**
- PHYS 3210 - Mechanics I **4 Credits**
- PHYS 3220 - Electromagnetism I **3 Credits**
- PHYS 3410K Electronics Laboratory **2 Credits**
- PHYS 3500K - Introduction to Computational Physics **3 Credits**
- PHYS 3710 - Modern Physics **4 Credits**
- PHYS 3720L - Modern Physics Laboratory **1 Credits**
- PHYS 4210 - Quantum Physics **4 Credits**
- PHYS 4230 - Thermal Physics **4 Credits**
- PHYS 4410K - Advanced Measurements Laboratory **2 Credits**

## Physics Education

- EDUC 1101 - UTeach Step 1 **1 Credits**
- EDUC 1102 - UTeach Step 2 **1 Credits**
- EDUC 2010 - UTeach Knowing and Learning **3 Credits**

- EDUC 2020 - Classroom Interactions **3 Credits**
- EDUC 4030 - Project Based Instruction **3 Credits**
- RSCH 3610 - Research Methods **3 Credits**
- STS 3347 - Perspectives on Science and Math **3 Credits**
- EDUC 4401 - Apprentice Teaching Seminar **1 Credits**
- EDUC 4406 - Apprentice Teaching **6 Credits**

Degree Program Total: 120

## Social and International Studies

### General Studies

#### Offering:

The Associate of Science Transfer Degree  
General Studies Transfer Program

The Associate of Science General Studies Transfer Program is designed for students who wish to complete the core at SPSU and then transfer to another institution.

### International Studies

#### Offering:

Bachelor of Science in International Studies  
Minor in International Studies

The Faculty:

Albert Churella, *Associate Professor*  
 J. LaJuana Cochrane, *Associate Professor and Psychology Coordinator*  
 Ravi Ghadge, *Assistant Professor*  
 Stacy Grant-Williams, *Lecturer*  
 Marianne Holdzkom, *Assistant Professor*  
 Kyunghum Jung, *Assistant Professor*  
 Rebecca LeFebvre, *Lecturer*  
 Julie Newell, *Professor and Chair of Department*



Thomas J. Nisley, *Associate Professor*  
 Bernice Nuhfer-Halten, *Professor and Language Coordinator*  
 Thomas E. Rotnem, *Professor, International Studies Coordinator, and Political Science Coordinator*  
 Leigh Sharma, *Assistant Professor*  
 William Skutans, *Lecturer*  
 Carl Snook, *Assistant Professor*  
 Roger Soiset, *Lecturer*  
 Mark D. Vickrey, *Senior Lecturer*

By offering an International Studies degree with minors in a variety of areas, SPSU seeks to produce graduates who not only understand the political and economic processes of globalization, but also possess technological skills and knowledge that will allow them to deal with the new demands of the global economy.

Companies that will employ our graduates will be global ones, so it is necessary for their employees to understand the political, economic, cultural, as well as technical contexts in which their companies function.

**The International Studies degree will prepare graduates for employment in:**

- Government
- Graduate study
- Intelligence
- International business
- Pre-law
- Public policy
- The military
- The transportation industry
- The travel industry
- Work in the non-profit sector

**Students pursuing this degree must complete:**

The Core Curriculum	60
Required Upper Division Core in International Studies	24
A Minor	15-18
Directed International Electives	9
Free Electives	7-12

Any courses taken to satisfy degree program requirements in International Studies Required Upper Division Core, the student's Minor, and the student's Directed International Electives must be passed with a grade of "C" or better.

## Political Science

### Offering:

Bachelor of Science in Political Science

## The Faculty:

Richard Bennett, *Associate Professor and Director of International Programs*

Albert Churella, *Associate Professor*

J. LaJuana Cochrane, *Associate Professor and Psychology Coordinator*

Jamye Hickman, *Assistant Professor*

Marianne Holdzkom, *Assistant Professor*

Julie Newell, *Professor and Chair of Department*

Thomas J. Nisley, *Assistant Professor*

Bernice Nuhfer-Halten, *Professor and Language Coordinator*

Thomas E. Rotnem, *Professor, International Studies Coordinator, and Political Science Coordinator*

William Skutans, *Lecturer*

Roger Soiset, *Lecturer*

Carl Snook, *Assistant Professor*

Mark D. Vickrey, *Senior Lecturer*

The Political Science program is part of the Department of Social and International Studies, in the School of Arts and Sciences at Southern Polytechnic State University. By offering a Political Science degree, SPSU seeks to produce graduates who have a higher degree of technical and statistical expertise than those found in customary political science programs elsewhere and also have hands-on experience in applied research.

**Political Science** degree will prepare graduates for employment in:

- Government
- Graduate study
- Intelligence
- International business
- Pre-law
- Public policy
- The non-profit sector

Students pursuing this degree must complete:

The Core Curriculum	60
Required Upper Division Core in Political Science	33
Directed International Electives	12
Free Electives	15

Any courses taken to satisfy degree program requirements in Political Science Required Upper Division Core and the student's Directed International Electives must be passed with a grade of "C" or better.

## Psychology

### Offering:

Bachelor of Science in Psychology

# The Faculty:

Richard Bennett, *Associate Professor and Director of International Studies*  
Albert Churella, *Associate Professor*  
J. LaJuana Cochrane, *Associate Professor and Psychology Coordinator*  
Jamy Hickman, *Assistant Professor*  
Marianne Holdzkom, *Assistant Professor*  
Julie Newell, *Professor and Chair of Department*  
Thomas J. Nisley, *Assistant Professor*  
Bernice Nuhfer-Halten, *Professor and Language Coordinator*  
Thomas E. Rotnem, *Associate Professor and International Studies Coordinator*  
William Skutans, *Lecturer*  
Roger Soiset, *Lecturer*  
Carl Snook, *Assistant Professor*  
Mark D. Vickrey, *Lecturer*

By offering a Psychology degree with concentrations in engineering psychology, industrial/organizational psychology, and general psychology, SPSU seeks to produce graduates who have a balanced, career-based education in psychology with a wide range of skills and practical knowledge.

## The Psychology degree will prepare graduates for employment in:

- Government
- Graduate study
- Work in the corporate sector
- Work in the non-profit sector

## Students pursuing this degree must complete:

The Core Curriculum	60
Required Upper Division Core in Psychology	32
A particular track	28

Any courses taken to satisfy degree program requirements in Psychology Required Upper Division Core and the student's Concentration must be passed with a grade of "C" or better.

# Areas of Study

## General Studies, A.S.

The Associate of Science General Studies Transfer Program is designed for students who wish to complete the core at SPSU and then transfer to another institution.

## All students must take:

- SPSU 1001 - Hitch-hiker's Introduction to SPSU **1 Credits**

## Area A: Essential Skills (9 credits)

Grade of C or better required in the courses used to satisfy this requirement. Freshmen must complete Area A by the time they have attempted 30 semester hours of course work.

- ENGL 1101 - English Composition I **3 Credits**
- ENGL 1102 - English Composition II **3 Credits**
- MATH 1111 - College Algebra **3 Credits**  
(or other math as specified in the University core)

## Area B: Institutional Options (4 credits)

- COMM 2400 - Public Speaking **2 Credits**
- STS 2400 - Science, Technology, and Society **2 Credits**

## Area C: Humanities / Fine Arts (6 credits)

### Choose ONE Literature Course:

- ENGL 2111 - Early World Literature **3 Credits**
- ENGL 2112 - World Literature Mid-1600s to Present **3 Credits**
- ENGL 2120 - British Literature Early to Present **3 Credits**
- ENGL 2121 - Early British Literature **3 Credits**
- ENGL 2122 - British Literature Late 1700s to Present **3 Credits**
- ENGL 2130 - American Literature Early to Present **3 Credits**
- ENGL 2131 - Early American Literature **3 Credits**
- ENGL 2132 - American Literature Mid 1800s to Present **3 Credits**
- ENGL 2141 - Early Western Literature **3 Credits**
- ENGL 2142 - Western Literature 1600s to Present **3 Credits**
- ENGL 2300 - African-American Literature and Culture **3 Credits**

## Choose ONE Arts or Language Course:

- ARTS 2001 - Art Appreciation **3 Credits**
- ARTS 2002 - Drama Appreciation **3 Credits**
- ARTS 2003 - Music Appreciation **3 Credits**
- ARTS 2004 - History of Contemporary American Music **3 Credits**
- FREN 1002 - Elementary French II **3 Credits**
- FREN 2001 - Intermediate French I **3 Credits**
- FREN 2002 - Intermediate French II **3 Credits**
- GRMN 1002 - Elementary German II **3 Credits**
- GRMN 2001 - Intermediate German I **3 Credits**
- GRMN 2002 - Intermediate German II **3 Credits**
- SPAN 1002 - Elementary Spanish II **3 Credits**
- SPAN 2001 - Intermediate Spanish I **3 Credits**
- SPAN 2002 - Intermediate Spanish II **3 Credits**

## Area D: Science and Math (11-12 credits)

### 8 hours science (two courses with labs):

You must take two semesters of lab science *and lab* (lecture=3 credits; lab=1 credit; K-courses=4 credits, lab is included)

- ASTR 1000K - Introduction to the Universe **4 Credits**
- ASTR 1010K - Introduction to the Universe II **4 Credits**
- BIOL 2107 - Principles of Biology I **3 Credits**
- BIOL 2107L - Principles of Biology I Laboratory **1 Credits**
- BIOL 2108 - Principles of Biology II **3 Credits**
- BIOL 2108L - Principles of Biology II Laboratory **1 Credits**
- CHEM 1211 - Principles of Chemistry I **3 Credits**
- CHEM 1211L - Principles of Chemistry I Lab **1 Credits**
- CHEM 1211K - Principles of Chemistry (ECORE) **4 Credits**
- CHEM 1212 - Principles of Chemistry II **3 Credits**
- CHEM 1212L - Principles of Chemistry II Lab **1 Credits**
- CHEM 1212K - Principles of Chemistry II (ECORE) **4 Credits**
- ENVS 2200K - Geology **4 Credits**
- ENVS 2202K - Introduction to Environmental Science **4 Credits**
- GEOL 1101K - Introductory Geosciences **4 Credits**
- PHYS 1111 - Introductory Physics I **3 Credits**
- PHYS 1111L - Introductory Physics Laboratory I **1 Credits**
- PHYS 1112 - Introductory Physics II **3 Credits**
- PHYS 1112L - Introductory Physics Laboratory II **1 Credits**

- **PHYS 1211K - Principles of Physics I (ECORE) 4 Credits**
- **PHYS 2211 - Principles of Physics I 3 Credits**
- **PHYS 2211L - Principles of Physics Laboratory I 1 Credits**
- **PHYS 2212 - Principles of Physics II 3 Credits**
- **PHYS 2212L - Principles of Physics Laboratory II 1 Credits**

## Math:

- **MATH 1113 - Pre-calculus 4 Credits**  
(or other math as specified in the University core)

## Area E: Social Sciences (12 credits)

### Group 1 American Perspectives- (3 credits):

Satisfies the American Perspectives overlay. Any one of these courses, taken within the University System of Georgia, also satisfies the Legislative Requirement for US and Georgia Constitution and History. Students who fulfill this requirement with transfer credit from outside the USG will need to take HIST 2911 U.S. and Georgia Constitution and History to satisfy the Legislative Requirement for graduation.

Choose ONE of the following:

- **HIST 2111 - United States History to 1877 3 Credits**
- **HIST 2112 - United States History since 1877 3 Credits**
- **POLS 1101 - American Government 3 Credits**

### Group 2 Historical Perspectives (3 credits):

Choose ONE of the following:

- **HIST 1111 - Survey of World Civilization pre 1500 3 Credits**
- **HIST 1112 - Survey of World Civilization post 1500 3 Credits**

### Group 3 Behavioral Science Perspectives (3 credits):

Choose ONE of the following:

- **ECON 1101 - Introduction to Economics 3 Credits**
- **PSYC 1101 - Introduction to General Psychology 3 Credits**
- **SOCI 1101 - Introduction to Sociology 3 Credits**

## Group 4 Global Perspectives (3 credits):

Satisfies the Global Perspectives overlay.

Choose ONE of the following:

- ANTH 1102 - Introduction to Anthropology **3 Credits**
- ES 1100 - Ethnic Studies **3 Credits**
- GEOG 1101 - Introduction to Human Geography **3 Credits**
- POLS 2401 - Global Issues **3 Credits**
- RELG 1200 - World Religion **3 Credits**

## Elective Courses:

- At least one additional course in humanities (Area C ) **3 Credits**
- At least one additional course in social sciences (Area E) **3 Credits**
- Any humanities, social science, math, lab science or any area F course from any program. **11-12 Credits**

**Total Program Hours: 60**

## History Minor

All courses must be completed with grade of C or better. No more than 9 hours may also be used to satisfy requirements in a major or another minor except free electives. No courses used to satisfy Core Areas A-E may be used in a minor.

## World History (3 credits):

Choose ONE course not used to satisfy core Area E-2:

- HIST 1111 - Survey of World Civilization pre 1500 **3 Credits**
- HIST 1112 - Survey of World Civilization post 1500 **3 Credits**

## US History (6 credits):

- HIST 2111 - United States History to 1877 **3 Credits**
  - HIST 2112 - United States History since 1877 **3 Credits**
- If HIST 2111 or HIST 2112 has been used to satisfy Core Area E-1, any 3-hour HIST course may be substituted.

## Upper-Division History courses (9 credits):

Any **9 credits** of 3000- or 4000-level HIST courses.

**Total Program Hours: 18**

## International Studies Minor

All courses must be completed with grade of C or better. No more than 9 hours may also be used to satisfy requirements in a major or another minor *except free electives*. No courses used to satisfy Core Areas A-E may be used in a minor.

## Regional Studies (3 credits):

Choose ONE of the following:

- IS 4000 - Regional Studies - General **3 Credits**
- IS 4001 - Regional Studies/Latin America **3 Credits**
- IS 4002 - Regional Studies/Asia:China **3 Credits**
- IS 4003 - Regional Studies/Asia:Japan **3 Credits**
- IS 4004 - Regional Studies/Middle East **3 Credits**
- IS 4005 - Regional Studies/Russia/Eastern Europe **3 Credits**
- IS 4006 - Regional Studies/Western Europe **3 Credits**
- IS 4007 - Regional Studies/Africa **3 Credits**

## Language Requirement:

Student must complete FREN 1002, GRMN 1002, or SPAN 1002 OR demonstrate proficiency in a non-English language at an equivalent level.

## Electives (12 credits):

Choose FOUR courses from the following list NOT used to satisfy core requirements in Areas A-E. No more than TWO may be numbered below 3000.

- ANTH 1102 - Introduction to Anthropology **3 Credits**
- ECON 1101 - Introduction to Economics **3 Credits**
- ECON 2106 - Principles of Microeconomics **3 Credits**
- ES 1100 - Ethnic Studies **3 Credits**
- GEOG 1101 - Introduction to Human Geography **3 Credits**
- GEOG 3101 - World Regional Geography **3 Credits**
- HIST 1111 - Survey of World Civilization pre 1500 **3 Credits**
- HIST 1112 - Survey of World Civilization post 1500 **3 Credits**



- HIST 3200 - History of Science Survey **3 Credits**
- HIST 3301 - Diplomatic and Military History since 1815 **3 Credits**
- HIST 3401 - Modern Social and Cultural History Twentieth Century **3 Credits**
- HIST 3501 - Colonization and Rebellion in the Trans-Atlantic World **3 Credits**
- HIST 3601 - History of the Pacific Rim **3 Credits**
- HIST 3801 - Contemporary World History since 1945 **3 Credits**
- IS 3600 - Comparative Culture **3 Credits**
- IS 3901 - Special Topics in International Studies **1 Credits**
- IS 3902 - Special Topics in International Studies **1 to 5 Credits**

Any regional studies course NOT used to satisfy the Regional Studies requirement above.

- IS 4000 - Regional Studies - General **3 Credits**
- IS 4001 - Regional Studies/Latin America **3 Credits**
- IS 4002 - Regional Studies/Asia:China **3 Credits**
- IS 4003 - Regional Studies/Asia:Japan **3 Credits**
- IS 4004 - Regional Studies/Middle East **3 Credits**
- IS 4005 - Regional Studies/Russia/Eastern Europe **3 Credits**
- IS 4006 - Regional Studies/Western Europe **3 Credits**
- IS 4007 - Regional Studies/Africa **3 Credits**
- IS 4600 - International Studies Internship **3 Credits**
- IS 4800 - International Studies Capstone **3 Credits**
- MGNT 4145 - International Management **3 Credits**
- POLS 2401 - Global Issues **3 Credits**
- POLS 3001 - Comparative Politics **3 Credits**
- POLS 3009 - Foundations of Public Policy **3 Credits**
- POLS 3301 - Modern Political Theory **3 Credits**
- POLS 3601 - Contemporary World Politics **3 Credits**
- POLS 4009 - Comparative Public Policy Analysis **3 Credits**
- POLS 4063 - Political Issues in Electronic Government **3 Credits**
- POLS 4101 - Political Economy of Post-Communist Transformation **3 Credits**
- POLS 4201 - International Relations in the Americas **3 Credits**
- POLS 4301 - International Political Economy **3 Credits**
- PSYC 3101 - International Social Psychology **3 Credits**
- PSYC 4000 - International Psychology **3 Credits**
- PSYC 4600 - Conflict Resolution **3 Credits**
- RELG 1200 - World Religion **3 Credits**
- SPAN 3001 - Advanced Conversation **3 Credits**
- SPAN 3002 - Grammar and Composition **3 Credits**
- SPAN 3003 - Hispanic Cultures and Civilizations **3 Credits**
- SPAN 4001 - Professional Spanish **3 Credits**
- SPAN 4002 - Techniques in Translation for Professional Spanish **3 Credits**
- SPAN 4003 - Service Learning Project **3 Credits**
- STS 4000 - International Issues in Science and Technology **3 Credits**
- STS 4400 - Topical Studies in Science and Technology **3 Credits**

Special topics courses in HIST, POLS, PSYC may be used as electives with topic-specific departmental approval.

**Total Program Hours: 15**

# International Studies, BS

By offering an International Studies degree with a required minor, SPSU seeks to produce graduates who not only understand the political and economic processes of globalization, but also possess field-specific skills and knowledge that will allow them to deal with the new demands of the global economy. Companies that will employ our graduates will be global ones, so it is necessary for their employees to understand the political, economic, cultural, as well as technical contexts in which their companies function. The International Studies degree will prepare graduates for graduate study in a number of possible fields and for employment in:

- Government
- Intelligence
- International business
- Pre-law
- Public policy
- The military
- The non-profit sector
- The transportation industry
- The travel industry

## Requirements

### Core Areas A through E

#### Area A: Essential Skills (9 credits)

Grade of C or better required in the courses used to satisfy this requirement. Freshmen must complete Area A by the time they have attempted 30 semester hours of course work.

- ENGL 1101 - English Composition I **3 Credits**
- ENGL 1102 - English Composition II **3 Credits**
- MATH 1111 - College Algebra **3 Credits**  
(or other math as specified in the SPSU core)

#### Area B: Institutional Options (4 credits)

- COMM 2400 - Public Speaking **2 Credits**
- STS 2400 - Science, Technology, and Society **2 Credits**

## Area C: Humanities / Fine Arts (6 credits)

### C-1: Literature (3 credits)

Choose ONE of the following:

- ENGL 2111 - Early World Literature **3 Credits**
- ENGL 2112 - World Literature Mid-1600s to Present **3 Credits**
- ENGL 2120 - British Literature Early to Present **3 Credits**
- ENGL 2121 - Early British Literature **3 Credits**
- ENGL 2122 - British Literature Late 1700s to Present **3 Credits**
- ENGL 2130 - American Literature Early to Present **3 Credits**
- ENGL 2131 - Early American Literature **3 Credits**
- ENGL 2132 - American Literature Mid 1800s to Present **3 Credits**
- ENGL 2141 - Early Western Literature **3 Credits**
- ENGL 2142 - Western Literature 1600s to Present **3 Credits**
- ENGL 2300 - African-American Literature and Culture **3 Credits**

### C-2: Humanities (3 credits)

Choose ONE of the following (language course recommended):

- ARTS 2001 - Art Appreciation **3 Credits**
- ARTS 2002 - Drama Appreciation **3 Credits**
- ARTS 2003 - Music Appreciation **3 Credits**
- ARTS 2004 - History of Contemporary American Music **3 Credits**
- FREN 1002 - Elementary French II **3 Credits**
- GRMN 1002 - Elementary German II **3 Credits**
- SPAN 1002 - Elementary Spanish II **3 Credits**

## Area D: Science and Math (11-12 credits)

### D-1: Lab Science (8 credits)

You must take two semesters of lab science *and lab* (lecture = 3 credits; lab = 1 credit; K-course=4 credits, including lab).

Choose TWO science courses with lab:

- ASTR 1000K - Introduction to the Universe **4 Credits**
- ASTR 1010K - Introduction to the Universe II **4 Credits**

- BIOL 2107 - Principles of Biology I **3 Credits**
- BIOL 2107L - Principles of Biology I Laboratory **1 Credits**
- BIOL 2108 - Principles of Biology II **3 Credits**
- BIOL 2108L - Principles of Biology II Laboratory **1 Credits**
- CHEM 1211 - Principles of Chemistry I **3 Credits**
- CHEM 1211L - Principles of Chemistry I Lab **1 Credits**
- CHEM 1212 - Principles of Chemistry II **3 Credits**
- CHEM 1212L - Principles of Chemistry II Lab **1 Credits**
- ENVS 2200K - Geology **4 Credits**
- ENVS 2202K - Introduction to Environmental Science **4 Credits**
- GEOL 1101K - Introductory Geosciences **4 Credits**
- PHYS 1111 - Introductory Physics I **3 Credits**
- PHYS 1111L - Introductory Physics Laboratory I **1 Credits**
- PHYS 1112 - Introductory Physics II **3 Credits**
- PHYS 1112L - Introductory Physics Laboratory II **1 Credits**
- PHYS 1211K - Principles of Physics I (ECORE) **4 Credits**
- PHYS 2211 - Principles of Physics I **3 Credits**
- PHYS 2211L - Principles of Physics Laboratory I **1 Credits**
- PHYS 2212 - Principles of Physics II **3 Credits**
- PHYS 2212L - Principles of Physics Laboratory II **1 Credits**

#### D-2: Math (minimum of 3 credits)

- MATH 1113 - Pre-calculus **4 Credits**  
(or other math as specified in the SPSU core)

#### Area E: Social Sciences (12 credits)

##### E-1: American Perspectives (3 credits)

Satisfies the American Perspectives overlay. Any one of these courses, taken within the University System of Georgia, also satisfies the Legislative Requirement for US and Georgia History and Constitution. Students who fulfill this requirement with transfer credit from outside the USG will need to take HIST 2911 U.S. and Georgia Constitution and History to satisfy the Legislative Requirement for graduation.

Choose ONE of the following:

- HIST 2111 - United States History to 1877 **3 Credits**
- HIST 2112 - United States History since 1877 **3 Credits**
- POLS 1101 - American Government **3 Credits**

##### E-2: Historical Perspectives (3 credits)

Choose ONE of the following:

- HIST 1111 - Survey of World Civilization pre 1500 **3 Credits**
- HIST 1112 - Survey of World Civilization post 1500 **3 Credits**

### E-3: Behavioral Science Perspectives (3 credits)

Choose ONE of the following (ECON 1101 Introduction to Economics is required in Area F and may not be used here):

- PSYC 1101 - Introduction to General Psychology **3 Credits**
- SOCI 1101 - Introduction to Sociology **3 Credits**

### E-4: Global Perspectives (3 credits)

Satisfies the Global Perspectives overlay. Choose ONE of the following (POLS 2401 is required in Area F and may not be used here):

- ANTH 1102 - Introduction to Anthropology **3 Credits**
- ES 1100 - Ethnic Studies **3 Credits**
- GEOG 1101 - Introduction to Human Geography **3 Credits**
- RELG 1200 - World Religion **3 Credits**

### Core Area F (18 credits):

Take ALL of the following:

- SPAN 2001 - Intermediate Spanish I **3 Credits**
- SPAN 2002 - Intermediate Spanish II **3 Credits**  
Or 6 credit hours of any non-English language at an equivalent level.
- COMM 2030 - Research for the Humanities & Social Sciences **3 Credits**
- ECON 1101 - Introduction to Economics **3 Credits**
- POLS 2100 - Introduction to Research Methods **3 Credits**
- POLS 2401 - Global Issues **3 Credits**

### Required Courses in Major (29 credits):

Grade of C or better required. Take ALL of the following:

- IS 1000 - International Studies Orientation **1 Credits**
- SPSU 1001 - Hitch-hiker's Introduction to SPSU **1 Credits**
- HIST 3801 - Contemporary World History since 1945 **3 Credits**
- POLS 3001 - Comparative Politics **3 Credits**
- POLS 3009 - Foundations of Public Policy **3 Credits**
- POLS 4009 - Comparative Public Policy Analysis **3 Credits**

- POLS 4301 - International Political Economy **3 Credits**
  - PSYC 3101 - International Social Psychology **3 Credits**
  - STS 4000 - International Issues in Science and Technology **3 Credits**
- Choose ONE Regional Studies Course:
- IS 4000 - Regional Studies - General **3 Credits**
  - IS 4001 - Regional Studies/Latin America **3 Credits**
  - IS 4002 - Regional Studies/Asia:China **3 Credits**
  - IS 4003 - Regional Studies/Asia:Japan **3 Credits**
  - IS 4004 - Regional Studies/Middle East **3 Credits**
  - IS 4005 - Regional Studies/Russia/Eastern Europe **3 Credits**
  - IS 4006 - Regional Studies/Western Europe **3 Credits**
  - IS 4007 - Regional Studies/Africa **3 Credits**
- To be taken in one of the last two terms before graduation (taught Spring only):
- IS 4800 - International Studies Capstone **3 Credits**

## Directed International Electives (9 credits):

Grade of C or better required. Choose THREE of the following:

Take THREE of the following:

- ECON 2106 - Principles of Microeconomics **3 Credits**
- GEOG 3101 - World Regional Geography **3 Credits**
- HIST 3200 - History of Science Survey **3 Credits**
- HIST 3301 - Diplomatic and Military History since 1815 **3 Credits**
- HIST 3401 - Modern Social and Cultural History Twentieth Century **3 Credits**
- HIST 3501 - Colonization and Rebellion in the Trans-Atlantic World **3 Credits**
- HIST 3601 - History of the Pacific Rim **3 Credits**
- IS 3600 - Comparative Culture **3 Credits**
- IS 4600 - International Studies Internship **3 Credits**
- IS 4000 - Regional Studies - General **3 Credits**  
or any Regional Studies (IS 400X) not used to satisfy Required Courses in the Major
- POLS 3301 - Modern Political Theory **3 Credits**
- POLS 3601 - Contemporary World Politics **3 Credits**
- POLS 4063 - Political Issues in Electronic Government **3 Credits**
- POLS 4101 - Political Economy of Post-Communist Transformation **3 Credits**
- POLS 4201 - International Relations in the Americas **3 Credits**
- PSYC 4000 - International Psychology **3 Credits**
- PSYC 4600 - Conflict Resolution **3 Credits**
- RELG 1200 - World Religion **3 Credits**
- SPAN 3001 - Advanced Conversation **3 Credits**  
or any 3000- or 4000- level SPAN
- STS 4400 - Topical Studies in Science and Technology **3 Credits**  
OR any IS special topics course. Special topics courses in HIST, POLS, PSYC may be used with topic-specific departmental approval.

**Minor 15-18 Hours**

International Studies majors must complete at least one of the minors offered at SPSU (in any department or program). Department policy requires that at least 9 hours in a minor not be used to meet any other requirement *except free electives*. University policy requires that no hours used in Core Areas A-E may be used toward any other requirement.

## Free Electives

Additional credit hours to bring the minimum total credits to bring the total hours up to the 120 required for graduation. *Free elective hours may be used toward an additional minor and are exempt from the 9 hours rule.*

**Degree Program Total: 120**

## Latin American Studies Minor

All courses must be completed with grade of C or better. No more than 9 hours may also be used to satisfy requirements in a major or another minor except free electives. No courses used to satisfy Core Areas A-E may be used in a minor.

### Required Courses:

- ES 1100 - Ethnic Studies **3 Credits**  
Latino / Hispanic Ethnic Studies ONLY; may not also be used to satisfy E-4 core
- HIST 3501 - Colonization and Rebellion in the Trans-Atlantic World **3 Credits**
- POLS 4201 - International Relations in the Americas **3 Credits**
- IS 4001 - Regional Studies/Latin America **3 Credits**
- SPAN 3003 - Hispanic Cultures and Civilizations **3 Credits**

**Total Program Hours: 15**

## Political Science Minor

All courses must be completed with grade of C or better. No more than 9 hours may also be used to satisfy requirements in a major or another minor except free electives. No courses used to satisfy Core Areas A-E may be used in a minor.

### Required Courses:

- POLS 1101 - American Government **3 Credits**
- POLS 2401 - Global Issues **3 Credits**

- POLS 3001 - Comparative Politics **3 Credits**
- POLS 3301 - Modern Political Theory **3 Credits**  
Choose ONE of the following:
- POLS 3601 - Contemporary World Politics **3 Credits**  
OR
- POLS 4301 - International Political Economy **3 Credits**  
Choose ONE of the following:
- POLS 3701 - American Institutions **3 Credits**  
OR
- POLS 3801 - Political Behavior **3 Credits**

**Total Program Hours: 18**

## **Political Science, BS**

There is a growing need for graduates in political science. The acquisition of methodological skills, coupled with an understanding of the political process at local, state, national and international levels, allows for employment in a variety of public and private venues where research techniques are highly prized. As well, the communication, analysis, and critical reasoning skills that our graduates obtain place them well in a competitive job market, where continual learning is essential and interpersonal and cross-cultural competencies are greatly needed.

While there are other political science programs offered in Georgia, SPSU's program will be unique in several respects:

- The SPSU program is highly quantitative in focus, offering students three additional quantitative courses in political science research methods and analysis beyond the norm required in other political science programs.
- The SPSU program offers students various inter-disciplinary course options through its Directed International Electives module.
- The SPSU program further establishes a strong international focus by encouraging students to become proficient in a second language.

Students who complete the program have the knowledge, skills, and real-world context to be productive and flexible in a rapidly changing workplace. Graduates with a bachelor's degree in political science find positions as committee staffers, budget analysts, communications consultants, research/policy analysts, corporate public affairs advisors, foreign service officers, writers/authors/political commentators, journalists, foundation staffers, lobbyists, marketing analysts, or public opinion analysts. Additionally, SPSU's program's training in the development of research, critical thinking, and communication skills will open opportunities in for-profit/non-profit business settings, international and U.S.-based non-governmental organizations and foundations. Graduates of SPSU's BS in Political Science will be more than qualified to take advantage of the local, regional, national, and international employment opportunities offered by metro Atlanta and the State of Georgia, as well as to pursue post-baccalaureate educational opportunities in either political science or the field of law.

## **Requirements**

**All students must take:**



- SPSU 1001 - Hitch-hiker's Introduction to SPSU **1 Credits**

## Core Areas A-E

### Area A: Essential Skills (9 credits)

Grade of C or better required in courses used to satisfy this requirement. Freshmen must complete Area A by the time they have attempted 30 semester hours of course work.

- ENGL 1101 - English Composition I **3 Credits**
- ENGL 1102 - English Composition II **3 Credits**
- MATH 1111 - College Algebra **3 Credits**  
(or other math as specified in the SPSU core)

### Area B: Institutional Options (4 credits)

- COMM 2400 - Public Speaking **2 Credits**
- STS 2400 - Science, Technology, and Society **2 Credits**

### Area C: Humanities / Fine Arts (6 credits)

#### C-1: Literature (3 credits)

Choose ONE of the following:

- ENGL 2111 - Early World Literature **3 Credits**
- ENGL 2112 - World Literature Mid-1600s to Present **3 Credits**
- ENGL 2120 - British Literature Early to Present **3 Credits**
- ENGL 2121 - Early British Literature **3 Credits**
- ENGL 2122 - British Literature Late 1700s to Present **3 Credits**
- ENGL 2130 - American Literature Early to Present **3 Credits**
- ENGL 2131 - Early American Literature **3 Credits**
- ENGL 2132 - American Literature Mid 1800s to Present **3 Credits**
- ENGL 2141 - Early Western Literature **3 Credits**
- ENGL 2142 - Western Literature 1600s to Present **3 Credits**
- ENGL 2300 - African-American Literature and Culture **3 Credits**

## C-2: Humanities (3 credits)

Choose ONE of the following (language recommended):

- ARTS 2001 - Art Appreciation **3 Credits**
- ARTS 2002 - Drama Appreciation **3 Credits**
- ARTS 2003 - Music Appreciation **3 Credits**
- ARTS 2004 - History of Contemporary American Music **3 Credits**
- FREN 1002 - Elementary French II **3 Credits**
- GRMN 1002 - Elementary German II **3 Credits**
- SPAN 1002 - Elementary Spanish II **3 Credits**

## Area D: Science and Math (12 credits)

### D-1: Lab Science (8 credits)

You must take two semesters of lab science *and lab* (lecture=3 credits; lab=1 credit; K-courses=4 credits, lab is included)

- ASTR 1000K - Introduction to the Universe **4 Credits**
- ASTR 1010K - Introduction to the Universe II **4 Credits**
- BIOL 2107 - Principles of Biology I **3 Credits**
- BIOL 2107L - Principles of Biology I Laboratory **1 Credits**
- BIOL 2108 - Principles of Biology II **3 Credits**
- BIOL 2108L - Principles of Biology II Laboratory **1 Credits**
- CHEM 1211 - Principles of Chemistry I **3 Credits**
- CHEM 1211L - Principles of Chemistry I Lab **1 Credits**
- CHEM 1211K - Principles of Chemistry (ECORE) **4 Credits**
- CHEM 1212 - Principles of Chemistry II **3 Credits**
- CHEM 1212L - Principles of Chemistry II Lab **1 Credits**
- CHEM 1212K - Principles of Chemistry II (ECORE) **4 Credits**
- ENVS 2200K - Geology **4 Credits**
- ENVS 2202K - Introduction to Environmental Science **4 Credits**
- GEOL 1101K - Introductory Geosciences **4 Credits**
- PHYS 1111 - Introductory Physics I **3 Credits**
- PHYS 1111L - Introductory Physics Laboratory I **1 Credits**
- PHYS 1112 - Introductory Physics II **3 Credits**
- PHYS 1112L - Introductory Physics Laboratory II **1 Credits**
- PHYS 1211K - Principles of Physics I (ECORE) **4 Credits**
- PHYS 2211 - Principles of Physics I **3 Credits**
- PHYS 2211L - Principles of Physics Laboratory I **1 Credits**
- PHYS 2212 - Principles of Physics II **3 Credits**
- PHYS 2212L - Principles of Physics Laboratory II **1 Credits**

## D-2: Math (Minimum of 3 credits)

- **MATH 1113 - Pre-calculus 4 Credits**  
(or other math as specified in the SPSU core)

## Area E: Social Sciences (12 credits)

### E-1: American Perspectives (3 credits)

Satisfies the American Perspectives overlay. Any one of these courses, taken within the University System of Georgia, also satisfies the Legislative Requirement for US and Georgia Constitution and History. Students who fulfill this requirement with transfer credit from outside the USG *may* need to take HIST 2911: U.S. and Georgia Constitution and History to satisfy the Legislative Requirement for graduation. Please check with your advisor.

Choose ONE of the following (POLS 1101 American Government is required in Area F and may not be used here):

- **HIST 2111 - United States History to 1877 3 Credits**
- **HIST 2112 - United States History since 1877 3 Credits**

### E-2: Historical Perspectives (3 credits)

Choose ONE of the following:

- **HIST 1111 - Survey of World Civilization pre 1500 3 Credits**
- **HIST 1112 - Survey of World Civilization post 1500 3 Credits**

### E-3: Behavioral Science Perspectives (3 credits)

Choose ONE of the following (ECON 1101 Introduction to Economics is required in Area F and may not be used here):

- **PSYC 1101 - Introduction to General Psychology 3 Credits**
- **SOCI 1101 - Introduction to Sociology 3 Credits**

### E-4: Global Perspectives (3 credits)

Satisfies Global Perspectives overlay. Choose ONE of the following (POLS 2401 is required in Area F and may not be used here):

- **ANTH 1102 - Introduction to Anthropology 3 Credits**
- **ES 1100 - Ethnic Studies 3 Credits**
- **GEOG 1101 - Introduction to Human Geography 3 Credits**

- RELG 1200 - World Religion **3 Credits**

## Core Area F (18 credits)

- SPAN 2001 - Intermediate Spanish I **3 Credits**
- SPAN 2002 - Intermediate Spanish II **3 Credits**  
or 6 credits of any non-English language at an equivalent level
- ECON 1101 - Introduction to Economics **3 Credits**
- POLS 1101 - American Government **3 Credits**
- POLS 2100 - Introduction to Research Methods **3 Credits**
- POLS 2401 - Global Issues **3 Credits**

## Required Courses in Major (36 credits):

Grade of C or better required.

- POLS 3001 - Comparative Politics **3 Credits**
- POLS 3100 - Research Design **3 Credits**
- POLS 3209 - U.S. Constitutional Law **3 Credits**
- POLS 3301 - Modern Political Theory **3 Credits**
- POLS 3601 - Contemporary World Politics **3 Credits**
- POLS 3701 - American Institutions **3 Credits**
- POLS 3801 - Political Behavior **3 Credits**
- POLS 4100 - Applied Methodology **3 Credits**
- POLS 4301 - International Political Economy **3 Credits**  
Choose ONE of the following:
- GEOG 4101 - Geographic Information Systems **3 Credits**
- POLS 4201 - International Relations in the Americas **3 Credits**  
Choose ONE Regional Studies Course:
- IS 4000 - Regional Studies - General **3 Credits**
- IS 4001 - Regional Studies/Latin America **3 Credits**
- IS 4002 - Regional Studies/Asia:China **3 Credits**
- IS 4003 - Regional Studies/Asia:Japan **3 Credits**
- IS 4004 - Regional Studies/Middle East **3 Credits**
- IS 4005 - Regional Studies/Russia/Eastern Europe **3 Credits**
- IS 4006 - Regional Studies/Western Europe **3 Credits**
- IS 4007 - Regional Studies/Africa **3 Credits**  
In one of final two semesters:
- POLS 4801 - Capstone: Political Science Practicum **3 Credits**

## Directed International Electives: (12 credits)

Grade of C or better required. Take any FOUR of the following courses:

- GEOG 3101 - World Regional Geography **3 Credits**
  - HIST 3200 - History of Science Survey **3 Credits**
  - HIST 3301 - Diplomatic and Military History since 1815 **3 Credits**
  - HIST 3401 - Modern Social and Cultural History Twentieth Century **3 Credits**
  - HIST 3501 - Colonization and Rebellion in the Trans-Atlantic World **3 Credits**
  - HIST 3601 - History of the Pacific Rim **3 Credits**
  - HIST 3801 - Contemporary World History since 1945 **3 Credits**
  - IS 3600 - Comparative Culture **3 Credits**
  - IS 4800 - International Studies Capstone **3 Credits**
  - POLS 2903 - Special Topics in Political Science **3 Credits**
  - POLS 3009 - Foundations of Public Policy **3 Credits**
  - POLS 3401 - Environmental Law and Policy **3 Credits**
  - POLS 3501 - Intellectual Property Issues **3 Credits**
  - POLS 4009 - Comparative Public Policy Analysis **3 Credits**
  - POLS 4063 - Political Issues in Electronic Government **3 Credits**
  - POLS 4101 - Political Economy of Post-Communist Transformation **3 Credits**
  - POLS 4201 - International Relations in the Americas **3 Credits**
  - POLS 4903 - Special Topics in Political Science **3 Credits**
  - PSYC 3101 - International Social Psychology **3 Credits**
  - PSYC 4000 - International Psychology **3 Credits**
  - PSYC 4600 - Conflict Resolution **3 Credits**
  - SPAN 3001 - Advanced Conversation **3 Credits**
  - SPAN 3002 - Grammar and Composition **3 Credits**
  - SPAN 3003 - Hispanic Cultures and Civilizations **3 Credits**
  - SPAN 3901 - Special Topics **1 to 5 Credits**
  - SPAN 3902 - Special Topics **1 to 5 Credits**
  - SPAN 3903 - Special Topics **1 to 5 Credits**
  - SPAN 3904 - Special Topics **1 to 5 Credits**
  - SPAN 3905 - Special Topics **1 to 5 Credits**
  - STS 4000 - International Issues in Science and Technology **3 Credits**
  - STS 4400 - Topical Studies in Science and Technology **3 Credits**
- Up to 6 additional credits in Regional Studies:
- IS 4000 - Regional Studies - General **3 Credits**
  - IS 4001 - Regional Studies/Latin America **3 Credits**
  - IS 4002 - Regional Studies/Asia:China **3 Credits**
  - IS 4003 - Regional Studies/Asia:Japan **3 Credits**
  - IS 4004 - Regional Studies/Middle East **3 Credits**
  - IS 4005 - Regional Studies/Russia/Eastern Europe **3 Credits**
  - IS 4006 - Regional Studies/Western Europe **3 Credits**
  - IS 4007 - Regional Studies/Africa **3 Credits**

## Free Electives (12 credits):

Any college-level credit not used above may be applied here. *Free electives may be used toward a minor and are exempt from the 9 hour rule.*

Degree Program Total: 121

## **Pre-Law Minor**

All courses must be completed with grade of C or better. No more than 9 hours may also be used to satisfy requirements in a major or another minor except free electives. No courses used to satisfy Core Areas A-E may be used in a minor.

### **Required Courses (6 credits):**

Take TWO of the following courses NOT used to satisfy Core Area E-1:

- HIST 2111 - United States History to 1877 **3 Credits**
- HIST 2112 - United States History since 1877 **3 Credits**
- POLS 1101 - American Government **3 Credits**

### **Elective Courses (12 credits):**

Pick any FOUR of the following:

- MGNT 3145 - Legal Environment of Business **3 Credits**
- POLS 3209 - U.S. Constitutional Law **3 Credits**
- POLS 3301 - Modern Political Theory **3 Credits**
- POLS 3401 - Environmental Law and Policy **3 Credits**
- POLS 3501 - Intellectual Property Issues **3 Credits**
- POLS 3701 - American Institutions **3 Credits**

Total Program Hours: 18

## **Psychology Minor**

All courses must be completed with grade of C or better. No more than 9 hours may also be used to satisfy requirements in a major or another minor *except free electives*. No courses used to satisfy Core Areas A-E may be used in a minor.

### **Required Courses:**

- PSYC 1101 - Introduction to General Psychology **3 Credits**

(If PSYC 1101 has been used for Core Area E-3, any 2000-Level PSYC course may be substituted in the minor)

- IET 2227 - Introduction to Statistics **3 Credits**
- PSYC 2100 - Basic Quantitative Research Methods for Psychology **3 Credits**  
(has IET 2227 prereq)
- PSYC 3101 - International Social Psychology **3 Credits**  
AND **6 Credits** in any PSYC 3000- or 4000- level courses

**Total Program Hours: 18**

## **Psychology, BS**

Southern Polytechnic State University's Bachelor of Science degree in Psychology provides students a program of study in modern psychology. Specifically, the program embraces a strong international component with a multi-disciplinary curriculum that provides a balanced, career-based education in psychology with a wide range of skills and practical knowledge. The concentrations offered cover the subject matter from seventeen major subfields coupling science and practice. This broad spectrum provides a rich context so that students who complete the program have the knowledge, skills, and real-world context to be productive and flexible in a rapidly changing workplace.

Career opportunities for graduates with a B.S. in Psychology include: employment counselors, corporate counselor trainees, interviewers, personnel analysts, systems analysts, rehabilitation assistants, mental health assistants, probation officers and writers. Additionally, training in the development of research and writing skills will open opportunities in profit/non-profit business settings, public affairs, public health, sales and administrative support.

The concentrations offered are:

- Engineering Psychology (involves the science of applying an understanding of human behavior interacting with the design of systems and products that improve human performance)
- Industrial/Organizational Psychology (involves the science of applying an understanding of human behavior with improving productivity and the workplace quality)
- Clinical and Counseling Psychology (involves the science of applying an understanding of human behavior with an emphasis on mental disorders and their treatment)

## **Requirements**

### **Core Areas A-E**

#### **Area A: Essential Skills (9 credits)**

Grade of C or better required in the courses used to satisfy this requirement. Freshmen must complete Area A by the time they have attempted 30 semester hours of course work.

- ENGL 1101 - English Composition I **3 Credits**
- ENGL 1102 - English Composition II **3 Credits**
- MATH 1111 - College Algebra **3 Credits**  
(or other math as specified in the SPSU core)

## Area B: Institutional Options (4 credits)

- COMM 2400 - Public Speaking **2 Credits**
- STS 2400 - Science, Technology, and Society **2 Credits**

## Area C: Humanities / Fine Arts (6 credits)

### C-1: Literature (3 credits)

Choose ONE of the following:

- ENGL 2111 - Early World Literature **3 Credits**
- ENGL 2112 - World Literature Mid-1600s to Present **3 Credits**
- ENGL 2120 - British Literature Early to Present **3 Credits**
- ENGL 2121 - Early British Literature **3 Credits**
- ENGL 2122 - British Literature Late 1700s to Present **3 Credits**
- ENGL 2130 - American Literature Early to Present **3 Credits**
- ENGL 2131 - Early American Literature **3 Credits**
- ENGL 2132 - American Literature Mid 1800s to Present **3 Credits**
- ENGL 2141 - Early Western Literature **3 Credits**
- ENGL 2142 - Western Literature 1600s to Present **3 Credits**
- ENGL 2300 - African-American Literature and Culture **3 Credits**

### C-2: Humanities (3 credits)

Choose ONE of the following:

- ARTS 2001 - Art Appreciation **3 Credits**
- ARTS 2002 - Drama Appreciation **3 Credits**
- ARTS 2003 - Music Appreciation **3 Credits**
- ARTS 2004 - History of Contemporary American Music **3 Credits**
- FREN 1002 - Elementary French II **3 Credits**
- FREN 2001 - Intermediate French I **3 Credits**
- FREN 2002 - Intermediate French II **3 Credits**
- GRMN 1002 - Elementary German II **3 Credits**
- GRMN 2001 - Intermediate German I **3 Credits**
- GRMN 2002 - Intermediate German II **3 Credits**



- SPAN 1002 - Elementary Spanish II **3 Credits**
- SPAN 2001 - Intermediate Spanish I **3 Credits**
- SPAN 2002 - Intermediate Spanish II **3 Credits**

## Area D: Science and Math (11-12 credits)

### D-1: Lab Science (8 credits)

You must take two semesters of lab science *and lab* (lecture=3 credits; lab=1 credit; K courses=4 credits, including lab). Biology recommended.

- ASTR 1000K - Introduction to the Universe **4 Credits**
- ASTR 1010K - Introduction to the Universe II **4 Credits**
- BIOL 2107 - Principles of Biology I **3 Credits**
- BIOL 2107L - Principles of Biology I Laboratory **1 Credits**
- BIOL 2108 - Principles of Biology II **3 Credits**
- BIOL 2108L - Principles of Biology II Laboratory **1 Credits**
- CHEM 1211 - Principles of Chemistry I **3 Credits**
- CHEM 1211L - Principles of Chemistry I Lab **1 Credits**
- CHEM 1211K - Principles of Chemistry (ECORE) **4 Credits**
- CHEM 1212 - Principles of Chemistry II **3 Credits**
- CHEM 1212L - Principles of Chemistry II Lab **1 Credits**
- CHEM 1212K - Principles of Chemistry II (ECORE) **4 Credits**
- ENVS 2200K - Geology **4 Credits**
- ENVS 2202K - Introduction to Environmental Science **4 Credits**
- GEOL 1101K - Introductory Geosciences **4 Credits**
- PHYS 1111 - Introductory Physics I **3 Credits**
- PHYS 1111L - Introductory Physics Laboratory I **1 Credits**
- PHYS 1112 - Introductory Physics II **3 Credits**
- PHYS 1112L - Introductory Physics Laboratory II **1 Credits**
- PHYS 1211K - Principles of Physics I (ECORE) **4 Credits**
- PHYS 2211 - Principles of Physics I **3 Credits**
- PHYS 2211L - Principles of Physics Laboratory I **1 Credits**
- PHYS 2212 - Principles of Physics II **3 Credits**
- PHYS 2212L - Principles of Physics Laboratory II **1 Credits**

### D-2: Math (Minimum of 3 credits)

- MATH 1113 - Pre-calculus **4 Credits**  
(or other math as specified in the SPSU core)

## Area E: Social Sciences (12 credits)

### E-1: American Perspectives (3 credits)

Satisfies the American Perspectives overlay. Any one of these courses, taken within the University System of Georgia, also satisfies the Legislative Requirement for US and Georgia History and Constitution. Students who fulfill this requirement with transfer credit from outside the USG will need to take U.S. and Georgia Constitution and History to satisfy the Legislative Requirement for graduation.

- HIST 2111 - United States History to 1877 **3 Credits**
- HIST 2112 - United States History since 1877 **3 Credits**
- POLS 1101 - American Government **3 Credits**

### E-2: Historical Perspectives (3 credits)

Choose ONE of the following:

- HIST 1111 - Survey of World Civilization pre 1500 **3 Credits**
- HIST 1112 - Survey of World Civilization post 1500 **3 Credits**

### E-3: Behavioral Science Perspectives (3 credits)

Choose ONE course (sociology recommended):

- ECON 1101 - Introduction to Economics **3 Credits**
- PSYC 1101 - Introduction to General Psychology **3 Credits**
- SOCI 1101 - Introduction to Sociology **3 Credits**

### E-4: Global Perspectives (3 credits)

Satisfies the Global Perspectives overlay. Choose ONE of the following:

- ANTH 1102 - Introduction to Anthropology **3 Credits**
- ES 1100 - Ethnic Studies **3 Credits**
- GEOG 1101 - Introduction to Human Geography **3 Credits**
- POLS 2401 - Global Issues **3 Credits**
- RELG 1200 - World Religion **3 Credits**

### Core Area F (18 credits)

- COMM 2030 - Research for the Humanities & Social Sciences **3 Credits**
- IET 2227 - Introduction to Statistics **3 Credits**
- PSYC 1101 - Introduction to General Psychology **3 Credits**  
(or 3 hours of PSYC 1XXX or 2XXX elective credit if PSYC 1101 has been used in Area E-3)

- PSYC 2011 - Cognitive Psychology **3 Credits**
- PSYC 2270 - Engineering Psychology **3 Credits**
- PSYC 2271 - Clinical and Counseling Psychology **3 Credits**

## Required Courses in Major (32 credits):

Grade of C or better required; take all of the following:

- SPSU 1001 - Hitch-hiker's Introduction to SPSU **1 Credits**
- MGNT 3105 - Management and Organizational Behavior **3 Credits**
- PSYC 1000 - Orientation to Psychology **2 Credits**
- PSYC 2100 - Basic Quantitative Research Methods for Psychology **3 Credits**
- PSYC 2401 - Psychology of Diversity **3 Credits**
- PSYC 3000 - Junior Seminar **3 Credits**
- PSYC 3020 - Physiological Psychology **3 Credits**
- PSYC 3031 - Experimental Psychology **4 Credits**
- PSYC 3101 - International Social Psychology **3 Credits**
- PSYC 4050 - History and Systems of Psychology **3 Credits**
- PSYC 4800 - Psychology Capstone Seminar **3 Credits**

## Concentrations

Choose and complete one of the concentrations below:

### Engineering Psychology (28 credits)

#### Required Courses (22 credits):

Grade of C or better required; take all of the following:

- IET 2305 - The Role of Industrial Engineering Technology in Industrial Systems **4 Credits**
- IET 3322 - Work Measurement and Ergonomics **4 Credits**  
*The following must be taken in the order listed:*
- CSE 1301J - Programming & Problem Solving I **4 Credits**  
(be sure it's 1301J)
- IT 1324 - Advanced Programming Principles **4 Credits**
- SWE 4324 - User-Centered Design **4 Credits**
- SWE 4783 - User Interaction Engineering **3 Credits**

#### Free Electives (6 credits)

Credit from any college-level course may be applied here. *Free elective hours may be used toward an additional minor and are exempt from the 9 hours rule.*

## Industrial / Organizational Psychology (28 credits)

### Required Courses (12 credits):

Grade of C or better required; take all of the following:

- MGNT 4115 - Human Resource Management **3 Credits**
- PSYC 3301 - Psychological Testing **3 Credits**
- PSYC 4000 - International Psychology **3 Credits**
- PSYC 4600 - Conflict Resolution **3 Credits**

### Concentration Electives (9 credits):

Grade of C or better required; choose THREE of the following:

- PSYC 3010 - Educational Psychology **3 Credits**
- PSYC 3015 - Theories of Personality **3 Credits**
- PSYC 3040 - Motivation and Emotion **Credits**
- PSYC 4130 - Psychology of Aging **3 Credits**
- PSYC 4220 - Psychoactive Drugs, Behavior, and Society **3 Credits**

### Free Electives (7 credits)

Credit from any college-level course may be applied here. *Free elective hours may be used toward an additional minor and are exempt from the 9 hours rule.*

## Clinical and Counseling Psychology (28 credits)

### Required Courses:

Grade of C or better required; take all of the following:

- PSYC 3015 - Theories of Personality **3 Credits**
- PSYC 3230 - Abnormal Psychology **3 Credits**
- PSYC 3301 - Psychological Testing **3 Credits**

### Concentration Electives (9 credits):

Grade of C or better required; choose THREE from the following:

- PSYC 2273 - Forensic Psychology **3 Credits**
- PSYC 3010 - Educational Psychology **3 Credits**

- PSYC 3040 - Motivation and Emotion **Credits**
- PSYC 3305 - Developmental Psychology **3 Credits**
- PSYC 4000 - International Psychology **3 Credits**
- PSYC 4130 - Psychology of Aging **3 Credits**
- PSYC 4220 - Psychoactive Drugs, Behavior, and Society **3 Credits**
- PSYC 4600 - Conflict Resolution **3 Credits**

### Free Electives (10 credits)

Credit from any college-level course may be applied here. *Free elective hours may be used toward an additional minor and are exempt from the 9 hours rule.*

**Degree Program Total: 120**

## Public Policy Minor

All courses must be completed with grade of C or better. No more than 9 hours may also be used to satisfy requirements in a major or another minor except free electives. No courses used to satisfy Core Areas A-E may be used in a minor.

### Required Courses (6 credits):

- POLS 3009 - Foundations of Public Policy **3 Credits**
- POLS 4009 - Comparative Public Policy Analysis **3 Credits**

### Electives (9 credits):

Choose THREE of the following:

- POLS 3401 - Environmental Law and Policy **3 Credits**
- POLS 3701 - American Institutions **3 Credits**
- PSYC 4600 - Conflict Resolution **3 Credits**
- STS 4000 - International Issues in Science and Technology **3 Credits**

## Special Topics

Special Topics in POLS, STS, or IS may also be used as electives with topic-specific approval of the department.

**Total Program Hours: 15**

## **Spanish Minor**

All courses must be completed with grade of C or better. No more than 9 hours may also be used to satisfy requirements in a major or another minor except free electives. No courses used to satisfy Core Areas A-E may be used in a minor.

### **2000-Level (6 credits):**

May not also be used to satisfy Core Area C-2:

- SPAN 2001 - Intermediate Spanish I **3 Credits**
- SPAN 2002 - Intermediate Spanish II **3 Credits**

### **3000-Level (9 credits):**

Any 9 credits in 3000-level SPAN courses.

**Total Program Hours: 15**

**Consider the Certificate in Professional Spanish as well:**

Requirements for Professional Certificate

## **Spanish Professional Certificate (Undergraduate)**

All courses must be completed with grade of C or better. No more than 9 hours may also be used to satisfy requirements in a major or another minor except free electives. No courses used to satisfy Core Areas A-E may be used in a minor.

### **All Courses Required for the Spanish Minor**

Requirements for Spanish Minor

### **4000-Level Electives (6 credits):**

Chose SIX credits from the following:

- SPAN 4001 - Professional Spanish **3 Credits**
- SPAN 4002 - Techniques in Translation for Professional Spanish **3 Credits**
- SPAN 4003 - Service Learning Project **3 Credits**
- SPAN 4901 - Special Topics for Professional Spanish **1 to 5 Credits**

- SPAN 4902 - Special Topics for Professional Spanish **1 to 5 Credits**
- SPAN 4903 - Special Topics for Professional Spanish **1 to 5 Credits**
- SPAN 4904 - Special Topics for Professional Spanish **1 to 5 Credits**
- SPAN 4905 - Special Topics for Professional Spanish **1 to 5 Credits**

### Learning Project (3 credits):

- SPAN 4003 - Service Learning Project **3 Credits**

### Oral Proficiency Interview (OPI):

After all coursework is completed, student must take the American Council on the Teaching of Foreign Language OPI.

Total Program Hours: 9 credits beyond the minor

## **School of Computing and Software Engineering**

### **Computer Science and Software Engineering**

### **Computer Science**

### **Offering:**

The Bachelor of Science in Computer Science (ABET Accredited)  
The Bachelor of Arts in Computer Science

### **Why study Computer Science at SPSU?**

What field of study has seen more technological developments that have become part of our daily lives in just a matter of the past few decades than any other? Developments such as the Internet and email, search engines, wi-fi, etc., virtually unknown a few decades ago, make computer science one of the strong contenders for this distinction!

Combining fundamental theory with hands-on lab work in current programming languages, the Computer Science degree gives students a breadth of knowledge -- of operating systems, architecture, networks, and databases -- in a high-tech environment. Our numerous labs are equipped with the latest technology, including a real-time lab with the most current commercial-grade software tools and an IT lab with its own server for management and IT courses. And

in our classrooms, professors teach using networked computers and smart boards, and technologies that allow for interactive demonstrations of programs at work, and other innovative pedagogical techniques.

## About the Program

As preparation for diverse employment opportunities, the Computer Science program offers a wide range of Mathematics and Computer Science courses, such as Programming Language Concepts, Data Structures, and Algorithm Analysis. Students may elect to earn a Bachelor of Science degree in Computer Science, which offers a mix of rigor and exposure to current technologies, or the Bachelor of Arts in Computer Science, which offers flexibility, e.g., with a minor in one additional area of study. For student convenience, many classes are offered in the evenings, especially as students make progress toward graduation.

## The Faculty

Each faculty member in Computer Science has his or her own specialty, from research to business applications. Our faculty members have completed research fellowships with the U.S. Air Force and other government labs, programmed business applications for Blue Cross Blue Shield, and developed and managed systems and software for IBM Corporation. They pass their expertise in the professional field along to their students, who go on to succeed professionally as well.

Patrick O. Bobbie, *Professor*

Bob Harbort, *Professor*

Chih-Cheng Hung, *Professor*

Edward Jung, *Assistant Professor*

Chia-Tien (Dan) Lo, *Associate Professor*

Briana B. Morrison, *Assistant Professor*

Patricia R. Pierce, *Senior Lecturer*

Kai Qian, *Professor*

## Are there learning opportunities outside the classroom?

Computer science students at SPSU can participate in the Aerial Robotics Club on campus, which placed second in the 2001 international competition sponsored by the Association for Unmanned Vehicle Systems for an automatic pilot guiding program that was written for SPSU's aerial robotics machines. Students also compete in annual programming contests sponsored by the Association of Computer Machinery, a national professional organization with student chapters worldwide. Students have internship and co-op opportunities, as well.

## What can I do with a Computer Science degree?

With a Computer Science degree, you are equipped to enter a variety of positions, from software development at a Fortune 500 company to game development, to just about anywhere your skills can take you – including winning an Oscar for animation technologies, as our alumni did in 2005! Graduates are often involved in software development, innovative applications and uses of computers, and new and improved solution techniques to hard problems. They gain many useful skills that are immediately applicable, but are well-founded in the fundamental concepts and are well on their way to lifelong learning in the rapidly changing technological workplace.

## Will I find employment?



According to a recent report from the Bureau of Labor Statistics, the top ten fastest jobs are either in health care or related to computing. Our close proximity to Atlanta opens up a world of internship, co-op, and full-time work opportunities to our students, as Atlanta is home to many major corporations that welcome SPSU students.

## **The Programs:**

The baccalaureate programs in Computer Science emphasize the entire scope of computer science, ranging from basic hardware principles through the system and application software levels to the use and management of such systems.

The ABET-accredited (<http://www.abet.org>) Bachelor of Science degree is designed for students wanting a maximum technical preparation for their career.

The Bachelor of Arts degree is designed for students wanting to apply their knowledge of computer science to another area of study.

Both degrees have Core requirements, Major requirements, and Directed Electives. The Core provides basic coursework to ensure that the graduate is well-rounded as an educated individual.

The Major contains those CS and SWE courses considered fundamental to the field, regardless of any specialization. The Directed Electives provide depth beyond the Core to support the student's professional preparation.

- Both degrees require a grade of "C" or better in all CS, CSE, SWE, and IT courses applied to degree requirements.

Students in the BS degree program are required to have at least three science-related courses subject to the following rules:

- Two lab science courses used to satisfy Area D of the core
- The remainder may be taken as lab sciences or as other approved courses that provide breadth and/or depth in the natural sciences or otherwise explore the scientific method

There is also a five-year BSCS-MSSWE option for qualifying students.

This program is likely to be of great interest to those who pursue the BSCS program and are interested in entering the job market with a high degree of preparedness. On top of a strong CS foundation, graduates from this combined program will be trained in software project management, an in-depth understanding of requirements, design, testing, support, metrics, etc. and the processes of software development and management (if they choose MSSWE), or with advanced course work in the dynamic field of computer science (if they choose MSCS). Students can start taking MS core graduate classes right away, even before graduating with the BSCS. Specifically, while still working on the BSCS, students can take two graduate courses applicable to the target MS program as electives in their BSCS degree, and the courses also count towards the MS program. Students will be able to complete the MS program by taking only 10 more graduate courses in an additional year.

## **Computer Game Design and Development**

### **Offering:**

The Bachelor of Science in Computer Game Design and Development  
The Minor in Computer Game Design and Development

# Why study Computer Game Design and Development at SPSU?

The Bachelors of Science in Computer Game Design and Development equips students and graduates with the skills and knowledge to apply computing and software engineering techniques to the design and production of digital media for entertainment, research, and education. As a specialization within the field of computing, game design and development builds on and applies expertise in computing hardware and software to create engaging and immersive multimedia systems.

## About the Program

The program exposes students to the breadth of the field in the areas of digital media, human-computer interaction, the history and theory of gaming, game design, 2D and 3D graphics, simulation, modeling, software engineering, artificial intelligence, data structures, and algorithms. Current and emerging domains including online games (and massively multiplayer games or MMOG), casual games, mobile games, and serious/educational games are explored. Students are also required to select an upper-level concentration within the program to ensure depth in their program of study. While these concentrations will change as the field evolves, current offerings include media-production, distributed-mobile, education-serious, planning-management, and simulation-informatics.

One of the more innovative aspects of the program is the inclusion of a significant studio experience for students in their senior year. This two-course sequence provides an opportunity for students to be mentored by faculty and their peers in the first semester and in turn mentor fellow students in the second semester. The year-long capstone project developed in these courses is a vital component in graduates' portfolios and will be showcased on the program's Web site. Moreover, giving the recruitment and hiring practices in the digital entertainment and computer gaming industry, portfolios are crucial in helping graduates secure employment in the industry.

The program places significant importance on developing students' communication, team, critical thinking, and problem solving skills, skills that were identified as vital by industrial partners and employers. Courses integrate written and oral presentations as well as team-based design and development projects to ensure students build these skills.

## The Faculty

Each faculty member in Computer Game Design and Development has his or her own specialty, from mobile games to graphics. Our faculty members have worked on research projects and grants with the National Science Foundation (NSF) and other agencies, developed augmented reality applications, built mobile games, and worked on various serious and games-for-learning projects. They pass their experiences and expertise in the field of computing and game development to their students to help them succeed professionally as well.

Jeffrey W. Chastine, *Associate Professor*

D. Michael Franklin, *Assistant Professor*

Richard A. Gesick, *Lecturer*

Chao Peng, *Associate Professor*

Jon Preston, *Associate Professor*

## BS CGDD Program Educational Objectives

The Bachelor of Science in Computer Game Design and Development prepares our graduates to reach the following goals 3 to 5 years beyond graduation:

- Computer Game Design and Development graduates will be successful professionals in the field with solid fundamental knowledge of gaming and computing, making valuable technical contributions to the design, development, and production of computer game systems and related applications.
- Graduates utilize and exhibit strong communication and interpersonal skills, as well as professional and ethical principles when functioning as members and leaders of multi-disciplinary teams.
- Graduates are sufficiently prepared for their first and subsequent positions, as they are independent learners, including learning new, rapidly-changing technologies and applying them in their game systems development.

## **BS CGDD Student Outcomes**

Each graduate of the program should be able to:

1. Decompose and solve complex problems through artifacts of computing such as hardware, software specifications, code and other written documents
2. Demonstrate an understanding of computing principles in the areas of programming, data structures, architecture, systems, graphics, and artificial intelligence and how they relate to computer game design and development
3. Utilize mathematics and science in game design and development
4. Apply principles of game design and development to generate a portfolio showcasing their successful industrial experience, research, and/or creative works
5. Demonstrate a breadth of knowledge in historic and emerging domains and genres of computer gaming and interaction
6. Demonstrate an understanding of social, professional, global, and ethical issues related to computing
7. Work effectively in teams on system development projects
8. Demonstrate effective oral and written communication skills

## **Other Program Goals**

Expand the visibility of SPSU and the University System of Georgia (USG) in the field of game design and development

- Scholarship and research in regional, national, and international venues
- Service and partnerships with professional societies and non-profit organizations in the field
- Create a strong community of students and alumni
- Offer an annual computer game design competition sponsored by SPSU and industrial partners
- Develop an online digital portfolio that showcases the work of students, alumni, and faculty
- Host and sponsor events in which students, alumni, and industrial partners connect and build relationships

Serve the community and industry

## **Software Engineering**

### **Offering:**

Bachelor of Science in Software Engineering

# Why study Software Engineering at SPSU?

Software engineering represents the fastest growing segment of software professionals -- men and women who solve problems and issues in the development and engineering of mission-critical software systems to meet the requirements of business and industry in a *reliable, secure, timely, and cost-effective* manner. At Southern Polytechnic, our Software Engineering students learn real-time strategies and procedures that will give them a competitive edge in the market. Coursework includes software design techniques, software quality, software project management, and electives such as component-based software, embedded systems design, game design, etc. This is the only Software Engineering program at the undergraduate level in Georgia and one of the few in the nation.

## The Faculty:

Each faculty member in Software Engineering has his or her own specialty, e.g., object-oriented design, large scale systems, user-centered design, etc. Some of our faculty members have extensive industry experience managing systems and software development. They pass their expertise in the professional field along to their students, who go on to succeed professionally as well.

Sheryl L. Duggins, *Professor*

Jonathan Lartigue, *Assistant Professor*

Patricia Roth Pierce, *Senior Lecturer*

Hassan Pournaghshband, *Professor*

Frank Tsui, *Associate Professor*

### Are there learning opportunities outside the classroom?

Our students can participate in the Aerial Robotics Club on campus, which placed second in the 2001 international competition sponsored by the Association for Unmanned Vehicle Systems for an automatic pilot guiding program that was written for SPSU's aerial robotics machines. Students have internship and co-op opportunities, as well.

### What can I do with a Software Engineering degree?

With a Software Engineering degree, you are equipped to enter a variety of positions, from real-world, large-scale software development and testing to software project management. You gain a foundation in computer science and learn many useful skills and tools that are immediately applicable, and are well on your way to lifelong learning in the rapidly changing technological workplace.

### Will I find employment?

According to a recent report from the Bureau of Labor Statistics, the top two of ten jobs with the fastest growth and highest median salaries are related to systems and applications software engineering. Our close proximity to Atlanta opens up a world of internship, co-op, and full-time work opportunities to our students, as Atlanta is home to many major corporations that welcome SPSU students.

## The Program:

### SWE Program Educational Objectives:

The Bachelor of Science in Software Engineering prepares our graduates to reach the following goals 3 to 5 years beyond graduation:

- Software Engineering graduates will be successful professionals in the field with solid fundamental knowledge of software engineering, who can effectively analyze, design, and develop high-quality software systems.
- Graduates utilize and exhibit strong communication and interpersonal skills, as well as professional and ethical principles when functioning as members and leaders of multi-disciplinary teams.
- Graduates will apply their foundations in software engineering to adapt to rapidly changing environments using the appropriate theory, principles, and processes.
- Graduates are sufficiently prepared for their first and subsequent positions, as they are independent learners, including being accepted into or completing advanced degree programs.

## **Student Outcomes:**

At the time of graduation, all Software Engineering students will have demonstrated:

- An ability to apply knowledge of mathematics, science, and engineering
- An ability to design and conduct experiments, as well as to analyze and interpret data
- An ability to design a system, component, or process to meet desired needs within realistic constraints such as economic, environmental, social, political, ethical, health and safety, manufacturability, and sustainability
- An ability to function on multidisciplinary teams
- An ability to identify, formulate, and solve engineering problems
- An understanding of professional and ethical responsibility
- An ability to communicate effectively
- The broad education necessary to understand the impact of engineering solutions in a global, economic, environmental, and societal context
- A recognition of the need for, and an ability to engage in life-long learning
- A knowledge of contemporary issues
- An ability to use the techniques, skills, and modern engineering tools necessary for engineering practice
- An ability to appropriately analyze, design, verify, validate, implement, apply, and maintain software systems
- An ability to appropriately apply discrete mathematics, probability and statistics, and relevant topics in computer science and support disciplines to complex software systems
- An ability to work in one or more significant application domains
- An ability to manage the development of software systems

The degree program includes Core requirements, Computer Science Foundations, the Software Engineering Core, Software Engineering Advanced Topics, Application Domains, Directed Electives and Other Required Courses. There is also a specialty track that allows students to choose a specialty area for more concentrated study. The Directed Electives provide depth beyond the Core to support the student's professional preparation.

## **Areas of Study**

### **Computer Game Design and Development Minor**

To be eligible for a minor in Computer Game Design and Development, the student must complete the following courses with a grade of "C" or better. Any upper level (3000+) courses that are required in the major may not be used as credit for the minor. Other upper level CGDD courses may be used as substituted. Students must have at least 9 upper level CGDD hours not required for their major (CGDD courses taken as electives for your major bachelor degree can be used to complete the minor).

Minor in Game Design and Development Program Objectives:

- Provide students with game design and development knowledge that can be applied in their major area of study
- Provide students with fundamental game design and development skills

Minor in Game Design and Development Learning Outcomes

- Demonstrate skills fundamental to game design and development
- Demonstrate knowledge in at least two subfields of game design and development

## Required Courses

- CSE 1301 - Programming and Problem Solving I **4 Credits**
- CGDD 2002 - Fundamentals of Game Design **2 Credits**
- CGDD 4003 - Digital Media and Interaction **3 Credits**
- Three additional upper-level CGDD courses **9+ Credits**

Minor Program Total: 18+ Credits

## Computer Game Design and Development, BS

Students must earn a C or better in all the major courses (CSE, CS, SWE, and CGDD).

## Requirements

- ENGL 1101 - English Composition I **3 Credits**
- ENGL 1102 - English Composition II **3 Credits**
- MATH 2253 - Calculus I **4 Credits**
- MATH 2254 - Calculus II **4 Credits**
- MATH 2345 - Discrete Mathematics **3 Credits**
- MATH 2260 - Introduction to Probability and Statistics **3 Credits**
- COMM 2400 - Public Speaking **2 Credits**
- STS 2400 - Science, Technology, and Society **2 Credits**
- Area C Group 1 Take One Course From the Literature Group **3 Credits**
- Area C Group 2 Take One Course From the Art and Culture Group **3 Credits**
- Area D See your advisor before you select science courses **8 Credits**
- Area E Group 1 American Context **3 Credits**
- Area E Group 2 World History **3 Credits**
- Area E Group 3 Behavioral Science **3 Credits**
- Area E Group 4 Cultures and Societies **3 Credits**
- CSE 1301 Programming & Problem Solving I **4 Credits**

- CSE 1302 Programming & Problem Solving II **4 Credits**
- CSE 1002 - Introduction to the Computing Disciplines **2 Credits**
- CSE 3642 - Professional Practices and Ethics **2 Credits**
- CS 3224 - Computer Organization & Architecture **4 Credits**
- CS 3424 - Data Structures **4 Credits**
- CS 4363 - Computer Graphics and Multimedia **3 Credits**
- CS 4523 - Artificial Intelligence **3 Credits**
- SWE 2313 - Introduction to Software Engineering **3 Credits**
- SWE 3643 - Software Testing and Quality Assurance **3 Credits**
- SWE 4324 - User-Centered Design **4 Credits**
- CGDD 2002 - Fundamentals of Game Design **2 Credits**
- CGDD 3103 - Application Extension and Scripting **3 Credits**
- CGDD 4003 - Digital Media and Interaction **3 Credits**
- CGDD 4203 - Mobile and Casual Game Development **3 Credits**
- CGDD 4303 - Educational and Serious Game Design **3 Credits**
- CGDD 4803 - Studio **3 Credits**
- CGDD 4814 - Capstone **4 Credits**
- Upper-level Concentration (see below for options or as approved) **9 Credits**
- Free Electives **6 Credits**

**Degree Program Total: 122**

## Note:

Students are strongly recommended to take at least one Physics course for their Area D because some later courses in this program (in particular the CGDD 4113 and CGDD 4603) may rely upon Physics. Students who are interested in the Simulation-Informatics concentration (see below) may find Biology or Chemistry beneficial instead of Physics.

## BS CGDD Upper-level Concentration

While the required courses in the degree ensure students are exposed to the breadth of the field of computer game design and development, it is also imperative that students are given flexibility to customize their experience and apply the knowledge gained in their required courses. To this end, the degree requires students select a concentration in which they may gain a depth of knowledge within their chosen area.

The following are suggested concentrations, but students may select a customized plan of study and set of courses under with their advisor's approval.

### Media-Production

- MATH 3312 - Linear Algebra **4 Credits**
- CGDD 4113 - 3D Modeling and Animation **3 Credits**
- CGDD 4603 - Production Pipeline and Asset Management **3 Credits**

## Distributed-Mobile

- SWE 3683 - Embedded Systems Analysis & Design **3 Credits**
- CS 4253 - Distributed Computing **3 Credits**
- CS 4263 - Computer Networks **3 Credits**

## Educational-Serious

- 6 hours of approved TCOM courses
- CGDD 4313 - Designing Online Learning Content and Environments **3 Credits**

## Planning-Management (pick 3 of 4)

- MGNT 3105 - Management and Organizational Behavior **3 Credits**
- MGNT 4185 - Technology Management **3 Credits**
- SWE 3623 - Software Systems Requirements **3 Credits**
- SWE 4663 - Software Project Management **3 Credits**

## Simulation-Informatics

- CSE 3153 - Database Systems **3 Credits**
- CS 4253 - Distributed Computing **3 Credits**
- CGDD 4703 - Data Modeling and Simulation **3 Credits**

## BS CGDD Program Objectives

Meet the educational needs of students and prepare them for careers within the discipline

Expand the visibility of SPSU and the University System of Georgia (USG) in the field of game design and development

Create a strong community of students and alumni

Serve the community and industry

## BS CGDD Learning Outcomes



Upon graduation, students will be able to:

- Decompose and solve complex problems through artifacts of computing such as hardware, software specifications, code and other written documents
- Demonstrate an understanding of computing principles in the areas of programming, data structures, architecture, systems, graphics, and artificial intelligence and how they relate to computer game design and development
- Utilize mathematics and science in game design and development
- Apply principles of game design and development to generate a portfolio showcasing their successful industrial experience, research, and/or creative works
- Demonstrate a breadth of knowledge in historic and emerging domains and genres of computer gaming and interaction
- Demonstrate an understanding of social, professional global, and ethical issues related to computing
- Work effectively in teams on system development projects
- Demonstrate effective oral and written communication skills

## Computer Science Minor

To be eligible for a minor in Computer Science, the student must complete the following courses with a grade of "C" or better. Students must have at least 9 upper level CS hours.

### Minor in CS Program Objectives

- Provide students with computing knowledge that can be applied in their major area of study.
- To provide students with fundamental programming skills.

### Minor in CS Learning Outcomes

- Demonstrate programming skills in 2 different programming languages.
- Demonstrate knowledge of at least one additional area of computing.

### Requirements:

- CSE 1301 - Programming & Problem Solving I 4
- CSE 1302 - Programming & Problem Solving II 4
- CS 3424 - Data Structures **4 Credits**
- Two additional upper-level CS courses 6+

### Note:

*CS 3424 requires MATH 2345 - Discrete Mathematics as a pre-requisite.*

## Computer Science, BA

## BACS Program Objectives

- To meet the educational needs of the students and prepare them for careers using their computing knowledge. Students should be well versed in not only the fundamentals but also develop skills in problem solving, logic, organization, and ethics.
- To provide graduates with a thorough grounding in key principles and practices of computing.
- To provide graduates with an understanding of the ethical aspects of computing within society.
- To provide graduates with applicable communication and team skills to be used in computing careers.
- To provide graduates with another area of study where they can apply their computing knowledge or expand the context for their computing knowledge.
- To prepare graduates for employment using their computing knowledge.

## BACS Learning Outcomes

Each graduate of the program should be able to:

- Convey the understanding of, and ability to solve, problems through artifacts of computing such as specifications, code and other written documents.
- Demonstrate and apply their knowledge of fundamental data structures and algorithms to solve problems.
- Describe and explain the major concepts in the areas of operating systems, programming languages, architecture, and distributed computing.
- Demonstrate an ability to work effectively in teams on computing related projects.
- Demonstrate an ability to effectively communicate technical information.
- Demonstrate an understanding of social, professional and ethical issues related to computing.
- Obtain the skills and knowledge to be employable in positions that utilize their computing education.
- Demonstrate an understanding of a minor field of study, where computing can be applied.

## Requirements

- ENGL 1101 - English Composition I **3 Credits**
- ENGL 1102 - English Composition II **3 Credits**
- TCOM 2010 - Technical Writing **3 Credits**
- MATH 1113 - Pre-calculus **4 Credits**
- MATH 2253 - Calculus I **4 Credits**
- MATH 2254 - Calculus II **4 Credits**
- MATH 2345 - Discrete Mathematics **3 Credits**
- MATH 2260 - Introduction to Probability and Statistics **3 Credits**
- COMM 2400 - Public Speaking **2 Credits**
- COMM 2400 - Public Speaking **2 Credits**
- STS 2400 - Science, Technology, and Society **2 Credits**
- Area C Group 1 - Take One Course from the Literature Group **3 Credits**
- Area C Group 2 - Take a foreign language **3 Credits**
- Area D - Two lab science courses required **8 Credits**
- Area E Group 1 - American Context **3 Credits**
- Area E Group 2 - World History **3 Credits**

- Area E Group 3 - Behavioral Science **3 Credits**
- Area E Group 4 - Cultures and Societies **3 Credits**
- CSE 1002 - Introduction to the Computing Disciplines **2 Credits**
- CSE 1301 - Programming & Problem Solving I **4 Credits**
- CSE 1302 - Programming & Problem Solving II **4 Credits**
- CSE 3642 - Professional Practices and Ethics **2 Credits**
- CS 3123 - Programming Language Concepts **3 Credits**
- CSE 3153 - Database Systems **3 Credits**
- CS 3224 - Computer Organization & Architecture **4 Credits**
- CS 3243 - Operating Systems **3 Credits**
- CS 3424 - Data Structures **4 Credits**
- SWE 2313 - Introduction to Software Engineering **3 Credits**
- SWE 3613 - Software System Engineering **3 Credits**
- Upper-Level CS Elective (or Approved UL CGGD/SWE/IT Elective) **4 Credits**
- Approved Minor **15 Credits**
- Upper-Level Free Electives (UL CS must be at least 4 hours, and the total of CS UL and UL free electives is 10 hours) **6 Credits**
- Free Electives **5 Credits**

**Degree Program Total: 123**

## **Computer Science, BS**

### **BSCS Program Educational Objectives (PEOs)**

The Bachelor of Science in Computer Science prepares our graduates to reach the following goals 3 to 5 years beyond graduation:

- Computer Science graduates will be successful professionals in the field with solid fundamental knowledge of computer science, making valuable technical contributions to the design, development, and production of computing systems and related areas.
- Graduates utilize and exhibit strong communication and interpersonal skills, as well as professional and ethical principles when functioning as members and leaders of multi-disciplinary teams.
- Graduates are sufficiently prepared for their first and subsequent positions, as they are independent learners, including being accepted into or completing advanced degree programs.

### **BSCS Student Outcomes (SOs)**

Each graduate of the program should be able to:

- Convey the understanding of, and ability to solve, problems through artifacts of computing such as specifications, code and other written documents.
- Demonstrate and apply their knowledge of fundamental data structures and algorithms to solve problems.

- Describe and explain the major concepts in the areas of operating systems, programming languages, architecture, and distributed computing.
- Demonstrate an ability to work effectively in teams on computing related projects.
- Demonstrate an ability to effectively communicate technical information.
- Demonstrate an understanding of social, professional and ethical issues related to computing.
- Obtain the skills and knowledge to be employable in positions that utilize their computing education.

## Requirements

- ENGL 1101 - English Composition I **3 Credits**
- ENGL 1102 - English Composition II **3 Credits**
- TCOM 2010 - Technical Writing **3 Credits**
- MATH 1113 - Pre-calculus **4 Credits**
- MATH 2253 - Calculus I **4 Credits**
- MATH 2254 - Calculus II **4 Credits**
- MATH 2345 - Discrete Mathematics **3 Credits**
- MATH 2260 - Introduction to Probability and Statistics **3 Credits**
- STS 2400 - Science, Technology, and Society **2 Credits**
- Area C Group 1 Take One Course from the Literature Group **3 Credits**
- Area C Group 2 Take One Course from the Art and Culture Group **3 Credits**
- Area D Two lab science courses required **8 Credits**
- Area E Group 1 American Context **3 Credits**
- Area E Group 2 World History **3 Credits**
- Area E Group 3 Behavioral Science **3 Credits**
- Area E Group 4 Cultures and Societies **3**
- COMM 2400 - Public Speaking **2 Credits**
- CSE 1002 - Introduction to the Computing Disciplines **2 Credits**
- CSE 1301 Programming & Problem Solving I **4 Credits**
- CSE 1302 Programming & Problem Solving II **4 Credits**
- SPSU 1001 - Hitch-hiker's Introduction to SPSU **1 Credits**
- CSE 3642 - Professional Practices and Ethics **2 Credits**
- CS 3123 - Programming Language Concepts **3 Credits**
- CSE 3153 - Database Systems **3 Credits**
- CS 3224 - Computer Organization & Architecture **4 Credits**
- CS 3243 - Operating Systems **3 Credits**
- CS 3424 - Data Structures **4 Credits**
- CS 4253 - Distributed Computing **3 Credits**
- CS 4413 - Algorithm Analysis **3 Credits**
- CS 4893 - Computer Science Capstone **3 Credits**
- SWE 2313 - Introduction to Software Engineering **3 Credits**
- SWE 3613 - Software System Engineering **3 Credits**
- Approved Science Elective **4 Credits**
- Approved Math Elective (MATH 2255, MATH 2306, MATH 2335, or 3000 level or above) **3 Credits**
- Upper-level CS Electives (or Approved UL CGDD/SWE/IT Electives) **9 Credits**
- Free Electives (\* MATH 1111 may not be used as free elective hours) **4 Credits**

Degree Program Total: 122

## The Five-Year BSCS-MSSWE Program

This program is likely to be of great interest to those who pursue the BSCS program and are interested in entering the job market with a high degree of preparedness by completing the requirements for a Master's degree in Software Engineering. On top of a strong CS foundation, graduates from this combined program will be trained in software project management, an in-depth understanding of requirements, design, testing, support, metrics, etc. and the processes of software development and management. Students can start taking MSSWE core graduate classes right away, even before graduating with the BSCS. Specifically, while still working on the BSCS, students can take two graduate courses applicable to the MSSWE program as electives in their BSCS degree, and the courses also count towards the MSSWE program. Students will be able to complete the MSSWE program by taking only 10 more graduate courses in an additional year.

Specific features of the combined 5-year BSCS+MS program include:

1. A waiver of all MSSWE or MSCS prerequisites with careful advisement and planning.
2. The ability to take and count two approved graduate courses – toward target MS program, taken as upper level electives in BSCS.
3. Taking the remaining ten graduate courses toward the MSSWE program during a 12-month period, including a summer. A third graduate course can be taken as an undergraduate that counts solely for the MSSWE (it does not count towards the BSCS), leaving only nine remaining courses for the MSSWE.

Note: The student must graduate with the BSCS before being fully admitted into the MSSWE program and still meet its entrance requirements.

## Software Engineering Minor

To be eligible for a minor in Software Engineering, the student must complete the following courses with a grade of "C" or better. Students must have at least 9 upper level SWE hours.

### Minor in SWE Program Objectives

Students earning a minor in Software Engineering will:

- Possess broad foundations in software engineering concepts and methodologies so they may contribute to the effective design and implementation of large scale software.

### Minor in SWE Learning Outcomes

Students earning a Software Engineering minor will have demonstrated the ability to:

- Apply SWE practices and process to software design and development.
- Demonstrate the ability to gather, analyze, develop, verify and/or validate artifacts of software engineering systems.
- Use software tools effectively in some phases of software development.

## Minor in Software Engineering

- CSE 1302 - Programming & Problem Solving II **4 Credits**
- SWE 2313 - Introduction to Software Engineering **3 Credits**
- Three additional upper-level SWE courses **9 Credits**

### Note:

SWE 1302 has a pre-requisite of SWE 1301.

## Software Engineering, BS

### Requirements

- ENGL 1101 - English Composition I **3 Credits**
- ENGL 1102 - English Composition II **3 Credits**
- TCOM 2010 - Technical Writing **3 Credits**
- ECON 2107 - Introduction to Economic Analysis **3 Credits**
- MATH 2253 - Calculus I **4 Credits** (extra hour is applied to area F)
- MATH 2254 - Calculus II **4 Credits**
- MATH 2345 - Discrete Mathematics **3 Credits**
- MATH 2260 - Introduction to Probability and Statistics **3 Credits**
- Math/Science Electives - (Math at the level of MATH 2253 or higher; Science at the level of Area D or higher) **6 Credits**
- COMM 2400 - Public Speaking **2 Credits**
- STS 2400 - Science, Technology, and Society **2 Credits**
- Area C Group 1 - Take One Course From the Literature Group **3 Credits**
- Area C Group 2 - Take One Course From the Art and Culture Group **3 Credits**
- Area D - Take Two Courses From the Laboratory Sciences Group excluding PHYS 1111, 1111L & PHYS 1112, 1112L) **8 Credits**
- PHYS 2211 - Principles of Physics I **3 Credits** (see note below)
- Area E Group 1 - American Context **3 Credits**
- Area E Group 2 - World History **3 Credits**
- Area E Group 3 - Behavioral Sciences **3 Credits**
- Area E Group 4 - Cultures and Societies **3 Credits**
- PHYS 2211L - Principles of Physics Laboratory I **1 Credits**
- SPSU 1001 - Hitch-hiker's Introduction to SPSU **1 Credits**
- CSE 1002 - Introduction to the Computing Disciplines **2 Credits**
- CSE 1301C or CSE 1301J - Programming & Problem Solving I **4 Credits**
- CSE 1302C or CSE 1302J - Programming & Problem Solving II **4 Credits**
- CSE 3642 - Professional Practices and Ethics **2 Credits**

- CSE 3153 - Database Systems **3 Credits**
- CS 3224 - Computer Organization & Architecture **4 Credits**
- CS 3424 - Data Structures **4 Credits**
- CS 3243 - Operating Systems **3 Credits**
- SWE 2313 - Introduction to Software Engineering **3 Credits**
- SWE 3623 - Software Systems Requirements **3 Credits**
- SWE 3633 - Software Architecture & Design **3 Credits**
- SWE 3643 - Software Testing and Quality Assurance **3 Credits**
- SWE 4324 - User-Centered Design **4 Credits**
- SWE 4663 - Software Project Management **3 Credits**
- SWE 4713 - SWE Application Domain **3 Credits**
- SWE 4724 - Software Engineering Project **4 Credits**
- SWE Upper Level Electives - Choose 2 courses from the approved list, at least one must be an SWE course **6 Credits**
- Free Electives - (Excludes MATH 1111, PHYS 1111, 1111L and PHYS 1112, 1112L) **5 Credits**

**Degree Program Total: 128+**

## Note:

In lieu of PHYS 2211, 2211L, an additional lab science course may be taken to form a sequence with one of the science courses in area D.

A grade of "C" or better must be earned in all CSE, CS, SWE, CGDD, and IT courses applied to degree requirement.

## Information Technology

## Offering:

Bachelor of Science in Information Technology

Bachelor of Applied Science in Information Technology (BASIT)

Bachelor of Applied Science in Health Information Technology (BAS-HIT)

Online Bachelor of Science in Information Technology (WebBSIT)

The Bachelor of Science in Information Technology (BSIT) degree has the primary objective of meeting the high demand for professional degrees in the strategy, development, and administration of integrated computing, management, and information technology systems. This offering is targeted at the metro Atlanta region, and will serve those students interested in combining computer science, management, and information technology curricula. The WebBSIT program is designed for people seeking a Bachelor's degree in Information Technology, but whose lifestyles make it difficult to attend traditional classes on campus. This program is in collaboration with other University System institutions. The Bachelor of Applied Science in Information Technology (BASIT) degree is designed to serve students who hold an associate of applied science (AAS) or associate of applied technology (AAT) degree in a computing discipline from a community college or a Technical College System of Georgia (TCSG) institution. Students will

transfer in approximately 2-years from their AAS or AAT degree and will complete additional general education and upper-level IT courses to complete their bachelor of applied science degree.

Information Technology (IT) is the term used to describe the convergence of Computer Science, Management, and Information Systems. IT emphasizes the integration and performance of information technology planning, development, implementation, and operation, and development of the infrastructure to support the processes necessary to achieve organizational objectives.

## The Faculty:

Bob Brown, *Senior Lecturer*  
Richard Halstead-Nussloch, *Professor*  
Lei Li, *Associate Professor*  
Svetlana Peltsverger, *Associate Professor*  
Han Reichgelt, *Professor and Dean*  
Rebecca Rutherford, *Professor*  
Dawn Tatum, *Lecturer*  
Susan Vande-Ven, *Senior Lecturer*  
Ming Yang, *Assistant Professor*  
Chi Zhang, *Assistant Professor*  
Guangzhi (Jack) Zheng, *Assistant Professor*

## The Program:

The courses in the major include courses from:

- Information technology
- Management
- Computer Science
- Software Engineering

The degree has Core requirements, major requirements, a required elective track and general electives. The Major contains those courses considered fundamental to the information technology field and the tracks give the student some flexibility in choice. **A grade of "C" or better must be earned in all IT, CS, CSE, MGNT, and SWE courses applied to degree requirements.**

## Areas of Study

### Information Technology Minor

To be eligible for a minor in Information Technology, the student must complete 18 credit hours of the following courses with a grade of "C" or better:

### Information Technology Minor Requirements

- CSE 1301 - Programming and Problem Solving I **4 Credits**



- IT 1324 - Advanced Programming Principles **4 Credits** or
- CSE 1302 - Programming & Problem Solving **2 4 Credits**
- IT 3123 - Hardware/Software Concepts **3 Credits** or
- CS 3224 - Computer Organization & Architecture **4 Credits**
- IT 3203 - Introduction to Web Development **3 Credits** or
- CSE 3153 - Database Systems **3 Credits**

And one of the Following:

- IT 4123 - Electronic Commerce **3 Credits**
- IT 4323 - Data Communications & Networks **3 Credits**
- IT 4823 - Information Security Administration & Privacy **3 Credits**

## **Information Technology, BAS**

This program is designed for students who have completed an AAS or AAT degree from a two year technical college in a computing discipline.

### **Requirements**

- ENGL 1101 - English Composition I **3 Credits**
- ENGL 1102 - English Composition II **3 Credits**
- MATH 1111 - College Algebra **3 Credits**
- COMM 2400 - Public Speaking **2 Credits**
- STS 2400 - Science, Technology, and Society **2 Credits**
- Area C Group 1 - Take one course from the Literature Group **3 Credits**
- Area C Group 2 - Take one course from the Art and Culture Group **3 Credits**
- Area D - Any two lab-based science courses **8 Credits**
- Area E Group 1 - American Context **3 Credits**
- Area E Group 2 - World History **3 Credits**
- Area E Group 3 - Behavioral Science **3 Credits**
- Area E Group 4 - Cultures and Societies **3 Credits**
- MATH 1113 - Pre-calculus **4 Credits**
- CSE 1301 Programming and Problem Solving I **4 Credits**
- MATH 2345 - Discrete Mathematics **3 Credits**
- IT 1324 - Advanced Programming Principles **4 Credits**
- CSE 3642 - Professional Practices and Ethics **2 Credits**
- CSE 3153 - Database Systems **3 Credits**
- IT 3123 - Hardware/Software Concepts **3 Credits**

- IT 3203 - Introduction to Web Development **3 Credits**
- IT 3223 - Software Acquisition and Project Management **3 Credits**
- IT 3423 - Operating Systems Concepts & Administration **3 Credits**
- IT 3883 - Advanced Applications Development **3 Credits**
- IT 4323 - Data Communications & Networks **3 Credits**
- IT 4823 - Information Security Administration & Privacy **3 Credits**
- CSE 1002 - Introduction to the Computing Disciplines **2 Credits**

Choose two from the following:

- IT 4123 - Electronic Commerce **3 Credits**
- IT 4203 - Advanced Web Development **3 Credits**
- IT 4153 - Advanced Database **3 Credits**
- IT 4333 - Network Configuration & Administration **3 Credits**
- IT 4683 - Management of Information Technology and Human Computer Interaction **3 Credits**
- IT 4723 - IT Policy and Law **3 Credits**
- IT 4833 - Wireless Security **3 Credits**
- IT 4843 - Ethical Hacking for Effective Defense **3 Credits**
- IT 4853 - Computer Forensics **3 Credits**
- IT 3503 - Foundations of Health Information Technology **3 Credits**

## Technical Block (AAS major courses) 37 Credits

Students may receive up to 37 technical block (major courses from the AAS degree) - 7 hours will count in AREA F and 30 hours in the technical block remainder.

**Degree Program Total: 122**

## Information Technology, BAS-HIT

This degree, which is only open to students who have completed an AAS or AAT degree in a Health Information Technology discipline, prepares students for careers in designing, supporting and administrating health information technology systems, with an emphasis on electronic health record systems.

## Requirements

- ENGL 1101 - English Composition I **3 Credits**
- ENGL 1102 - English Composition II **3 Credits**
- MATH 1111 - College Algebra **3 Credits**

- COMM 2400 - Public Speaking **2 Credits**
- STS 2400 - Science, Technology, and Society **2 Credits**
- Area C Group 1 - Take one course from the Literature Group **3 Credits**
- Area C Group 2 - Take one course from the Art and Culture Group **3 Credits**
- Area D - Any two lab-based science courses **8 Credits**
- Area E Group 1 - American Context **3 Credits**
- Area E Group 2 - World History **3 Credits**
- Area E Group 3 - Behavioral Science **3 Credits**
- Area E Group 4 - Cultures and Societies **3 Credits**
- MATH 1113 - Pre-calculus **4 Credits**
- MATH 2345 - Discrete Mathematics **3 Credits**
- CSE 1301J - Programming & Problem Solving I **4 Credits**
- IT 1324 - Advanced Programming Principles **4 Credits**
- CSE 3642 - Professional Practices and Ethics **2 Credits**
- CSE 3153 - Database Systems **3 Credits**
- IT 3123 - Hardware/Software Concepts **3 Credits**
- IT 3203 - Introduction to Web Development **3 Credits**
- IT 3223 - Software Acquisition and Project Management **3 Credits**
- IT 4323 - Data Communications & Networks **3 Credits**
- IT 4523 - Clinical Processes and Workflows: Analysis and Redesign **3 Credits**
- IT 4533 - Health Information Security and Privacy **3 Credits**
- IT 4823 - Information Security Administration & Privacy **3 Credits**
- TCOM 2010 - Technical Writing **3 Credits**
- CSE 4983 - CSE Computing Internship **3 Credits**
- CSE 1002 - Introduction to the Computing Disciplines **2 Credits**

## Technical Block (AAS major courses) 37 Credits

7 hours go into AREA F and 30 additional tech block hours are transferred

Degree Program Total: 122

## Information Technology, BS

### Requirements

- ENGL 1101 - English Composition I **3 Credits**
- ENGL 1102 - English Composition II **3 Credits**
- MATH 1113 - Pre-calculus **4 Credits** (extra hour is applied to area F)
- MATH 2253 - Calculus I **4 Credits** (extra hour is applied to area F) or

- MATH 2240 - Survey of Calculus **3 Credits**
- COMM 2400 - Public Speaking **2 Credits**
- STS 2400 - Science, Technology, and Society **2 Credits**
- Area C Group 1 - Take One Course from the Literature Group **3 Credits**
- Area C Group 2 - Take One Course from the Art and Culture Group **3 Credits**
- Area D - Any two lab-based science courses **8 Credits**
- Area E Group 1 - American Context **3 Credits**
- Area E Group 2 - World History **3 Credits**
- Area E Group 3 - Behavioral Science **3 Credits**
- Area E Group 4 - Cultures and Societies **3 Credits**
- TCOM 2010 - Technical Writing **3 Credits**
- MATH 2345 - Discrete Mathematics **3 Credits**
- MATH 2260 - Introduction to Probability and Statistics **3 Credits** or
- IET 2227 - Introduction to Statistics **3 Credits**
- CSE 1301 - Program and Problem Solving I **4 Credits**
- IT 1324 - Advanced Programming Principles **4 Credits** or CSE 1302
- CSE 1002 - Introduction to the Computing Disciplines **2 Credits**
- CSE 3642 - Professional Practices and Ethics **2 Credits**
- CSE 3153 - Database Systems **3 Credits**
- IT 3123 - Hardware/Software Concepts **3 Credits**
- IT 3203 - Introduction to Web Development **3 Credits**
- IT 3223 - Software Acquisition and Project Management **3 Credits**
- IT 3423 - Operating Systems Concepts & Administration **3 Credits**
- IT 3883 - Advanced Applications Development **3 Credits**
- IT 4123 - Electronic Commerce **3 Credits**
- IT 4323 - Data Communications & Networks **3 Credits**
- IT 4423 - Unix/Linux **3 Credits**
- IT 4683 - Management of Information Technology and Human Computer Interaction **3 Credits**
- IT 4723 - IT Policy and Law **3 Credits**
- IT 4823 - Information Security Administration & Privacy **3 Credits**
- IT 4983 - IT Capstone **3 Credits**
- Free Electives **7 Credits**
- Concentration or Technical Electives (see listing below) **12 Credits**

**Degree Program Total: 122**

## Tracks

Choose one of the tracks below and complete 3 of their courses. The 4th elective can be from the same or different track.

## Enterprise Systems Track

- IT 4203 - Advanced Web Development **3 Credits**
- IT 4153 - Advanced Database **3 Credits**
- IT 4333 - Network Configuration & Administration **3 Credits**
- IT 4903 - Special Topics in Information Technology **3 Credits**
- IT 4673 - Virtual IT Systems **3 Credits**
- IT 4713 - Business Intelligence Systems **3 Credits**

## Information Assurance & Security Track

- IT 4833 - Wireless Security **3 Credits**
- IT 4843 - Ethical Hacking for Effective Defense **3 Credits**
- IT 4853 - Computer Forensics **3 Credits**
- IT 4903 - Special Topics in Information Technology **3 Credits**

## Health Information Technology Track

- IT 3503 - Foundations of Health Information Technology **3 Credits**
- IT 4513 - Electronic Health Record Systems **3 Credits**
- IT 4523 - Clinical Processes and Workflows: Analysis and Redesign **3 Credits**
- IT 4533 - Health Information Security and Privacy **3 Credits**
- IT 4903 - Special Topics in Information Technology **3 Credits**

## Mobile and Web Track

- IT 3203 - Introduction to Web Development **3 Credits**
- IT 4203 - Advanced Web Development **3 Credits**
- IT 4903 - Special Topics in Information Technology **3 Credits**
- CGDD 4203 - Mobile and Casual Game Development **3 Credits**
- IT 4213 - Mobile Web Development **3 Credits**
- CSE 3203 - Overview of Mobile Systems **3 Credits**

## **Information Technology, BS (Online) WebBSIT**

## WebBSIT Curriculum

- ENGL 1101 - English Composition I **3 Credits**
- ENGL 1102 - English Composition II **3 Credits**
- MATH 1111 - College Algebra **3 Credits**
- MATH 1113 - Pre-calculus **4 Credits**
- COMM 2400 - Public Speaking **2 Credits**
- STS 2400 - Science, Technology, and Society **2 Credits**
- Area C Group 1 - Take one course from the Literature Group **3 Credits**
- Area C Group 2 - Take one course from the Art and Culture Group **3 Credits**
- Area D - Any two lab-based science courses **8 Credits**
- Area E Group 1 - American Context **3 Credits**
- Area E Group 2 - World History **3 Credits**
- Area E Group 3 - Behavioral Science **3 Credits**
- Area E Group 4 - Cultures and Societies **3 Credits**

## Area F (18 Credits)

- WBIT 1100 - Introduction to Information Technology **3 Credits**
- WBIT 1310 - Programming and Problem Solving **3 Credits**
- MATH 1401 - Intro to Statistics **3 Credits** (Available from WebBSIT participating institutions or through eCore®)
- WBIT 2000 - The Enterprise and IT **3 Credits**
- WBIT 2300 - Discrete Mathematics for IT **3 Credits**
- WBIT 2311 - Programming and Problem Solving II **3 Credits**

## Required Core Courses (42 Credits)

- WBIT 3010 - Technical Communication **3 Credits**
- WBIT 3110 - Systems Analysis and Design **3 Credits**
- WBIT 3111 - Information Technology Project Management **3 Credits**
- WBIT 3200 - Database Design, Development and Deployment **3 Credits**
- WBIT 3400 - Introduction to Multimedia **3 Credits**
- WBIT 3410 - Web Applications Development **3 Credits**
- WBIT 3500 - Architecture and Operating Systems **3 Credits**
- WBIT 3510 - Data Communications and Networking **3 Credits**
- WBIT 3600 - Introduction to E-Commerce **3 Credits**
- WBIT 4020 - Professional Practices and Ethics **3 Credits**
- WBIT 4030 - Senior Project **3 Credits**

- WBIT 4112 - Systems Acquisition, Integration and Implementation **Credits**
- WBIT 4120 - Human-Computer Interaction **3 Credits**
- WBIT 4520 - Information Security **Credits**

## Concentration/Electives (18 Credits)

- WBIT 4601 - Customer Relationship Management **3 Credits**
- WBIT 4602 - IT Strategy Seminar **3 Credits**
- WBIT 4610 - IT Policy and Law **3 Credits**
- Free Electives (not within the WebBSIT) - **9 Credits**

# School of Engineering

## Offering

Bachelor of Science Degrees  
Master of Science Degrees

Southern Polytechnic State University offers a variety of engineering programs, including Civil Engineering, Construction Engineering, Electrical Engineering, Mechanical Engineering, Mechatronics Engineering, Software Engineering, and Systems Engineering at the undergraduate level, and Software Engineering and Systems Engineering at the Masters level. Individuals interested in these programs should see the appropriate sections of this catalog.

Courses listed in this section of the catalog which carry the ENGR prefix, are general in nature, and are taken by more than one engineering or engineering technology major. Courses specific to individual majors may be found in the listing for the specific program.

## Civil and Construction Engineering

### Civil Engineering

#### Offering:

Bachelor of Science degree in Civil Engineering

Civil engineering is the oldest of the engineering disciplines and involves the planning, design, and construction of facilities essential to modern life.

Graduates can look forward to employment by construction companies; city and county engineering departments; state and federal transportation organizations (such as the Georgia Department of Transportation); and civil engineering

consulting and design firms. Graduates have the qualifications to enter careers in areas such as, but not limited to, transportation engineering, structural engineering, environmental engineering, geotechnical engineering, water resource engineering, and construction engineering. Typical job titles for graduates include civil engineer, construction engineer, project engineer, planner, project supervisor, consulting engineer, and design engineer.

Civil Engineering requires rigorous training in basic engineering principles along with the development of skills in the areas of planning and management of construction projects and the associated systems and resources. Graduates in the area of Civil Engineering will be required to master technical elements and to demonstrate particular competence in the areas of communication, fiscal management, and project control. The broad-based background is tailored to develop professionals who will be able to move between the technical and managerial aspects of civil engineering projects and to serve in key leadership positions within the engineering profession.

## **Faculty:**

Samuel Beadles, *P.E., Professor and Department Chair*  
Sung-Hee Kim, *Ph.D., P.E., Associate Professor*  
Wasim Barham, *Ph.D., P.E., Assistant Professor*  
M.A. Karim, *Ph.D., P.E., Assistant Professor*  
Metin Oguzmert, *Ph.D., P.E., Assistant Professor*  
Jidong Yang, *Ph.D., P.E., Assistant Professor*  
Tien M. Yee, *Ph.D., Assistant Professor*

## **Construction Engineering (ABET Accredited)**

### **Offering:**

Bachelor of Science degree in Construction Engineering

The Construction Engineering program is part of the School of Engineering at Southern Polytechnic State University. In this major the traditional areas of civil engineering and construction are combined to produce graduates who are able to work effectively in all aspects of the construction industry.

### **Accreditation**

Engineering Accreditation Commission (EAC) of ABET.

Construction Engineering requires rigorous training in basic engineering principles along with the development of skills in the areas of planning and management of construction projects and the associated systems and resources. Graduates in the area of Construction Engineering will be required to master technical elements and to demonstrate particular competence in the areas of communication, fiscal management, and project control. The broad-based background is tailored to develop professionals who will be able to move between the technical and managerial aspects of construction projects and to serve in key leadership positions within the construction industry.

Graduates can look forward to employment by construction companies; city and county construction departments; state and federal transportation organizations (such as the Georgia Department of Transportation); and civil engineering consulting and design firms. Graduates have the qualifications to enter careers in construction related fields as well, including construction engineering design, construction operations and management, construction planning and cost estimating. Typical job titles for graduates include construction engineer, project engineer, project supervisor, construction manager, and design engineer.



The Construction Engineering curriculum offers a balance of course work in engineering analysis, engineering design, construction practice, and construction management. Graduates of the program are expected to be able to:

- Create, design, analyze and improve construction processes, devices or systems.
- Apply modern construction practices and materials to construction designs.
- Apply and interpret appropriate software in developing construction engineering problems.
- Be capable of professional registration nationwide.
- Be capable of pursuing varied graduate education in engineering.
- Recognize careers in the construction engineering field and be prepared for advancement in the industry.

## Faculty:

Samuel Beadles, P.E., *Professor and Department Chair*  
Sung-Hee Kim, Ph.D., P.E., *Associate Professor*  
Wasim Barham, Ph.D., P.E., *Assistant Professor*  
M.A. Karim, Ph.D., P.E., *Assistant Professor*  
Metin Oguzmert, Ph.D., P.E., *Assistant Professor*  
Jidong Yang, Ph.D., P.E., *Assistant Professor*  
Tien M. Yee, Ph.D., *Assistant Professor*

## Areas of Study

### Civil Engineering, BS

#### Requirements

- CHEM 1211 - Principles of Chemistry I **3 Credits**
- CHEM 1212 - Principles of Chemistry II **3 Credits**
- ENGL 1101 - English Composition I **3 Credits**
- ENGL 1102 - English Composition II **3 Credits**
- MATH 2253 - Calculus I **4 Credits**
- COMM 2400 - Public Speaking **2 Credits**
- STS 2400 - Science, Technology, and Society **2 Credits**
- Area C1 - Course in English Literature **3 Credits**
- Area C2 - Course in Art and Culture **3 Credits**
- Area E1 - Course in History: Political Science **3 Credits**
- Area E2 - World Civilization **3 Credits**
- Area E3 - Course in Behavioral Science **3 Credits**
- Area E4 - International Issues **3 Credits**
- MATH 2254 - Calculus II **4 Credits**
- MATH 2260 - Introduction to Probability and Statistics **3 Credits**

**\*\*or equivalent as approved by CCE Chair**

- **MATH 2306 - Ordinary Differential Equations 3 Credits**
- **BIOL 2107 - Principles of Biology I 3 Credits**
- **BIOL 2107L - Principles of Biology I Laboratory 1 Credits**
- **PHYS 2211 - Principles of Physics I 3 Credits**
- **PHYS 2212 - Principles of Physics II 3 Credits**
- **ENGR 2214 - Engineering Mechanics – Statics 3 Credits**
- **ENGR 3131 - Strength of Materials 3 Credits**
- **ENGR 3132 - Strength of Materials Lab 1 Credits**
- **ENGR 3324 - Project Cost Analysis 4 Credits**
- **ENGR 3305 - Data Collection and Analysis in Engineering 4 Credits**
- **ENGR 3343 - Fluid Mechanics 3 Credits**
- **ENGR 3345 - Fluid Mechanics Laboratory 1 Credits**
- **CE 1000 - Orientation to Engineering and Surveying Professions 1 Credits**
- **SPSU 1001 - Hitch-hiker's Introduction to SPSU 1 Credits**
- **CE 3201 - Structural Analysis 3 Credits**
- **CE 3202 - Design of Concrete Structures 3 Credits**
- **CE 3501 - Materials for Civil & Construction Engineering 3 Credits**
- **CE 3502 - Materials for Civil & Construction Engineering Lab 1 Credits**
- **CE 3701 - Geotechnical Engineering 3 Credits**
- **CE 3708 - Geotechnical Engineering Lab 1 Credits**
- **CE 3702 - Environmental Engineering 3 Credits**
- **CE 3704 - Environmental Engineering Lab 1 Credits**
- **CE 3703 - Environmental Engineering II 3 Credits**
- **CE 4103 - Design of Steel Structures 3 Credits**
- **CE 4105 - Foundation Design 3 Credits**
- **CE 4177 - Transportation Engineering 3 Credits**
- **CE 4178 - Highway Design and Construction 3 Credits**
- **CE 4703 - Engineering Hydrology 3 Credits**
- **CE XXXX Technical Electives 6 Credits**
- **CE 4800 - Senior Project 3 Credits**
- **SURV 4470 - Land Development Design 4 Credits**

## **Degree Program Total: 130**

The Civil Engineering degree requires a grade of "C" or better in all CE, SURV, and ENGR courses applied to degree requirements.

## **CE Technical Electives: (6 hrs)**

- **CE 4704 - Engineering Hydraulic Analysis and Design 3 Credits**
- **CE 4705 - Advanced Soil Mechanics 3 Credits**
- **CE 4706 - Pavement Engineering 3 Credits**
- **CE 4707 - Design of Wood Structures 3 Credits**
- **CE 4708 - Hazardous Waste Engineering 3 Credits**

- CE 4709 - Matrix Structural Analysis 3 Credits

## **Construction Engineering, BS**

### **Requirements**

- CHEM 1211 - Principles of Chemistry I 3 Credits
- CHEM 1211L - Principles of Chemistry I Lab 1 Credits
- CHEM 1212 - Principles of Chemistry II 3 Credits
- CHEM 1212L - Principles of Chemistry II Lab 1 Credits
- ENGL 1101 - English Composition I 3 Credits
- ENGL 1102 - English Composition II 3 Credits
- MATH 2253 - Calculus I 4 Credits
- MATH 2254 - Calculus II 4 Credits
- MATH 2260 - Introduction to Probability and Statistics 3 Credits
- MATH 2306 - Ordinary Differential Equations 3 Credits
- MATH 2335 - Numerical Methods I 3 Credits
- PHYS 2211 - Principles of Physics I 3 Credits
- PHYS 2211L - Principles of Physics Laboratory I 1 Credits
- PHYS 2212 - Principles of Physics II 3 Credits
- PHYS 2212L - Principles of Physics Laboratory II 1 Credits
- COMM 2400 - Public Speaking 2 Credits
- STS 2400 - Science, Technology, and Society 2 Credits
- Area C1 - Course in English Literature 3 Credits
- Area C2 - Course in Art and Culture 3 Credits
- Area E1 - Course in History: American Perspective 3 Credits
- Area E2 - World History 3 Credits
- Area E3 - Course in Behavioral Science 3 Credits
- Area E4 - Cultures and Societies 3 Credits
- EDG 2160 - Civil Graphics and Computer Aided Drafting 3 Credits
- ENGR 2214 - Engineering Mechanics – Statics 3 Credits
- ENGR 3131 - Strength of Materials 3 Credits
- ENGR 3132 - Strength of Materials Lab 1 Credits
- ENGR 3324 - Project Cost Analysis 4 Credits
- ENGR 3343 - Fluid Mechanics 3 Credits
- CE 1000 - Orientation to Engineering and Surveying Professions 1 Credits
- SPSU 1001 - Hitch-hiker's Introduction to SPSU 1 Credits
- CE 3201 - Structural Analysis 3 Credits
- CE 3501 - Materials for Civil & Construction Engineering 3 Credits
- CE 3502 - Materials for Civil & Construction Engineering Lab 1 Credits
- CE 3701 - Geotechnical Engineering 3 Credits
- CE 3702 - Environmental Engineering 3 Credits
- CE 4177 - Transportation Engineering 3 Credits

- CE 4178 - Highway Design and Construction **3 Credits**
- CE 4703 - Engineering Hydrology **3 Credits**
- CE 4800 - Senior Project **3 Credits**
- CM 3160 - Commercial and Heavy Construction Methods **3 Credits**
- CM 3420 - Construction Estimating and Bid Preparation **4 Credits**
- CM 4510 - Construction Scheduling **3 Credits**
- CM 4560 - Construction Project Management **3 Credits**
- CM 4639 - Construction Safety & Law **4 Credits**
- SURV 2221 - Surveying I **4 Credits**
- CE 4202 - Steel and Concrete Design **4 Credits**

**Degree Program Total: 130**

The Construction Engineering degree requires a grade of "C" or better in all CE, SURV, ENGR and CM courses applied to degree requirements.

## **Electrical and Mechatronics Engineering**

### **Electrical Engineering**

#### **Offering:**

Bachelor of Science degree in Electrical Engineering

The Electrical Engineering program is part of the School of Engineering at Southern Polytechnic State University. Electrical Engineering is arguably the largest discipline of engineering. It focuses on the application of the principles of electricity and its use with electrical devices and systems. In this energy conscious world, a thorough understanding of energy and its uses is essential to the success of an electrical engineer.

Nearly every industry utilizes electrical engineers. Graduates have the qualifications to enter careers in areas such as, but not limited to, telecommunications, computer engineering, manufacturing, the aerospace industry, power generation and distribution, alternative energy, robotics, and automation. Typical job titles for graduates may include electrical engineer, electronics engineer, telecommunications engineer, project engineer, planner, project supervisor, consulting engineer, and design engineer.

Electrical Engineering requires rigorous training in basic engineering principles along with the development of skills in the areas of planning and management of design projects and the associated systems and resources. Graduates in the area of Electrical Engineering will be required to master technical elements and to demonstrate particular competence in the areas of communication, fiscal management, and project control. The broad-based background is tailored to develop professionals who will be able to move between the technical and managerial aspects of electrical engineering projects and to serve in key leadership positions within the engineering profession.

The Bachelor of Science in Electrical Engineering was approved by the Board of Regents in August 2009.

#### **Faculty:**

Lance Crimm, *P.E., Professor and Department Chair*  
Bill M. Diong, *Ph.D., Associate Professor*  
Deidra Hodges, *Ph.D., Assistant Professor*  
Yusun Chang, *Ph.D., Assistant Professor*  
Kuo-Sheng Ma, *Ph.D. Assistant Professor*  
Hoseon Lee, *Ph.D, Assistant Professor*

# Mechatronics Engineering

## Offering:

Bachelor of Science degree in Mechatronics Engineering

Mechatronics Engineering is the integration of mechanical and electrical engineering disciplines with an infusion of computer science and software engineering. Mechatronics engineers use this integrated approach to bring higher performance to engineering systems, and to make them more reliable and more cost-effective. Professionals skilled in this area have been identified as a critical need by industry and by the Society of Manufacturing Engineers. Studies conducted by the National Research Council discuss the value of interdisciplinary solutions that integrate multiple technologies across technical disciplines.

Mechatronic systems can be a complete product or a sub-component of a product. Examples of mechatronic systems include aircraft flight control and navigation systems; automotive electronic fuel injection and anti-lock brake systems; automated manufacturing systems including robots, numerical control machining centers, packaging systems and plastic injection-molding systems; artificial organs; health monitoring of engineered and surgical systems; copy machines; and many more. A common element of all these systems is the integration of analog and digital circuits, microprocessors and computers, mechanical devices, sensors, actuators, and controls.

Mechatronics Engineering graduates can select from a wide spectrum of industries for career choices and can also contribute in a variety of roles including design engineer, software engineer, project planner, product designer, and project manager. Opportunities are also available to graduates in smaller companies that need generalists who can perform both mechanical and electrical engineering functions.

The SPSU Bachelor of Science degree in Mechatronics Engineering was approved by the Board of Regents in October 2006.

## Faculty:

Matthew Marshall, *Ph.D., Assistant Professor*  
Chan Ham, *Ph.D., Assistant Professor and Program Director*  
Ying Wang, *Ph.D., Assistant Professor*  
Kevin McFall, *Ph.D., Assistant Professor*

## Areas of Study

### Electrical Engineering, BS

## Requirements

- ENGL 1101 - English Composition I **3 Credits**
- ENGL 1102 - English Composition II **3 Credits**
- COMM 2400 - Public Speaking **2 Credits**
- STS 2400 - Science, Technology, and Society **2 Credits**
- Area C1 - Course in Literature **3 Credits**
- Area C2 - Course in Art and Culture **3 Credits**
- Area E1 - American Perspective **3 Credits**
- Area E2 - World History **3 Credits**
- Area E4 - Course in Cultures and Societies **3 Credits**
- ECON 2107 - Introduction to Economic Analysis **3 Credits**
- CHEM 1211 - Principles of Chemistry I **3 Credits**
- CHEM 1211L - Principles of Chemistry I Lab **1 Credits**
- MATH 2253 - Calculus I **4 Credits**
- MATH 2254 - Calculus II **4 Credits**
- MATH 2255 - Calculus III **4 Credits**
- MATH 2306 - Ordinary Differential Equations **3 Credits**
- PHYS 2211 - Principles of Physics I **3 Credits**
- PHYS 2211L - Principles of Physics Laboratory I **1 Credits**
- PHYS 2212 - Principles of Physics II **3 Credits**
- PHYS 2212L - Principles of Physics Laboratory II **1 Credits**
- EE 1000 - Orientation and Foundations of Electrical Engineering **2 Credits**
- CSE 1301E - C++ Programming for Engineers **4 Credits**
- ENGR 2214 - Engineering Mechanics – Statics **3 Credits**
- EE 2301 - Circuit Analysis I **4 Credits**
- EE 2302 - Circuit Analysis II **3 Credits**
- EE 2401 - Semiconductor Devices **3 Credits**
- EE 2501 - Digital Logic Design **4 Credits**
- MATH 2260 - Introduction to Probability and Statistics **3 Credits**
- EE 3501 - Microprocessors & Embedded Systems **4 Credits**
- EE 3605 - Electromagnetics **3 Credits**
- EE 3701 - Signals and Systems **3 Credits**
- ENGR 4402 - Engineering Ethics **1 Credits**
- EE 3401 - Engineering Electronics **4 Credits**
- EE 3702 - Communication Systems **3 Credits**
- EE 3601 - Electric Machines **4 Credits**
- EE 4201 - Control Systems **4 Credits**
- EE 4701 - Professional Practice **3 Credits**
- EE 3/4XXX - Technical Electives **9 Credits**
- EE 3/4XXX - Engineering Science Elective **3 Credits**
- EE 4800 - Senior Project **4 Credits**
- Math Elective - Math above 2335 **3 Credits**

## Degree Program Total: 129

The Electrical Engineering degree requires a grade of "C" or better in all EE and ENGR courses applied to degree requirements.

## **Mechatronics Engineering, BS**

### Requirements

- ENGL 1101 - English Composition I **3 Credits**
- ENGL 1102 - English Composition II **3 Credits**
- COMM 2400 - Public Speaking **2 Credits**
- STS 2400 - Science, Technology, and Society **2 Credits**
- Area C Group 1 - Take One Course, Literature Group **3 Credits**
- Area C Group 2 - Take One Course, Art and Culture Group **3 Credits**
- Area E Group 1 - American Context **3 Credits**
- Area E Group 2 - World History **3 Credits**
- Area E Group 4 - Cultures and Societies **3 Credits**
- ECON 2107 - Introduction to Economic Analysis **3 Credits** (Recommended Area E-3)
- CHEM 1211 - Principles of Chemistry I **3 Credits**
- CHEM 1211L - Principles of Chemistry I Lab **1 Credits**
- MATH 2253 - Calculus I **4 Credits** (the extra hour is applied to Major Req.)
- MATH 2254 - Calculus II **4 Credits**
- MATH 2255 - Calculus III **4 Credits**
- MATH 2306 - Ordinary Differential Equations **3 Credits**
- PHYS 2211 - Principles of Physics I **3 Credits**
- PHYS 2211L - Principles of Physics Laboratory I **1 Credits**
- PHYS 2212 - Principles of Physics II **3 Credits**
- PHYS 2212L - Principles of Physics Laboratory II **1 Credits**
- EDG 1211 - Engineering Graphics I **3 Credits**
- EE 2301 - Circuit Analysis I **4 Credits**
- ENGR 2214 - Engineering Mechanics – Statics **3 Credits**
- MATH 3312 - Linear Algebra **4 Credits**
- EE 3401 - Engineering Electronics **4 Credits**
- ENGR 2501 - Engineering Materials **3 Credits**
- ENGR 3122 - Dynamics **3 Credits**
- ENGR 3343 - Fluid Mechanics **3 Credits**
- ENGR 3345 - Fluid Mechanics Laboratory **1 Credits**
- EE 3601 - Electric Machines **4 Credits**
- ENGR 4421 - Instruments and Controls **4 Credits**
- EE 4201 - Control Systems **4 Credits**
- MTRE 1000 - Introduction to Mechatronics Engineering **1 Credits**
- SPSU 1001 - Hitch-hiker's Introduction to SPSU **1 Credits**

- MTRE 3710 - Mechatronics Engineering Fundamentals **4 Credits**
- EE 2501 - Digital Logic Design **4 Credits**
- ENGR 3131 - Strength of Materials **3 Credits**
- ENGR 3132 - Strength of Materials Lab **1 Credits**
- ENGR 3125 - Machine Dynamics & Vibrations **3 Credits**
- MTRE 4000 - Advanced Controls **3 Credits**
- MTRE 4200 - Robotics Analysis and Synthesis **3 Credits**
- MTRE 4400 - Mechatronics System Design **4 Credits**
- CSE 1301E - C++ Programming for Engineers **4 Credits**
- Math Elective **3 Credits**

**Degree Program Total Hours: 130**

The Mechatronics Engineering degree requires a grade of "C" or better in all MTRE, EE, ME and ENGR courses applied to degree requirements.

## **Systems and Mechanical Engineering**

### **Mechanical Engineering**

#### **Offering:**

Bachelor of Science degree in Mechanical Engineering

Mechanical engineering is one of the largest disciplines of engineering because it is one of the broadest. It focuses on the application of the principles of mechanics and materials to design machines and devices. Mechanical engineers design devices that help society, everything from artificial knee joints to wind-turbines.

Graduates have the qualifications to enter graduate school, become a licensed professional engineer in any state after sufficient work experience, or directly enter careers in areas such as, but not limited to, manufacturing, aerospace industry, power generation and distribution, automotive design, machine design, alternative energy, robotics, and automation. Typical job titles for graduates may include design engineer, project engineer, process engineer, test engineer, development engineer, program manager, consulting engineer, and field engineer.

Mechanical Engineering requires rigorous training in basic science and engineering principles along with the development of skills in the areas of computer-aided design, instrumentation, and planning and management of design projects. Graduates in the area of Mechanical Engineering will be required to master technical elements and to demonstrate particular competence in the areas of communication, fiscal management, and project control. The broad-based background is tailored to develop professionals who will be able to move between the technical and managerial aspects of mechanical engineering projects and to serve in key leadership positions within the engineering profession. As with all engineering degrees, a mechanical engineer becomes very good at solving difficult problems which makes it a good degree for non-engineering careers as well. The Bachelor of Science in Mechanical Engineering was approved by the Board of Regents in August 2009.

#### **The Faculty:**



Mir Atiqulla, Ph.D., *Professor*  
Erhan Ilksoy, P.E., *Senior Lecturer*  
Margaret Loraine Lowder, Ph.D., *Assistant Professor*  
Mohammed S. Mayeed, Ph.D., *Assistant Professor*  
Richard Ruhala, Ph.D., *Associate Professor*  
Laura A. Ruhala, Ph.D., *Associate Professor*  
Muhammad Salman, Ph.D., *Lecturer*  
Valmiki Sooklal, Ph.D., *Assistant Professor*  
David R. Veazie, Ph.D., P.E., *Professor*

## **Systems Engineering**

### **Offering:**

Bachelor of Science degree in Systems Engineering  
Minor in Aerospace Engineering  
Minor in Nuclear Engineering

Systems Engineering is an interdisciplinary and structured approach to designing and deploying successful systems. The Systems Engineering degree blends engineering, systems thinking, and management topics. Systems Engineering addresses the business and technical needs of all stakeholders throughout the entire design process, from concept to production to operation to disposal. In this major, engineering techniques and a systems approach are combined to produce graduates who are highly valued for their problem solving and managerial skills.

Graduates of this program will understand the multidisciplinary fundamentals of engineering and possess strong team skills to solve complex problems that cross disciplinary boundaries. They will understand current technology, but also be creative thinkers and have the flexibility to change with technology. They will be able to create sustainable systems, to adapt to the new global context and be empowered for lifelong learning. Graduates can look forward to employment in the defense, aerospace, transportation, energy and telecommunications industries, as well as many other fields that look for the knowledge and skills necessary to engineer large and complex systems.

The Systems Engineering program offers two minors for all engineering students: Aerospace Engineering and Nuclear Engineering.

- The Aerospace Engineering minor provides a comprehensive education to prepare graduates for productive careers with special emphasis on the needs of aviation, aerospace engineering, and related fields.
- Students who study Nuclear Engineering will become true multi-disciplinary specialists. Graduates will enter an expanding job market in industry, national laboratories, government and academia, where one can work on problems that will have large impact on our future environment, security, health, and safety.

### **The Faculty:**

Renee J. Butler, Ph.D., P.E. *Associate Professor and Department Chair*  
Adeel Khalid, Ph.D., *Assistant Professor*  
Mahmoud Ghavi, Ph.D., *Professor*

Kamran Moghaddam, Ph.D., P.E., *Assistant Professor*  
Woodrow W. Winchester, III, Ph.D., *Associate Professor*

## **Areas of Study**

### **Aerospace Engineering Minor**

#### **Requirements**

- SYE 3801 - Aerodynamics (Aeronautic Elective) **3 Credits**
- SYE 4803 - Aeronautics Project **3 Credits**

Choose 3 courses from the following:

- SYE 3802 - Aircraft Design and Performance (Aeronautic Elective) **3 Credits**
- SYE 3803 - Fundamentals of Avionics **3 Credits**
- SYE 4801 - Aircraft Propulsion **3 Credits**
- SYE 4802 - Helicopter Theory **3 Credits**
- SYE 4804 - Special Topics **Credits** related to aerospace engineering **3 Credits**

Minor Program Total: 15

### **Mechanical Engineering, BS**

#### **Requirements**

- CHEM 1211 - Principles of Chemistry I **3 Credits**
- CHEM 1211L - Principles of Chemistry I Lab **1 Credits**
- ENGL 1101 - English Composition I **3 Credits**
- ENGL 1102 - English Composition II **3 Credits**
- ENGL 21XX - Core C1-Literature **3 Credits**
- MATH 2253 - Calculus I **4 Credits**
- MATH 2254 - Calculus II **4 Credits**
- MATH 2255 - Calculus III **4 Credits**
- MATH 2260 - Introduction to Probability and Statistics **3 Credits**
- MATH 2306 - Ordinary Differential Equations **3 Credits**

- MATH 2335 - Numerical Methods I **3 Credits** \* May substitute MATH 3312 Linear Algebra (4 credits) or equivalent as approved by SME Chair department chair.
- PHYS 2211 - Principles of Physics I **3 Credits**
- PHYS 2211L - Principles of Physics Laboratory I **1 Credits**
- PHYS 2212 - Principles of Physics II **3 Credits**
- PHYS 2212L - Principles of Physics Laboratory II **1 Credits**
- COMM 2400 - Public Speaking **2 Credits**
- STS 2400 - Science, Technology, and Society **2 Credits**
- TCOM 2010 - Technical Writing **3 Credits**
- Core C2 - Art & Culture **3 Credits**
- Core E1 - American Context **3 Credits**
- Core E2 - World History **3 Credits**
- Core E3 - Behavioral Science Or ECON 2107 - Introduction to Economic Analysis **3 Credits**
- Core E4 - Culture & Societies **3 Credits**
- SPSU 1001 - Hitch-hiker's Introduction to SPSU **1 Credits**
- EDG 1211 - Engineering Graphics I **3 Credits**
- CSE 1301E - C++ Programming for Engineers **4 Credits**
- ENGR 2214 - Engineering Mechanics – Statics **3 Credits**
- ENGR 3122 - Dynamics **3 Credits**
- ENGR 3125 - Machine Dynamics & Vibrations **3 Credits**
- ENGR 3131 - Strength of Materials **3 Credits**
- ENGR 3132 - Strength of Materials Lab **1 Credits**
- ENGR 3343 - Fluid Mechanics **3 Credits**
- ENGR 3345 - Fluid Mechanics Laboratory **1 Credits**
- ENGR 4402 - Engineering Ethics **1 Credits**
- EE 2301 - Circuit Analysis I **4 Credits**
- ME 1001 - Introduction to Mechanical Engineering **2 Credits**
- ME 3101 - Materials Science and Engineering **3 Credits**
- ME 3201 - Product Realization **2 Credits**
- ME 3410 - Thermodynamics **3 Credits**
- ME 3440 - Heat Transfer **3 Credits**
- ME 3501 - Dynamic Systems & Control Theory **3 Credits**
- ME 4141 - Machine Design I **3 Credits**
- ME 4250 - Computer Aided Engineering **3 Credits**
- ME 4403 - Heat Transfer and Thermodynamics Lab **1 Credits**
- ME 4501 - Vibrations & Controls Lab **1 Credits**
- ME 4201 - Senior Design I **1 Credits**
- ME 4202 - Senior Design II **3 Credits**
- Approved technical electives **8 Credits**

## Degree Program Total: 129

The Mechanical Engineering degree requires a grade of "C" or better in all ME and ENGR courses applied to degree requirements.

## Technical Electives

Technical Electives can be any non-required 3000 and/or 4000 level courses from ME, including Special Topics (ME 3903 or ME 4903) and Undergraduate Research (ME 4801, ME 4802, and ME 4803). Some ENGR, EE, MTRE or SYE may be approved for technical electives by the program coordinator or the department chair. Students may focus their technical electives in Aerospace Engineering (SYE 3801, SYE 3802, SYE 3803, SYE 4801, SYE 4802, SYE 4803) or Nuclear Engineering (SYE 3501, SYE 3502, SYE 4501, SYE 4502, or SYE 4503).

\*\*If student doesn't take ECON 2107 for Core E-3, the student must take SYE 3320 - Engineering Economics and Decision Analysis as a Technical Elective.

## Nuclear Engineering Minor

### Requirements

- SYE 3501 - Fundamentals of Nuclear Engineering **3 Credits**
- SYE 3502 - Radiation Detection and Measurement **3 Credits**
- SYE 4501 - Nuclear Power Generation **3 Credits**
- SYE 4502 - Radiation Protection and Health Physics **3 Credits**
- SYE 4503 - Nuclear Fuel Cycle **3 Credits**

Minor Program Total: 15

## Systems Engineering, BS

### Requirements

- ENGL 1101 - English Composition I **3 Credits**
- ENGL 1102 - English Composition II **3 Credits**
- COMM 2400 - Public Speaking **2 Credits**
- TCOM 2010 - Technical Writing **3 Credits**
- STS 2400 - Science, Technology, and Society **2 Credits**
- Area C Group 1 - Take One Course From the Literature Group **3 Credits**
- Area C Group 2 - Take One Course From the Art and Culture Group **3 Credits**
- Area E Group 1 - American Context **3 Credits**
- Area E Group 2 - World History **3 Credits**
- Area E Group 3 - Behavioral Science **3 Credits**
- Area E Group 4 - Cultures and Societies **3 Credits**

- CHEM 1211 - Principles of Chemistry I **3 Credits**
- CHEM 1211L - Principles of Chemistry I Lab **1 Credits**
  
- CSE 1301E - C++ Programming for Engineers **4 Credits** or
- CSE 1301J - Programming & Problem Solving I **4 Credits**
  
- CSE 1302E - Object Oriented C++ Programming for Engineers **4 Credits** or
- CSE 1302J - Programming & Problem Solving II **4 Credits**
  
- SPSU 1001 - Hitch-hiker's Introduction to SPSU **1 Credits**
- EE 2301 - Circuit Analysis I **4 Credits**
- ENGR 2214 - Engineering Mechanics – Statics **3 Credits**
- ENGR 3122 - Dynamics **3 Credits**
- MATH 2253 - Calculus I **4 Credits**
- MATH 2254 - Calculus II **4 Credits**
- MATH 2255 - Calculus III **4 Credits**
- MATH 3312 - Linear Algebra **4 Credits**
- PHYS 2211 - Principles of Physics I **3 Credits**
- PHYS 2211L - Principles of Physics Laboratory I **1 Credits**
- PHYS 2212 - Principles of Physics II **3 Credits**
- PHYS 2212L - Principles of Physics Laboratory II **1 Credits**
- SYE 2100 - Systems Analysis and Design **3 Credits**
- SYE 3320 - Engineering Economics and Decision Analysis **3 Credits**
- SYE 2600 - Applications of Probability **3 Credits**
- SYE 3100 - Systems Reliability and Maintainability **3 Credits**
- SYE 3120 - Contemporary Technological Systems: Design, Analysis, and Architecture **3 Credits**
- SYE 3200 - Human Machine Systems **3 Credits**
- SYE 3300 - Program Management **3 Credits**
- SYE 3400 - Engineering Optimization I: Deterministic Decision Models **3 Credits**
- SYE 3600 - Statistics with Applications **3 Credits**
  
- SYE 3700 - Manufacturing and Production Systems **3 Credits** or
- SYE 3710 - Logistics and Supply Chain Systems **3 Credits**
  
- SYE 4400 - Engineering Optimization II: Stochastic Decision Models **3 Credits**
- SYE 4500 - System Modeling and Simulation **3 Credits**
- SYE 4900 - System Design Project **3 Credits**
- Approved technical electives **12 Credits**

## Degree Program Total: 129

The Systems Engineering degree requires a grade of 'C' or better for any course with an ENGR or SYE prefix and ENGL 1101. A 'D' or better is required for any other course.

## Technical Electives

Technical Electives can be 3000 and/or 4000 level courses from SYE, SWE, MTRE, ME, CE, EE or MATH. Other courses may be approved by the department chair. Students may focus their technical electives in Aerospace Engineering or Nuclear Engineering.

# School of Engineering Technology & Management

## Offering

Bachelor of Science Degrees

Master of Science Degrees

Southern Polytechnic State University offers a variety of engineering programs, including Civil Engineering, Construction Engineering, Electrical Engineering, Mechanical Engineering, Mechatronics Engineering, Software Engineering, and Systems Engineering at the undergraduate level, and Software Engineering and Systems Engineering at the Masters level. Individuals interested in these programs should see the appropriate sections of this catalog.

Courses listed in this section of the catalog which carry the ENGR prefix, are general in nature, and are taken by more than one engineering or engineering technology major. Courses specific to individual majors may be found in the listing for the specific program.

## Engineering Technology

Engineering Technology (ET) is the profession in which knowledge of applied mathematics and natural sciences gained by higher education, experience, and practice is devoted to the application of engineering principles and the implementation and extension of technological advances for the benefit of society. Engineering Technology education focuses primarily on analyzing, applying, designing, implementing, and improving existing and emerging technologies. The intent of Engineering Technology programs is to prepare graduates for the practice of engineering closest to the product improvement, manufacturing, and engineering operational functions.

The backbone of ET degree programs is experiential learning. The mathematical and science requirements are enhanced by the number of laboratory courses offered with the lectures. Further, lecture courses emphasize the application of mathematics, science, and engineering and we offer labs that are hands-on and project-based in nature.

SPSU offers Engineering Technology degrees in civil, computer, electrical, industrial, mechanical, and telecommunications. These programs are accredited by the Technology Accreditation Commission of ABET, 111 Market Place, Suite 1050, Baltimore, MD 21202-4012; telephone: (410) 347-7700.

Engineering Technology students are encouraged to pursue registration as a Professional Engineer. The first step in the registration process is the successful completion of the Fundamentals of Engineering (FE) Exam. Students may take this exam during your senior year. Additional requirements for professional licensure following graduation if the accumulation of a minimum of seven years of progressive experience and successful completion of the Professional Engineer (PE) exam.

## Business Administration

### Offering:

The Bachelor of Applied Science in Business Management  
The Bachelor of Arts in Management  
The Bachelor of Science in Accounting  
The Bachelor of Science in Business Administration

The Masters of Business Administration (See the graduate catalog)  
The Masters of Science in Accounting (See the graduate catalog)

The baccalaureate programs in Business Administration prepare students for successful careers in management and marketing. Graduates of the program advance into supervisory and management positions in service and industrial enterprises.

The **Bachelor of Applied Science in Business Management** degree is designed to cap designated associate degree programs. Admission to this program requires completion of an associate of applied science or associate of applied technology degree, in Management/Supervising or Marketing from a SACS accredited school in the Technical College System of Georgia. The program covers the common professional component in Business Administration with additional courses to fulfill the requirements of Areas A through E of the core. This coursework will prepare a candidate for a supervisory role in business or industry.

The **Bachelor of Arts in Management** provides students with a strong foundation in the management of the employees of a business. The program has a strong interpersonal focus that prepares students for the changing dynamics of management. The program also offers the students the flexibility to tailor their program of study to meet their specific career plans.

The **Bachelor of Science in Accounting** (BSA) is designed to give students a broad understanding of the major components of the accounting industry and the foundation requirements for taking the certified public accountant (CPA) exam as specified by the Georgia State Board of Accountancy. Included in the 122 hours required to earn this degree is a comprehensive coverage of business principles.

The **Bachelor of Science in Business Administration** provides students with a strong foundation in the management of business and service enterprises. The program has a technology focus that prepares students for the changing business arena. The program has concentrations: Accounting, Finance, Management, Management Information Systems, and Marketing.

*Note: Students enrolled in Business Administration and Accounting majors are required to earn a "C" average (2.0 GPA) in their ACCT, ECON, and MGNT courses, two grades of "D" may be used for graduation purposes in the major courses. A grade of "C" or better is required in the capstone course.*

## **The Faculty:**

*Donald Ariail, Associate Professor, Accounting*  
*Mark Hiatt, Assistant Professor, Management*  
*Zeynep Kelani, Lecturer, Economics*  
*Amine Khayati, Assistant Professor, Finance*  
*Mikhail Melnik, Associate Professor, Economics*  
*Max M. North, Professor, Management Information System*  
*Muhammad A. Obeidat, Professor, Operations & Technology Management*  
*Gregory Quinet, Assistant Professor, Management*  
*Ronny Richardson, Professor and Department Chair, Operations Management*  
*Shannon Shumate, Lecturer, Accounting*  
*Mona Sinha, Assistant Professor, Marketing*  
*Sondra Smith, Temporary Full-time Instructor, Accounting*  
*Sandria Stephenson, Assistant Professor, Accounting*  
*Sonia Toson, Assistant Professor, Law*

*Bor-Yi Tsay, Professor, Accounting*  
*Sandra Vasa-Sideris, Professor, Management*

## **Accounting Minor**

Students who wish to receive a concentration or minor in Accounting must take:

### **Accounting Minor Courses**

- ACCT 3230 - Intermediate Accounting I **3 Credits**
- ACCT 3231 - Intermediate Accounting II **3 Credits**
- ACCT 3530 - Cost Accounting **3 Credits**
- ACCT 4535 - Accounting Information Systems **3 Credits**  
Select one of the following:
- ACCT 4530 - Advanced Accounting **3 Credits** or
- ACCT 4560 - Intro to Federal Income Taxes **3 Credits**

**Minor Program Total: 15**

## **Accounting, BS**

The Bachelor of Science in Accounting (BSA) is designed to give students a broad understanding of the major components of the accounting industry and the foundation requirements for taking the certified public accountant (CPA) exam as specified by the Georgia State Board of Accountancy. Included in the 122 hours required to earn this degree is a comprehensive coverage of business principles.

### **Requirements**

#### **Area A Essential Skills**

- ENGL 1101 - English Composition I **3 Credits**
- ENGL 1102 - English Composition II **3 Credits**
- MATH 1113 - Pre-calculus **4 Credits**



## Area B Institutional Options

- COMM 2400 - Public Speaking **2 Credits**
- STS 2400 - Science, Technology, and Society **2 Credits**

## Area C Humanities/Fine Arts

Group 1: Literature (Select one)

- ENGL 2111 - Early World Literature **3 Credits**
- ENGL 2112 - World Literature Mid-1600s to Present **3 Credits**
- ENGL 2120 - British Literature Early to Present **3 Credits**
- ENGL 2121 - Early British Literature **3 Credits**
- ENGL 2122 - British Literature Late 1700s to Present **3 Credits**
- ENGL 2130 - American Literature Early to Present **3 Credits**
- ENGL 2131 - Early American Literature **3 Credits**
- ENGL 2132 - American Literature Mid 1800s to Present **3 Credits**
- ENGL 2141 - Early Western Literature **3 Credits**
- ENGL 2142 - Western Literature 1600s to Present **3 Credits**
- ENGL 2300 - African-American Literature and Culture **3 Credits**

Group 2: Art and Culture (Select one)

- ARTS 2001 - Art Appreciation **3 Credits**
- ARTS 2002 - Drama Appreciation **3 Credits**
- ARTS 2003 - Music Appreciation **3 Credits**
- ARTS 2004 - History of Contemporary American Music **3 Credits**
- FREN 1002 - Elementary French II **3 Credits**
- GRMN 1002 - Elementary German II **3 Credits**
- SPAN 1002 - Elementary Spanish II **3 Credits**

## Area D Science, Mathematics, and Technology

- MATH 2240 - Survey of Calculus **3 Credits**
- plus Science: select two (2) science courses with labs (labs must be taken concurrently) - **8 Credits**
- ASTR 1000K - Introduction to the Universe **4 Credits**
- ASTR 1010K - Introduction to the Universe II **4 Credits**
- BIOL 2107 - Principles of Biology I **3 Credits**
- BIOL 2107L - Principles of Biology I Laboratory **1 Credits**
- BIOL 2108 - Principles of Biology II **3 Credits**
- BIOL 2108L - Principles of Biology II Laboratory **1 Credits**

- CHEM 1211 - Principles of Chemistry I **3 Credits**
- CHEM 1211L - Principles of Chemistry I Lab **1 Credits**
- CHEM 1212 - Principles of Chemistry II **3 Credits**
- CHEM 1212L - Principles of Chemistry II Lab **1 Credits**
- PHYS 1111 - Introductory Physics I **3 Credits**
- PHYS 1111L - Introductory Physics Laboratory I **1 Credits**
- PHYS 1112 - Introductory Physics II **3 Credits**
- PHYS 1112L - Introductory Physics Laboratory II **1 Credits**
- PHYS 2211 - Principles of Physics I **3 Credits**
- PHYS 2211L - Principles of Physics Laboratory I **1 Credits**
- PHYS 2212 - Principles of Physics II **3 Credits**
- PHYS 2212L - Principles of Physics Laboratory II **1 Credits**
- GEOL 1101K - Introductory Geosciences **4 Credits**
- ENVS 2202K - Introduction to Environmental Science **4 Credits**

## Area E Social Sciences

Group 1: American Context (select one)

- HIST 2111 - United States History to 1877 **3 Credits**
- HIST 2112 - United States History since 1877 **3 Credits**
- POLS 1101 - American Government **3 Credits**

Area E-2: World History (select one)

- HIST 1111 - Survey of World Civilization pre 1500 **3 Credits**
- HIST 1112 - Survey of World Civilization post 1500 **3 Credits**

Area E-3: Behavioral Science (select one)

- ECON 1101 - Introduction to Economics **3 Credits**
- ECON 2107 - Introduction to Economic Analysis **3 Credits**
- PSYC 1101 - Introduction to General Psychology **3 Credits**
- SOCI 1101 - Introduction to Sociology **3 Credits**

Area E-4: Cultures and Societies (select one)

- ANTH 1102 - Introduction to Anthropology **3 Credits**
- ES 1100 - Ethnic Studies **3 Credits**
- GEOG 1101 - Introduction to Human Geography **3 Credits**
- POLS 2401 - Global Issues **3 Credits**
- RELG 1200 - World Religion **3 Credits**

## Area F

- ACCT 2101 - Principles of Financial Accounting **3 Credits**
- ACCT 2102 - Principles of Managerial Accounting **3 Credits**
- ECON 2105 - Principles of Macroeconomics **3 Credits**
- ECON 2106 - Principles of Microeconomics **3 Credits**
- COMM 2000 - Business Communication **3 Credits**

- **MGNT 2201 - Business Computer Applications 3 Credits**

## Common Professional Core

- **MGNT 1000 - Orientation to Business 1 Credits**
- **SPSU 1001 - Hitch-hiker's Introduction to SPSU 1 Credits**
- **IET 2227 - Introduction to Statistics 3 Credits**
- **MGNT 3105 - Management and Organizational Behavior 3 Credits**
- **MGNT 3135 - Principles of Marketing 3 Credits**
- **MGNT 3125 - Business Finance 3 Credits**
- **MGNT 3145 - Legal Environment of Business 3 Credits**
- **MGNT 3205 - Management Information Systems 3 Credits**
- **MGNT 4135 - Project Management 3 Credits**
- **MGNT 4151 - Operations Management 3 Credits**

## Core Accounting Courses

- **ACCT 3230 - Intermediate Accounting I 3 Credits**
- **ACCT 3231 - Intermediate Accounting II 3 Credits**
- **ACCT 4530 - Advanced Accounting 3 Credits**
- **ACCT 3530 - Cost Accounting 3 Credits**
- **ACCT 4535 - Accounting Information Systems 3 Credits**
- **MGNT 4545 - Legal Environment of Business II 3 Credits**
- **MGNT 4545 - Legal Environment of Business II 3 Credits**
- **ACCT 4555 - Auditing and Assurance 3 Credits**
- **ACCT 4560 - Intro to Federal Income Taxes 3 Credits**

## Electives (Select 3 courses)

- **ACCT 4562 - Federal Taxation II 3 Credits**
  - **ACCT 4565 - Fraud Examination 3 Credits**
  - **MGNT 4115 - Human Resource Management 3 Credits**
  - **MGNT 4125 - Technology and Public Issues 3 Credits**
  - **MGNT 4145 - International Management 3 Credits**
  - **MGNT 4190 - Entrepreneurship 3 Credits**
  - **MGNT 4595 - Business Strategy 3 Credits**
- Free Elective - 2 credit hours

Degree Program Total: 122

## **Business Administration, BS**

### **Area A - Essential Skills (10 hours)**

- ENGL 1101 - English Composition I **3 Credits**
- ENGL 1102 - English Composition II **3 Credits**
- MATH 1113 - Pre-calculus **4 Credits**

### **Area B - Institutional Options (4 hours)**

- COMM 2400 - Public Speaking **2 Credits**
- STS 2400 - Science, Technology, and Society **2 Credits**

### **Area C1 - Humanities (3 hours)**

- ENGL 2111 - Early World Literature **3 Credits**
- ENGL 2112 - World Literature Mid-1600s to Present **3 Credits**
- ENGL 2120 - British Literature Early to Present **3 Credits**
- ENGL 2121 - Early British Literature **3 Credits**
- ENGL 2122 - British Literature Late 1700s to Present **3 Credits**
- ENGL 2130 - American Literature Early to Present **3 Credits**
- ENGL 2131 - Early American Literature **3 Credits**
- ENGL 2132 - American Literature Mid 1800s to Present **3 Credits**
- ENGL 2141 - Early Western Literature **3 Credits**
- ENGL 2142 - Western Literature 1600s to Present **3 Credits**
- ENGL 2300 - African-American Literature and Culture **3 Credits**

### **Area C2 - Fine Arts (3 hours)**

- ARTS 2001 - Art Appreciation **3 Credits**

- ARTS 2002 - Drama Appreciation **3 Credits**
- ARTS 2003 - Music Appreciation **3 Credits**
- ARTS 2004 - History of Contemporary American Music **3 Credits**
- FREN 1002 - Elementary French II **3 Credits**
- GRMN 1002 - Elementary German II **3 Credits**
- SPAN 1002 - Elementary Spanish II **3 Credits**

## Area D1 - Mathematics (4 hours)

- MATH 2240 - Survey of Calculus **3 Credits**

## Area D2 - Science (8 hours)

- ASTR 1000K - Introduction to the Universe **4 Credits**
- BIOL 2107 - Principles of Biology I **3 Credits**
- BIOL 2108 - Principles of Biology II **3 Credits**
- CHEM 1211 - Principles of Chemistry I **3 Credits**
- CHEM 1212 - Principles of Chemistry II **3 Credits**
- PHYS 1111 - Introductory Physics I **3 Credits**
- PHYS 1112 - Introductory Physics II **3 Credits**
- PHYS 2211 - Principles of Physics I **3 Credits**
- PHYS 2212 - Principles of Physics II **3 Credits**

## Area E1 - Social Sciences - American Context (3 hours)

- HIST 2111 - United States History to 1877 **3 Credits**
- HIST 2112 - United States History since 1877 **3 Credits**
- POLS 1101 - American Government **3 Credits**

## Area E2 - Social Sciences - World History (3 hours)

- HIST 1111 - Survey of World Civilization pre 1500 **3 Credits**
- HIST 1112 - Survey of World Civilization post 1500 **3 Credits**

## Area E3 - Behavioral Science (3 hours)

- ECON 1101 - Introduction to Economics **3 Credits**
- PSYC 1101 - Introduction to General Psychology **3 Credits**
- SOCI 1101 - Introduction to Sociology **3 Credits**

## Area E4 - Cultures and Societies (3 hours)

- ANTH 1102 - Introduction to Anthropology **3 Credits**
- ES 1100 - Ethnic Studies **3 Credits**
- GEOG 1101 - Introduction to Human Geography **3 Credits**
- POLS 2401 - Global Issues **3 Credits**
- RELG 1200 - World Religion **3 Credits**

## Area F (18 hours)

- ACCT 2101 - Principles of Financial Accounting **3 Credits**
- ACCT 2102 - Principles of Managerial Accounting **3 Credits**
- COMM 2400 - Public Speaking **2 Credits**
- ECON 2105 - Principles of Macroeconomics **3 Credits**
- ECON 2106 - Principles of Microeconomics **3 Credits**
- MGNT 2201 - Business Computer Applications **3 Credits**

## Required Courses

- MGNT 1000 - Orientation to Business **1 Credits**
- IET 2227 - Introduction to Statistics **3 Credits**
- IET 3356 - Quality Concepts and Systems Design **3 Credits**
- IET 4405 - Operations Research - Concepts, Models and Methods **3 Credits**
- MGNT 3105 - Management and Organizational Behavior **3 Credits**
- MGNT 3125 - Business Finance **3 Credits**
- MGNT 3135 - Principles of Marketing **3 Credits**
- MGNT 3145 - Legal Environment of Business **3 Credits**
- MGNT 3205 - Management Information Systems **3 Credits**
- MGNT 4115 - Human Resource Management **3 Credits**
- MGNT 4125 - Technology and Public Issues **3 Credits**
- MGNT 4135 - Project Management **3 Credits**
- MGNT 4145 - International Management **3 Credits**
- MGNT 4151 - Operations Management **3 Credits**

- **MGNT 4595 - Business Strategy 3 Credits**

## Business Administration Options

### **Concentration, Business Electives, Directed Electives, or a Minor in Another Discipline**

Students in the Bachelor of Science in Business Administration program may complete the remaining 17 hours of credit by taking electives in a concentration (management, marketing, management of information systems), directed electives, or by completing a minor in another field. At least three courses must be at the 3000-level or above.

#### **Option 1: Concentration**

Students may complete 12 hours (four courses) in Accounting, Management, Marketing, or MIS by completing four electives in the selected area (see the elective lists that follows). At least three courses must be at the 3000-level or above.

#### **Option 2: Business Electives**

Students may complete 12 hours of elective credit from all of the business electives. At least three courses must be at the 3000-level or above.

#### **Option 3: Directed Electives**

Students may create a customized group of four electives from business and other disciplines, subject to advisor approval. At least three of the courses must be at the 3000-level or above.

#### **\*Option 4: Minor in another field of study**

Students may complete a Minor in another field (15-18 hours). See the catalog for requirements in a specific minor. Must complete free electives if the minor is less than 17 hours. Note that some minors require 18 hours.

### Accounting Concentration Electives (15 Credits)

- **ACCT 3230 - Intermediate Accounting I 3 Credits**
- **ACCT 3231 - Intermediate Accounting II 3 Credits**
- **ACCT 3530 - Cost Accounting 3 Credits**
- **ACCT 4535 - Accounting Information Systems 3 Credits**
  
- **ACCT 4530 - Advanced Accounting 3 Credits or**
- **ACCT 4560 - Intro to Federal Income Taxes 3 Credits**

## Finance Concentration Electives (12 Credits)

- MGNT 3231 - Management of Financial Institutions **3 Credits**
- MGNT 4232 - Financial Planning and Capital Budgeting **3 Credits**
- MGNT 4233 - Investment Analysis and Portfolio Management **3 Credits**
- MGNT 4234 - International Finance **3 Credits**

## Management Concentration Electives: Select 4 courses from the list below

- MGNT 4100 - Business Systems Analysis and Design **3 Credits**
- MGNT 4140 - Management of Networks and Telecommunications **3 Credits**
- MGNT 4185 - Technology Management **3 Credits**
- MGNT 4195 - Current Readings in Management of Technology and Operations **3 Credits**
- MGNT 4903 - Special Topics in Management
- MGNT 4103 - Marketing Management **3 Credits**
- MGNT 3170 - Leadership **3 Credits**
- MGNT 4190 - Entrepreneurship **3 Credits**

## Management Information Systems Concentration Electives (12 Credits)

- IT 1113 - Programming Principles **3 Credits**
- MGNT 3500 - Database Management **3 Credits**
- MGNT 4100 - Business Systems Analysis and Design **3 Credits**
- MGNT 4140 - Management of Networks and Telecommunications **3 Credits**

## Marketing Concentration Electives (12 Credits)

- MGNT 3210 - Professional Selling and Customer Relationship Management **3 Credits**
- MGNT 3224 - Business Marketing **3 Credits**
- MGNT 3228 - Market Research **3 Credits**
- MGNT 4103 - Marketing Management **3 Credits**
- MGNT 4903 - Special Topics in Marketing

## **Business Management, BAS**



The Bachelor of Applied Science degree is designed to cap designated associate degree programs. Admission to this program requires completion of an associate of applied science or associate of applied technology degree in Business Management or Marketing from a SACS accredited school in the Technical College System of Georgia. The program covers the common professional component in Business Administration with additional courses to fulfill the requirements of Areas A through E of the core. This coursework will prepare a candidate for a supervisory role in business or industry.

## Area A - Essentials Skills

- ENGL 1101 - English Composition I **3 Credits**
- ENGL 1102 - English Composition II **3 Credits**
- MATH 1111 - College Algebra **3 Credits**

## Area B - Institutional Options (4 hours)

- COMM 2400 - Public Speaking **2 Credits**
- STS 2400 - Science, Technology, and Society **2 Credits**

## Area C1 - Literature of the World (3 hours)

- ENGL 2111 - Early World Literature **3 Credits**
- ENGL 2112 - World Literature Mid-1600s to Present **3 Credits**
- ENGL 2120 - British Literature Early to Present **3 Credits**
- ENGL 2121 - Early British Literature **3 Credits**
- ENGL 2122 - British Literature Late 1700s to Present **3 Credits**
- ENGL 2130 - American Literature Early to Present **3 Credits**
- ENGL 2131 - Early American Literature **3 Credits**
- ENGL 2132 - American Literature Mid 1800s to Present **3 Credits**
- ENGL 2141 - Early Western Literature **3 Credits**
- ENGL 2142 - Western Literature 1600s to Present **3 Credits**
- ENGL 2300 - African-American Literature and Culture **3 Credits**

## Area C2 - Art and Culture

- ARTS 2001 - Art Appreciation **3 Credits**
- ARTS 2002 - Drama Appreciation **3 Credits**
- ARTS 2003 - Music Appreciation **3 Credits**
- ARTS 2004 - History of Contemporary American Music **3 Credits**

- FREN 1002 - Elementary French II **3 Credits**
- GRMN 1002 - Elementary German II **3 Credits**
- SPAN 1002 - Elementary Spanish II **3 Credits**

## Area D1 - Mathematics (4 hours)

- MATH 1113 - Pre-calculus **4 Credits**

## Area D2 - Science (8 hours)

- ASTR 1000K - Introduction to the Universe **4 Credits**
- BIOL 2107 - Principles of Biology I **3 Credits**
- BIOL 2107L - Principles of Biology I Laboratory **1 Credits**
- CHEM 1211 - Principles of Chemistry I **3 Credits**
- CHEM 1211K - Principles of Chemistry (ECORE) **4 Credits**
- CHEM 1211L - Principles of Chemistry I Lab **1 Credits**
- CHEM 1212 - Principles of Chemistry II **3 Credits**
- CHEM 1212K - Principles of Chemistry II (ECORE) **4 Credits**
- CHEM 1212L - Principles of Chemistry II Lab **1 Credits**
- PHYS 1111 - Introductory Physics I **3 Credits**
- PHYS 1111L - Introductory Physics Laboratory I **1 Credits**
- PHYS 1112 - Introductory Physics II **3 Credits**
- PHYS 1112L - Introductory Physics Laboratory II **1 Credits**
- GEOL 1101K - Introductory Geosciences **4 Credits**

## Area E1 - Social Sciences - American Context (3 hours)

- HIST 2111 - United States History to 1877 **3 Credits**
- HIST 2112 - United States History since 1877 **3 Credits**
- POLS 1101 - American Government **3 Credits**

## Area E2 - Social Sciences - World History (3 hours)

- HIST 1111 - Survey of World Civilization pre 1500 **3 Credits**
- HIST 1112 - Survey of World Civilization post 1500 **3 Credits**

## Area E3 - Social Sciences - Behavioral Science (3 hours)

- ECON 1101 - Introduction to Economics **3 Credits**
- PSYC 1101 - Introduction to General Psychology **3 Credits**
- SOCI 1101 - Introduction to Sociology **3 Credits**

## Area E4 - Social Sciences - Cultures and Societies

- ANTH 1102 - Introduction to Anthropology **3 Credits**
- ES 1100 - Ethnic Studies **3 Credits**
- GEOG 1101 - Introduction to Human Geography **3 Credits**
- RELG 1200 - World Religion **3 Credits**
- POLS 2401 - Global Issues **3 Credits**

## Technical Block

Students who have completed an A.A.S. in Business Management/Supervision or Marketing from a SACS accredited school in the Technical College System of Georgia may obtain transfer credit in the Technical Block for up to 38 credit hours in business.

## Required Business Administration Courses (outside of Technical Block)

- SPSU 1001 - Hitch-hiker's Introduction to SPSU **1 Credits**
- MGNT 1000 - Orientation to Business **1 Credits**
- MATH 2240 - Survey of Calculus **3 Credits**
- IET 2227 - Introduction to Statistics **3 Credits**
- MGNT 3105 - Management and Organizational Behavior **3 Credits**
- MGNT 3125 - Business Finance **3 Credits**
- MGNT 3145 - Legal Environment of Business **3 Credits**
- MGNT 3205 - Management Information Systems **3 Credits**
- MGNT 4115 - Human Resource Management **3 Credits**
- MGNT 4135 - Project Management **3 Credits**
- MGNT 4145 - International Management **3 Credits**
- MGNT 4151 - Operations Management **3 Credits**
- MGNT 4595 - Business Strategy **3 Credits**
- Upper level Management elective

Degree Program Total: 122

## **Business Minor**

Students wishing to receive a minor in Business Administration must take:

ACCT 2101 - Principles of Financial Accounting

MGNT 3105 - Management and Organizational Behavior

Plus three additional business courses (9 hours), two of which must be upper division.

- You may not use MGNT 1000 to satisfy a requirement in the minor.
- Additionally, accounting courses beyond ACCT 2101 may not be used for the business minor.
- Students majoring in Accounting are not eligible for the minor in Business Administration.

## **Entrepreneurship Minor**

### Entrepreneurship Minor

- ACCT 2101 - Principles of Financial Accounting **3 Credits**
- MGNT 3105 - Management and Organizational Behavior **3 Credits**
- MGNT 3120 - Entrepreneurial Finance **3 Credits**
- MGNT 3135 - Principles of Marketing **3 Credits**
- MGNT 3170 - Leadership **3 Credits**
- MGNT 4190 - Entrepreneurship **3 Credits**

## **Finance Minor**

### Finance Minor

- MGNT 3125 - Business Finance **3 Credits**  
plus 12 hours of Finance Electives such as:
- MGNT 3120 - Entrepreneurial Finance **3 Credits**
- MGNT 3231 - Management of Financial Institutions **3 Credits**
- MGNT 4232 - Financial Planning and Capital Budgeting **3 Credits**
- MGNT 4233 - Investment Analysis and Portfolio Management **3 Credits**

- **MGNT 4234 - International Finance 3 Credits**

## **International Business Minor**

### International Business Minor

- **ACCT 2101 - Principles of Financial Accounting 3 Credits**
- **MGNT 3105 - Management and Organizational Behavior 3 Credits**
- **MGNT 3125 - Business Finance 3 Credits**
- **MGNT 3135 - Principles of Marketing 3 Credits**
- **MGNT 4145 - International Management 3 Credits**
- **POLS 4301 - International Political Economy 3 Credits**
- **SPAN 2002 - Intermediate Spanish II 3 Credits**  
or equivalent language course

## **Management BA**

The Bachelor of Arts in Management program provides students with a strong foundation in the management of the employees of a business. The program has a strong interpersonal focus that prepares students for the changing dynamics of management. The program also offers the students the flexibility to tailor their program of study to meet their specific career plans.

### Area A - Essential Skills (9 hours)

- **ENGL 1101 - English Composition I 3 Credits**
- **ENGL 1102 - English Composition II 3 Credits**
- **MATH 1111 - College Algebra 3 Credits**

### Area B - Institutional Options (4 hours)

- **COMM 2400 - Public Speaking 2 Credits**
- **STS 2400 - Science, Technology, and Society 2 Credits**

### Area C1 - Humanities/Fine Arts - Literature (3 hours)

- ENGL 2111 - Early World Literature **3 Credits**
- ENGL 2112 - World Literature Mid-1600s to Present **3 Credits**
- ENGL 2120 - British Literature Early to Present **3 Credits**
- ENGL 2121 - Early British Literature **3 Credits**
- ENGL 2122 - British Literature Late 1700s to Present **3 Credits**
- ENGL 2130 - American Literature Early to Present **3 Credits**
- ENGL 2131 - Early American Literature **3 Credits**
- ENGL 2132 - American Literature Mid 1800s to Present **3 Credits**
- ENGL 2141 - Early Western Literature **3 Credits**
- ENGL 2142 - Western Literature 1600s to Present **3 Credits**
- ENGL 2300 - African-American Literature and Culture **3 Credits**

## Area C2 - Humanities/Fine Arts - Art and Culture (3 hours)

- ARTS 2001 - Art Appreciation **3 Credits**
- ARTS 2002 - Drama Appreciation **3 Credits**
- ARTS 2003 - Music Appreciation **3 Credits**
- ARTS 2004 - History of Contemporary American Music **3 Credits**
- FREN 1002 - Elementary French II **3 Credits**
- GRMN 1002 - Elementary German II **3 Credits**
- SPAN 1002 - Elementary Spanish II **3 Credits**

## Area D - Science, Mathematics, and Technology (12 hours)

- MATH 1113 - Pre-calculus **4 Credits**  
Take any two courses of the following (course must have a lab that is taken concurrently)
- ASTR 1000K - Introduction to the Universe **4 Credits**
- BIOL 2107 - Principles of Biology I **3 Credits**
- BIOL 2107L - Principles of Biology I Laboratory **1 Credits**
- BIOL 2108 - Principles of Biology II **3 Credits**
- BIOL 2108L - Principles of Biology II Laboratory **1 Credits**
- CHEM 1211 - Principles of Chemistry I **3 Credits**
- CHEM 1211K - Principles of Chemistry (ECORE) **4 Credits**
- CHEM 1211L - Principles of Chemistry I Lab **1 Credits**
- CHEM 1212 - Principles of Chemistry II **3 Credits**
- CHEM 1212K - Principles of Chemistry II (ECORE) **4 Credits**
- CHEM 1212L - Principles of Chemistry II Lab **1 Credits**
- PHYS 1111 - Introductory Physics I **3 Credits**
- PHYS 1111L - Introductory Physics Laboratory I **1 Credits**
- PHYS 1112 - Introductory Physics II **3 Credits**

- **PHYS 1112L - Introductory Physics Laboratory II 1 Credits**

## **Area E1 - Social Sciences - American Context (3 hours)**

- **HIST 2111 - United States History to 1877 3 Credits**
- **HIST 2112 - United States History since 1877 3 Credits**
- **POLS 1101 - American Government 3 Credits**  
HIST 2911 (1 credit hour) may be required for students who have a transfer credit for American History or American Government to meet US or GA history or Constitution requirements.

## **Area E2 - World History (3 hours)**

- **HIST 1111 - Survey of World Civilization pre 1500 3 Credits**
- **HIST 1112 - Survey of World Civilization post 1500 3 Credits**

## **Area E3 - Behavioral Science (3 hours)**

- **ECON 1101 - Introduction to Economics 3 Credits**
- **PSYC 1101 - Introduction to General Psychology 3 Credits**
- **SOCI 1101 - Introduction to Sociology 3 Credits**

## **Area E4- Cultures and Societies**

- **ANTH 1102 - Introduction to Anthropology 3 Credits**
- **ES 1100 - Ethnic Studies 3 Credits**
- **GEOG 1101 - Introduction to Human Geography 3 Credits**
- **POLS 2401 - Global Issues 3 Credits**
- **RELG 1200 - World Religion 3 Credits**

## **Area F (18 hours)**

- **ACCT 2101 - Principles of Financial Accounting 3 Credits**
- **ACCT 2102 - Principles of Managerial Accounting 3 Credits**
- **COMM 2000 - Business Communication 3 Credits**

- ECON 2105 - Principles of Macroeconomics **3 Credits**
- ECON 2106 - Principles of Microeconomics **3 Credits**
- MGNT 2201 - Business Computer Applications **3 Credits**

## Bachelor of Arts - Management - Required Courses (38 hours)

- MGNT 1000 - Orientation to Business **1 Credits**
- SPSU 1001 - Hitch-hiker's Introduction to SPSU **1 Credits**
- IET 2227 - Introduction to Statistics **3 Credits**
- MGNT 3105 - Management and Organizational Behavior **3 Credits**
- MGNT 3125 - Business Finance **3 Credits**
- MGNT 3135 - Principles of Marketing **3 Credits**
- MGNT 3145 - Legal Environment of Business **3 Credits**
- MGNT 4115 - Human Resource Management **3 Credits**
- MGNT 3170 - Leadership **3 Credits**
- COMM 4100 - Small Group Communication **3 Credits**
- PSYC 4600 - Conflict Resolution **3 Credits**
- MGNT 4145 - International Management **3 Credits**
- MGNT 4595 - Business Strategy **3 Credits**

## Option 1 and Option 2

Bachelor of Arts - Management majors may select Option 1 or Option 2 to complete in addition to the required courses.

**Option 1** - *Select 5 courses (15 hours) from Group 1 and Group 2*

- **Group 1:** Select 3-5 courses of the following courses (9-15 hours)
  - MGNT 4103 - Marketing Management **3 Credits**
  - MGNT 4125 - Technology and Public Issues **3 Credits**
  - MGNT 4135 - Project Management **3 Credits**
  - MGNT 4185 - Technology Management **3 Credits**
  - MGNT 4075 - Healthcare Management **3 Credits**
  - MGNT 4190 - Entrepreneurship **3 Credits**
  - MGNT 4195 - Current Readings in Management of Technology and Operations **3 Credits**
  - MGNT 4203 Special Topics in Management
- **Group 2** - (select 0 to two of the following courses (0-6 hours)
  - TCOM 3030 - Instructional Design **3 Credits**
  - COMM 3035 - Organizational Communication **3 Credits**
  - COMM 3040 - Health Communication **3 Credits**
  - COMM 3065 - International Communication **3 Credits**
  - TCOM 3145 - Social Media Integration **3 Credits**

**Option 2** - *Complete one of the following minors (15-18 hours)*



Technical Communication  
Professional Writing  
International Studies  
Psychology  
Pre-Law  
Public Policy  
Global Communication  
Leadership and Organizational Communication

Free Electives - 6-9 hours

## **Management Information Systems minor**

Management Information Systems Minor

- MGNT 3205 - Management Information Systems **3 Credits**
- MGNT 3500 - Database Management **3 Credits**
- MGNT 4100 - Business Systems Analysis and Design **3 Credits**
- MGNT 4140 - Management of Networks and Telecommunications **3 Credits**
- TCOM 3400 - Foundations of Design for the Web **3 Credits**

## **Management Minor**

Management Minor

- MGNT 3105 - Management and Organizational Behavior **3 Credits**
- MGNT 3170 - Leadership **3 Credits**  
plus 3 of the following (9 hours):
- MGNT 4100 - Business Systems Analysis and Design **3 Credits**
- MGNT 4103 - Marketing Management **3 Credits**
- MGNT 4185 - Technology Management **3 Credits**
- MGNT 4190 - Entrepreneurship **3 Credits**
- MGNT 4195 - Current Readings in Management of Technology and Operations **3 Credits**

## **Management of Operations and Technology Minor**

## Management of Operations and Technology Minor

- MGNT 4125 - Technology and Public Issues **3 Credits**
- MGNT 4135 - Project Management **3 Credits**
- MGNT 4140 - Management of Networks and Telecommunications **3 Credits**
- MGNT 4151 - Operations Management **3 Credits**
- MGNT 4185 - Technology Management **3 Credits**
- MGNT 4195 - Current Readings in Management of Technology and Operations **3 Credits**

## Marketing Minor

### Marketing Minor

- MGNT 3135 - Principles of Marketing **3 Credits**  
Plus four of the following courses:
- MGNT 3210 - Professional Selling and Customer Relationship Management **3 Credits**
- MGNT 3224 - Business Marketing **3 Credits**
- MGNT 3228 - Market Research **3 Credits**
- MGNT 4103 - Marketing Management **3 Credits**
- MGNT 394x Special Topics in Marketing **3 Credits**

## Civil Engineering Technology

## Civil Engineering Technology

### Offering:

The Bachelor of Science in Civil Engineering Technology  
The Bachelor of Science in Geospatial Technology: Land Surveying Option  
The Bachelor of Science in Geospatial Technology: Geographical Information Systems (GIS) Option  
The Bachelor of Science in Environmental Engineering Technology  
Certificate in Geographical Information Systems (GIS)  
Certificate in Land Surveying

All of these programs and certificates provide the knowledge and skills for graduates to play an effective role in the rehabilitation of the nation's infrastructure. In addition, our programs emphasize sustainability and environmental control which are essential in today's practice. Our graduates are immediately employable and

productive. This ability of our graduates to "**hit the ground running**" is highly valued by industry employers.

## Accreditation

The B.S. Civil Engineering Technology program is accredited by the Engineering Technology Accreditation Commission of ABET, <http://www.abet.org>.

The B.S. Geospatial Technology: Land Surveying Option is accredited by the Applied Science Accreditation Commission of ABET, <http://www.abet.org>.

## The Faculty:

Daniel L. Branham, *Lecturer*

John M. Lee, *Instructor*

Mark G. Lee, *Instructor*

Mehrdad Mesbahi, *Associate Professor*

Fatih Oncul, *Assistant Professor*

Allen D. Roberts, *Assistant Professor*

Nancy J. Turner, *Lecturer*

Matthew M. Wilson, *Professor*

Timothy W. Zeigler, *Professor and Department Chair*

## B.S. Civil Engineering Technology

Civil Engineering Technology is a broad field producing engineering technologists with versatile backgrounds.

Graduates of the **B.S. Civil Engineering Technology Program** have the qualifications to enter careers in:

Construction  
Surveying  
Geotechnical  
Site development  
Structural Design  
Transportation  
Urban Planning  
Environmental Technologies

Civil Engineering Technology (CET) Program prepares graduates for analysis and design of civil engineering systems and facilities. In addition to fundamental civil engineering courses students take management and civil software application courses. The CET program offers courses in several civil engineering technology fields, such as:

- **Environmental Engineering Technology:** Analysis and design of systems and facilities to correct or control the pollution of air, land, or water. For example, design of water treatment and wastewater plants, and solid waste disposal facilities. Many career opportunities exist with municipalities, industry, consulting firms and governmental agencies.
- **Structural Engineering Technology:** Planning, preparation, construction, and inspection of modern buildings and bridges and other structures. In their coursework, students analyze and design structural members of steel, reinforced concrete and other engineering materials.

- **Geotechnical Engineering Technology:** Subsurface investigations, and field and laboratory tests; and design and analysis for civil engineering works such as foundations, dams, and retaining walls.
- **Transportation Engineering Technology:** Planning and maintenance of all types of transportation facilities including streets, highways, mass transit systems, railroads, airfields, ports, harbors and pipelines.
- **Geospatial Technology (Surveying and Mapping):** Utilization of the state-of-the-art surveying equipment (including theodolites, total stations, GPS units, and field-to-plot systems) in developing maps, designing and laying out construction projects and in planning land development for residential and commercial enterprises.

**Professional Engineer:** In Georgia and approximately thirty-five other states in the U.S., the BS-CET degree along with the appropriate number of years of experience, and the passage of two 8-hour examinations (FE and PE), qualifies a graduate to become a licensed Professional Engineer (PE). The FE exam can be taken while a senior enrolled in the CET curriculum.

**Licensed Land Surveyor:** CET majors whose curriculum contains at least six elective hours of surveying coursework meet the educational requirements to become a licensed as a Professional Land Surveyor (PLS) in Georgia. In addition, they must obtain four-years of acceptable experience and pass the FLS and PLS examinations.

### **B. S. Environmental Engineering Technology**

Graduates of the **Environmental Engineering Technology Program** are prepared for analysis, design and management and operation of environmental facilities. A graduate shall understand the concepts of professional practice and the role and responsibilities of public institutions, as well as private organizations in preserving and maintaining the quality of the environment. Electives in the program are available in environmental chemistry, ecology, and management.

**Professional Engineer:** In Georgia and approximately thirty-five other states in the U.S., the B.S. Environmental Engineering Technology degree along with the appropriate number of years of experience, and the passage of two 8-hour examinations (FE and PE) qualifies a graduate to become a licensed Professional Engineer (PE). The FE exam can be taken while a senior enrolled in the CET curriculum.

### **B.S. Geospatial Technology: Land Surveying Option**

Graduates of B.S. Geospatial Technology: Land Surveying Option are capable of operating modern surveying equipment including theodolites, electronic total stations, robotic instrumentation, Global Positioning Systems (GPS) satellite receivers, and optical alignment devices. Mapping photogrammetry and remote sensing.

In laboratories, students develop maps from field measurements, design and layout construction projects, plan subdivision developments and establish horizontal and vertical control using satellite geodesy. Computer analysis is used extensively in reducing data, planning field layouts, plotting boundaries, drawing (CAD) plats and map production.

Students also study topics from the Civil Engineering Technology program including elementary structures, fluid mechanics, hydrology and the design and construction of highways. Courses in mathematics, business principles and core requirements provide the students added depth.

With focused laboratory based classes, students develop the critical thinking needed to work in this field. Using a variety of tools - GPS receivers, electronic distance meters, laser total stations, and data collection equipment to name a few - students become adept at creating maps from field measurements, designing and laying out construction projects, and planning subdivision developments. Field exercises, which take place right on campus, help prepare you to work in the private sector, government and utilities, or engineering practices.

**Professional Registration:**

**Registered Land Surveyor:** Graduates exceed the educational requirements to become licensed as a Registered Land Surveyor (RLS) in Georgia. In addition, they must obtain four-years of acceptable experience and pass the FLS and PLS examinations.

**B. S. Geospatial Technology: Geographical Information Systems (GIS) Option**

Graduates of the **B. S. Geospatial Technology: Geographical Information Systems (GIS) Option** are capable of applying GIS skills in mapping, data analysis, software applications, database administration, project management, remote sensing, and spatial analysis. Careers are available with large corporations (as well as small businesses); state, local and federal agencies and the military. GIS applications are strong in urban planning, environmental control, and transportation design.

## Civil Engineering Technology, BS

### Requirements

- ENGL 1101 - English Composition I **3 Credits**
- ENGL 1102 - English Composition II **3 Credits**
- COMM 2400 - Public Speaking **2 Credits**
- STS 2400 - Science, Technology, and Society **2 Credits**
- Area C Group 1 Take One Course from the Literature Group **3 Credits**
- Area C Group 2 Take One Course from the Art and Culture Group **3 Credits**
- Area D CHEM 1211, CHEM 1211L and PHYS 2211, PHYS 2211L **8 Credits**
- Area E Group 1 American Context **3 Credits**
- Area E Group 2 World History **3 Credits**
- Area E Group 3 Behavioral Science **3 Credits**
- Area E Group 4 Cultures and Societies **3 Credits**
- MATH 1113 - Pre-calculus **4 Credits**
- MATH 2253 - Calculus I **4 Credits**
- MATH 2254 - Calculus II **4 Credits**
- SPSU 1001 - Hitch-hiker's Introduction to SPSU **1 Credits**

- CET 1000 - Orientation to Civil Engineering Technology **1 Credits**
- CET 2110 - Problem Solving Methods in CET **3 Credits**
- CET 3410 - Soil Properties and Site Exploration **3 Credits**
- CET 3410L - Soil Properties Lab **1 Credits**
- CET 3110 - Construction Materials and Sustainability **3 Credits**
- CET 3110L - Construction Materials Lab **1 Credits**
- CET 3120 - Cost Estimating and Scheduling in CET **3 Credits**
- CET 3120L - Plan Reading and Take Offs Lab **1 Credits**
- CET 3210 - Structural Mechanics **3 Credits**
- CET 3510 - Traffic Analysis and Road Design **2 Credits**
- CET 3510L - Traffic Analysis and Road Design Lab **1 Credits**
- CET 3130 - Applied Fluid Mechanics and Hydraulics **2 Credits**
- CET 3130L - Fluids and Hydraulics Lab **1 Credits**
- CET 3310 - Water Treatment and Distribution **2 Credits**
- CET 3310L - Water Treatment and Distribution Lab **1 Credits**
- CET 3320 - Wastewater Collection and Treatment **2 Credits**
- CET 3320L - Wastewater Collection and Treatment Lab **1 Credits**
- CET 3220 - Applied Structural Steel Design **3 Credits**
- CET 3230 - Concrete Infrastructure Design **3 Credits**
- CET 3430L - Site Exploration and Field Testing Lab **1 Credits**
- CET 4110 - Ethics of Engineering **1 Credits**
- CET 4120 - Senior Design and Engineering Documentation **3 Credits**
- CET 4130 - Special Inspections **2 Credits**
- CET 4240L - Structural Detailing Lab **1 Credits**
- CET 4310 - Stormwater Management and Erosion Control **2 Credits**
- CET 4310L - Erosion Control Lab **1 Credits**
- SURV 2221 - Surveying I **4 Credits**
- SURV 3421 - Geographic Information Systems I **4 Credits**
- EDG 2160 - Civil Graphics and Computer Aided Drafting **3 Credits**
- ENGT 2124 - Statics with Applications **3 Credits**
- ENGT 3124 - Strength of Materials with Applications **3 Credits**
- ENGT 3124L - Strength of Materials Lab **1 Credits**
- CET Electives **9 Credits**

**Degree Program Total: 123**

CET students are required to earn a grade of "C" or better in all courses required in the major and all courses used as electives.

## **Environmental Engineering Technology, BS**

### **Requirements**

## Area A:

- ENGL 1101 - English Composition I **3 Credits**
- ENGL 1102 - English Composition II **3 Credits**
- MATH 1113 - Pre-calculus **4 Credits**

## Area B:

- COMM 2400 - Public Speaking **2 Credits**
- STS 2400 - Science, Technology, and Society **2 Credits**

## Area C:

- ENGL Literature **3 Credits**
- ARTS 2001, **2002, 2003, 2004** or **FRENCH, GERMAN, SPANISH 1002** **3 Credits**

## Area D

- CHEM 1211 - Principles of Chemistry I **3 Credits**
- CHEM 1211L - Principles of Chemistry I Lab **1 Credits**
- CHEM 1212 - Principles of Chemistry II **3 Credits**
- CHEM 1212L - Principles of Chemistry II Lab **1 Credits**
- MATH 2253 - Calculus I **4 Credits** (extra hour added to core Area F)

## Area E:

- Take one course from each Social Science Social Science group ( E1, E2, E3, E4) **12 Credits**

## Area F:

Core related to major.

- EDG 2160 - Civil Graphics and Computer Aided Drafting **3 Credits**
- PHYS 2211 - Principles of Physics I **3 Credits**
- PHYS 2211L - Principles of Physics Laboratory I **1 Credits**
- MATH 2254 - Calculus II **4 Credits**
- CET 2110 - Problem Solving Methods in CET **3 Credits**
- SURV 2110 - Introduction to Mapping **4 Credits**

## Additional Requirements

- CE 1000 - Orientation to Engineering and Surveying Professions **1 Credits**
- SPSU 1001 - Hitch-hiker's Introduction to SPSU **1 Credits**
- CET 2110 - Problem Solving Methods in CET **3 Credits**
- CET 2200 - Introduction to Structures **4 Credits**
- CET 3110 - Construction Materials and Sustainability **3 Credits**
- CET 3110L - Construction Materials Lab **1 Credits**
- CET 3120 - Cost Estimating and Scheduling in CET **3 Credits**
- CET 3120L - Plan Reading and Take Offs Lab **1 Credits**
- CET 3130 - Applied Fluid Mechanics and Hydraulics **2 Credits**
- CET 3130L - Fluids and Hydraulics Lab **1 Credits**
- CET 3310 - Water Treatment and Distribution **2 Credits**
- CET 3310L - Water Treatment and Distribution Lab **1 Credits**
- CET 3320 - Wastewater Collection and Treatment **2 Credits**
- CET 3320L - Wastewater Collection and Treatment Lab **1 Credits**
- CET 3410 - Soil Properties and Site Exploration **3 Credits**
- CET 3410L - Soil Properties Lab **1 Credits**
- CET 4310 - Stormwater Management and Erosion Control **2 Credits**
- CET 4310L - Erosion Control Lab **1 Credits**
- CET 4320 - Unit Operations in Environmental Engineering **4 Credits**
- CET 4330 - Solid Waste Management **3 Credits**
- CET 4110 - Ethics of Engineering **1 Credits**
- CET 4120 - Senior Design and Engineering Documentation **3 Credits**
- POLS 3401 - Environmental Law and Policy **3 Credits**
- MATH MAJOR COURSES: Excess from AREA A **1 Credits**
- CM 4710 - Construction Safety **4 Credits**
- ENVS 3100K - Soil & Water Science **4 Credits**
- ENVS 2202K - Introduction to Environmental Science **4 Credits**

## Major Electives:

Take minimum of 6 hours from major electives listed below:

- MGNT 3105 - Management and Organizational Behavior **3 Credits**
- MET 3400 - Thermodynamics and Heat Transfer **3 Credits**
- SET 3240 - Hydraulic Structures **3 Credits**
- BIOL 3300K - Ecology **4 Credits**
- CHEM 3150K - Environmental Chemistry **4 Credits**
- CET 4340 - Air Pollution Control **3 Credits**

**Degree Program Total: 123**



EvET students are required to earn a grade of "C" or better in all courses required in the major and all courses used as electives.

## **Geographical Information Systems Certificate**

The Geographical Information Systems (GIS) Certificate program is designed to prepare students with a practical set of GIS marketable skills who have a background in GIS applications such as surveying, real estate, marketing, geography or business background. There are five courses required in the certificate program.

### **Required Courses (19 Credits)**

- SURV 2110 - Introduction to Mapping **4 Credits**
- SURV 3421 - Geographic Information Systems I **4 Credits**
- SURV 4420 - Remote Sensing **4 Credits**
- SURV 4422 - Geographic Information Systems II **4 Credits**
- SURV 4110 - Geographical Information Systems (GIS) Practice **3 Credits**

**Certificate Program Total: 19**

## **Land Surveying Certificate**

The Land Surveying Certificate program is designed to prepare surveyors with the basic education necessary to take the Fundamentals of Land Surveying Exam and exceeds the State of Georgia academic registration requirements to become a Registered Land Surveyor. There are six courses required in the certificate program.

### **Required Courses (22 Credits)**

- SURV 2221 - Surveying I **4 Credits**
- SURV 3222 - Surveying II **4 Credits**
- SURV 4465 - Legal Aspects of Land Surveying **4 Credits**
- SURV 4475 - Land Surveying Practice **2 Credits**
- SURV 4470 - Land Development Design **4 Credits**
- CET 4310 - Stormwater Management and Erosion Control **2 Credits**

**Certificate Program Total: 21**

# Structural Engineering Technology, BS

(pending BOR approval)

## Requirements

- ENGL 1101 - English Composition I **3 Credits**
- ENGL 1102 - English Composition II **3 Credits**
- COMM 2400 - Public Speaking **2 Credits**
- STS 2400 - Science, Technology, and Society **2 Credits**
- Area C Group 1 - Take One Course from the Literature Group **3 Credits**
- Area C Group 2 - Take One Course from the Art and Culture Group **3 Credits**
- Area D - CHEM 1211, 1211L and PHYS 2211, 2211L **8 Credits**
- Area E Group 1 - American Context **3 Credits**
- Area E Group 2 - World History **3 Credits**
- Area E Group 3 - Behavioral Science **3 Credits**
- Area E Group 4 - Cultures and Societies **3 Credits**
- MATH 1113 - Pre-calculus **4 Credits** (extra hour is applied to core related to major)
- MATH 2253 - Calculus I **4 Credits** (extra hour is applied to core related to major)
- MATH 2254 - Calculus II **4 Credits**
- MATH 3312 - Linear Algebra **4 Credits**
- EDG 2160 - Civil Graphics and Computer Aided Drafting **3 Credits**
- ENGR 2214 - Engineering Mechanics – Statics **3 Credits**
- CE 1000 - Orientation to Engineering and Surveying Professions **1 Credits**
- SPSU 1001 - Hitch-hiker's Introduction to SPSU **1 Credits**
- CET 2110 - Problem Solving Methods in CET **3 Credits**
- ENGR 3131 - Strength of Materials **3 Credits**
- ENGR 3132 - Strength of Materials Lab **1 Credits**
- CET 3110 - Construction Materials and Sustainability **3 Credits**
- CET 3210 - Structural Mechanics **3 Credits**
- CET 3120 - Cost Estimating and Scheduling in CET **3 Credits**
- CET 3130 - Applied Fluid Mechanics and Hydraulics **2 Credits**
- CET 3220 - Applied Structural Steel Design **3 Credits**
- CET 3230 - Concrete Infrastructure Design **3 Credits**
- CET 3410 - Soil Properties and Site Exploration **3 Credits**
- CET 4410 - Foundation and Retaining Wall Design **3 Credits**
- SET 3260 - Masonry and Timber Design **4 Credits**
- SET 3250 - Structural Loads and Connections **3 Credits**
- SET 4240 - Structural Rehabilitation **3 Credits**
- CET 4210 - Computer Methods in Structures **4 Credits**
- CET 4230 - Advanced Concrete Design **4 Credits**
- SET 4250 - Bridge Design **3 Credits**
- CET 4110 - Ethics of Engineering **1 Credits**
- CET 4120 - Senior Design and Engineering Documentation **3 Credits**
- MGNT 3105 - Management and Organizational Behavior **3 Credits**

## CET Electives

Take a minimum 8 hours from the courses listed below:

- CET 4220 - LFRD Steel Design **4 Credits**
- CET 4310 - Stormwater Management and Erosion Control **2 Credits**
- SET 3240 - Hydraulic Structures **3 Credits**
- CET 4420 - Earth Dam and Levee Design **3 Credits**

## Degree Program Total 130

CET students are required to earn a grade of "C" or better in all courses required in the major and all courses used as electives.

## Surveying and Mapping, BS

### Requirements:

- ENGL 1101 - English Composition I **3 Credits**
- ENGL 1102 - English Composition II **3 Credits**
- TCOM 2010 - Technical Writing **3 Credits**
- STS 2400 - Science, Technology, and Society **2 Credits**
- Area C Group 1 - Take One Course From the Literature Group **3 Credits**
- Area C Group 2 - Take One Course From the Art and Culture Group **3 Credits**
- COMM 2400 - Public Speaking **2 Credits**
- MATH 1113 - Pre-calculus **4 Credits** (extra hour is applied to area F)
- MATH 2253 - Calculus I **4 Credits** (extra hour is applied to area F)
- MATH 2254 - Calculus II **4 Credits**
- MATH 2260 - Introduction to Probability and Statistics **3 Credits**
- Math Elective - **3 Credits**
- Area D - Any Two Lab Sciences **8 Credits**
- PHYS 1111 - Introductory Physics I **3 Credits**
- PHYS 1111L - Introductory Physics Laboratory I **1 Credits**
- PHYS 1112 - Introductory Physics II **3 Credits**
- Area E Group 1 - American Context **3 Credits**
- Area E Group 2 - World History **3 Credits**
- Area E Group 3 - Behavioral Science **3 Credits**
- Area E Group 4 - Cultures and Societies **3 Credits**
- PHYS 1112L - Introductory Physics Laboratory II **1 Credits**
  
- IT 1113 - Programming Principles **3 Credits** or
- CS 2123 - C Programming **3 Credits**

- CET 3130 - Applied Fluid Mechanics and Hydraulics **2 Credits**
- CE 1000 - Orientation to Engineering and Surveying Professions **1 Credits**
- SPSU 1001 - Hitch-hiker's Introduction to SPSU **1 Credits**
- MGNT 3105 - Management and Organizational Behavior **3 Credits**
- EDG 2160 - Civil Graphics and Computer Aided Drafting **3 Credits**
- CET 2200 - Introduction to Structures **4 Credits**
- CET 3510 - Traffic Analysis and Road Design **2 Credits**
- CET 4310 - Stormwater Management and Erosion Control **2 Credits**
- CET 3120 - Cost Estimating and Scheduling in CET **3 Credits**
- SURV 2221 - Surveying I **4 Credits**
- SURV 3222 - Surveying II **4 Credits**
- SURV 4410 - Surveying Computations and Adjustments **4 Credits**
- SURV 3421 - Geographic Information Systems I **4 Credits**
- SURV 4465 - Legal Aspects of Land Surveying **4 Credits**
- SURV 4470 - Land Development Design **4 Credits**
- SURV 4415 - Geodetic Surveying Methods **4 Credits**
- SURV 4475 - Land Surveying Practice **2 Credits**
- SURV Electives **4 Credits**
- Free Elective **3 Credits**

**Degree Program Total: 129 hours**

### **Note:**

*Surveying students are required to earn a grade of "C" or better in all courses required in the major and all courses used as electives.*

*PHYS 1111 and PHYS 1112 are required.*

*If you use PHYS 1111/PHYS 1112 in Area D then you may use 4 hours of either CET or SURV 1-2000 level courses or any Lab Science to fulfill the Area F requirement.*

*If you use PHYS 1111/PHYS 1112 in Area D then you may use 4 hours of either CET or SURV 3-4000 level courses or any Lab Science to fulfill the major requirement.*

## **Electrical and Computer Engineering Technology**

## **Electrical and Computer Engineering Technology**

### **Offering:**

The Bachelor of Science in Computer Engineering Technology  
The Bachelor of Science in Electrical Engineering Technology  
The Bachelor of Science in Telecommunications Engineering Technology

## Accreditation

The Bachelor of Science degree programs in Electrical Engineering Technology, Computer Engineering Technology, and Telecommunications Engineering Technology are accredited by the Engineering Technology Accreditation Committee (ETAC) of ABET, 111 Market Place, Suite 1050, Baltimore, MD 21202 ([www.ABET.org](http://www.ABET.org)).

## Electrical and Computer Engineering Technology

Your challenge: Create a computer-aided testing system. Your solution: Write software, design circuits, and demonstrate how the two work together. Your result: Technological expertise that translates into high-powered careers.

Highly ranked and nationally respected, our three engineering technology programs provide plenty of hands-on learning. Flexible schedules give you the option of attending day or night, and our faculty bring their consulting experience into every lab. In small classes and on team projects, you learn the practical skills needed in many careers, from design and test engineering to research and development, sales, management, and telecommunications network administration. The majority of Engineering Technology graduates obtain jobs as engineers and fill many engineering positions in the US. Industry and educational leaders consider our graduates among the nation's best.

For the first two and a half years, all students take a common curriculum of fundamentals, circuits, electronics, and data communication, as well as calculus and physics. Courses in speech, technical writing, and composition help develop your communication skills, which are key to advancement. Our Industry Advisory Board, which includes representatives from BellSouth, Georgia Power, Home Depot, and Lockheed, among others, helps keep our programs in line with industrial innovation. And student professional and honors organizations offer design competitions and networking opportunities that are both fun and practical.

Engineering Technology is a branch of engineering education that emphasizes the practical aspects of engineering rather than abstract concepts or theories. It is a blend of the application of science, engineering knowledge, and technical skills used in support of engineering activities. The Electrical and Computer Engineering Technology Department at Southern Polytechnic State University offers many diverse areas of study including communications, power, audio, digital design, controls, and computer design. Programs of study can lead to any one of the following degrees:

- Bachelor of Science in Computer Engineering Technology (BS-CpET)
- Bachelor of Science in Electrical Engineering Technology (BS-EET)
- Bachelor of Science in Telecommunications Engineering Technology (BS-TCET)

## The Faculty:

Austin B. Asgill, *Professor and Department Chair*

Charles L. Bachman, *Professor Emeritus*

Craig A. Chin, *Assistant Professor*

Kim Davis, *Associate Professor*

Thomas J. Fallon, *Professor*

Pamela S. Frinzi, *Professor*

Hai T. Ho, *Associate Professor*

L. Brent Jenkins, *Associate Professor*

Scott Larisch, *Assistant Professor*  
Florian Misoc, *Associate Professor*  
Adimathara P. Preethy, *Assistant Professor*  
Walter E. Thain Jr., *Associate Professor*  
Scott J. Tippens, *Professor*  
Jeff H. Wagner, *Assistant Professor*  
Daren R. Wilcox, *Assistant Professor*  
Omar Zia, *Professor Emeritus*

The ECET department has adopted the following Program Educational Objectives:

- Demonstrate appropriate knowledge of fundamentals of their discipline, mathematics, science and computer engineering technology.
- Possess an appropriate knowledge of the fundamentals of the discipline, mathematics, science and technologies in order to adapt to rapidly changing technologies.
- Function and communicate effectively, both individually and within team environments, demonstrating ethical, respectful and professional behavior in all associations.
- Apply creativity in the design, testing and maintenance of the discipline-specific systems, and think critically to identify, evaluate and solve complex technical and non-technical problems.
- Recognize the need for a commitment to pursue continuous self-improvement and lifelong learning.
- Be cognizant of contemporary professional, societal and global issues and be aware of and respect diverse cultures.
- Obtain and maintain a meaningful employment in their respective disciplines and attain increasing levels of responsibility and leadership in their chosen career field.

## **Bachelor of Science in Computer Engineering Technology**

The development of the microcomputer has created a need for engineering technology graduates with a specialized knowledge of computers and control systems. The bachelor of science degree in computer engineering technology was created to meet this need. The degree program in Computer Engineering Technology (CpET) utilizes a core of mathematics, physics, and electronics courses. These courses provide the scientific and technical background for an in-depth study of the hardware and software aspects of computers and related systems. The emphasis of the program is on microcomputers and their application to the solution of industrial problems relating to robotics, control, instrumentation, monitoring, data communications, networks, and automated testing.

The ECET department has adopted the following Computer Engineering Technology Program Outcomes:

- Demonstrate appropriate knowledge of fundamentals of their discipline, mathematics, science and computer engineering technology.
- Demonstrate an appropriate mastery of knowledge, techniques, skills and modern tools of the technical components of the curriculum appropriate to their discipline.
- Use appropriate tools and laboratory equipment to acquire data, conduct experimental measurements, analyze and interpret the results.
- Demonstrate the ability to think critically and generate creative and realistic solutions to defined problems and projects appropriate to their discipline.
- Produce written documents; deliver oral presentations, prepare and interpret visual information.
- Function effectively on teams.

- Recognize the value of diversity, and identify ethical and social issues in business and technical tasks.
- Demonstrate a commitment to quality timeliness and continuous improvement.

The degree program in computer engineering technology utilizes a core of mathematics, physics, and electronics courses. These courses provide the scientific and technical background for an in-depth study of the hardware and software aspects of computers and related systems.

The emphasis of the program is on microcomputers and their application to the solution of industrial problems relating to robotics, control, instrumentation, monitoring, data communications, networks, and automated testing.

Graduates of these programs are qualified for employment as engineering technologists with companies that utilize computers in computation and control activities as well as companies that design, manufacture, market, install, and service computers and computer networks.

CpET students are required to take one project-based capstone course as part of their 11 hours of CpET electives. Contact the ECET Department to obtain a list of acceptable CpET project-based capstone courses. Any non-required upper division (3XXX/4XXX) ECET course, with the exception of ECET 3000 - Electrical Principles, ECET 3010 & ECET 4830, may be used for the remainder of their CpET electives. Students may also choose one course from outside the major to count as a CpET elective. Contact the ECET Department to obtain a list of acceptable courses from outside the major that count as a CpET elective.

## **Bachelor of Science in Electrical Engineering Technology**

Electronics has given birth to an industrial giant. Computers, medical electronics, automation, communications, instrumentation, radar, and robotics are but a few of the fields based on electronics. This demand has created a need for electrical engineering technology graduates in all phases of development, design, production, maintenance, and troubleshooting. Graduates of the bachelor of science degree program in electrical engineering technology are meeting this need. The Electrical Engineering Technology (EET) program prepares graduates to enter the technical workforce in a variety of fields. Communications, instrumentation, automation, control systems, power, robotics, computers, and medical electronics are but a few of these fields. Within these fields, Electrical Engineering Technology graduates are typically involved in areas such as: development, design, quality assurance, technical documentation, production, maintenance, test, field service, or technical sales.

The ECET department has adopted the following Electrical Engineering Technology Program Outcomes:

- Demonstrate appropriate knowledge of fundamentals of their discipline, mathematics, science and electrical engineering technology.
- Demonstrate an appropriate mastery of knowledge, techniques, skills and modern tools of the technical components of the curriculum appropriate to their discipline.
- Use appropriate tools and laboratory equipment to acquire data, conduct experimental measurements, analyze and interpret the results.
- Demonstrate the ability to think critically and generate creative and realistic solutions to defined problems and projects appropriate to their discipline.
- Produce written documents; deliver oral presentations, prepare and interpret visual information.
- Function effectively on teams.
- Recognize the value of diversity, and identify ethical and social issues in business and technical tasks.
- Demonstrate a commitment to quality timeliness and continuous improvement.

EET students are required to take one project-based capstone course as part of their 13 hours of EET electives. Contact the ECET Department to obtain a list of acceptable EET project-based capstone courses. Any non-required upper

division (3XXX/4XXX) ECET course, with the exception of ECET 3000, ECET 3010 & ECET 4830, may be used for the remainder of their EET electives. Students may also choose one course from outside the major to count as an EET elective. Contact the ECET Department to obtain a list of acceptable courses from outside the major that count as an EET elective.

Students may wish to focus their EET electives in a particular area of Electrical Engineering Technology. Suggested choices in the areas of biomedical, communications, digital, power, and telecommunications are listed below: EET Electives

Biomedical electronics, instrumentation, and devices represent one of the fastest growing segments of the health care industry. Recognizing the demand, and the importance of producing graduates for this growth area, the ECET department offers a Biomedical Engineering Technology Option under the Electrical Engineering Technology (EET) degree. Students wishing to take this option must declare so in DegreeWorks. Upon completion of the EET-BMET Degree Option, students will receive the BS-EET degree with the Option inscribed on their transcripts.

## **Bachelor of Science in Telecommunications Engineering Technology**

The ever-increasing popularity of the Internet combined with significant advances in communications software and hardware has spawned an immense demand for individuals possessing the knowledge and skills required to design, implement, and maintain computer networking systems of all types. The bachelor of science degree program in telecommunications engineering technology (TCET) is designed to provide individuals with the theory and hands-on knowledge necessary to meet the demand.

The ECET department has adopted the following Telecommunications Engineering Technology Program Outcomes:

- Demonstrate appropriate knowledge of fundamentals of their discipline, mathematics, science and telecommunications engineering technology.
- Demonstrate an appropriate mastery of knowledge, techniques, skills and modern tools of the technical components of the curriculum appropriate to their discipline.
- Use appropriate tools and laboratory equipment to acquire data, conduct experimental measurements, analyze and interpret the results.
- Demonstrate the ability to think critically and generate creative and realistic solutions to defined problems and projects appropriate to their discipline.
- Produce written documents; deliver oral presentations, prepare and interpret visual information.
- Function effectively on teams.
- Recognize the value of diversity, and identify ethical and social issues in business and technical tasks.
- Demonstrate a commitment to quality timeliness and continuous improvement.

The degree program is based upon a core of mathematics, physics, and electronics courses. These courses provide the scientific and technical background required for an in-depth understanding of the hardware and software aspects of computers and related systems. Building upon this core, students immerse themselves into several telecommunications-related courses that provide them with a holistic perspective of this behemoth industry.

Although entitled a telecommunications degree, this program covers virtually all aspects of modern computer networking. The student's experience is greatly augmented by numerous hands-on exercises undertaken in the university's state-of-the-art telecommunications laboratory. Providing the graduate of this program with the opportunity to ascend into management, the degree is also comprised of several management-related courses.



# Areas of Study

## Computer Engineering Technology, BS

### Requirements

- ENGL 1101 - English Composition I **3 Credits**
- ENGL 1102 - English Composition II **3 Credits**
- MATH 1113 - Pre-calculus **4 Credits** (extra hour is applied to area F)
- MATH 2253 - Calculus I **4 Credits** (extra hour is applied to area F)
- MATH 2254 - Calculus II **4 Credits**
- MATH 2335 - Numerical Methods I **3 Credits**
- MATH 2306 - Ordinary Differential Equations **3 Credits**
- PHYS 2211 - Principles of Physics I **3 Credits**
- PHYS 2211L - Principles of Physics Laboratory I **1 Credits**
- PHYS 2212 - Principles of Physics II **3 Credits**
- PHYS 2212L - Principles of Physics Laboratory II **1 Credits**
- COMM 2400 - Public Speaking **2 Credits**
- STS 2400 - Science, Technology, and Society **2 Credits**
- TCOM 2010 - Technical Writing **3 Credits**
- Area C Group 1 Take One Course from the Literature Group **3 Credits**
- Area C Group 2 Take One Course from the Art and Culture Group **3 Credits**
- Area E Group 1 American Context **3 Credits**
- Area E Group 2 World History **3 Credits**
- Area E Group 3 Behavioral Science **3 Credits**
- Area E Group 4 Cultures and Societies **3 Credits**
- ECET 1001 - Orientation **1 Credits**
- SPSU 1001 - Hitch-hiker's Introduction to SPSU **1 Credits**
- ECET 1012 - Design Fundamentals **2 Credits**
- ECET 1101 - Circuits I **4 Credits**
- ECET 1200 - Digital I **4 Credits**
- ECET 2111 - Circuits II **4 Credits**
- ECET 2300 - Electronics I **4 Credits**
- ECET 2210 - Digital II **4 Credits**
- ECET 2310 - Electronics II **4 Credits**
- ECET 3220 - Digital III **4 Credits**
- ECET 3400 - Data Communications **4 Credits**
- ECET 3600 - Test Engineering **4 Credits**
- ECET 3410 - High Frequency Systems **4 Credits**
- ECET 3701 - Embedded PCs **4 Credits**
- ECET 3710 - Hardware Programming and Interfacing **4 Credits**
- ECET 3810 - Applications of C++, JAVA and HTML **3 Credits**

- ECET 4610 - Control Systems **4 Credits**
- EDG 1210 - Survey of Engineering Graphics **2 Credits**
- CpET Electives **11 Credits**

**Degree Program Total: 128**

## Note:

*\* PHYS 1111/PHYS 1111L and PHYS 1112 /PHYS 1112L may be substituted for PHYS 2211/PHYS 2211L and PHYS 2212/PHYS 2212L .*

*CpET majors are required to earn a "C" or better in their ECET courses, except one "D" in a 3000 or 4000 level non-prerequisite course may be used for graduation purposes. A grade of "C" or better is required in the project-based capstone course.*

## CpET Electives

### Embedded Systems (take 2 of the following courses)

Graduate will specialize in the design and implementation of smart devices used in products ranging from audio to medical to security systems. Both hardware design and programming at the system level will be stressed. The specialist will gain resume skills such as DSP and VHDL design, embedded micro-controller and embedded PC interfacing and programming.

- ECET 3640 - Introduction to Systems Engineering and Robotics **4 Credits**
- ECET 4630 - Digital Signal Processing **4 Credits**
- ECET 4720 - Distributed Microcontrollers and PCs **4 Credits**
- ECET 4730 - VHDL and Field Programmable Gate Arrays **4 Credits**

### Networks (take 2 of the following courses)

Graduate will specialize in the development and implementation of networks of computers and micro-controllers. Applications include Telemedicine, factory automation systems, point-of-sales systems, and robotics. There will be heavy emphasis of high-level programming using C, Visual C++, JAVA, Visual BASIC, HTML, Windows, LINUX, TCP/IP, etc. Hardware will emphasize PCs and embedded PCs, smart devices, LAN technologies, and remote sensing and control.

- ECET 4710 - Network Programming and Interfacing **4 Credits**
- ECET 4720 - Distributed Microcontrollers and PCs **4 Credits**
- ECET 48XX - BS Telecom 3000-4000 course
- ECET 48XX - BS Telecom 3000-4000 course

Note: *ECET 4830 cannot be used as an elective.*

# Electrical Engineering Technology, BS

## Requirements

- CHEM 1211 - Principles of Chemistry I **3 Credits \***
- CHEM 1211L - Principles of Chemistry I Lab **1 Credits**
- ENGL 1101 - English Composition I **3 Credits**
- ENGL 1102 - English Composition II **3 Credits**
- MATH 1113 - Pre-calculus **4 Credits** (extra hour is applied to area F)
- MATH 2253 - Calculus I **4 Credits** (extra hour is applied to area F)
- MATH 2254 - Calculus II **4 Credits**
- MATH 2306 - Ordinary Differential Equations **3 Credits**
- PHYS 2211 - Principles of Physics I **3 Credits \***
- PHYS 2211L - Principles of Physics Laboratory I **1 Credits**
- PHYS 2212 - Principles of Physics II **3 Credits \***
- PHYS 2212L - Principles of Physics Laboratory II **1 Credits**
- COMM 2400 - Public Speaking **2 Credits**
- STS 2400 - Science, Technology, and Society **2 Credits**
- TCOM 2010 - Technical Writing **3 Credits**
- Area C Group 1 Take One Course from the Literature Group **3 Credits**
- Area C Group 2 Take One Course from the Art and Culture Group **3 Credits**
- Area E Group 1 American Context **3 Credits**
- Area E Group 2 World History **3 Credits**
- Area E Group 3 Behavioral Science **3 Credits**
- Area E Group 4 Cultures and Societies **3 Credits**
- ECET 1001 - Orientation **1 Credits**
- SPSU 1001 - Hitch-hiker's Introduction to SPSU **1 Credits**
- ECET 1012 - Design Fundamentals **2 Credits**
- ECET 1101 - Circuits I **4 Credits**
- ECET 1200 - Digital I **4 Credits**
- ECET 2111 - Circuits II **4 Credits**
- ECET 2300 - Electronics I **4 Credits**
- ECET 2210 - Digital II **4 Credits**
- ECET 2310 - Electronics II **4 Credits**
- ECET 3220 - Digital III **4 Credits**
- ECET 3400 - Data Communications **4 Credits**
- ECET 3600 - Test Engineering **4 Credits**
- ECET 3410 - High Frequency Systems **4 Credits**
- ECET 3500 - Survey of Electric Machines **4 Credits**
- ECET 3620 - Signals and Systems Analysis **4 Credits**
- ECET 4610 - Control Systems **4 Credits**
- EDG 1210 - Survey of Engineering Graphics **2 Credits**
- EET Electives **13 Credits**

## Degree Program Total: 128

### Note:

*\* PHYS 1111/PHYS 1111L and PHYS 1112/PHYS 1112L may be substituted for PHYS 2211/PHYS 2211L and PHYS 2212/PHYS 2212L*

*EET majors are required to earn a "C" or better in their ECET courses, except one "D" in a 3000 or 4000 level non-prerequisite course may be used for graduation purposes. A grade of "C" or better is required in the project-based capstone course.*

### EET Electives

Students may wish to focus their EET electives in a particular area of Electrical Engineering Technology. Suggested choices in the areas of biomedical, communications, digital, power, and telecommunications are listed below:

#### Biomedical

- ECET 3020 - Biomedical Instrumentation **4 Credits**
- ECET 3030 - Biomechanics **4 Credits**
- ECET 4010 - Virtual Biomedical Instrumentation **4 Credits**
- ECET 4020 - Biomedical Imaging **4 Credits**
- ECET 4030 - Bioinformatics and Telemedicine **4 Credits**
- ECET 4040 - Biometrics **4 Credits**
- ECET 4050 - BMET Capstone (Project) **4 Credits**
- ECET 4050 - BMET Capstone (Internship) **4 Credits**

#### Communications

- ECET 4320 - Active Filters **4 Credits**
- ECET 4330 - Audio Technology **4 Credits**
- ECET 4420 - Communications Circuit Applications **4 Credits**
- ECET 4431 - Wireless Communications Systems **4 Credits**
- ECET 4432 - Fiber-optic Communications Systems **4 Credits**
- ECET 4450 - RF Electronics **4 Credits**
- ECET 4820 - Communications Networks and the Internet **4 Credits**

#### Digital

- ECET 3640 - Introduction to Systems Engineering and Robotics **4 Credits**
- ECET 3701 - Embedded PCs **4 Credits**
- ECET 4630 - Digital Signal Processing **4 Credits**
- ECET 4710 - Network Programming and Interfacing **4 Credits**
- ECET 4720 - Distributed Microcontrollers and PCs **4 Credits**
- ECET 4730 - VHDL and Field Programmable Gate Arrays **4 Credits**
- ECET 4820 - Communications Networks and the Internet **4 Credits**

## Power

- ECET 4510 - Power System Analysis **4 Credits**
- ECET 4520 - Industrial Distribution Systems, Illumination, and the NEC **4 Credits**
- ECET 4530 - Industrial Motor Control **4 Credits**
- ECET 4540 - Introduction to Power Electronics **4 Credits**
- ECET 4560 - Electric Drives **4 Credits**

## Telecommunications

- ECET 3810 - Applications of C++, JAVA and HTML **3 Credits**
- ECET 4820 - Communications Networks and the Internet **4 Credits**
- ECET 4840 - Advanced Telecommunications **4 Credits**
- ECET 4850 - Telecommunications Project **4 Credits**
- ECET 4860 - Network Security **4 Credits**

## Electrical Engineering Technology - Biomedical Engineering Technology Option, BS

The ECET department offers a Biomedical Engineering Technology Option under the Electrical Engineering Technology (EET) degree. Students wishing to take this option must declare so in DegreeWorks. Upon completion of the EET-BMET Degree Option, students will receive the BS-EET degree with the Option inscribed on their transcripts. For this Option, the following required courses will need to be completed instead of those required for the regular EET degree program:

### **EET-BMET Option Course**

BIOL 2107/BIOL 2107L - Biological Principles (4)

MATH 2260 - Probability and Statistics (3)

\*ECET 2000 - Intro. to Biomedical Engineering

### **EET Course**

CHEM 1211/CHEM 1211L - Chemistry I (4)

MATH 2306 - Differential Equations (3)

ECET 3500 - Survey of Electric Machines (4)

Technology (3)

\*ECET 3010 - Health Care Safety (3)

ECET 3620 - Signals and Systems (4)

ECET 3020 - Biomedical Instrumentation (4)

ECET 4610 - Control Systems (4)

ECET 3701 - Embedded PCs (4)

ECET 3220 - Digital III (4)

ECET 3810 - C++, JAVA, HTML (3)

ECET Technical Elective (3)

\*Differences made up in Technical Elective hours

In addition to the above required courses, Students are required to take ECET 4050 - Biomedical Capstone (Project or Internship) as well as at least one Technical Elective in the Biomedical Engineering Technology area.

## Telecommunications Engineering Technology, BS

### Requirements

- ENGL 1101 - English Composition I **3 Credits**
- ENGL 1102 - English Composition II **3 Credits**
- MATH 1113 - Pre-calculus **4 Credits** (extra hour is applied to area F)
- MATH 2253 - Calculus I **4 Credits** (extra hour is applied to area F)
- MATH 2254 - Calculus II **4 Credits**
- MATH 2260 - Introduction to Probability and Statistics **3 Credits**
- MATH 2306 - Ordinary Differential Equations **3 Credits**
- PHYS 2211 - Principles of Physics I **3 Credits \***
- PHYS 2211L - Principles of Physics Laboratory I **1 Credits**
- PHYS 2212 - Principles of Physics II **3 Credits \***
- PHYS 2212L - Principles of Physics Laboratory II **1 Credits**
- COMM 2400 - Public Speaking **2 Credits**
- STS 2400 - Science, Technology, and Society **2 Credits**
- TCOM 2010 - Technical Writing **3 Credits**
- Area C Group 1 - Take One Course From the Literature Group **3 Credits**
- Area C Group 2 - Take One Course From the Art and Culture Group **3 Credits**
- Area E Group 1 - American Context **3 Credits**
- Area E Group 2 - World History **3 Credits**
- Area E Group 3 - Behavioral Science **3 Credits**
- Area E Group 4 - Cultures and Societies **3 Credits**
- ECET 1001 - Orientation **1 Credits**
- SPSU 1001 - Hitch-hiker's Introduction to SPSU **1 Credits**
- ECET 1012 - Design Fundamentals **2 Credits**
- ECET 1101 - Circuits I **4 Credits**
- ECET 1200 - Digital I **4 Credits**
- ECET 2111 - Circuits II **4 Credits**

- ECET 2300 - Electronics I **4 Credits**
- ECET 2210 - Digital II **4 Credits**
- ECET 2310 - Electronics II **4 Credits**
- ECET 3400 - Data Communications **4 Credits**
- ECET 3410 - High Frequency Systems **4 Credits**
- ECET 3810 - Applications of C++, JAVA and HTML **3 Credits**
- ECET 4820 - Communications Networks and the Internet **4 Credits**
- ECET 4830 - Telecommunications Management **3 Credits**
- ECET 4840 - Advanced Telecommunications **4 Credits**
- ECET 4850 - Telecommunications Project **4 Credits**
- ECET 4860 - Network Security **4 Credits**
- EDG 1210 - Survey of Engineering Graphics **2 Credits**
- MGNT 3105 - Management and Organizational Behavior **3 Credits**
- MGNT 4135 - Project Management **3 Credits**
- TCET Electives **6 Credits**

**Degree Program Total: 128**

### **Note:**

*\* PHYS 1111/PHYS 1111L and PHYS 1112/PHYS 1112L may be substituted for PHYS 2211/PHYS 2211L and PHYS 2212/PHYS 2212L .*

*TCET majors are required to earn a "C" or better in their ECET courses, except one "D" in a 3000 or 4000 level non-prerequisite course may be used for graduation purposes. A grade of "C" or better is required in the project-based capstone course.*

### **TCET Electives**

Students may take any *non-required* 3000 or 4000 level ECET or MGNT course to satisfy the TCET elective requirement of 6 credit hours.

## **Industrial Engineering Technology**

## **Industrial Engineering Technology**

### **Offering:**

Bachelor of Science in Industrial Engineering Technology

Who manages the flow of people at theme parks or airports? Decides what kind of training employees need before they work with new equipment? Explains to accountants why the cost of a facility upgrade has changed? Determines where

to add people or machinery for maximum impact? If you like to be at the center of the action, designing creative solutions that make business and industry work safer, faster, and leaner, the career for you is industrial engineering technology.

The Industrial Engineering Technology program prepares students to help make organizations more efficient, productive, and cost-effective. These skills add directly to a company's—and the students own—bottom line.

Who makes a good industrial engineering technology student? Those who are organized, analytical, and detail oriented, yet who can think of creative solutions to resolve problems. Since you work with people from many different areas, you need to enjoy interacting with diverse specialists. Excellent communication skills are crucial, too, as you translate engineering requirements to non-engineers and explain technical information to managers.

Industrial engineers manage quality, resources, and systems of a wide range of workplaces, including commercial facilities, service organizations, hospitals, and insurance companies.

To compete today, business and industry must aim for the greatest productivity and quality. SPSU does the same. Our small classes ensure more individual attention from our expert faculty. Moreover, IET's Industry Advisory Board provides suggestions to keep our curriculum current.

As you master quality control, facility design, time studies, simulation software, and project management, you can immediately apply such course knowledge in a part-time job or internship. Employers appreciate our students' professionalism, learned by making class presentations and working in teams. This experience also prepares you to manage future projects—a new service, a new process, a new product or whatever new innovation your employer is considering.

SPSU's IET graduates work for such powerhouses as Nissan, Shaw Industries, Milliken, General Electric, AT&T, UPS, Lockheed Martin and several other top companies.

The field of Industrial Engineering Technology offers the student a challenging career in business, industry, or government. Graduates deal primarily with the efficient management of money, materials, and labor in a business and industrial environment.

Traditionally IET graduates have pursued careers in manufacturing environments, but increasingly they hold positions in logistics, banking, healthcare, and transportation. Our student organization—Institute of Industrial Engineers (IIE)—put you in contact with professional networks before graduation.

Career opportunities involve problem solving in the fields of:

- Production/Materials Management
- Facilities Planning
- Process Improvement
- Quality Control
- Logistics and Supply Chain Management
- Systems Simulation
- Workplace Design
- Personnel Management
- Occupational Safety, Health and Ethics
- Project Management
- Economic Analysis/Cost Control

Offering the only Industrial Engineering Technology program in the University System of Georgia, Southern Polytechnic prepares you to help make organizations more efficient, productive, and cost-effective. To enable the graduate to solve such a wide variety of business and industrial problems, the curriculum of study is broad and interesting.



# Program Educational Objectives:

Graduates of the Industrial Engineering Technology Program will:

- Meet industry expectations for expertise in the design, improvement, and installation of integrated systems of manpower, machines, materials, information, energy and logistics,
- Possess a balance of knowledge that encompasses the specialties in the industrial engineering spectrum,
- Be capable of combining the knowledge and practice of engineering technology with the science of decision making in business, manufacturing, and service,
- Be capable of using the sciences together with methods of engineering analysis and design to evaluate, specify, and predict the results to be obtained from integrated systems,
- Be capable of career advancement with increasing responsibilities,
- Understand legal, political, social and ethical issues to increase their sense of responsibility, membership, and awareness in society,
- Possess the necessary interpersonal skills to communicate and work effectively in teams.

# Program Outcomes:

Graduates of the Industrial Engineering Technology Program will demonstrate the following:

- An appropriate mastery of mathematical and scientific knowledge, techniques, and tools used in analysis of industrial systems.
- An ability to adapt to emerging applications of mathematics, science, engineering and technology.
- An ability to conduct, analyze and interpret experiments and apply experimental results to improve manufacturing and service processes.
- An ability to apply creativity in the design of industrial systems and processes.
- An ability to function effectively on multidisciplinary teams.
- An ability to identify, formulate and solve technical problems related to industrial engineering.
- An ability to communicate effectively.
- An ability to engage in and recognize the need for lifelong learning.
- An ability to understand, professional, ethical and social responsibilities.
- Respect for diversity and issues of social and global nature.
- A commitment to quality, timeliness and continuous improvement.
- An ability to integrate industrial systems using engineering methods.

The B.S. in Industrial Engineering Technology program is accredited by the Technology Accreditation Commission (TAC) of ABET. Further information regarding the accreditation board may be found at [abet.org](http://abet.org).

# The Faculty:

Robert W. Atkins, *Professor*

Bill Bailey, *Assistant Professor*

Thomas Ball, *Assistant Professor and Department Chair*

E. Lester Dollar, III, *Associate Professor*

Ruston M. Hunt, *Professor and Dean of Extended University*

Kenneth W. Jackson, *Associate Professor*

Christina R. Scherrer, *Associate Professor*

Gregory Wiles, *Assistant Professor*

Komla Dzigbede, *Part Time Faculty*

Rhonda Freeman, *Part Time Faculty*  
Mark Kyle, *Part Time Faculty*  
Walter Thomas, *Part Time Faculty, Professor Emeritus*

## **BAS Manufacturing Operations**

### **Offering:**

Bachelor of Applied Science

The Bachelor of Applied Science in Manufacturing Operations has been specifically designed for students who have completed an Associate of Applied Science Degree from a Technical College System of Georgia institution.

The goal of the partnership between SPSU and the TCSG schools is to provide the opportunity for degreed graduates from the technical schools of Georgia to complete a Bachelor's degree in approximately 60 semester credits which is equivalent to about two years as a full time student.

All required major courses to complete the BAS in Manufacturing Operations program are offered totally online by SPSU faculty. All general education requirements are also offered on-line through the university system called E-core.

The BAS Manufacturing Operations program prepares students in the areas of manufacturing, logistics and operations through an industry-driven curriculum encompassing manufacturing processes, quality principles, engineering economy, work measurement and facilities layout.

Companies traditionally who hire SPSU graduates include such leaders as Shaw Industries, Delta Airlines, AT&T, Nissan, Georgia Power, Mohawk Industries, Lockheed Martin and UPS.

Further information on the TCSG and SPSU program can also be found at <http://tcsг.spsu.edu/>.

## **BAS Supply Chain Logistics**

### **Offering:**

Bachelor of Applied Science

The Bachelor of Applied Science in Supply Chain Logistics has been specifically designed for students who have completed an Associate of Applied Science Degree from a Technical College System of Georgia institution.

The goal of the partnership between SPSU and the TCSG schools is to provide the opportunity for degreed graduates from the technical schools of Georgia to complete a Bachelor's degree in approximately 60 semester credits which is equivalent to about two years as a full time student.

All required major courses to complete the BAS in Supply Chain Logistics are offered totally online by SPSU faculty. All general education requirements are also offered on-line through the university system called E-core.

The BAS Supply Chain Logistics prepares students for careers in managing raw materials, work-in-process and finished goods inventories and how to efficiently control the movement of those inventories.

Graduates in this type program are engaged in challenging and demanding careers in responsible positions such as Logistics Manager, Demand Planning Analyst, Senior Buyer, Purchasing Agent and Supply Chain Manager.

Companies traditionally who hire SPSU graduates include such leaders as Shaw Industries, Delta Airlines, Georgia Power, AT&T, Nissan, Mohawk Industries, Lockheed Martin and UPS.

Further information on the TCSG and SPSU program can also be found at <http://tcsг.spsu.edu/>.

## **Industrial Engineering Technology Department Certificate in Logistics**

The primary objective of the Certificate in Logistics is to provide training and education to members of the Supply Chain industry that need to improve skills and knowledge in the latest technology available in their field. Students can complete the requirements in 4-6 semesters. The courses may also be applied toward completing a B. S. degree in Industrial Engineering Technology. The program will be offered on campus, through distance learning, and over the Internet.

### **Admission Requirements:**

Applicants must have earned a High School degree or GED and been out of high school for at least five years or have earned 30 college credits from an accredited institution of higher learning with a minimum GPA of 2.0.

## **Industrial Engineering Technology Department Certificate in Production Design**

The primary objective of the Certificate in Production Design is to provide training and education to members of the Industrial Engineering field in the measurement and analysis of work and in the design or improvement of facilities. Students can complete the requirements in 3-4 semesters. These courses may also be applied toward completing a B.S. degree in Industrial Engineering Technology upon acceptance to SPSU.

### **Admission Requirements:**

Applicants must meet all undergraduate admission requirements.

## **Industrial Engineering Technology Department Certificate in Quality Principles**

The primary objective of the Certificate in Quality Principles is to provide training and education to members of the Industrial Engineering field in quality system principles, methodology, elements and standards. Students can complete the requirements in 3– 4 semesters. These courses may also be applied toward completing a B.S. degree in Industrial Engineering technology upon acceptance to SPSU.

### **Admission Requirements:**

Applicants must meet all undergraduate admission requirements.

# Apparel Textile Technology-Fashion Design & Product Development

## Offering:

Fashion Design and Product Development  
Bachelor of Apparel and Textiles

Fashion is clothing that is in style at a particular time. The focus of the Fashion Design and Product Development program is the "concept to distribution" design and development of fashions for the ready-to-wear clothing market. Men's wear, women's wear, active and leisure apparel, children's wear and many other sewn products are all part of the fashion/apparel industry, one of the largest and most important industries in the United States. Excellent starting salaries, rapid advancement, job diversity, and travel are just some of the benefits to graduates of this program. The industry offers employment in all 50 states, and many opportunities around the world. Graduates work with technologies, computers and software to design and create quality products in a fast-paced, ever changing fashion environment.

## The Faculty:

Thomas Ball, *Assistant Professor and Department Chair*  
Keely Clay, *Assistant Professor*  
Walter Thomas, *Part Time Faculty and Professor Emeritus*

## Program Educational Objectives

- To prepare graduates with the fundamental understanding of concept, product development, sourcing, marketing and merchandising of the ready-to-wear apparel industry.
- To provide graduates with an understanding of the political and ethnical aspects pertaining to global product development.
- To prepare graduates with the basic knowledge for various entry level positions in the fashion/apparel industry.
- To provide a challenging curriculum consistent with industry needs.

## Program Outcomes

Graduates of the program should be able to:

- Demonstrate a conceptual knowledge of the fashion/apparel industry;
- Communicate effectively in written and presentation skills;
- Demonstrate an ability to plan, execute and critique their concepts and ideas;
- Identify, critique and evaluate emerging technologies and concepts applicable to their chosen field;
- Demonstrate sound business principles and practices of the fashion/apparel industry.
- Demonstrate the ability to perform effectively in team environments.

- Recognize the need for life long learning.

## Areas of Study

### Apparel and Textiles Minor

To be eligible for a minor in Apparel and Textile Technology, the student must complete 15 credit hours from the following courses with at least 9 hours of upper division course work.

#### Requirements

- ATT 1200 - Apparel Design Graphics **2 Credits**
- ATT 1300 - International Sourcing **3 Credits**
- ATT 1400 - Principles of Merchandising **3 Credits**
- ATT 2301 - Apparel Computer-Aided Technical Design I **4 Credits**
- ATT 3100 - Fashion Merchandising **3 Credits**
- ATT 3505 - Fabric Formation and Design **3 Credits**
- ATT 3600 - Apparel Analysis and Product Development **3 Credits**
- ATT 3602 - Apparel Computer-Aided Technical Design II **4 Credits**
- ATT 3800 - Fashion Forecasting, Data Analysis & Consumer Trends **3 Credits**
- ATT 4444 - Quality Assurance for Textiles and Apparel **4 Credits**
- ATT 4670 - Apparel/Textile Business Practices **3 Credits**
- ATT 4750 - Advanced Design and Product Development **3 Credits**

Minor Program Total: 15

### Apparel Product Development Certificate

The Fashion Design and Product Development program offers a Certificate in Apparel Product Development. The objective is to provide training and education to members of the apparel industry, graduates of fashion and design schools and other interested parties seeking to improve their skills. The courses may also be applied toward completing the Bachelor of Apparel and Textiles degree. All requirements for normal admissions are applicable. Certificate students must complete five courses from the following list:

#### Requirements

Certificate students must complete five classes from the following list:

- ATT 1300 - International Sourcing **3 Credits**
- ATT 1400 - Principles of Merchandising **3 Credits**

- ATT 2301 - Apparel Computer-Aided Technical Design I **4 Credits**
- ATT 3100 - Fashion Merchandising **3 Credits**
- ATT 3505 - Fabric Formation and Design **3 Credits**
- ATT 3600 - Apparel Analysis and Product Development **3 Credits**
- ATT 3602 - Apparel Computer-Aided Technical Design II **4 Credits**
- ATT 3800 - Fashion Forecasting, Data Analysis & Consumer Trends **3 Credits**
- ATT 4444 - Quality Assurance for Textiles and Apparel **4 Credits**
- ATT 4670 - Apparel/Textile Business Practices **3 Credits**
- ATT 4750 - Advanced Design and Product Development **3 Credits**

Certificate Program Total: 15

## **Bachelor of Apparel and Textiles**

### **Area A**

- ENGL 1101 - English Composition I **3 Credits**
- ENGL 1102 - English Composition II **3 Credits**
- MATH 1111 - College Algebra **3 Credits**

### **Area B**

- COMM 2400 - Public Speaking **2 Credits**
- STS 2400 - Science, Technology, and Society **2 Credits**

### **Area C**

- C1 - Literature of the World **3 Credits**
- C2 - Art and Culture of the World **3 Credits**

### **Area D**

- Sciences - Two Area D Lab Science Courses **8 Credits**
- Math - One Area D Math Course **4 Credits**

### **Area E**

- E1 - US History **3 Credits**
- E2 - World History **3 Credits**
- E3 - Behavioral Science **3 Credits**
- E4 - Cultures and Societies **3 Credits**

## Area F

- ACCT 2101 - Principles of Financial Accounting **3 Credits**
- ATT 1200 - Apparel Design Graphics **2 Credits**
- ATT 1300 - International Sourcing **3 Credits**
- ECON 1101 - Introduction to Economics **3 Credits**
- MGNT 2201 - Business Computer Applications **3 Credits**
- TCOM 2010 - Technical Writing **3 Credits**

## Major Courses

- ATT 1000 - Orientation **1 Credits**
- ATT 1400 - Principles of Merchandising **3 Credits**
- ATT 2301 - Apparel Computer-Aided Technical Design I **4 Credits**
- ATT 3100 - Fashion Merchandising **3 Credits**
- ATT 3505 - Fabric Formation and Design **3 Credits**
- ATT 3600 - Apparel Analysis and Product Development **3 Credits**
- ATT 3602 - Apparel Computer-Aided Technical Design II **4 Credits**
- ATT 3800 - Fashion Forecasting, Data Analysis & Consumer Trends **3 Credits**
- ATT 4444 - Quality Assurance for Textiles and Apparel **4 Credits**
- ATT 4670 - Apparel/Textile Business Practices **3 Credits**
- ATT 4750 - Advanced Design and Product Development **3 Credits**
- ATT 4840 - Textile/Apparel Business Project **3 Credits**
- IET 4810 - Ethics and Safety **1 Credits**
- MGNT 3135 - Principles of Marketing **3 Credits**
- SPSU 1001 - Hitch-hiker's Introduction to SPSU **1 Credits**

## ATT Related Electives: Select four courses: \* 12

- ARTS 2010 - Introduction to Drawing **3 Credits**
- ATT 4820 - Senior Internship **3 Credits**
- IET 2227 - Introduction to Statistics **3 Credits**
- IET 2449 - Logistics and Supply Chain Management **3 Credits**
- IET 3511 - Sustainability Engineering **3 Credits**
- MGNT 3105 - Management and Organizational Behavior **3 Credits**

- MGNT 3205 - Management Information Systems **3 Credits**
- MGNT 4145 - International Management **3 Credits**
- Free Electives **6 Credits**

**Degree Program Total: 120**

\* At least six hours of Related Elective must be upper level courses

## **Industrial Engineering Technology Minor**

To be eligible for a minor in Industrial Engineering Technology,

**Students must complete the following three courses:**

- IET 2227 - Introduction to Statistics **3 Credits**
- IET 2305 - The Role of Industrial Engineering Technology in Industrial Systems **4 Credits**
- IET 3356 - Quality Concepts and Systems Design **3 Credits**

**And choose two courses from the following list:**

- IET 2449 - Logistics and Supply Chain Management **3 Credits**
- IET 3320 - Advanced Logistics **3 Credits**
- IET 3322 - Work Measurement and Ergonomics **4 Credits**
- IET 3339 - Statistical Quality Control **3 Credits**
- IET 3403 - Advanced Statistics with Application **3 Credits**
- IET 3407 - Six Sigma and Lean Manufacturing **3 Credits**
- IET 3410 - Principles of Team Dynamics **3 Credits**
- IET 3424 - Engineering Economy **3 Credits**
- IET 3511 - Sustainability Engineering **3 Credits**
- IET 4405 - Operations Research - Concepts, Models and Methods **3 Credits**
- IET 4422 - Facilities Design, Plant Layout, and Materials Handling **4 Credits**

**Minor Program Total: 16-18**

**Note:**

*An overall 2.0 GPA is required in the courses for the IET Minor (excluding the international studies minor courses).*



# Industrial Engineering Technology, BS

## Area A

- ENGL 1101 - English Composition I **3 Credits**
- ENGL 1102 - English Composition II **3 Credits**
- MATH 1113 - Pre-calculus **4 Credits**

## Area B

- COMM 2400 - Public Speaking **2 Credits**
- STS 2400 - Science, Technology, and Society **2 Credits**

## Area C

- Group 1 - Literature of the World **3 Credits**
- Group 2 - Art and Culture of the World **3 Credits**

## Area D

- Sciences - Lab Science\* Note 1 **8 Credits**
- MATH 2253 - Calculus I **4 Credits**

## Area E

- Group 1 - American Context **3 Credits**
- Group 2 - World History **3 Credits**
- Group 3 - Behavioral Science **3 Credits**
- Group 4 - Cultures and Societies **3 Credits**

## Area F

- CHEM 1211 - Principles of Chemistry I **3 Credits** \* Note 2
- CHEM 1211L - Principles of Chemistry I Lab **1 Credits**
- TCOM 2010 - Technical Writing **3 Credits**
- IT 1113 - Programming Principles **3 Credits**
- EDG 1210 - Survey of Engineering Graphics **2 Credits**

- IET 2305 - The Role of Industrial Engineering Technology in Industrial Systems **4 Credits**

## Major Courses

- ACCT 2101 - Principles of Financial Accounting **3 Credits**
- IET 1000 - Orientation **1 Credits**
- IET 2227 - Introduction to Statistics **3 Credits**
- IET 2449 - Logistics and Supply Chain Management **3 Credits**
- IET 3322 - Work Measurement and Ergonomics **4 Credits**
- IET 3339 - Statistical Quality Control **3 Credits**
- IET 3356 - Quality Concepts and Systems Design **3 Credits**
- IET 3403 - Advanced Statistics with Application **3 Credits**
- IET 3424 - Engineering Economy **3 Credits**
- IET 3433 - Product and Process Costing **3 Credits**
- IET 4405 - Operations Research - Concepts, Models and Methods **3 Credits**
- IET 4422 - Facilities Design, Plant Layout, and Materials Handling **4 Credits**
- IET 4451 - Systems Simulation **3 Credits**
- IET 4475 - Senior Project **3 Credits**
- IET 4810 - Ethics and Safety **1 Credits**
- MGNT 4115 - Human Resource Management **3 Credits**
- MGNT 4135 - Project Management **3 Credits**
- MGNT 4151 - Operations Management **3 Credits**
- SPSU 1001 - Hitch-hiker's Introduction to SPSU **1 Credits**
- Free Electives **6 Credits**

## IET Electives (9 semester hours from the list below)

- IET 3320 - Advanced Logistics **3 Credits**
- IET 3407 - Six Sigma and Lean Manufacturing **3 Credits**
- IET 3410 - Principles of Team Dynamics **3 Credits**
- IET 3511 - Sustainability Engineering **3 Credits**
- IET 3620 - Warehousing Systems **3 Credits**
- IET 4111 - Design of Experiments **3 Credits**
- IET 4121 - Advanced Topics in Quality Assurance **3 Credits**
- IET 4478 - Senior Internship **3 Credits**

## Degree Program Total: 128

*Note 1 - Physics I and Physics II are preferred Area D Sciences, however, any Lab Sciences from the approved list is permissible.*

*Note 2 – Chemistry I is the preferred Area F Science, however, any Lab Science from the approved list is permissible.*

**A grade of "C" or better is required in all courses used in the major prescribed for the bachelor degree program.**

## Concentration in Logistics

The primary objective of the Concentration in Logistics is to provide training and education to students interested in entering the Supply Chain industry.

### Required Courses

- IET 2227 - Introduction to Statistics **3 Credits**
- IET 2449 - Logistics and Supply Chain Management **3 Credits**
- IET 3320 - Advanced Logistics **3 Credits**
  
- IET 3511 - Sustainability Engineering **3 Credits** or
- IET 3620 - Warehousing Systems **3 Credits**
  
- IET 4405 - Operations Research - Concepts, Models and Methods **3 Credits**
- MGNT 4115 - Human Resource Management **3 Credits**
- MGNT 4151 - Operations Management **3 Credits**

**Total: 21**

Students who successfully complete the Concentration with a grade of "C" or better in each course will be awarded a Green Belt Certificate.

## Concentration in Quality Principles

The primary objective of the Concentration in Quality Principles is to provide training and education to students interested in quality system principles, methodology, elements and standards.

### Required Courses:

- IET 3339 - Statistical Quality Control **3 Credits**
- IET 3356 - Quality Concepts and Systems Design **3 Credits**
- IET 3403 - Advanced Statistics with Application **3 Credits**
- IET 3407 - Six Sigma and Lean Manufacturing **3 Credits**
- IET 3410 - Principles of Team Dynamics **3 Credits**
- MGNT 4135 - Project Management **3 Credits**
- MGNT 4151 - Operations Management **3 Credits**

Total: 21

Students who successfully complete the Concentration with a grade of "C" or better in each course will be awarded a Green Belt Certificate.

## **Logistics Certificate**

The primary objective of the Certificate in Logistics is to provide training and education to members of the Supply Chain industry that need to improve skills and knowledge in the latest technology available in their field. Students can complete the requirements in 4-6 semesters. The courses may also be applied toward completing a B. S. degree in Industrial Engineering Technology. The program will be offered on campus, through distance learning, and over the Internet.

### **Admission Requirements:**

Applicants must have earned a High School degree or GED and been out of high school for at least five years or have earned 30 college credits from an accredited institution of higher learning with a minimum GPA of 2.0.

### **Required Courses:**

- IET 2227 - Introduction to Statistics **3 Credits**
- IET 2449 - Logistics and Supply Chain Management **3 Credits**
- IET 3320 - Advanced Logistics **3 Credits**
- IET 3620 - Warehousing Systems **3 Credits**
- IET 4405 - Operations Research - Concepts, Models and Methods **3 Credits**
- MGNT 4115 - Human Resource Management **3 Credits**
- MGNT 4151 - Operations Management **3 Credits**

Certificate Program Total: 21

## **Logistics Minor**

Students must complete the following courses:

- IET 2227 - Introduction to Statistics **3 Credits**
- IET 2449 - Logistics and Supply Chain Management **3 Credits**
- IET 3320 - Advanced Logistics **3 Credits**

- IET 3620 - Warehousing Systems **3 Credits**

Students choose one from the following:

- IET 3403 - Advanced Statistics with Application **3 Credits**
- IET 3410 - Principles of Team Dynamics **3 Credits**
- IET 3511 - Sustainability Engineering **3 Credits**
- IET 4405 - Operations Research - Concepts, Models and Methods **3 Credits**
- MGNT 4115 - Human Resource Management **3 Credits**
- MGNT 4135 - Project Management **3 Credits**
- MGNT 4151 - Operations Management **3 Credits**

Minor Program Total: 15

## **Manufacturing Operations, BAS**

The Bachelor of Applied Science in Manufacturing Operations has been specifically designed for students who have completed an Associate of Applied Science Degree from a Technical College System of Georgia institution.

The goal of the partnership between SPSU and the TCSG schools is to provide the opportunity for degreed graduates from the technical schools of Georgia to complete a Bachelor's degree in approximately 60 semester credits which in equivalent to about two years as a full time student.

All required major courses to complete the BAS in Manufacturing Operations program are offered totally online by SPSU faculty. All general education requirements are also offered on-line through the university system called E-core.

The BAS Manufacturing Operations program prepares students in the areas of manufacturing, logistics and operations through an industry-driven curriculum encompassing manufacturing processes, quality principles, engineering economy, work measurement and facilities layout.

Companies traditionally who hire SPSU graduates include such leaders as Shaw Industries, Delta Airlines, Georgia Power, Mohawk Industries, Lockheed Martin and UPS.

Since each TCSG program is different, the website <http://iet.spsu.edu/BAS.html> outlines the articulation of each program to SPSU.

Further information on the TCSG and SPSU program can also be found at <http://tcsг.spsu.edu/>.

## **Area A**

- ENGL 1101 - English Composition I **3 Credits**
- ENGL 1102 - English Composition II **3 Credits**

- MATH 1111 - College Algebra **3 Credits**

## Area B

- COMM 2400 - Public Speaking **2 Credits**
- STS 2400 - Science, Technology, and Society **2 Credits**

## Area C

- Group 1 - Literature of the World **3 Credits**
- Group 2 - Art and Culture of the World **3 Credits**

## Area D

- Sciences - Lab Sciences **8 Credits**
- MATH 1113 - Pre-calculus **4 Credits**

## Area E

- Group 1 - American Context **3 Credits**
- Group 2 - World History **3 Credits**
- Group 3 - Behavioral Science **3 Credits**
- Group 4 - Cultures and Societies **3 Credits**

## Area F

- Technical Block - Up to 17 Semester Hours **17 Credits**
- Major Technical Block - Up to 21 Semester Hours **21 Credits**

## Major Courses

- ACCT 2101 - Principles of Financial Accounting **3 Credits**
- IET 2227 - Introduction to Statistics **3 Credits**
- IET 3322 - Work Measurement and Ergonomics **4 Credits**
- IET 3339 - Statistical Quality Control **3 Credits**
- IET 3356 - Quality Concepts and Systems Design **3 Credits**
- IET 3424 - Engineering Economy **3 Credits**
- IET 3511 - Sustainability Engineering **3 Credits**

- IET 4422 - Facilities Design, Plant Layout, and Materials Handling **4 Credits**
- MATH 2253 - Calculus I **4 Credits**
- MGNT 4151 - Operations Management **3 Credits**
- SPSU 1001 - Hitch-hiker's Introduction to SPSU **1 Credits**

## Technical Electives

Choose any two courses

- IET 2305 - The Role of Industrial Engineering Technology in Industrial Systems **4 Credits**
- IET 2449 - Logistics and Supply Chain Management **3 Credits**
- IET 3403 - Advanced Statistics with Application **3 Credits**
- ECET 3000 - Electrical Principles **4 Credits**
- MET 1311 - Manufacturing Processes **3 Credits**
- MET 2322 - Metrology and CNC Machining **3 Credits**
- TCOM 2010 - Technical Writing **3 Credits**

**Degree Program Total: 120**

## Production Design Certificate

The primary objective of the Certificate in Production Design is to provide training and education to members of the Industrial Engineering field in the measurement and analysis of work and in the design or improvement of facilities. Students can complete the requirements in 3-4 semesters. These courses may also be applied toward completing a B.S. degree in Industrial Engineering Technology upon acceptance to SPSU.

### Admission Requirements:

Applicants must meet all undergraduate admission requirements.

### Required Courses:

- IET 2227 - Introduction to Statistics **3 Credits**
- IET 3322 - Work Measurement and Ergonomics **4 Credits**
- ACCT 2101 - Principles of Financial Accounting **3 Credits**
- IET 4422 - Facilities Design, Plant Layout, and Materials Handling **4 Credits**
- IET 4405 - Operations Research - Concepts, Models and Methods **3 Credits**
- MGNT 4151 - Operations Management **3 Credits**

**Certificate Program Total: 20**

## Quality Principles Certificate

The primary objective of the Certificate in Quality Principles is to provide training and education to members of the Industrial Engineering field in quality system principles, methodology, elements and standards. Students can complete the requirements in 3–4 semesters. These courses may also be applied toward completing a B.S. degree in Industrial Engineering technology upon acceptance to SPSU.

### Admission Requirements:

Applicants must meet all undergraduate admission requirements.

### Required Courses:

- IET 2227 - Introduction to Statistics **3 Credits**
- IET 3339 - Statistical Quality Control **3 Credits**
- IET 3356 - Quality Concepts and Systems Design **3 Credits**
- IET 3403 - Advanced Statistics with Application **3 Credits**
- IET 3410 - Principles of Team Dynamics **3 Credits**
- MGNT 4135 - Project Management **3 Credits**
- MGNT 4151 - Operations Management **3 Credits**

Certificate Program Total: 21

## Quality Principles Minor

Students must complete the following courses:

- IET 2227 - Introduction to Statistics **3 Credits**
- IET 3339 - Statistical Quality Control **3 Credits**
- IET 3356 - Quality Concepts and Systems Design **3 Credits**
- IET 3407 - Six Sigma and Lean Manufacturing **3 Credits**

Students choose one from the following:



- IET 3403 - Advanced Statistics with Application **3 Credits**
- IET 3410 - Principles of Team Dynamics **3 Credits**
- IET 4405 - Operations Research - Concepts, Models and Methods **3 Credits**
- MGNT 4135 - Project Management **3 Credits**
- MGNT 4151 - Operations Management **3 Credits**

**Minor Program Total: 15**

## **Supply Chain Logistics, BAS**

The Bachelor of Applied Science in Supply Chain Logistics has been specifically designed for students who have completed an Associate of Applied Science Degree from a Technical College System of Georgia institution.

The goal of the partnership between SPSU and the TCSG schools is to provide the opportunity for degreed graduates from the technical schools of Georgia to complete a Bachelor's degree in approximately 60 semester credits which in equivalent to about two years as a full time student.

All required major courses to complete the BAS in Supply Chain Logistics are offered totally online by SPSU faculty. All general education requirements are also offered on-line through the university system called E-core.

The BAS Supply Chain Logistics prepares students for careers in managing raw materials, work-in-process and finished goods inventories and how to efficiently control the movement of those inventories.

Graduates in this type program are engaged in challenging and demanding careers in responsible positions such as Logistics Manager, Demand Planning Analyst, Senior Buyer, Purchasing Agent and Supply Chain Manager.

Companies traditionally who hire SPSU graduates include such leaders as Shaw Industries, Delta Airlines, Georgia Power, Mohawk Industries, Lockheed Martin and UPS.

Since each TCSG program is different, the website <http://iet.spsu.edu/BASSC.html> outlines the articulation of each program to SPSU.

Further information on the TCSG and SPSU program can also be found at <http://tcsг.spsu.edu/>.

### **Area A**

- ENGL 1101 - English Composition I **3 Credits**
- ENGL 1102 - English Composition II **3 Credits**
- MATH 1111 - College Algebra **3 Credits**

### **Area B**

- COMM 2400 - Public Speaking **2 Credits**

- STS 2400 - Science, Technology, and Society **2 Credits**

## Area C

- Group 1 - Literature of the World **3 Credits**
- Group 2 - Art and Culture of the World **3 Credits**

## Area D

- Sciences - Lab Sciences **8 Credits**
- MATH 1113 - Pre-calculus **4 Credits**

## Area E

- Group 1 - American Context **3 Credits**
- Group 2 - World History **3 Credits**
- Group 3 - Behavioral Science **3 Credits**
- Group 4 - Cultures and Societies **3 Credits**

## Area F

- Technical Block - Up to 17 Semester Hours **17 Credits**
- Major Technical Block - Up to 21 Semester Hours **21 Credits**

## Major Courses

- ACCT 2101 - Principles of Financial Accounting **3 Credits**
- IET 2227 - Introduction to Statistics **3 Credits**
- IET 2449 - Logistics and Supply Chain Management **3 Credits**
- IET 3320 - Advanced Logistics **3 Credits**
- IET 3339 - Statistical Quality Control **3 Credits**
- IET 3356 - Quality Concepts and Systems Design **3 Credits**
- IET 3424 - Engineering Economy **3 Credits**
- IET 3511 - Sustainability Engineering **3 Credits**
- IET 3620 - Warehousing Systems **3 Credits**
- MGNT 3105 - Management and Organizational Behavior **3 Credits**
- MGNT 3135 - Principles of Marketing **3 Credits**
- MGNT 4135 - Project Management **3 Credits**
- TCOM 2010 - Technical Writing **3 Credits**
- SPSU 1001 - Hitch-hiker's Introduction to SPSU **1 Credits**

Degree Program Total: 120

## **Mechanical Engineering Technology**

### **Offering:**

Offering: Bachelor of Science in Mechanical Engineering Technology

### **Mission Statement**

The Mechanical Engineering Technology Program at Southern Polytechnic State University prepares graduates with the necessary knowledge and skills to perform in professional positions in mechanical engineering. Positions include careers in the design, development, implementation, analysis, manufacturing, testing, evaluation, sales, or maintenance of mechanical systems. Graduates will possess knowledge in math, basic sciences, the traditional engineering sciences, engineering graphics, manufacturing processes, and principals of automation. Students will develop skills in problem solving; written and oral communications; and the use of computer tools. Graduates will apply this knowledge in the design and analysis, development, selection, implementation and control of mechanical systems.

### **Employers**

SPSU's MET graduates work for top companies such as LockheedMartin, General Electric, Gerdau Ameristeel, Kubota, Caterpillar, Club Car, Newell Rubbermaid, Annheuser Busch, Shaw Industries and many others

SPSU's MET graduates are leaders. They build their own companies and show leadership as professional engineers, chief engineers, and presidents. ATS (Applied Technical Services), Marietta NDT, Automated Logic, and Werner Machine are some of the international and local companies started by MET alumni.

SPSU's MET graduates have industry-ready skills employers are looking for. Many of our students are employment-ready before graduation and receive internships, co-op positons and part time jobs.

### **Engineering Tools**

The tools of the engineer have changed and SPSU's MET graduates are grounded in fundamental engineering principles and prepared to lead in the application of the latest engineering technologies. Students are thoroughly trained in the latest CAD software from geometric modeling to simulations and engineering analysis. They use MATLAB to write code and perform advanced engineering calculations. Students not only create designs but build what they design using traditional methods including: welding, sheet metal forming, manual machining, and plasma cutting. CAD/CAM, (Computer-Aided Design, and Computer-Aided Manufacturing) programs are written and run on the latest CNC machining and turning centers. In hands-on labs students perform mechanical testing, fluids testing, and wind tunnel testing. Automation skills are developed with PLC (Programmable Logic Controller) programming. Additive manufacturing is applied using Fused Deposition Modeling or Inkjet technology, otherwise known as 3D printing. 3D scanning and instrumentation is used for metrology and reverse engineering applications. MET graduates apply time tested engineering principles using the latest technologically advanced engineering tools to solve real world problems.

# Educational Objective

Graduates of the mechanical engineering technology program will:

- Be prepared for applied mechanical engineering positions that require specialized knowledge and skills in a particular area of mechanical engineering, such as mechanical design; manufacturing and automation; plant engineering; or heating, ventilation, air conditioning, and refrigeration (HVAC-R).
- Be aware of the impacts of their decisions on the health and safety of workers and on the environment, and of ethical and societal concerns.
- Solve problems that require critical thinking, use of teamwork, research, and communication skills.
- Understand the need for lifelong learning and continued professional development, including Professional Engineer registration.

# Outcomes

Graduates of the Mechanical Engineering Technology program will demonstrate:

- an ability to apply knowledge of engineering materials, applied mechanics, thermal sciences, fundamentals of electricity, manufacturing processes, mechanical design, computer-aided engineering graphics, and electro-mechanical devices and controls.
- an ability to apply current knowledge and adapt to emerging applications of mathematics, science, engineering and technology
- an ability to conduct, analyze and interpret experiments and apply experimental results to improve processes
- an ability to apply creativity in the design of systems, components, and processes
- an ability to function effectively on teams,
- an ability to identify, analyze and solve technical problems,
- an ability to communicate effectively,
- a recognition of the need for, and an ability to engage in lifelong learning,
- an ability to understand professional, ethical and social responsibilities,
- a respect for diversity and a knowledge of contemporary professional, societal and global issues.
- a commitment to quality, timeliness, and continuous improvement.
- technical expertise in engineering materials, statics, dynamics, strength of materials, solid and fluid mechanics, thermodynamics, industrial electronics.
- technical expertise with added depth in mechanical design and computer-aided design.
- added technical depth in at least one of the following (selected by the student): analysis and design of HVAC&R systems, including economic analysis and computerized energy evaluation methods; engineering materials; or manufacturing.
- ability to use calculus to solve applied physics problems in mechanics and thermodynamics.

# The Faculty

Jeffrey Ray, *Professor and Dean*

John F. Sweigart, *Associate Professor and Department Chair*

Joseph A. Como, *Lecturer*

Gregory M. Conrey, *Associate Professor*

Puttagounder S Dhanasekaran, Assistant Professor  
Randall Emert, Assistant Professor  
Donald D. Horton, *Associate Professor*  
Ali Khazaei, *Associate Professor*  
Simin Nasser, *Associate Professor*  
Norman A. Russell, *Associate Professor*

## Accreditation

The B.S. degree in Mechanical Engineering Technology is accredited by the Engineering Technology Accreditation Commission (ETAC) of ABET, 111 Market Place, Suite 1050, Baltimore, MD 21202-4012 - telephone: (410) 347-7700.

## Areas of Study

Mechanical Engineering Technology, BS

## Concentrations

Mechanical Engineering Technology is a broad discipline. However, with the appropriate selection of elective courses, any one concentration can be completed within the hours required for the MET degree. Students at Southern Polytechnic State University may obtain a concentration in one of the following areas:

- Aerospace
- Energy
- Engineering Design Graphics
- General
- Machine Design
- Manufacturing

## Aerospace Concentration:

The Aerospace concentration is designed to provide students with sufficient knowledge and skills to allow them to operate as a competent practitioner within the field of aerospace engineering. Students will develop not only technical know-how but also a practical and analytical approach to problem-solving that will allow them to address a range of aerospace engineering challenges.

The Aerospace Concentration requires the following course:  
MET 3123 Dynamics of Machines

Select three additional courses which count toward the MET Major Electives from the following:

SYE 3801 Aerodynamics  
SYE 3802 Aircraft Design and Performance  
SYE 4801 Aircraft Propulsion  
SYE 4802 Helicopter Theory  
SYE 4803 Senior Design (Aeronautics)

## **Energy Concentration:**

Energy is the fundamental industry that supports all others. Students who choose this concentration may work in the heating, ventilating, and refrigeration area or work with internal combustion engines, steam turbines, boilers, air compressors, pumps, and fans.

Graduates with this concentration are employed as system designers in architectural companies; as process engineers in the petrochemical and pulp and paper industries; as power generation plant engineers; and as sales representatives for manufacturers.

The Energy Concentration requires the following course:  
MET 3402 Thermodynamics II

Select three additional courses which count toward the MET Major Electives from the following:

MET 4341 Automation Systems and Controls  
MET 4411 Refrigeration  
MET 4412 Air Conditioning  
MET 4431 Plant and Power Applications  
MET 4401 Heat Transfer

## **Engineering Design Graphics:**

Mechanical Engineering Technology graduates with an Engineering Design Graphics concentration may obtain employment as Product Design Engineers, Machine Design Engineers, Project Engineers, CAD/CAE Application Engineers, Biomedical Engineers, and Mechanical Engineers. Students with this concentration specialize in CAD systems performing geometric and solid modeling, CAD animations and simulations, Computer Aided Engineering Analysis, surface modeling, sheet metal and weldment design, and CAD customization and standards.

The Engineering Design Graphics Concentration requires the following course:  
MET 4112 Computer Aided Engineering

Select three additional courses which count toward the MET Major Electives from the following:

EDG 3112 Advanced Engineering Graphics  
EDG 4111 Surface Modeling  
EDG 4222 CAD Customization and Standards  
EDG 4224 Engineering Graphics for Manufacturing  
MET 3332 Rapid Design and Manufacture

## **General Concentration:**

The MET bachelor degree with a general concentration offers the student the opportunity to explore courses in any of the other four concentration areas listed. In order to obtain this concentration a student will take one of the following courses:

MET 3123 Dynamics of Machines  
MET 3331 Tool Design  
MET 3402 Thermodynamics II  
MET 4112 Computer Aided Engineering

Select three additional courses from any of the other concentration areas, which count toward the MET Major Electives (extra courses from the list above can be used as major elective):

See Energy Concentration Courses  
See Engineering Design Graphics Concentration Courses  
See Machine Design Concentration Courses  
See Manufacturing Concentration Courses

## **Machine Design Concentration:**

The Machine Design concentration is concerned with the application of fundamental principles of design to new and existing machines, machine parts and mechanical structures; the fabricating, testing and assembly of components into production of mechanical systems; and the operation of machines and mechanical equipment.

Graduates with a Machine Design concentration may be employed as designers of machinery and/or machine parts for the improvement of production operations and cost; supervisors of fabricating facilities, manufacturing plants, maintenance and repair shops; sales and service representatives of industrial and manufacturing firms.

The Machine Design Concentration requires the following course:  
MET 3123 Dynamics of Machines

Select three additional courses which count toward the MET Major Electives from the following:

MET 3332 Rapid Design and Manufacture  
MET 4112 Computer Aided Engineering & Analysis  
MET 4124 Vibration and Advanced Dynamics  
MET 4133 Advanced Engineering Materials  
MET 4142 Mechanical Systems Design  
MET 4341 Automation Systems and Controls

## **Manufacturing Concentration:**

The Manufacturing concentration is concerned with both traditional manufacturing processes and advanced additive manufacturing technology. Students may obtain industry ready skills in CNC machining, tool design, 3D printing, 3D scanning, rapid tooling, PLC's, and automation.

Graduates may be employed in manufacturing industries such as: aircraft, automotive, biomedical, racing, heavy equipment, steel production and fabrication, plastics production, injection molding, and aluminum production. Titles for graduates may be: Manufacturing Engineer, Project Engineer, Tool Designer, Tooling Engineer, Process Engineer, Mold Designer, PLC programmer, and Automation Engineer.

The Manufacturing Concentration requires the following course:  
MET 3331 Tool Design

Select three additional courses which count toward the MET Major Electives from the following:

MET 3332 Rapid Design and Manufacture  
MET 4133 Advanced Engineering Materials  
MET 4341 Automation Systems and Controls  
MET 4342 Numerical Control of Machines  
MGNT4135 Project Management

## **Engineering Design Graphics Minor**

Students who wish to receive a minor in Engineering Design Graphics must take:

- EDG 1212 - Engineering Graphics II **4 credits**

Select four additional courses from the following:

- EDG 3112 - Advanced Engineering Graphics **3 credits**
- EDG 4111 - Surface Modeling **3 credits**
- EDG 4222 - CAD Customization and Standards **3 credits**
- EDG 4224 - Engineering Graphics for Manufacturing **3 credits**
- MET 3332 - Rapid Design and Manufacture **3 credits**
- MET 4112 - Computer Aided Engineering & Analysis **3 credits**
- OR
- ME 4250 - Computer Aided Engineering **3 credits**

Minor Program Total: 16

Not available to MET students with a concentration in Engineering Design Graphics.

## **Manufacturing Engineering Technology Minor**

Students who wish to receive a minor in Manufacturing Engineering Technology must take the following two courses:

- MET 1311 - Manufacturing Processes **3 credits**
- MET 2322 - Metrology and CNC Machining **3 credits**

Select three additional courses from the following:

- EDG 4224 - Engineering Graphics for Manufacturing **3 credits**
- IET 3407 - Six Sigma and Lean Manufacturing **3 credits**
- MET 3331 - Tool Design **3 credits**
- MET 3332 - Rapid Design and Manufacture **3 credits**
- MET 4342 - Numerical Control of Machines **3 credits**
- MGNT 4135 - Project Management **3 credits**

Minor Program Total: 15

Note: Not available to MET students with a concentration in Manufacturing

## **Mechanical Engineering Technology, BS**

### **Requirements**

- CHEM 1211 - Principles of Chemistry I **3 Credits**
- CHEM 1211L - Principles of Chemistry I Lab **1 Credits**
- ECON 2107 - Introduction to Economic Analysis **3 Credits** (Recommended for Area E-3)
- ENGL 1101 - English Composition I **3 Credits**
- ENGL 1102 - English Composition II **3 Credits**
- TCOM 2010 - Technical Writing **3 Credits**
- MATH 1113 - Pre-calculus **4 Credits** (the extra hour is applied to area F)



- MATH 2254 - Calculus II **4 Credits**
- MATH 2306 - Ordinary Differential Equations **3 Credits**
- MATH 2253 - Calculus I **4 Credits** (the extra hour is applied to Major Req.)
- PHYS 2211 - Principles of Physics I **3 Credits**
- PHYS 2211L - Principles of Physics Laboratory I **1 Credits**
- PHYS 2212 - Principles of Physics II **3 Credits**
- PHYS 2212L - Principles of Physics Laboratory II **1 Credits**
- COMM 2400 - Public Speaking **2 Credits**
- STS 2400 - Science, Technology, and Society **2 Credits**
- Area C Group 1 - Take One Course From the Literature Group **3 Credits**
- Area C Group 2 - Take One Course From the Art and Culture Group **3 Credits**
- Area E Group 1 - American Context **3 Credits**
- Area E Group 2 - World History **3 Credits**
- Area E Group 4 - Cultures and Societies **3 Credits**
- MET 4501 - Engineering Computation using Matlab **3 Credits**
- ECET 3000 - Electrical Principles **4 Credits**
- EDG 1211 - Engineering Graphics I **3 Credits**
- EDG 1212 - Engineering Graphics II **4 Credits**
- ENGR 2214 - Engineering Mechanics – Statics **3 Credits**
- ENGR 3122 - Dynamics **3 Credits**
- ENGR 3131 - Strength of Materials **3 Credits**
- ENGR 3132 - Strength of Materials Lab **1 Credits**
- MET 3101 - Fluid Mechanics Principles & Applications **4 Credits**
- MET 1000 - Mechanical Engineering Technology Orientation **1 Credits**
- SPSU 1001 - Hitch-hiker's Introduction to SPSU **1 Credits**
- MET 1311 - Manufacturing Processes **3 Credits**
- MET 1321 - Machining and Welding **2 Credits**
- MET 2322 - Metrology and CNC Machining **3 Credits**
- MET 3132 - Engineering Materials **4 Credits**
- MET 3401 - Thermodynamics I **3 Credits**
- MET 4141 - Machine Design I **4 Credits**
- MET 4421 - Instruments and Controls **4 Credits**

Select one of the following four courses (3 Credits)

- MET 3123 - Dynamics of Machines **3 Credits**
- MET 3331 - Tool Design **3 Credits**
- MET 3402 - Thermodynamics II **3 Credits**
- MET 4112 - Computer Aided Engineering & Analysis **3 Credits**
- MET XXXX - Major Electives (For Concentration) **12 Credits**
- Free Elective **3 Credits**

Degree Program Total: 129

## Note:

Note 1. MET majors are required to earn an overall 2.0 average in all courses designated as MET and ENGR.

Note 2. PHYS 1111, PHYS 1111L and PHYS 1112, PHYS 1112L may be substituted for PHYS 2211, PHYS 2211L and PHYS 2212, PHYS 2212L .

Note 3. The Free Elective may not be MATH 1111 .

# Environmental Engineering Technology

## Programs of Study

### Major

### Accounting, BS

The Bachelor of Science in Accounting (BSA) is designed to give students a broad understanding of the major components of the accounting industry and the foundation requirements for taking the certified public accountant (CPA) exam as specified by the Georgia State Board of Accountancy. Included in the 122 hours required to earn this degree is a comprehensive coverage of business principles.

### Requirements

#### Area A Essential Skills

- ENGL 1101 - English Composition I **3 Credits**
- ENGL 1102 - English Composition II **3 Credits**
- MATH 1113 - Pre-calculus **4 Credits**

#### Area B Institutional Options

- COMM 2400 - Public Speaking **2 Credits**
- STS 2400 - Science, Technology, and Society **2 Credits**

## Area C Humanities/Fine Arts

Group 1: Literature (Select one)

- ENGL 2111 - Early World Literature **3 Credits**
- ENGL 2112 - World Literature Mid-1600s to Present **3 Credits**
- ENGL 2120 - British Literature Early to Present **3 Credits**
- ENGL 2121 - Early British Literature **3 Credits**
- ENGL 2122 - British Literature Late 1700s to Present **3 Credits**
- ENGL 2130 - American Literature Early to Present **3 Credits**
- ENGL 2131 - Early American Literature **3 Credits**
- ENGL 2132 - American Literature Mid 1800s to Present **3 Credits**
- ENGL 2141 - Early Western Literature **3 Credits**
- ENGL 2142 - Western Literature 1600s to Present **3 Credits**
- ENGL 2300 - African-American Literature and Culture **3 Credits**

Group 2: Art and Culture (Select one)

- ARTS 2001 - Art Appreciation **3 Credits**
- ARTS 2002 - Drama Appreciation **3 Credits**
- ARTS 2003 - Music Appreciation **3 Credits**
- ARTS 2004 - History of Contemporary American Music **3 Credits**
- FREN 1002 - Elementary French II **3 Credits**
- GRMN 1002 - Elementary German II **3 Credits**
- SPAN 1002 - Elementary Spanish II **3 Credits**

## Area D Science, Mathematics, and Technology

- MATH 2240 - Survey of Calculus **3 Credits**
- plus Science: select two (2) science courses with labs (labs must be taken concurrently) - **8 Credits**
- ASTR 1000K - Introduction to the Universe **4 Credits**
- ASTR 1010K - Introduction to the Universe II **4 Credits**
- BIOL 2107 - Principles of Biology I **3 Credits**
- BIOL 2107L - Principles of Biology I Laboratory **1 Credits**
- BIOL 2108 - Principles of Biology II **3 Credits**
- BIOL 2108L - Principles of Biology II Laboratory **1 Credits**
- CHEM 1211 - Principles of Chemistry I **3 Credits**
- CHEM 1211L - Principles of Chemistry I Lab **1 Credits**
- CHEM 1212 - Principles of Chemistry II **3 Credits**
- CHEM 1212L - Principles of Chemistry II Lab **1 Credits**
- PHYS 1111 - Introductory Physics I **3 Credits**

- PHYS 1111L - Introductory Physics Laboratory I **1 Credits**
- PHYS 1112 - Introductory Physics II **3 Credits**
- PHYS 1112L - Introductory Physics Laboratory II **1 Credits**
- PHYS 2211 - Principles of Physics I **3 Credits**
- PHYS 2211L - Principles of Physics Laboratory I **1 Credits**
- PHYS 2212 - Principles of Physics II **3 Credits**
- PHYS 2212L - Principles of Physics Laboratory II **1 Credits**
- GEOL 1101K - Introductory Geosciences **4 Credits**
- ENVS 2202K - Introduction to Environmental Science **4 Credits**

## Area E Social Sciences

- Group 1: American Context (select one)
  - HIST 2111 - United States History to 1877 **3 Credits**
  - HIST 2112 - United States History since 1877 **3 Credits**
  - POLS 1101 - American Government **3 Credits**
- Area E-2: World History (select one)
  - HIST 1111 - Survey of World Civilization pre 1500 **3 Credits**
  - HIST 1112 - Survey of World Civilization post 1500 **3 Credits**
- Area E-3: Behavioral Science (select one)
  - ECON 1101 - Introduction to Economics **3 Credits**
  - ECON 2107 - Introduction to Economic Analysis **3 Credits**
  - PSYC 1101 - Introduction to General Psychology **3 Credits**
  - SOCI 1101 - Introduction to Sociology **3 Credits**
- Area E-4: Cultures and Societies (select one)
  - ANTH 1102 - Introduction to Anthropology **3 Credits**
  - ES 1100 - Ethnic Studies **3 Credits**
  - GEOG 1101 - Introduction to Human Geography **3 Credits**
  - POLS 2401 - Global Issues **3 Credits**
  - RELG 1200 - World Religion **3 Credits**

## Area F

- ACCT 2101 - Principles of Financial Accounting **3 Credits**
- ACCT 2102 - Principles of Managerial Accounting **3 Credits**
- ECON 2105 - Principles of Macroeconomics **3 Credits**
- ECON 2106 - Principles of Microeconomics **3 Credits**
- COMM 2000 - Business Communication **3 Credits**
- MGNT 2201 - Business Computer Applications **3 Credits**

## Common Professional Core

- MGNT 1000 - Orientation to Business **1 Credits**
- SPSU 1001 - Hitch-hiker's Introduction to SPSU **1 Credits**
- IET 2227 - Introduction to Statistics **3 Credits**
- MGNT 3105 - Management and Organizational Behavior **3 Credits**
- MGNT 3135 - Principles of Marketing **3 Credits**
- MGNT 3125 - Business Finance **3 Credits**
- MGNT 3145 - Legal Environment of Business **3 Credits**
- MGNT 3205 - Management Information Systems **3 Credits**
- MGNT 4135 - Project Management **3 Credits**
- MGNT 4151 - Operations Management **3 Credits**

## Core Accounting Courses

- ACCT 3230 - Intermediate Accounting I **3 Credits**
- ACCT 3231 - Intermediate Accounting II **3 Credits**
- ACCT 4530 - Advanced Accounting **3 Credits**
- ACCT 3530 - Cost Accounting **3 Credits**
- ACCT 4535 - Accounting Information Systems **3 Credits**
- MGNT 4545 - Legal Environment of Business II **3 Credits**
- MGNT 4545 - Legal Environment of Business II **3 Credits**
- ACCT 4555 - Auditing and Assurance **3 Credits**
- ACCT 4560 - Intro to Federal Income Taxes **3 Credits**

## Electives (Select 3 courses)

- ACCT 4562 - Federal Taxation II **3 Credits**
- ACCT 4565 - Fraud Examination **3 Credits**
- MGNT 4115 - Human Resource Management **3 Credits**
- MGNT 4125 - Technology and Public Issues **3 Credits**
- MGNT 4145 - International Management **3 Credits**
- MGNT 4190 - Entrepreneurship **3 Credits**
- MGNT 4595 - Business Strategy **3 Credits**
- Free Elective - 2 credit hours

Degree Program Total: 122

## **Bachelor of Apparel and Textiles**

## Area A

- ENGL 1101 - English Composition I **3 Credits**
- ENGL 1102 - English Composition II **3 Credits**
- MATH 1111 - College Algebra **3 Credits**

## Area B

- COMM 2400 - Public Speaking **2 Credits**
- STS 2400 - Science, Technology, and Society **2 Credits**

## Area C

- C1 - Literature of the World **3 Credits**
- C2 - Art and Culture of the World **3 Credits**

## Area D

- Sciences - Two Area D Lab Science Courses **8 Credits**
- Math - One Area D Math Course **4 Credits**

## Area E

- E1 - US History **3 Credits**
- E2 - World History **3 Credits**
- E3 - Behavioral Science **3 Credits**
- E4 - Cultures and Societies **3 Credits**

## Area F

- ACCT 2101 - Principles of Financial Accounting **3 Credits**
- ATT 1200 - Apparel Design Graphics **2 Credits**
- ATT 1300 - International Sourcing **3 Credits**
- ECON 1101 - Introduction to Economics **3 Credits**
- MGNT 2201 - Business Computer Applications **3 Credits**
- TCOM 2010 - Technical Writing **3 Credits**

## Major Courses

- ATT 1000 - Orientation **1 Credits**
- ATT 1400 - Principles of Merchandising **3 Credits**
- ATT 2301 - Apparel Computer-Aided Technical Design I **4 Credits**
- ATT 3100 - Fashion Merchandising **3 Credits**
- ATT 3505 - Fabric Formation and Design **3 Credits**
- ATT 3600 - Apparel Analysis and Product Development **3 Credits**
- ATT 3602 - Apparel Computer-Aided Technical Design II **4 Credits**
- ATT 3800 - Fashion Forecasting, Data Analysis & Consumer Trends **3 Credits**
- ATT 4444 - Quality Assurance for Textiles and Apparel **4 Credits**
- ATT 4670 - Apparel/Textile Business Practices **3 Credits**
- ATT 4750 - Advanced Design and Product Development **3 Credits**
- ATT 4840 - Textile/Apparel Business Project **3 Credits**
- IET 4810 - Ethics and Safety **1 Credits**
- MGNT 3135 - Principles of Marketing **3 Credits**
- SPSU 1001 - Hitch-hiker's Introduction to SPSU **1 Credits**

ATT Related Electives: Select four courses: \* 12

- ARTS 2010 - Introduction to Drawing **3 Credits**
- ATT 4820 - Senior Internship **3 Credits**
- IET 2227 - Introduction to Statistics **3 Credits**
- IET 2449 - Logistics and Supply Chain Management **3 Credits**
- IET 3511 - Sustainability Engineering **3 Credits**
- MGNT 3105 - Management and Organizational Behavior **3 Credits**
- MGNT 3205 - Management Information Systems **3 Credits**
- MGNT 4145 - International Management **3 Credits**
- Free Electives **6 Credits**

**Degree Program Total: 120**

\* At least six hours of Related Elective must be upper level courses

## **Bachelor of Architecture**

[5 Year Professional Degree]

### Requirements

## USG Core

- ENGL 1101 - English Composition I **3 Credits**
- ENGL 1102 - English Composition II **3 Credits**
- COMM 2400 - Public Speaking **2 Credits**
- STS 2400 - Science, Technology, and Society **2 Credits**
- Area C Group 1 Take One Course from the Literature Group [See ARCH Matrix] **3 Credits**
- Area C Group 2 Take One Course from the Art and Culture Group [See ARCH Matrix] **3 Credits**
- MATH 1113 - Pre-calculus **4 Credits**
- MATH 2253 - Calculus I **4 Credits**
- Area D Lab Sciences (Two courses with Labs) – PHYS 1111L [required] – **8 Credits Hours Total**
- Area E Group 1 American Context, One Course [See ARCH Matrix] **3 Credits**
- Area E Group 2 World History, One Course [See ARCH Matrix] **3 Credits**
- Area E Group 3 Behavioral Science, One Course [See ARCH Matrix] **3 Credits**
- Area E Group 4 Cultures and Societies, One Course [See ARCH Matrix] **3 Credits**

## Design Foundation

- SPSU 1001 - Hitch-hiker's Introduction to SPSU **1 Credits**
- DFN 1000 - Orientation to Architecture (Summer Design Workshop) **2 Credits**
- DFN 1001 - Design Foundation I **4 Credits**
- DFN 1002 - Design Foundation II **4 Credits**
- DFN 1241 - Design Communication I **2 Credits**
- DFN 2003 - Design Foundation III **4 Credits**
- DFN 2004 - Design Foundation IV **4 Credits**
- DFN 1111 - Architecture Culture I: Early Civilizations & Medieval **3 Credits**
- DFN 2112 - Architecture Culture II - The Renaissance through 1850 **3 Credits**
- DFN 2211 - Architecture Structures I - Introduction to Structures **3 Credits**
- DFN 2311 - Environmental Tech I -Systems Selection and Materials **3 Credits**
- DFN 2242 - Design Communication II **2 Credits**

## Architecture

- ARCH 3011 - Architecture Studio I **4 Credits**
- ARCH 3012 - Architecture Studio II **4 Credits**
- ARCH 3113 - Architecture Culture III - 1850 through 1945 **3 Credits**
- ARCH 3116 - Urban Planning and Design Theory **3 Credits**
- ARCH 3211 - Architecture Structures II: Steel and Wood **4 Credits**



- ARCH 3212 - Architecture Structures III: Concrete and Lateral Loads **3 Credits**
- ARCH 3313 - Environmental Technology II: Human Comfort, Sustainability and HVAC Systems: **3 Credits**
- ARCH 3314 - Environmental Technology III: Natural & Artificial Lighting, Electrical Systems & Vertical Circulation: **3 Credits**
- ARCH 4013 - Architecture Studio III **4 Credits**
- ARCH 4014 - Architecture Studio IV **4 Credits**
- ARCH 4114 - Architecture Cultures IV: 1945-Current **3 Credits**
- ARCH 4224 - Environmental Technology IV: Codes and Technical Documentation **3 Credits**
- ARCH 4411 - Design Cost Control **2 Credits**
- ARCH 5313 - Professional Practice and Ethics **3 Credits**
- ARCH 5593 - Thesis Prep/Research **2 Credits**
- ARCH 5998F - Focus Studio **4 Credits**
- ARCH 5999R - Thesis Research S/U **Credits**
- ARCH 5999T - Thesis Project **5 Credits**
- Electives **17 Credits**

Degree Program Total: 153

## **Biology, B.S.**

### Area A

- ENGL 1101 - English Composition I **3 Credits**
- ENGL 1102 - English Composition II **3 Credits**
- MATH 1113 - Pre-calculus **4 Credits**

### Area B

- COMM 2400 - Public Speaking **2 Credits**
- STS 2400 - Science, Technology, and Society **2 Credits**

### Area C

- Group 1 - Literature of the World **3 Credits**
- Group 2 - Art and Culture of the World **3 Credits**

## Area D

- **MATH 2253 - Calculus I 4 Credits**  
Take any 2 of the courses below (with labs):
- **BIOL 2107 - Principles of Biology I 3 Credits**
- **BIOL 2107L - Principles of Biology I Laboratory 1 Credits**
- **BIOL 2108 - Principles of Biology II 3 Credits**
- **BIOL 2108L - Principles of Biology II Laboratory 1 Credits**
- **CHEM 1211 - Principles of Chemistry I 3 Credits**
- **CHEM 1211L - Principles of Chemistry I Lab 1 Credits**
- **CHEM 1212 - Principles of Chemistry II 3 Credits**
- **CHEM 1212L - Principles of Chemistry II Lab 1 Credits**
- **PHYS 1111 - Introductory Physics I 3 Credits**
- **PHYS 1111L - Introductory Physics Laboratory I 1 Credits**
- **PHYS 1112 - Introductory Physics II 3 Credits**
- **PHYS 1112L - Introductory Physics Laboratory II 1 Credits**

### Note:

*PHYS 2211/PHYS 2211L and PHYS 2212/PHYS 2212L may be taken instead of PHYS 1111/PHYS 1111L and PHYS 1112/PHYS 1112L*

## Area E

- **Group 1 - American Context 3 Credits**
- **Group 2 - World History 3 Credits**
- **Group 3 - Behavioral Science 3 Credits**
- **Group 4 - Cultures and Societies 3 Credits**

## Area F

Take any 4 courses (with labs) from the list below. Courses used as Area D requirements may not be selected.

- **BIOL 2107 - Principles of Biology I 3 Credits**
- **BIOL 2107L - Principles of Biology I Laboratory 1 Credits**
- **BIOL 2108 - Principles of Biology II 3 Credits**
- **BIOL 2108L - Principles of Biology II Laboratory 1 Credits**
- **CHEM 1211 - Principles of Chemistry I 3 Credits**
- **CHEM 1211L - Principles of Chemistry I Lab 1 Credits**
- **CHEM 1212 - Principles of Chemistry II 3 Credits**
- **CHEM 1212L - Principles of Chemistry II Lab 1 Credits**
- **PHYS 1111 - Introductory Physics I 3 Credits**
- **PHYS 1111L - Introductory Physics Laboratory I 1 Credits**
- **PHYS 1112 - Introductory Physics II 3 Credits**

- PHYS 1112L - Introductory Physics Laboratory II **1 Credits**

## Note:

*PHYS 2211/PHYS 2211L and PHYS 2212/PHYS 2212L may be taken instead of PHYS 1111/PHYS 1111L and PHYS 1112/PHYS 1112L*

## Common Biology Major Requirements

A grade of "C" or better must be earned in all courses (excluding core areas A-E and free electives).

- BIOL 3000K - Genetics **4 Credits**
- BIOC 3111K - Biochemistry I **4 Credits**
- CHEM 2511K - Organic Chemistry I **4 Credits**
- CHEM 2512K - Organic Chemistry II **4 Credits**
- MATH 2260 - Introduction to Probability and Statistics **3 Credits**
- TCOM 2010 - Technical Writing **3 Credits**
- A Biology major must complete one program track (see below).

## General Biology Track Requirements

- BIOL 3300K - Ecology **4 Credits**
- BIOL 4480 - Evolution **3 Credits**
- At least 5 additional BIOL or BIOC courses above 2199 (excluding track requirements), with **at least one course** from each of the **Cellular Form and Function group** and the **Organismal Form and Function group** **17-21 Credits**
- Free Electives **10-14 Credits**

## Cellular Form and Function group

- BIOL 3100K - Microbiology **4 Credits**
- BIOL 3400K - Cell Physiology **4 Credits**
- BIOL 4410 - Immunology **3 Credits**
- BIOL 4470 - Plant Physiology **3 Credits**

## Organismal Form and Function group

- BIOL 3700K - Ichthyology **4 Credits**
- BIOL 4100K - Entomology **4 Credits**

- BIOL 4110 - Parasitology **3 Credits**
- BIOL 4200K - Zoology **4 Credits**
- BIOL 4400K - Human Physiology **4 Credits**
- BIOL 4440K - Botany **4 Credits**
- BIOL 4460K - Human Anatomy **4 Credits**

## Biochemistry & Molecular Biology Track Requirements

- BIOL 3200K - Applied Molecular Biology Laboratory **4 Credits**
- BIOL 3310K - Molecular Biology **4 Credits**
- BIOC 3112K - Biochemistry II **4 Credits**
- At Least 4 additional BIOL or BIOC courses above 2199 (excluding track requirements) **12-16 Credits**
- Free Electives **10 – 14 Credits**

## Bioinformatics Track Requirements

- BIOL 2500K - Bioinformatics I - Tools & Databases **4 Credits**
- BIOL 3310K - Molecular Biology **4 Credits**
- BIOL 4510K - Bioinformatics II **4 Credits**
- CSE 1301J - Programming & Problem Solving I **4 Credits**
- CSE 1302J - Programming & Problem Solving II **4 Credits**
- CSE 3153 - Database Systems **3 Credits**
- At least 3 additional BIOL or BIOC courses above 2199 (excluding track requirements) **9 – 12 Credits**
- Free Electives **3 – 6 Credits**

## Biotechnology Track Requirements

- BIOL 3100K - Microbiology **4 Credits**
- BIOL 3310K - Molecular Biology **4 Credits**
- BIOL 3400K - Cell Physiology **4 Credits**
- BIOL 4350K - Cell and Tissue Culture **4 Credits**
- BIOL 4600K - Biotechnology **4 Credits**
- At Least 3 additional BIOL or BIOC courses above 2199 (excluding track requirements) **9-11 Credits**
- Free electives **7-9 Credits**

## Pre-Health Professional Track Requirements

- BIOL 3400K - Cell Physiology **4 Credits**
- BIOL 4400K - Human Physiology **4 Credits**
- BIOL 4460K - Human Anatomy **4 Credits**
- At Least 4 additional BIOL or BIOG Courses Above 2199 (excluding track requirements) **12-16 Credits**
- Free Electives **10-14 Credits**

**Degree Program Total: 120**

## **Biology, Education Track, BS**

The bachelor's degrees in mathematics or science with the Teacher Education track provides students with a strong foundation in the discipline, giving them maximum flexibility with their degrees. Adding the Teacher Education track can give students immediate job possibilities.

The Teacher Education Program at SPSU provides students with strong, mentored experiences in the schools, a thorough knowledge of the teaching strategies and research on learning science and mathematics, and a nationally renowned teacher preparation program. This program allows students to build confidence in working with a variety of students in multiple school settings, and prepares them for a successful career in teaching mathematics or science in the middle school or high school.

## **Requirements**

- ENGL 1101 - English Composition I **3 Credits**
- ENGL 1102 - English Composition II **3 Credits**
- MATH 1113 - Pre-calculus **4 Credits**
- MATH 2253 - Calculus I **4 Credits**
- MATH 2260 - Introduction to Probability and Statistics **3 Credits**
- COMM 2400 - Public Speaking **2 Credits**
- STS 2400 - Science, Technology, and Society **2 Credits**
- Area C Group 1 Take One Course from the Literature Group **3 Credits**
- Area C Group 2 Take One Course from the Art and Culture Group **3 Credits**
- Area E Group 1 American Context **3 Credits**
- Area E Group 2 World History **3 Credits**
- Area E Group 3 Behavioral Science **3 Credits**
- Area E Group 4 Cultures and Societies **3 Credits**
- SPSU 1001 - Hitch-hiker's Introduction to SPSU **1 Credits**
- CHEM 1211 - Principles of Chemistry I **3 Credits**
- CHEM 1211L - Principles of Chemistry I Lab **1 Credits**
- CHEM 1212 - Principles of Chemistry II **3 Credits**
- CHEM 1212L - Principles of Chemistry II Lab **1 Credits**
- CHEM 2511K - Organic Chemistry I **4 Credits**
- CHEM 2512K - Organic Chemistry II **4 Credits**
- PHYS 1111 - Introductory Physics I **3 Credits**

- PHYS 1111L - Introductory Physics Laboratory I **1 Credits**
- BIOL 3000K - Genetics **4 Credits**
- BIOL 3300K - Ecology **4 Credits**
- BIOL 3400K - Cell Physiology **4 Credits**
- BIOL 4200K - Zoology **4 Credits**
- BIOL 4400K - Human Physiology **4 Credits**
- BIOL 4460K - Human Anatomy **4 Credits**
- BIOL 4440K - Botany **4 Credits**
- BIOL 4480 - Evolution **3 Credits**
- EDUC 1101 - UTeach Step 1 **1 Credits**
- EDUC 1102 - UTeach Step 2 **1 Credits**
- EDUC 2010 - UTeach Knowing and Learning **3 Credits**
- EDUC 2020 - Classroom Interactions **3 Credits**
- EDUC 4030 - Project Based Instruction **3 Credits**
- RSCH 3610 - Research Methods **3 Credits**
- STS 3347 - Perspectives on Science and Math **3 Credits**
- EDUC 4401 - Apprentice Teaching Seminar **1 Credits**
- EDUC 4406 - Apprentice Teaching **6 Credits**

**Degree Program Total: 126**

### **Note:**

*PHYS 2211, PHYS 2211L and PHYS 2212, PHYS 2212L may be taken instead of PHYS 1111, PHYS 1111L and PHYS 1112, PHYS 1112L*

## **Business Administration, BS**

### **Area A - Essential Skills (10 hours)**

- ENGL 1101 - English Composition I **3 Credits**
- ENGL 1102 - English Composition II **3 Credits**
- MATH 1113 - Pre-calculus **4 Credits**

### **Area B - Institutional Options (4 hours)**

- COMM 2400 - Public Speaking **2 Credits**
- STS 2400 - Science, Technology, and Society **2 Credits**

## Area C1 - Humanities (3 hours)

- ENGL 2111 - Early World Literature **3 Credits**
- ENGL 2112 - World Literature Mid-1600s to Present **3 Credits**
- ENGL 2120 - British Literature Early to Present **3 Credits**
- ENGL 2121 - Early British Literature **3 Credits**
- ENGL 2122 - British Literature Late 1700s to Present **3 Credits**
- ENGL 2130 - American Literature Early to Present **3 Credits**
- ENGL 2131 - Early American Literature **3 Credits**
- ENGL 2132 - American Literature Mid 1800s to Present **3 Credits**
- ENGL 2141 - Early Western Literature **3 Credits**
- ENGL 2142 - Western Literature 1600s to Present **3 Credits**
- ENGL 2300 - African-American Literature and Culture **3 Credits**

## Area C2 - Fine Arts (3 hours)

- ARTS 2001 - Art Appreciation **3 Credits**
- ARTS 2002 - Drama Appreciation **3 Credits**
- ARTS 2003 - Music Appreciation **3 Credits**
- ARTS 2004 - History of Contemporary American Music **3 Credits**
- FREN 1002 - Elementary French II **3 Credits**
- GRMN 1002 - Elementary German II **3 Credits**
- SPAN 1002 - Elementary Spanish II **3 Credits**

## Area D1 - Mathematics (4 hours)

- MATH 2240 - Survey of Calculus **3 Credits**

## Area D2 - Science (8 hours)

- ASTR 1000K - Introduction to the Universe **4 Credits**
- BIOL 2107 - Principles of Biology I **3 Credits**
- BIOL 2108 - Principles of Biology II **3 Credits**
- CHEM 1211 - Principles of Chemistry I **3 Credits**
- CHEM 1212 - Principles of Chemistry II **3 Credits**
- PHYS 1111 - Introductory Physics I **3 Credits**

- PHYS 1112 - Introductory Physics II **3 Credits**
- PHYS 2211 - Principles of Physics I **3 Credits**
- PHYS 2212 - Principles of Physics II **3 Credits**

### Area E1 - Social Sciences - American Context (3 hours)

- HIST 2111 - United States History to 1877 **3 Credits**
- HIST 2112 - United States History since 1877 **3 Credits**
- POLS 1101 - American Government **3 Credits**

### Area E2 - Social Sciences - World History (3 hours)

- HIST 1111 - Survey of World Civilization pre 1500 **3 Credits**
- HIST 1112 - Survey of World Civilization post 1500 **3 Credits**

### Area E3 - Behavioral Science (3 hours)

- ECON 1101 - Introduction to Economics **3 Credits**
- PSYC 1101 - Introduction to General Psychology **3 Credits**
- SOCI 1101 - Introduction to Sociology **3 Credits**

### Area E4 - Cultures and Societies (3 hours)

- ANTH 1102 - Introduction to Anthropology **3 Credits**
- ES 1100 - Ethnic Studies **3 Credits**
- GEOG 1101 - Introduction to Human Geography **3 Credits**
- POLS 2401 - Global Issues **3 Credits**
- RELG 1200 - World Religion **3 Credits**

### Area F (18 hours)

- ACCT 2101 - Principles of Financial Accounting **3 Credits**
- ACCT 2102 - Principles of Managerial Accounting **3 Credits**



- COMM 2400 - Public Speaking **2 Credits**
- ECON 2105 - Principles of Macroeconomics **3 Credits**
- ECON 2106 - Principles of Microeconomics **3 Credits**
- MGNT 2201 - Business Computer Applications **3 Credits**

## Required Courses

- MGNT 1000 - Orientation to Business **1 Credits**
- IET 2227 - Introduction to Statistics **3 Credits**
- IET 3356 - Quality Concepts and Systems Design **3 Credits**
- IET 4405 - Operations Research - Concepts, Models and Methods **3 Credits**
- MGNT 3105 - Management and Organizational Behavior **3 Credits**
- MGNT 3125 - Business Finance **3 Credits**
- MGNT 3135 - Principles of Marketing **3 Credits**
- MGNT 3145 - Legal Environment of Business **3 Credits**
- MGNT 3205 - Management Information Systems **3 Credits**
- MGNT 4115 - Human Resource Management **3 Credits**
- MGNT 4125 - Technology and Public Issues **3 Credits**
- MGNT 4135 - Project Management **3 Credits**
- MGNT 4145 - International Management **3 Credits**
- MGNT 4151 - Operations Management **3 Credits**
- MGNT 4595 - Business Strategy **3 Credits**

## Business Administration Options

### **Concentration, Business Electives, Directed Electives, or a Minor in Another Discipline**

Students in the Bachelor of Science in Business Administration program may complete the remaining 17 hours of credit by taking electives in a concentration (management, marketing, management of information systems), directed electives, or by completing a minor in another field. At least three courses must be at the 3000-level or above.

#### **Option 1: Concentration**

Students may complete 12 hours (four courses) in Accounting, Management, Marketing, or MIS by completing four electives in the selected area (see the elective lists that follows). At least three courses must be at the 3000-level or above.

#### **Option 2: Business Electives**

Students may complete 12 hours of elective credit from all of the business electives. At least three courses must be at the 3000-level or above.

### **Option 3: Directed Electives**

Students may create a customized group of four electives from business and other disciplines, subject to advisor approval. At least three of the courses must be at the 3000-level or above.

### **\*Option 4: Minor in another field of study**

Students may complete a Minor in another field (15-18 hours). See the catalog for requirements in a specific minor. Must complete free electives if the minor is less than 17 hours. Note that some minors require 18 hours.

#### **Accounting Concentration Electives (15 Credits)**

- ACCT 3230 - Intermediate Accounting I **3 Credits**
- ACCT 3231 - Intermediate Accounting II **3 Credits**
- ACCT 3530 - Cost Accounting **3 Credits**
- ACCT 4535 - Accounting Information Systems **3 Credits**
  
- ACCT 4530 - Advanced Accounting **3 Credits** or
- ACCT 4560 - Intro to Federal Income Taxes **3 Credits**

#### **Finance Concentration Electives (12 Credits)**

- MGNT 3231 - Management of Financial Institutions **3 Credits**
- MGNT 4232 - Financial Planning and Capital Budgeting **3 Credits**
- MGNT 4233 - Investment Analysis and Portfolio Management **3 Credits**
- MGNT 4234 - International Finance **3 Credits**

#### **Management Concentration Electives: Select 4 courses from the list below**

- MGNT 4100 - Business Systems Analysis and Design **3 Credits**
- MGNT 4140 - Management of Networks and Telecommunications **3 Credits**
- MGNT 4185 - Technology Management **3 Credits**
- MGNT 4195 - Current Readings in Management of Technology and Operations **3 Credits**
- MGNT 4903 - Special Topics in Management
- MGNT 4103 - Marketing Management **3 Credits**
- MGNT 3170 - Leadership **3 Credits**
- MGNT 4190 - Entrepreneurship **3 Credits**

## Management Information Systems Concentration Electives (12 Credits)

- IT 1113 - Programming Principles **3 Credits**
- MGNT 3500 - Database Management **3 Credits**
- MGNT 4100 - Business Systems Analysis and Design **3 Credits**
- MGNT 4140 - Management of Networks and Telecommunications **3 Credits**

## Marketing Concentration Electives (12 Credits)

- MGNT 3210 - Professional Selling and Customer Relationship Management **3 Credits**
- MGNT 3224 - Business Marketing **3 Credits**
- MGNT 3228 - Market Research **3 Credits**
- MGNT 4103 - Marketing Management **3 Credits**
- MGNT 4903 - Special Topics in Marketing

## **Business Management, BAS**

The Bachelor of Applied Science degree is designed to cap designated associate degree programs. Admission to this program requires completion of an associate of applied science or associate of applied technology degree in Business Management or Marketing from a SACS accredited school in the Technical College System of Georgia. The program covers the common professional component in Business Administration with additional courses to fulfill the requirements of Areas A through E of the core. This coursework will prepare a candidate for a supervisory role in business or industry.

### Area A - Essentials Skills

- ENGL 1101 - English Composition I **3 Credits**
- ENGL 1102 - English Composition II **3 Credits**
- MATH 1111 - College Algebra **3 Credits**

### Area B - Institutional Options (4 hours)

- COMM 2400 - Public Speaking **2 Credits**
- STS 2400 - Science, Technology, and Society **2 Credits**

## Area C1 - Literature of the World (3 hours)

- ENGL 2111 - Early World Literature **3 Credits**
- ENGL 2112 - World Literature Mid-1600s to Present **3 Credits**
- ENGL 2120 - British Literature Early to Present **3 Credits**
- ENGL 2121 - Early British Literature **3 Credits**
- ENGL 2122 - British Literature Late 1700s to Present **3 Credits**
- ENGL 2130 - American Literature Early to Present **3 Credits**
- ENGL 2131 - Early American Literature **3 Credits**
- ENGL 2132 - American Literature Mid 1800s to Present **3 Credits**
- ENGL 2141 - Early Western Literature **3 Credits**
- ENGL 2142 - Western Literature 1600s to Present **3 Credits**
- ENGL 2300 - African-American Literature and Culture **3 Credits**

## Area C2 - Art and Culture

- ARTS 2001 - Art Appreciation **3 Credits**
- ARTS 2002 - Drama Appreciation **3 Credits**
- ARTS 2003 - Music Appreciation **3 Credits**
- ARTS 2004 - History of Contemporary American Music **3 Credits**
- FREN 1002 - Elementary French II **3 Credits**
- GRMN 1002 - Elementary German II **3 Credits**
- SPAN 1002 - Elementary Spanish II **3 Credits**

## Area D1 - Mathematics (4 hours)

- MATH 1113 - Pre-calculus **4 Credits**

## Area D2 - Science (8 hours)

- ASTR 1000K - Introduction to the Universe **4 Credits**
- BIOL 2107 - Principles of Biology I **3 Credits**
- BIOL 2107L - Principles of Biology I Laboratory **1 Credits**
- CHEM 1211 - Principles of Chemistry I **3 Credits**
- CHEM 1211K - Principles of Chemistry (ECORE) **4 Credits**
- CHEM 1211L - Principles of Chemistry I Lab **1 Credits**

- CHEM 1212 - Principles of Chemistry II **3 Credits**
- CHEM 1212K - Principles of Chemistry II (ECORE) **4 Credits**
- CHEM 1212L - Principles of Chemistry II Lab **1 Credits**
- PHYS 1111 - Introductory Physics I **3 Credits**
- PHYS 1111L - Introductory Physics Laboratory I **1 Credits**
- PHYS 1112 - Introductory Physics II **3 Credits**
- PHYS 1112L - Introductory Physics Laboratory II **1 Credits**
- GEOL 1101K - Introductory Geosciences **4 Credits**

### Area E1 - Social Sciences - American Context (3 hours)

- HIST 2111 - United States History to 1877 **3 Credits**
- HIST 2112 - United States History since 1877 **3 Credits**
- POLS 1101 - American Government **3 Credits**

### Area E2 - Social Sciences - World History (3 hours)

- HIST 1111 - Survey of World Civilization pre 1500 **3 Credits**
- HIST 1112 - Survey of World Civilization post 1500 **3 Credits**

### Area E3 - Social Sciences - Behavioral Science (3 hours)

- ECON 1101 - Introduction to Economics **3 Credits**
- PSYC 1101 - Introduction to General Psychology **3 Credits**
- SOCI 1101 - Introduction to Sociology **3 Credits**

### Area E4 - Social Sciences - Cultures and Societies

- ANTH 1102 - Introduction to Anthropology **3 Credits**
- ES 1100 - Ethnic Studies **3 Credits**
- GEOG 1101 - Introduction to Human Geography **3 Credits**
- RELG 1200 - World Religion **3 Credits**
- POLS 2401 - Global Issues **3 Credits**

### Technical Block

Students who have completed an A.A.S. in Business Management/Supervision or Marketing from a SACS accredited school in the Technical College System of Georgia may obtain transfer credit in the Technical Block for up to 38 credit hours in business.

## Required Business Administration Courses (outside of Technical Block)

- SPSU 1001 - Hitch-hiker's Introduction to SPSU **1 Credits**
- MGNT 1000 - Orientation to Business **1 Credits**
- MATH 2240 - Survey of Calculus **3 Credits**
- IET 2227 - Introduction to Statistics **3 Credits**
- MGNT 3105 - Management and Organizational Behavior **3 Credits**
- MGNT 3125 - Business Finance **3 Credits**
- MGNT 3145 - Legal Environment of Business **3 Credits**
- MGNT 3205 - Management Information Systems **3 Credits**
- MGNT 4115 - Human Resource Management **3 Credits**
- MGNT 4135 - Project Management **3 Credits**
- MGNT 4145 - International Management **3 Credits**
- MGNT 4151 - Operations Management **3 Credits**
- MGNT 4595 - Business Strategy **3 Credits**
- Upper level Management elective

Degree Program Total: 122

## Chemistry, BS

### Area A

- ENGL 1101 - English Composition I **3 Credits**
- ENGL 1102 - English Composition II **3 Credits**
- MATH 1113 - Pre-calculus **4 Credits**

### Area B

- COMM 2400 - Public Speaking **2 Credits**
- STS 2400 - Science, Technology, and Society **2 Credits**

## Area C

- Group 1 - Literature of the World **3 Credits**
- Group 2 - Art and Culture of the World **3 Credits**

## Area D

- MATH 2253 - Calculus I **4 Credits**  
Take any 2 of the courses below (with labs):
- BIOL 2107 - Principles of Biology I **3 Credits**
- BIOL 2107L - Principles of Biology I Laboratory **1 Credits**
- BIOL 2108 - Principles of Biology II **3 Credits**
- BIOL 2108L - Principles of Biology II Laboratory **1 Credits**
- CHEM 1211 - Principles of Chemistry I **3 Credits**
- CHEM 1211L - Principles of Chemistry I Lab **1 Credits**
- CHEM 1212 - Principles of Chemistry II **3 Credits**
- CHEM 1212L - Principles of Chemistry II Lab **1 Credits**
- PHYS 2211 - Principles of Physics I **3 Credits**
- PHYS 2211L - Principles of Physics Laboratory I **1 Credits**
- PHYS 2212 - Principles of Physics II **3 Credits**
- PHYS 2212L - Principles of Physics Laboratory II **1 Credits**

## Area E

- Group 1 - American Context **3 Credits**
- Group 2 - World History **3 Credits**
- Group 3 - Behavioral Science **3 Credits**
- Group 4 - Cultures and Societies **3 Credits**

## Area F

Take any 4 courses (with labs) from the list below. Courses used as Area D requirements may not be selected.

- CHEM 1211 - Principles of Chemistry I **3 Credits**
- CHEM 1211L - Principles of Chemistry I Lab **1 Credits**
- CHEM 1212 - Principles of Chemistry II **3 Credits**
- CHEM 1212L - Principles of Chemistry II Lab **1 Credits**
- PHYS 2211 - Principles of Physics I **3 Credits**
- PHYS 2211L - Principles of Physics Laboratory I **1 Credits**
- PHYS 2212 - Principles of Physics II **3 Credits**
- PHYS 2212L - Principles of Physics Laboratory II **1 Credits**
- CHEM 2511K - Organic Chemistry I **4 Credits**
- CHEM 2512K - Organic Chemistry II **4 Credits**

## Chemistry Major Requirements

- MATH 2254 - Calculus II **4 Credits**
- CHEM 2601 - Chemical Literature **2 Credits**
- CHEM 3100K - Analytical Chemistry **5 Credits**
- CHEM 3300K - Instrumental Analysis **4 Credits**
- CHEM 4411 - Inorganic Chemistry **3 Credits**
- CHEM 4111K - Physical Chemistry I **4 Credits**
- CHEM 4112 - Physical Chemistry II **3 Credits**
- CHEM 4112L - Physical Chemistry II Lab **1 Credits**
- BIOC 3111K - Biochemistry I **4 Credits**
- TCOM 2010 - Technical Writing **3 Credits**
- A Chemistry major must complete one program track (see below).

## General Chemistry Track

- Four additional BIOC, CHEM, MATH, or Science electives at the 3000 level or higher. **12-16 Credits**
- Free electives **11-15 Credits**

## Materials Science Track

- MSCI 3101K - Introduction to Material Science **4 Credits**
- CHEM 4412 - Main Group Inorganic Chemistry **3 Credits**
- CHEM 4415 - Solid State Chemistry **3 Credits**
- Upper-level CHEM elective **3-4 Credits**
- Free electives **13-14 Credits**

## Chemistry, Education Track, BS

The bachelor's degrees in mathematics or science with the Teacher Education track provides students with a strong foundation in the discipline, giving them maximum flexibility with their degrees. Adding the Teacher Education track can give students immediate job possibilities.

The Teacher Education Program at SPSU provides students with strong, mentored experiences in the schools, a thorough knowledge of the teaching strategies and research on learning science and mathematics, and a nationally renowned teacher preparation program. This program allows students to build confidence in working with a variety of students in multiple school settings, and prepares them for a successful career in teaching mathematics or science in the middle school or high school.

## Requirements



- ENGL 1101 - English Composition I **3 Credits**
- ENGL 1102 - English Composition II **3 Credits**
- TCOM 2010 - Technical Writing **3 Credits**
- COMM 2400 - Public Speaking **2 Credits**
- STS 2400 - Science, Technology, and Society **2 Credits**
- Area C1 - Course in Literature **3 Credits**
- Area C2 - Course in Art and Culture **3 Credits**
- Area D - Two courses in Laboratory Science (Physics recommended) **8 Credits**
- Area E1 - American Perspective **3 Credits**
- Area E2 - World History **3 Credits**
- Area E3 - Course in Behavioral Science **3 Credits**
- Area E4 - Course in Cultures and Societies **3 Credits**
- SPSU 1001 - Hitch-hiker's Introduction to SPSU **1 Credits**
- BIOC 3111K - Biochemistry I **4 Credits**
- CHEM 1211 - Principles of Chemistry I **3 Credits**
- CHEM 1212 - Principles of Chemistry II **3 Credits**
- CHEM 2511K - Organic Chemistry I **4 Credits**
- CHEM 2512K - Organic Chemistry II **4 Credits**
- CHEM 3100K - Analytical Chemistry **5 Credits**
- CHEM 3300K - Instrumental Analysis **4 Credits**
- CHEM 4111K - Physical Chemistry I **4 Credits**
- CHEM 4112 - Physical Chemistry II **3 Credits**
- CHEM 4112L - Physical Chemistry II Lab **1 Credits**
- CHEM 4411 - Inorganic Chemistry **3 Credits**
- MATH 1113 - Pre-calculus **4 Credits**
- MATH 2253 - Calculus I **4 Credits**
- MATH 2254 - Calculus II **4 Credits**

## Chemistry Education

- EDUC 1101 - UTeach Step 1 **1 Credits**
- EDUC 1102 - UTeach Step 2 **1 Credits**
- EDUC 2010 - UTeach Knowing and Learning **3 Credits**
- EDUC 2020 - Classroom Interactions **3 Credits**
- EDUC 4030 - Project Based Instruction **3 Credits**
- RSCH 3610 - Research Methods **3 Credits**
- STS 3347 - Perspectives on Science and Math **3 Credits**
- EDUC 4401 - Apprentice Teaching Seminar **1 Credits**
- EDUC 4406 - Apprentice Teaching **6 Credits**
- Chemistry Electives **6 Credits**
- Free Electives **2 Credits**

Degree Program Total: 120

## **Civil Engineering Technology, BS**

### Requirements

- ENGL 1101 - English Composition I **3 Credits**
- ENGL 1102 - English Composition II **3 Credits**
- COMM 2400 - Public Speaking **2 Credits**
- STS 2400 - Science, Technology, and Society **2 Credits**
- Area C Group 1 Take One Course from the Literature Group **3 Credits**
- Area C Group 2 Take One Course from the Art and Culture Group **3 Credits**
- Area D CHEM 1211, CHEM 1211L and PHYS 2211, PHYS 2211L **8 Credits**
- Area E Group 1 American Context **3 Credits**
- Area E Group 2 World History **3 Credits**
- Area E Group 3 Behavioral Science **3 Credits**
- Area E Group 4 Cultures and Societies **3 Credits**
- MATH 1113 - Pre-calculus **4 Credits**
- MATH 2253 - Calculus I **4 Credits**
- MATH 2254 - Calculus II **4 Credits**
- SPSU 1001 - Hitch-hiker's Introduction to SPSU **1 Credits**
- CET 1000 - Orientation to Civil Engineering Technology **1 Credits**
- CET 2110 - Problem Solving Methods in CET **3 Credits**
- CET 3410 - Soil Properties and Site Exploration **3 Credits**
- CET 3410L - Soil Properties Lab **1 Credits**
- CET 3110 - Construction Materials and Sustainability **3 Credits**
- CET 3110L - Construction Materials Lab **1 Credits**
- CET 3120 - Cost Estimating and Scheduling in CET **3 Credits**
- CET 3120L - Plan Reading and Take Offs Lab **1 Credits**
- CET 3210 - Structural Mechanics **3 Credits**
- CET 3510 - Traffic Analysis and Road Design **2 Credits**
- CET 3510L - Traffic Analysis and Road Design Lab **1 Credits**
- CET 3130 - Applied Fluid Mechanics and Hydraulics **2 Credits**
- CET 3130L - Fluids and Hydraulics Lab **1 Credits**
- CET 3310 - Water Treatment and Distribution **2 Credits**
- CET 3310L - Water Treatment and Distribution Lab **1 Credits**
- CET 3320 - Wastewater Collection and Treatment **2 Credits**
- CET 3320L - Wastewater Collection and Treatment Lab **1 Credits**
- CET 3220 - Applied Structural Steel Design **3 Credits**
- CET 3230 - Concrete Infrastructure Design **3 Credits**

- CET 3430L - Site Exploration and Field Testing Lab **1 Credits**
- CET 4110 - Ethics of Engineering **1 Credits**
- CET 4120 - Senior Design and Engineering Documentation **3 Credits**
- CET 4130 - Special Inspections **2 Credits**
- CET 4240L - Structural Detailing Lab **1 Credits**
- CET 4310 - Stormwater Management and Erosion Control **2 Credits**
- CET 4310L - Erosion Control Lab **1 Credits**
- SURV 2221 - Surveying I **4 Credits**
- SURV 3421 - Geographic Information Systems I **4 Credits**
- EDG 2160 - Civil Graphics and Computer Aided Drafting **3 Credits**
- ENGT 2124 - Statics with Applications **3 Credits**
- ENGT 3124 - Strength of Materials with Applications **3 Credits**
- ENGT 3124L - Strength of Materials Lab **1 Credits**
- CET Electives **9 Credits**

**Degree Program Total: 123**

CET students are required to earn a grade of "C" or better in all courses required in the major and all courses used as electives.

## **Civil Engineering, BS**

### **Requirements**

- CHEM 1211 - Principles of Chemistry I **3 Credits**
- CHEM 1212 - Principles of Chemistry II **3 Credits**
- ENGL 1101 - English Composition I **3 Credits**
- ENGL 1102 - English Composition II **3 Credits**
- MATH 2253 - Calculus I **4 Credits**
- COMM 2400 - Public Speaking **2 Credits**
- STS 2400 - Science, Technology, and Society **2 Credits**
- Area C1 - Course in English Literature **3 Credits**
- Area C2 - Course in Art and Culture **3 Credits**
- Area E1 - Course in History: Political Science **3 Credits**
- Area E2 - World Civilization **3 Credits**
- Area E3 - Course in Behavioral Science **3 Credits**
- Area E4 - International Issues **3 Credits**
- MATH 2254 - Calculus II **4 Credits**
- MATH 2260 - Introduction to Probability and Statistics **3 Credits**  
\*\*or equivalent as approved by CCE Chair
- MATH 2306 - Ordinary Differential Equations **3 Credits**
- BIOL 2107 - Principles of Biology I **3 Credits**
- BIOL 2107L - Principles of Biology I Laboratory **1 Credits**

- PHYS 2211 - Principles of Physics I **3 Credits**
- PHYS 2212 - Principles of Physics II **3 Credits**
- ENGR 2214 - Engineering Mechanics – Statics **3 Credits**
- ENGR 3131 - Strength of Materials **3 Credits**
- ENGR 3132 - Strength of Materials Lab **1 Credits**
- ENGR 3324 - Project Cost Analysis **4 Credits**
- ENGR 3305 - Data Collection and Analysis in Engineering **4 Credits**
- ENGR 3343 - Fluid Mechanics **3 Credits**
- ENGR 3345 - Fluid Mechanics Laboratory **1 Credits**
- CE 1000 - Orientation to Engineering and Surveying Professions **1 Credits**
- SPSU 1001 - Hitch-hiker's Introduction to SPSU **1 Credits**
- CE 3201 - Structural Analysis **3 Credits**
- CE 3202 - Design of Concrete Structures **3 Credits**
- CE 3501 - Materials for Civil & Construction Engineering **3 Credits**
- CE 3502 - Materials for Civil & Construction Engineering Lab **1 Credits**
- CE 3701 - Geotechnical Engineering **3 Credits**
- CE 3708 - Geotechnical Engineering Lab **1 Credits**
- CE 3702 - Environmental Engineering **3 Credits**
- CE 3704 - Environmental Engineering Lab **1 Credits**
- CE 3703 - Environmental Engineering II **3 Credits**
- CE 4103 - Design of Steel Structures **3 Credits**
- CE 4105 - Foundation Design **3 Credits**
- CE 4177 - Transportation Engineering **3 Credits**
- CE 4178 - Highway Design and Construction **3 Credits**
- CE 4703 - Engineering Hydrology **3 Credits**
- CE XXXX Technical Electives **6 Credits**
- CE 4800 - Senior Project **3 Credits**
- SURV 4470 - Land Development Design **4 Credits**

## Degree Program Total: 130

The Civil Engineering degree requires a grade of "C" or better in all CE, SURV, and ENGR courses applied to degree requirements.

## CE Technical Electives: (6 hrs)

- CE 4704 - Engineering Hydraulic Analysis and Design **3 Credits**
- CE 4705 - Advanced Soil Mechanics **3 Credits**
- CE 4706 - Pavement Engineering **3 Credits**
- CE 4707 - Design of Wood Structures **3 Credits**
- CE 4708 - Hazardous Waste Engineering **3 Credits**
- CE 4709 - Matrix Structural Analysis **3 Credits**

# Computer Engineering Technology, BS

## Requirements

- ENGL 1101 - English Composition I **3 Credits**
- ENGL 1102 - English Composition II **3 Credits**
- MATH 1113 - Pre-calculus **4 Credits** (extra hour is applied to area F)
- MATH 2253 - Calculus I **4 Credits** (extra hour is applied to area F)
- MATH 2254 - Calculus II **4 Credits**
- MATH 2335 - Numerical Methods I **3 Credits**
- MATH 2306 - Ordinary Differential Equations **3 Credits**
- PHYS 2211 - Principles of Physics I **3 Credits**
- PHYS 2211L - Principles of Physics Laboratory I **1 Credits**
- PHYS 2212 - Principles of Physics II **3 Credits**
- PHYS 2212L - Principles of Physics Laboratory II **1 Credits**
- COMM 2400 - Public Speaking **2 Credits**
- STS 2400 - Science, Technology, and Society **2 Credits**
- TCOM 2010 - Technical Writing **3 Credits**
- Area C Group 1 Take One Course from the Literature Group **3 Credits**
- Area C Group 2 Take One Course from the Art and Culture Group **3 Credits**
- Area E Group 1 American Context **3 Credits**
- Area E Group 2 World History **3 Credits**
- Area E Group 3 Behavioral Science **3 Credits**
- Area E Group 4 Cultures and Societies **3 Credits**
- ECET 1001 - Orientation **1 Credits**
- SPSU 1001 - Hitch-hiker's Introduction to SPSU **1 Credits**
- ECET 1012 - Design Fundamentals **2 Credits**
- ECET 1101 - Circuits I **4 Credits**
- ECET 1200 - Digital I **4 Credits**
- ECET 2111 - Circuits II **4 Credits**
- ECET 2300 - Electronics I **4 Credits**
- ECET 2210 - Digital II **4 Credits**
- ECET 2310 - Electronics II **4 Credits**
- ECET 3220 - Digital III **4 Credits**
- ECET 3400 - Data Communications **4 Credits**
- ECET 3600 - Test Engineering **4 Credits**
- ECET 3410 - High Frequency Systems **4 Credits**
- ECET 3701 - Embedded PCs **4 Credits**
- ECET 3710 - Hardware Programming and Interfacing **4 Credits**
- ECET 3810 - Applications of C++, JAVA and HTML **3 Credits**
- ECET 4610 - Control Systems **4 Credits**
- EDG 1210 - Survey of Engineering Graphics **2 Credits**
- CpET Electives **11 Credits**

## Degree Program Total: 128

### Note:

*\* PHYS 1111/PHYS 1111L and PHYS 1112 /PHYS 1112L may be substituted for PHYS 2211/PHYS 2211L and PHYS 2212/PHYS 2212L .*

*CpET majors are required to earn a "C" or better in their ECET courses, except one "D" in a 3000 or 4000 level non-prerequisite course may be used for graduation purposes. A grade of "C" or better is required in the project-based capstone course.*

## CpET Electives

### Embedded Systems (take 2 of the following courses)

Graduate will specialize in the design and implementation of smart devices used in products ranging from audio to medical to security systems. Both hardware design and programming at the system level will be stressed. The specialist will gain resume skills such as DSP and VHDL design, embedded micro-controller and embedded PC interfacing and programming.

- ECET 3640 - Introduction to Systems Engineering and Robotics **4 Credits**
- ECET 4630 - Digital Signal Processing **4 Credits**
- ECET 4720 - Distributed Microcontrollers and PCs **4 Credits**
- ECET 4730 - VHDL and Field Programmable Gate Arrays **4 Credits**

### Networks (take 2 of the following courses)

Graduate will specialize in the development and implementation of networks of computers and micro-controllers. Applications include Telemedicine, factory automation systems, point-of-sales systems, and robotics. There will be heavy emphasis of high-level programming using C, Visual C++, JAVA, Visual BASIC, HTML, Windows, LINUX, TCP/IP, etc. Hardware will emphasize PCs and embedded PCs, smart devices, LAN technologies, and remote sensing and control.

- ECET 4710 - Network Programming and Interfacing **4 Credits**
  - ECET 4720 - Distributed Microcontrollers and PCs **4 Credits**
  - ECET 48XX - BS Telecom 3000-4000 course
  - ECET 48XX - BS Telecom 3000-4000 course
- Note: *ECET 4830 cannot be used as an elective.*

## Computer Game Design and Development, BS

Students must earn a C or better in all the major courses (CSE, CS, SWE, and CGDD).

## Requirements

- ENGL 1101 - English Composition I **3 Credits**
- ENGL 1102 - English Composition II **3 Credits**
- MATH 2253 - Calculus I **4 Credits**
- MATH 2254 - Calculus II **4 Credits**
- MATH 2345 - Discrete Mathematics **3 Credits**
- MATH 2260 - Introduction to Probability and Statistics **3 Credits**
- COMM 2400 - Public Speaking **2 Credits**
- STS 2400 - Science, Technology, and Society **2 Credits**
- Area C Group 1 Take One Course From the Literature Group **3 Credits**
- Area C Group 2 Take One Course From the Art and Culture Group **3 Credits**
- Area D See your advisor before you select science courses **8 Credits**
- Area E Group 1 American Context **3 Credits**
- Area E Group 2 World History **3 Credits**
- Area E Group 3 Behavioral Science **3 Credits**
- Area E Group 4 Cultures and Societies **3 Credits**
- CSE 1301 Programming & Problem Solving I **4 Credits**
- CSE 1302 Programming & Problem Solving II **4 Credits**
- CSE 1002 - Introduction to the Computing Disciplines **2 Credits**
- CSE 3642 - Professional Practices and Ethics **2 Credits**
- CS 3224 - Computer Organization & Architecture **4 Credits**
- CS 3424 - Data Structures **4 Credits**
- CS 4363 - Computer Graphics and Multimedia **3 Credits**
- CS 4523 - Artificial Intelligence **3 Credits**
- SWE 2313 - Introduction to Software Engineering **3 Credits**
- SWE 3643 - Software Testing and Quality Assurance **3 Credits**
- SWE 4324 - User-Centered Design **4 Credits**
- CGDD 2002 - Fundamentals of Game Design **2 Credits**
- CGDD 3103 - Application Extension and Scripting **3 Credits**
- CGDD 4003 - Digital Media and Interaction **3 Credits**
- CGDD 4203 - Mobile and Casual Game Development **3 Credits**
- CGDD 4303 - Educational and Serious Game Design **3 Credits**
- CGDD 4803 - Studio **3 Credits**
- CGDD 4814 - Capstone **4 Credits**
- Upper-level Concentration (see below for options or as approved) **9 Credits**
- Free Electives **6 Credits**

**Degree Program Total: 122**

## Note:

Students are strongly recommended to take at least one Physics course for their Area D because some later courses in this program (in particular the CGDD 4113 and CGDD 4603) may rely upon Physics. Students who are interested in the Simulation-Informatics concentration (see below) may find Biology or Chemistry beneficial instead of Physics.

## BS CGDD Upper-level Concentration

While the required courses in the degree ensure students are exposed to the breadth of the field of computer game design and development, it is also imperative that students are given flexibility to customize their experience and apply the knowledge gained in their required courses. To this end, the degree requires students select a concentration in which they may gain a depth of knowledge within their chosen area.

The following are suggested concentrations, but students may select a customized plan of study and set of courses under with their advisor's approval.

### Media-Production

- MATH 3312 - Linear Algebra **4 Credits**
- CGDD 4113 - 3D Modeling and Animation **3 Credits**
- CGDD 4603 - Production Pipeline and Asset Management **3 Credits**

### Distributed-Mobile

- SWE 3683 - Embedded Systems Analysis & Design **3 Credits**
- CS 4253 - Distributed Computing **3 Credits**
- CS 4263 - Computer Networks **3 Credits**

### Educational-Serious

- 6 hours of approved TCOM courses
- CGDD 4313 - Designing Online Learning Content and Environments **3 Credits**

### Planning-Management (pick 3 of 4)

- MGNT 3105 - Management and Organizational Behavior **3 Credits**
- MGNT 4185 - Technology Management **3 Credits**
- SWE 3623 - Software Systems Requirements **3 Credits**



- SWE 4663 - Software Project Management **3 Credits**

## Simulation-Informatics

- CSE 3153 - Database Systems **3 Credits**
- CS 4253 - Distributed Computing **3 Credits**
- CGDD 4703 - Data Modeling and Simulation **3 Credits**

## BS CGDD Program Objectives

Meet the educational needs of students and prepare them for careers within the discipline

Expand the visibility of SPSU and the University System of Georgia (USG) in the field of game design and development

Create a strong community of students and alumni

Serve the community and industry

## BS CGDD Learning Outcomes

Upon graduation, students will be able to:

- Decompose and solve complex problems through artifacts of computing such as hardware, software specifications, code and other written documents
- Demonstrate an understanding of computing principles in the areas of programming, data structures, architecture, systems, graphics, and artificial intelligence and how they relate to computer game design and development
- Utilize mathematics and science in game design and development
- Apply principles of game design and development to generate a portfolio showcasing their successful industrial experience, research, and/or creative works
- Demonstrate a breadth of knowledge in historic and emerging domains and genres of computer gaming and interaction
- Demonstrate an understanding of social, professional global, and ethical issues related to computing
- Work effectively in teams on system development projects
- Demonstrate effective oral and written communication skills

## Computer Science, BA

### BACS Program Objectives

- To meet the educational needs of the students and prepare them for careers using their computing knowledge. Students should be well versed in not only the fundamentals but also develop skills in problem solving, logic, organization, and ethics.

- To provide graduates with a thorough grounding in key principles and practices of computing.
- To provide graduates with an understanding of the ethical aspects of computing within society.
- To provide graduates with applicable communication and team skills to be used in computing careers.
- To provide graduates with another area of study where they can apply their computing knowledge or expand the context for their computing knowledge.
- To prepare graduates for employment using their computing knowledge.

## BACS Learning Outcomes

Each graduate of the program should be able to:

- Convey the understanding of, and ability to solve, problems through artifacts of computing such as specifications, code and other written documents.
- Demonstrate and apply their knowledge of fundamental data structures and algorithms to solve problems.
- Describe and explain the major concepts in the areas of operating systems, programming languages, architecture, and distributed computing.
- Demonstrate an ability to work effectively in teams on computing related projects.
- Demonstrate an ability to effectively communicate technical information.
- Demonstrate an understanding of social, professional and ethical issues related to computing.
- Obtain the skills and knowledge to be employable in positions that utilize their computing education.
- Demonstrate an understanding of a minor field of study, where computing can be applied.

## Requirements

- ENGL 1101 - English Composition I **3 Credits**
- ENGL 1102 - English Composition II **3 Credits**
- TCOM 2010 - Technical Writing **3 Credits**
- MATH 1113 - Pre-calculus **4 Credits**
- MATH 2253 - Calculus I **4 Credits**
- MATH 2254 - Calculus II **4 Credits**
- MATH 2345 - Discrete Mathematics **3 Credits**
- MATH 2260 - Introduction to Probability and Statistics **3 Credits**
- COMM 2400 - Public Speaking **2 Credits**
- COMM 2400 - Public Speaking **2 Credits**
- STS 2400 - Science, Technology, and Society **2 Credits**
- Area C Group 1 - Take One Course from the Literature Group **3 Credits**
- Area C Group 2 - Take a foreign language **3 Credits**
- Area D - Two lab science courses required **8 Credits**
- Area E Group 1 - American Context **3 Credits**
- Area E Group 2 - World History **3 Credits**
- Area E Group 3 - Behavioral Science **3 Credits**
- Area E Group 4 - Cultures and Societies **3 Credits**
- CSE 1002 - Introduction to the Computing Disciplines **2 Credits**
- CSE 1301 - Programming & Problem Solving I **4 Credits**
- CSE 1302 - Programming & Problem Solving II **4 Credits**
- CSE 3642 - Professional Practices and Ethics **2 Credits**

- CS 3123 - Programming Language Concepts **3 Credits**
- CSE 3153 - Database Systems **3 Credits**
- CS 3224 - Computer Organization & Architecture **4 Credits**
- CS 3243 - Operating Systems **3 Credits**
- CS 3424 - Data Structures **4 Credits**
- SWE 2313 - Introduction to Software Engineering **3 Credits**
- SWE 3613 - Software System Engineering **3 Credits**
- Upper-Level CS Elective (or Approved UL CGGD/SWE/IT Elective) **4 Credits**
- Approved Minor **15 Credits**
- Upper-Level Free Electives (UL CS must be at least 4 hours, and the total of CS UL and UL free electives is 10 hours) **6 Credits**
- Free Electives **5 Credits**

**Degree Program Total: 123**

## **Computer Science, BS**

### **BSCS Program Educational Objectives (PEOs)**

The Bachelor of Science in Computer Science prepares our graduates to reach the following goals 3 to 5 years beyond graduation:

- Computer Science graduates will be successful professionals in the field with solid fundamental knowledge of computer science, making valuable technical contributions to the design, development, and production of computing systems and related areas.
- Graduates utilize and exhibit strong communication and interpersonal skills, as well as professional and ethical principles when functioning as members and leaders of multi-disciplinary teams.
- Graduates are sufficiently prepared for their first and subsequent positions, as they are independent learners, including being accepted into or completing advanced degree programs.

### **BSCS Student Outcomes (SOs)**

Each graduate of the program should be able to:

- Convey the understanding of, and ability to solve, problems through artifacts of computing such as specifications, code and other written documents.
- Demonstrate and apply their knowledge of fundamental data structures and algorithms to solve problems.
- Describe and explain the major concepts in the areas of operating systems, programming languages, architecture, and distributed computing.
- Demonstrate an ability to work effectively in teams on computing related projects.
- Demonstrate an ability to effectively communicate technical information.
- Demonstrate an understanding of social, professional and ethical issues related to computing.
- Obtain the skills and knowledge to be employable in positions that utilize their computing education.

## Requirements

- ENGL 1101 - English Composition I **3 Credits**
- ENGL 1102 - English Composition II **3 Credits**
- TCOM 2010 - Technical Writing **3 Credits**
- MATH 1113 - Pre-calculus **4 Credits**
- MATH 2253 - Calculus I **4 Credits**
- MATH 2254 - Calculus II **4 Credits**
- MATH 2345 - Discrete Mathematics **3 Credits**
- MATH 2260 - Introduction to Probability and Statistics **3 Credits**
- STS 2400 - Science, Technology, and Society **2 Credits**
- Area C Group 1 Take One Course from the Literature Group **3 Credits**
- Area C Group 2 Take One Course from the Art and Culture Group **3 Credits**
- Area D Two lab science courses required **8 Credits**
- Area E Group 1 American Context **3 Credits**
- Area E Group 2 World History **3 Credits**
- Area E Group 3 Behavioral Science **3 Credits**
- Area E Group 4 Cultures and Societies **3**
- COMM 2400 - Public Speaking **2 Credits**
- CSE 1002 - Introduction to the Computing Disciplines **2 Credits**
- CSE 1301 Programming & Problem Solving I **4 Credits**
- CSE 1302 Programming & Problem Solving II **4 Credits**
- SPSU 1001 - Hitch-hiker's Introduction to SPSU **1 Credits**
- CSE 3642 - Professional Practices and Ethics **2 Credits**
- CS 3123 - Programming Language Concepts **3 Credits**
- CSE 3153 - Database Systems **3 Credits**
- CS 3224 - Computer Organization & Architecture **4 Credits**
- CS 3243 - Operating Systems **3 Credits**
- CS 3424 - Data Structures **4 Credits**
- CS 4253 - Distributed Computing **3 Credits**
- CS 4413 - Algorithm Analysis **3 Credits**
- CS 4893 - Computer Science Capstone **3 Credits**
- SWE 2313 - Introduction to Software Engineering **3 Credits**
- SWE 3613 - Software System Engineering **3 Credits**
- Approved Science Elective **4 Credits**
- Approved Math Elective (MATH 2255, MATH 2306, MATH 2335, or 3000 level or above) **3 Credits**
- Upper-level CS Electives (or Approved UL CGDD/SWE/IT Electives) **9 Credits**
- Free Electives (\* MATH 1111 may not be used as free elective hours) **4 Credits**

**Degree Program Total: 122**

**The Five-Year BSCS-MSSWE Program**

This program is likely to be of great interest to those who pursue the BSCS program and are interested in entering the job market with a high degree of preparedness by completing the requirements for a Master's degree in Software Engineering. On top of a strong CS foundation, graduates from this combined program will be trained in software project management, an in-depth understanding of requirements, design, testing, support, metrics, etc. and the processes of software development and management. Students can start taking MSSWE core graduate classes right away, even before graduating with the BSCS. Specifically, while still working on the BSCS, students can take two graduate courses applicable to the MSSWE program as electives in their BSCS degree, and the courses also count towards the MSSWE program. Students will be able to complete the MSSWE program by taking only 10 more graduate courses in an additional year.

Specific features of the combined 5-year BSCS+MS program include:

1. A waiver of all MSSWE or MSCS prerequisites with careful advisement and planning.
2. The ability to take and count two approved graduate courses – toward target MS program, taken as upper level electives in BSCS.
3. Taking the remaining ten graduate courses toward the MSSWE program during a 12-month period, including a summer. A third graduate course can be taken as an undergraduate that counts solely for the MSSWE (it does not count towards the BSCS), leaving only nine remaining courses for the MSSWE.

Note: The student must graduate with the BSCS before being fully admitted into the MSSWE program and still meet its entrance requirements.

## Construction Engineering, BS

### Requirements

- CHEM 1211 - Principles of Chemistry I **3 Credits**
- CHEM 1211L - Principles of Chemistry I Lab **1 Credits**
- CHEM 1212 - Principles of Chemistry II **3 Credits**
- CHEM 1212L - Principles of Chemistry II Lab **1 Credits**
- ENGL 1101 - English Composition I **3 Credits**
- ENGL 1102 - English Composition II **3 Credits**
- MATH 2253 - Calculus I **4 Credits**
- MATH 2254 - Calculus II **4 Credits**
- MATH 2260 - Introduction to Probability and Statistics **3 Credits**
- MATH 2306 - Ordinary Differential Equations **3 Credits**
- MATH 2335 - Numerical Methods I **3 Credits**
- PHYS 2211 - Principles of Physics I **3 Credits**
- PHYS 2211L - Principles of Physics Laboratory I **1 Credits**
- PHYS 2212 - Principles of Physics II **3 Credits**
- PHYS 2212L - Principles of Physics Laboratory II **1 Credits**
- COMM 2400 - Public Speaking **2 Credits**
- STS 2400 - Science, Technology, and Society **2 Credits**
- Area C1 - Course in English Literature **3 Credits**
- Area C2 - Course in Art and Culture **3 Credits**
- Area E1 - Course in History: American Perspective **3 Credits**
- Area E2 - World History **3 Credits**

- Area E3 - Course in Behavioral Science **3 Credits**
- Area E4 - Cultures and Societies **3 Credits**
- EDG 2160 - Civil Graphics and Computer Aided Drafting **3 Credits**
- ENGR 2214 - Engineering Mechanics – Statics **3 Credits**
- ENGR 3131 - Strength of Materials **3 Credits**
- ENGR 3132 - Strength of Materials Lab **1 Credits**
- ENGR 3324 - Project Cost Analysis **4 Credits**
- ENGR 3343 - Fluid Mechanics **3 Credits**
- CE 1000 - Orientation to Engineering and Surveying Professions **1 Credits**
- SPSU 1001 - Hitch-hiker's Introduction to SPSU **1 Credits**
- CE 3201 - Structural Analysis **3 Credits**
- CE 3501 - Materials for Civil & Construction Engineering **3 Credits**
- CE 3502 - Materials for Civil & Construction Engineering Lab **1 Credits**
- CE 3701 - Geotechnical Engineering **3 Credits**
- CE 3702 - Environmental Engineering **3 Credits**
- CE 4177 - Transportation Engineering **3 Credits**
- CE 4178 - Highway Design and Construction **3 Credits**
- CE 4703 - Engineering Hydrology **3 Credits**
- CE 4800 - Senior Project **3 Credits**
- CM 3160 - Commercial and Heavy Construction Methods **3 Credits**
- CM 3420 - Construction Estimating and Bid Preparation **4 Credits**
- CM 4510 - Construction Scheduling **3 Credits**
- CM 4560 - Construction Project Management **3 Credits**
- CM 4639 - Construction Safety & Law **4 Credits**
- SURV 2221 - Surveying I **4 Credits**
- CE 4202 - Steel and Concrete Design **4 Credits**

**Degree Program Total: 130**

The Construction Engineering degree requires a grade of "C" or better in all CE, SURV, ENGR and CM courses applied to degree requirements.

## **Construction Management, BS**

### **Area A:**

- ENGL 1101 - English Composition I **3 Credits**
- ENGL 1102 - English Composition II **3 Credits**
- MATH 1113 - Pre-calculus **4 Credits**

### **Area B:**

- COMM 2400 - Public Speaking **2 Credits**
- STS 2400 - Science, Technology, and Society **2 Credits**

### Area C:

- Group 1 - Take One Course from the Literature Group **3 Credits**
- Group 2 - Take One Course from the Art and Culture Group **3 Credits**

### Area D: Laboratory Sciences

- Group 1 - Any Two Lab Sciences (PHYS 1111, PHYS 1111L required and CHEM 1211, CHEM 1211L recommended) \*See Note 2 for PHYS 1111, PHYS 1111L **8 Credits**
- PHYS 1111 - Introductory Physics I **3 Credits** recommended for Area D– **See Note 2**
- PHYS 1111L - Introductory Physics Laboratory I **1 Credits**
- Group 2 - MATH 2240 - Survey of Calculus **3 Credits**

### Area E: Social Sciences

- Group 1 - American Context **3 Credits**
- Group 2 - World History **3 Credits**
- Group 3 - Behavioral Science **3 Credits**
- ECON 1101 - Introduction to Economics **3 Credits** recommended for Area E– **See Note 1**
- Group 4 - Cultures and Societies **3 Credits**

### Area F:

- MGNT 3145 - Legal Environment of Business **3 Credits**
- CET 2200 - Introduction to Structures **4 Credits**
- SURV 2200 - Construction Measurements **4 Credits**
- TCOM 2010 - Technical Writing **3 Credits**
- MGNT 3205 - Management Information Systems **3 Credits**

### Major-CM Courses

- ACCT 2101 - Principles of Financial Accounting **3 Credits**
- CM 1000 - Orientation to Construction and Development **2 Credits**
- CM 2000 - Construction Graphics **3 Credits**
- CM 3000 - Computer Applications in Construction **3 Credits**
- CM 3110 - Residential and Light Construction Methods **3 Credits**
- CM 3180 - Mechanical and Electrical Building Systems **4 Credits**
- CM 3410 - Construction Quantity Surveying **3 Credits**
- CM 3500 - Building Codes **2 Credits**
- CM 4510 - Construction Scheduling **3 Credits**
- CM 4760 - Construction and Real Property Law **3 Credits**
- CM 4900 - Capstone Project **3 Credits**
- CM 3040 - Building Information Modeling Applications I **3 Credits**

## Other Major Requirements:

- MGNT 3105 - Management and Organizational Behavior **3 Credits**
- ECON 1101 - Introduction to Economics **3 Credits** (if needed)
- PHYS 1111 - Introductory Physics I **3 Credits** (if needed)
- PHYS 1111L - Introductory Physics Laboratory I **1 Credits** (if needed)

## Concentration

Choose one Concentration from below.

### General Concentration

- CM 3210 - Applied Structures **4 Credits**
- CM 3260 - Temporary Structures **3 Credits**
- CM 3420 - Construction Estimating and Bid Preparation **4 Credits**
- CM 3620 - Construction Finance and Feasibility **4 Credits**
- CM 4560 - Construction Project Management **3 Credits**
- CM 4800 - Construction Process Simulation **3 Credits**

### Development Concentration

- CM 3310 - Introduction to Development **3 Credits**
- CM 3430 - Construction Estimating for Development **3 Credits**
- CM 3710 - Site Planning **4 Credits**
- CM 4570 - Development Process I **4 Credits**



- CM 3620 - Construction Finance and Feasibility **4 Credits**
- CM 4620 - Development Process II **3 Credits**

## Specialty Concentration

- CM 3280 - Building Mechanical and Electrical Codes and Loads **4 Credits**
- CM 3190 - Sustainable Construction **3 Credits**
- CM 3480 - Mechanical and Electrical Systems Estimating **4 Credits**
- CM 4480 - Design/Build MEP Systems **4 Credits**
- CM 4560 - Construction Project Management **3 Credits**
- CM 4800 - Construction Process Simulation **3 Credits**

## Facilities Management Concentration

- CM 3190 - Sustainable Construction **3 Credits**
- CM 3620 - Construction Finance and Feasibility **4 Credits**
- CM 3290 - Facilities Management **4 Credits**
- CM 4480 - Design/Build MEP Systems **4 Credits**
- CM 4560 - Construction Project Management **3 Credits**
- CM 4620 - Development Process II **3 Credits**

**Degree Program Total: 128**

### Note:

*Specialty Prerequisite for CM 4800 is CM 4480 in addition to the other prerequisites.*

*If ECON 1101 was taken to satisfy Area E, Group 3, a 3-hour Construction Elective can be substituted.*

*If PHYS 1111, PHYS 1111L were taken to satisfy Area D, Lab Science, a 4-hour Construction Elective can be substituted.*

## **Electrical Engineering Technology, BS**

### Requirements

- CHEM 1211 - Principles of Chemistry I **3 Credits \***
- CHEM 1211L - Principles of Chemistry I Lab **1 Credits**
- ENGL 1101 - English Composition I **3 Credits**
- ENGL 1102 - English Composition II **3 Credits**
- MATH 1113 - Pre-calculus **4 Credits** (extra hour is applied to area F)
- MATH 2253 - Calculus I **4 Credits** (extra hour is applied to area F)
- MATH 2254 - Calculus II **4 Credits**
- MATH 2306 - Ordinary Differential Equations **3 Credits**
- PHYS 2211 - Principles of Physics I **3 Credits \***
- PHYS 2211L - Principles of Physics Laboratory I **1 Credits**
- PHYS 2212 - Principles of Physics II **3 Credits \***
- PHYS 2212L - Principles of Physics Laboratory II **1 Credits**
- COMM 2400 - Public Speaking **2 Credits**
- STS 2400 - Science, Technology, and Society **2 Credits**
- TCOM 2010 - Technical Writing **3 Credits**
- Area C Group 1 Take One Course from the Literature Group **3 Credits**
- Area C Group 2 Take One Course from the Art and Culture Group **3 Credits**
- Area E Group 1 American Context **3 Credits**
- Area E Group 2 World History **3 Credits**
- Area E Group 3 Behavioral Science **3 Credits**
- Area E Group 4 Cultures and Societies **3 Credits**
- ECET 1001 - Orientation **1 Credits**
- SPSU 1001 - Hitch-hiker's Introduction to SPSU **1 Credits**
- ECET 1012 - Design Fundamentals **2 Credits**
- ECET 1101 - Circuits I **4 Credits**
- ECET 1200 - Digital I **4 Credits**
- ECET 2111 - Circuits II **4 Credits**
- ECET 2300 - Electronics I **4 Credits**
- ECET 2210 - Digital II **4 Credits**
- ECET 2310 - Electronics II **4 Credits**
- ECET 3220 - Digital III **4 Credits**
- ECET 3400 - Data Communications **4 Credits**
- ECET 3600 - Test Engineering **4 Credits**
- ECET 3410 - High Frequency Systems **4 Credits**
- ECET 3500 - Survey of Electric Machines **4 Credits**
- ECET 3620 - Signals and Systems Analysis **4 Credits**
- ECET 4610 - Control Systems **4 Credits**
- EDG 1210 - Survey of Engineering Graphics **2 Credits**
- EET Electives **13 Credits**

**Degree Program Total: 128**

**Note:**

*\* PHYS 1111/PHYS 1111L and PHYS 1112/PHYS 1112L may be substituted for PHYS 2211/PHYS 2211L and PHYS 2212/PHYS 2212L*

*EET majors are required to earn a "C" or better in their ECET courses, except one "D" in a 3000 or 4000 level non-prerequisite course may be used for graduation purposes. A grade of "C" or better is required in the project-based capstone course.*

## EET Electives

Students may wish to focus their EET electives in a particular area of Electrical Engineering Technology. Suggested choices in the areas of biomedical, communications, digital, power, and telecommunications are listed below:

### Biomedical

- ECET 3020 - Biomedical Instrumentation **4 Credits**
- ECET 3030 - Biomechanics **4 Credits**
- ECET 4010 - Virtual Biomedical Instrumentation **4 Credits**
- ECET 4020 - Biomedical Imaging **4 Credits**
- ECET 4030 - Bioinformatics and Telemedicine **4 Credits**
- ECET 4040 - Biometrics **4 Credits**
- ECET 4050 - BMET Capstone (Project) **4 Credits**
- ECET 4050 - BMET Capstone (Internship) **4 Credits**

### Communications

- ECET 4320 - Active Filters **4 Credits**
- ECET 4330 - Audio Technology **4 Credits**
- ECET 4420 - Communications Circuit Applications **4 Credits**
- ECET 4431 - Wireless Communications Systems **4 Credits**
- ECET 4432 - Fiber-optic Communications Systems **4 Credits**
- ECET 4450 - RF Electronics **4 Credits**
- ECET 4820 - Communications Networks and the Internet **4 Credits**

### Digital

- ECET 3640 - Introduction to Systems Engineering and Robotics **4 Credits**
- ECET 3701 - Embedded PCs **4 Credits**
- ECET 4630 - Digital Signal Processing **4 Credits**
- ECET 4710 - Network Programming and Interfacing **4 Credits**
- ECET 4720 - Distributed Microcontrollers and PCs **4 Credits**
- ECET 4730 - VHDL and Field Programmable Gate Arrays **4 Credits**

- ECET 4820 - Communications Networks and the Internet **4 Credits**

## Power

- ECET 4510 - Power System Analysis **4 Credits**
- ECET 4520 - Industrial Distribution Systems, Illumination, and the NEC **4 Credits**
- ECET 4530 - Industrial Motor Control **4 Credits**
- ECET 4540 - Introduction to Power Electronics **4 Credits**
- ECET 4560 - Electric Drives **4 Credits**

## Telecommunications

- ECET 3810 - Applications of C++, JAVA and HTML **3 Credits**
- ECET 4820 - Communications Networks and the Internet **4 Credits**
- ECET 4840 - Advanced Telecommunications **4 Credits**
- ECET 4850 - Telecommunications Project **4 Credits**
- ECET 4860 - Network Security **4 Credits**

## Electrical Engineering Technology - Biomedical Engineering Technology Option, BS

The ECET department offers a Biomedical Engineering Technology Option under the Electrical Engineering Technology (EET) degree. Students wishing to take this option must declare so in DegreeWorks. Upon completion of the EET-BMET Degree Option, students will receive the BS-EET degree with the Option inscribed on their transcripts. For this Option, the following required courses will need to be completed instead of those required for the regular EET degree program:

<b>EET-BMET Option Course</b>	<b>EET Course</b>
BIOL 2107/BIOL 2107L - Biological Principles (4)	CHEM 1211/CHEM 1211L - Chemistry I (4)
MATH 2260 - Probability and Statistics (3)	MATH 2306 - Differential Equations (3)
*ECET 2000 - Intro. to Biomedical Engineering Technology (3)	ECET 3500 - Survey of Electric Machines (4)
*ECET 3010 - Health Care Safety (3)	ECET 3620 - Signals and Systems (4)
ECET 3020 - Biomedical Instrumentation (4)	ECET 4610 - Control Systems (4)
ECET 3701 - Embedded PCs (4)	ECET 3220 - Digital III (4)
ECET 3810 - C++, JAVA, HTML (3)	ECET Technical Elective (3)

\*Differences made up in Technical Elective hours

In addition to the above required courses, Students are required to take ECET 4050 - Biomedical Capstone (Project or Internship) as well as at least one Technical Elective in the Biomedical Engineering Technology area.

## **Electrical Engineering, BS**

### **Requirements**

- ENGL 1101 - English Composition I **3 Credits**
- ENGL 1102 - English Composition II **3 Credits**
- COMM 2400 - Public Speaking **2 Credits**
- STS 2400 - Science, Technology, and Society **2 Credits**
- Area C1 - Course in Literature **3 Credits**
- Area C2 - Course in Art and Culture **3 Credits**
- Area E1 - American Perspective **3 Credits**
- Area E2 - World History **3 Credits**
- Area E4 - Course in Cultures and Societies **3 Credits**
- ECON 2107 - Introduction to Economic Analysis **3 Credits**
- CHEM 1211 - Principles of Chemistry I **3 Credits**
- CHEM 1211L - Principles of Chemistry I Lab **1 Credits**
- MATH 2253 - Calculus I **4 Credits**
- MATH 2254 - Calculus II **4 Credits**
- MATH 2255 - Calculus III **4 Credits**
- MATH 2306 - Ordinary Differential Equations **3 Credits**
- PHYS 2211 - Principles of Physics I **3 Credits**
- PHYS 2211L - Principles of Physics Laboratory I **1 Credits**
- PHYS 2212 - Principles of Physics II **3 Credits**
- PHYS 2212L - Principles of Physics Laboratory II **1 Credits**
- EE 1000 - Orientation and Foundations of Electrical Engineering **2 Credits**
- CSE 1301E - C++ Programming for Engineers **4 Credits**
- ENGR 2214 - Engineering Mechanics – Statics **3 Credits**
- EE 2301 - Circuit Analysis I **4 Credits**
- EE 2302 - Circuit Analysis II **3 Credits**
- EE 2401 - Semiconductor Devices **3 Credits**
- EE 2501 - Digital Logic Design **4 Credits**
- MATH 2260 - Introduction to Probability and Statistics **3 Credits**
- EE 3501 - Microprocessors & Embedded Systems **4 Credits**
- EE 3605 - Electromagnetics **3 Credits**
- EE 3701 - Signals and Systems **3 Credits**
- ENGR 4402 - Engineering Ethics **1 Credits**
- EE 3401 - Engineering Electronics **4 Credits**
- EE 3702 - Communication Systems **3 Credits**
- EE 3601 - Electric Machines **4 Credits**

- EE 4201 - Control Systems **4 Credits**
- EE 4701 - Professional Practice **3 Credits**
- EE 3/4XXX - Technical Electives **9 Credits**
- EE 3/4XXX - Engineering Science Elective **3 Credits**
- EE 4800 - Senior Project **4 Credits**
- Math Elective - Math above 2335 **3 Credits**

## Degree Program Total: 129

The Electrical Engineering degree requires a grade of "C" or better in all EE and ENGR courses applied to degree requirements.

## English and Professional Communication, BA

Our Bachelor of Arts in English and Professional Communication degree is not your typical B.A. in English. Our program emphasizes the role and place of text and image within a world increasingly dependent upon clear communication. Our project-driven courses challenge students to implement real-world applications in nearly every class. Specialized course-work and individual attention allow graduates to begin work immediately, satisfying the demand for professionals who can communicate technical, international, scientific, and computer-related information to both technical and non-technical users.

The required communication courses equip students with the most advanced communication skills in writing, editing, graphics, information design and collaboration. In addition, students study classical rhetoric, develop high-level computer skills, and produce a portfolio that demonstrates their communication proficiency to potential employers. Our literature courses help students understand the diversity of genres, cultures, and authors that contribute to literary production. With offerings in journalism, creative writing, science writing, and environmental writing, our Professional Writing and Communication concentration prepares students for careers in media writing, freelance writing, marketing, public relations, and publishing. Our concentration in Media, Communication, and Culture combines hands-on production courses with a study of media and culture to prepare students for careers in marketing, mass communication, and entertainment, where media savvy can really pay off.

## Requirements

- ENGL 1101 - English Composition I **3 Credits**
- ENGL 1102 - English Composition II **3 Credits**
- MATH 1111 - College Algebra **3 Credits**
- MATH 1113 - Pre-calculus **4 Credits**
- COMM 2400 - Public Speaking **2 Credits**
- STS 2400 - Science, Technology, and Society **2 Credits**
- Area C1 - Course in Literature **3 Credits**
- Area C2 - Course in Art and Culture **3 Credits**
- Area D - Two courses in Laboratory Science **8 Credits**
- Area E1 - American Context **3 Credits**
- Area E2 - World History **3 Credits**
- Area E3 - Course in Behavioral Science **3 Credits**
- Area E4 - Course in Cultures and Societies **3 Credits**

## Required Area F Foundations Courses (9 Credits)

- COMM 2000 - Business Communication **3 Credits**
- TCOM 2010 - Technical Writing **3 Credits**
- TCOM 2020 - Intro to Professional & Technical Communication **3 Credits**

## Area F Required Research Methods Course (3 Credits; Choose One)

- TCOM 2030 - Research in Technical Communication **3 Credits** or
- ENGL 2030 - Research in Professional and Critical Writing **3 Credits**

## Area F Electives (6 Credits; Choose Two)

- ARTS 2020 - History and Principles of Design **3 Credits**
- ENGL 2xxx - Any 2000-level literature survey **3-6 Credits**
- COMM 2065 - Cross-Cultural Communication **3 Credits**
- COMM 2170 - Introduction to Media Studies **3 Credits**
- COMM 2150 - Ethics and Communication **3 Credits**
- Other coursework appropriate to major, as approved by the department (3 credits max) **3 Credits**
- Any foreign language, 2001 or higher **3 Credits**

## Basic Required Courses in the Major (15 Credits)

- ENGL 3030 - English Grammar for Professional Writing **3 Credits**
- ENGL 3100 - Rhetoric: History, Theory, and Practice **3 Credits**
- TCOM 3400 - Foundations of Design for the Web **3 Credits**
- TCOM 3430 - Foundations of Graphics **3 Credits**
- COMM 4100 - Small Group Communication **3 Credits**
- ENGL 4800 - Project Portfolio **3 Credits**
- English and Professional Communication Electives Take any 3000-level or higher ARTS, COMM, ENGL, or TCOM Course, or other courses (not to exceed 6 credits) as approved by the department. **12 Credits**
- Free Electives **15 Credits**
- Concentration Courses (Professional Writing and Communication or Media, Communication and Culture) or Minor Courses (International Studies or Spanish) **15 Credits**
- SPSU 1001 - Hitch-hiker's Introduction to SPSU **1 Credits**

## Professional Writing and Communication (15 Credits)

- COMM 3035 - Organizational Communication 3 Credits
  - COMM 3040 - Health Communication 3 Credits
  - COMM 3050 - Journalism 3 Credits
  - COMM 3150 - Public Relations Practice 3 Credits
  - ENGL 3010 - Science Writing 3 Credits
  - ENGL 3015 - Environmental Writing 3 Credits
  - ENGL 3025 - Creative Writing Workshop 3 Credits
  - ENGL 3035 - Problems in Language 3 Credits
  - ENGL 3040 - Article and Essay Workshop 3 Credits
  - ENGL 3081 - Studies in Genre 3 Credits
  - ENGL 3082 - Science & Literature 3 Credits
  - ENGL 4010 - Publishing for New Media 3 Credits
  - TCOM 3020 - Proposal Writing 3 Credits
  - TCOM 4000 - Professional Editing 3 Credits
- or

## Media, Communication, and Culture (15 Credits)

- ARTS 3000 - Visual Thinking 3 Credits
- COMM 3060 - Media, Culture, and Society 3 Credits
- COMM 3065 - International Communication 3 Credits
- COMM 3160 - Media Theory and Practice 3 Credits
- ENGL 3045 - New Media Writing 3 Credits
- ENGL 3180 - Film as Literature 3 Credits
- ENGL 4170 - Media and Narrative 3 Credits
- TCOM 3145 - Social Media Integration 3 Credits
- TCOM 4045 - Foundations of Multimedia 3 Credits
- TCOM 4170 - Film and Video Production 3 Credits

## Degree Program Total: 121

For additional information about the B.A. program, contact the English, Technical Communication, and Media Arts Department at 678-915-7202, or email to [TCOM@spsu.edu](mailto:TCOM@spsu.edu). You can also visit our website at [etema.spsu.edu](http://etema.spsu.edu).

## Minors:



## International Studies (15 Credits)

In place of a concentration, students can choose to complete the BA in English and Professional Communication with an International Studies minor . To be eligible for a minor in International Studies, the student must complete all courses with a grade of C or better.

## Spanish (15 Credits)

In place of a concentration, students can choose to complete the BA in English and Professional Communication with a Spanish Minor . To be eligible for a minor in Spanish, the student must complete all courses with a grade of C or better.

- SPAN 2001 - Intermediate Spanish I **3 Credits**
- SPAN 2002 - Intermediate Spanish II **3 Credits**
- Additional courses in Spanish at the 3000 level **9 Credits**

## Environmental Engineering Technology, BS

### Requirements

#### Area A:

- ENGL 1101 - English Composition I **3 Credits**
- ENGL 1102 - English Composition II **3 Credits**
- MATH 1113 - Pre-calculus **4 Credits**

#### Area B:

- COMM 2400 - Public Speaking **2 Credits**
- STS 2400 - Science, Technology, and Society **2 Credits**

#### Area C:

- ENGL Literature **3 Credits**
- ARTS 2001, **2002, 2003, 2004** or **FRENCH, GERMAN, SPANISH 1002** **3 Credits**

#### Area D

- CHEM 1211 - Principles of Chemistry I **3 Credits**
- CHEM 1211L - Principles of Chemistry I Lab **1 Credits**
- CHEM 1212 - Principles of Chemistry II **3 Credits**
- CHEM 1212L - Principles of Chemistry II Lab **1 Credits**
- MATH 2253 - Calculus I **4 Credits** (extra hour added to core Area F)

## Area E:

- Take one course from each Social Science Social Science group ( E1, E2, E3, E4) **12 Credits**

## Area F:

Core related to major.

- EDG 2160 - Civil Graphics and Computer Aided Drafting **3 Credits**
- PHYS 2211 - Principles of Physics I **3 Credits**
- PHYS 2211L - Principles of Physics Laboratory I **1 Credits**
- MATH 2254 - Calculus II **4 Credits**
- CET 2110 - Problem Solving Methods in CET **3 Credits**
- SURV 2110 - Introduction to Mapping **4 Credits**

## Additional Requirements

- CE 1000 - Orientation to Engineering and Surveying Professions **1 Credits**
- SPSU 1001 - Hitch-hiker's Introduction to SPSU **1 Credits**
- CET 2110 - Problem Solving Methods in CET **3 Credits**
- CET 2200 - Introduction to Structures **4 Credits**
- CET 3110 - Construction Materials and Sustainability **3 Credits**
- CET 3110L - Construction Materials Lab **1 Credits**
- CET 3120 - Cost Estimating and Scheduling in CET **3 Credits**
- CET 3120L - Plan Reading and Take Offs Lab **1 Credits**
- CET 3130 - Applied Fluid Mechanics and Hydraulics **2 Credits**
- CET 3130L - Fluids and Hydraulics Lab **1 Credits**
- CET 3310 - Water Treatment and Distribution **2 Credits**
- CET 3310L - Water Treatment and Distribution Lab **1 Credits**
- CET 3320 - Wastewater Collection and Treatment **2 Credits**
- CET 3320L - Wastewater Collection and Treatment Lab **1 Credits**
- CET 3410 - Soil Properties and Site Exploration **3 Credits**
- CET 3410L - Soil Properties Lab **1 Credits**
- CET 4310 - Stormwater Management and Erosion Control **2 Credits**
- CET 4310L - Erosion Control Lab **1 Credits**
- CET 4320 - Unit Operations in Environmental Engineering **4 Credits**

- CET 4330 - Solid Waste Management 3 Credits
- CET 4110 - Ethics of Engineering 1 Credits
- CET 4120 - Senior Design and Engineering Documentation 3 Credits
- POLS 3401 - Environmental Law and Policy 3 Credits
- MATH MAJOR COURSES: Excess from AREA A 1 Credits
- CM 4710 - Construction Safety 4 Credits
- ENVS 3100K - Soil & Water Science 4 Credits
- ENVS 2202K - Introduction to Environmental Science 4 Credits

## Major Electives:

Take minimum of 6 hours from major electives listed below:

- MGNT 3105 - Management and Organizational Behavior 3 Credits
- MET 3400 - Thermodynamics and Heat Transfer 3 Credits
- SET 3240 - Hydraulic Structures 3 Credits
- BIOL 3300K - Ecology 4 Credits
- CHEM 3150K - Environmental Chemistry 4 Credits
- CET 4340 - Air Pollution Control 3 Credits

## Degree Program Total: 123

EvET students are required to earn a grade of "C" or better in all courses required in the major and all courses used as electives.

## Environmental Science, B.S.

### Core Requirements

#### Area A

- ENGL 1101 - English Composition I 3 Credits
- ENGL 1102 - English Composition II 3 Credits
- MATH 1113 - Pre-calculus 4 Credits

#### Area B

- STS 2400 - Science, Technology, and Society **2 Credits**
- COMM 2400 - Public Speaking **2 Credits**

## Area C

- Group 1 - Literature of the World **3 Credits**
- Group 2 - Art and Culture of the World **3 Credits**

## Area D

Environmental Science majors **MUST** take the courses listed below to satisfy Area D

- MATH 2253 - Calculus I **4 Credits**
- BIOL 2107 - Principles of Biology I **3 Credits**
- BIOL 2107L - Principles of Biology I Laboratory **1 Credits**
- BIOL 2108 - Principles of Biology II **3 Credits**
- BIOL 2108L - Principles of Biology II Laboratory **1 Credits**

## Area E

- Group 1 - American Context **3 Credits**
- Group 2 - World History **3 Credits**
- Group 3 - Behavioral Science **3 Credits**
- Group 4 - Cultures and Societies **3 Credits**

## Area F

- CHEM 1211 - Principles of Chemistry I **3 Credits**
- CHEM 1211L - Principles of Chemistry I Lab **1 Credits**
- CHEM 1212 - Principles of Chemistry II **3 Credits**
- CHEM 1212L - Principles of Chemistry II Lab **1 Credits**
- PHYS 1111 - Introductory Physics I **3 Credits**
- PHYS 1111L - Introductory Physics Laboratory I **1 Credits**
- GEOL 1101K - Introductory Geosciences **4 Credits**

## Environmental Science Major Requirements

- MATH 2260 - Introduction to Probability and Statistics **3 Credits**
- ENVS 2202K - Introduction to Environmental Science **4 Credits**
- BIOL 3000K - Genetics **4 Credits**

- BIOL 3300K - Ecology **4 Credits**
- BIOL 4200K - Zoology OR BIOL 4440K - Botany **4 Credits**
- CHEM 2511K - Organic Chemistry I **4 Credits**
- CHEM 2512K - Organic Chemistry II **4 Credits**
- CHEM 3150K - Environmental Chemistry **4 Credits**
- POLS 3401 - Environmental Law and Policy **3 Credits**
- STS 4300 - Environmental Ethics **3 Credits**
- SURV 3421 - Geographic Information Systems I **4 Credits**
- ENVS 3100K - Soil & Water Science **4 Credits**
- ENVS 4500 - Environmental Science Internship **3 Credits**

### Environmental Science Electives (12 semester hours from the list below)

- BIOL 3100K - Microbiology **4 Credits**
- BIOL 3250K - Ecosystem Ecology **4 Credits**
- BIOL 3500 - Biostatistics **3 Credits**
- BIOL 3600 - Freshwater Biology **3 Credits**
- BIOL 3700K - Ichthyology **4 Credits**
- CET 3130 - Applied Fluid Mechanics and Hydraulics **2 Credits**
- CET 3310 - Water Treatment and Distribution **2 Credits**
- CET 3320 - Wastewater Collection and Treatment **2 Credits**
- CET 4310 - Stormwater Management and Erosion Control **2 Credits**
- CET 4330 - Solid Waste Management **3 Credits**
- CHEM 3100K - Analytical Chemistry **5 Credits**
- CHEM 3200K - Atmospheric Chemistry **3 Credits**
- CHEM 3300K - Instrumental Analysis **4 Credits**
- SURV 2110 - Introduction to Mapping **4 Credits**
- ENVS 3150K - Environmental Toxicology **4 Credits**
- ENVS 3250 - Natural Resource Management **3 Credits**
- ENVS 3450 - Conservation Biology **3 Credits**
- TCOM 2010 - Technical Writing **3 Credits**

Degree Program Total: 120

## **Industrial Engineering Technology, BS**

Area A

- ENGL 1101 - English Composition I **3 Credits**
- ENGL 1102 - English Composition II **3 Credits**
- MATH 1113 - Pre-calculus **4 Credits**

## Area B

- COMM 2400 - Public Speaking **2 Credits**
- STS 2400 - Science, Technology, and Society **2 Credits**

## Area C

- Group 1 - Literature of the World **3 Credits**
- Group 2 - Art and Culture of the World **3 Credits**

## Area D

- Sciences - Lab Science\* Note 1 **8 Credits**
- MATH 2253 - Calculus I **4 Credits**

## Area E

- Group 1 - American Context **3 Credits**
- Group 2 - World History **3 Credits**
- Group 3 - Behavioral Science **3 Credits**
- Group 4 - Cultures and Societies **3 Credits**

## Area F

- CHEM 1211 - Principles of Chemistry I **3 Credits** \* Note 2
- CHEM 1211L - Principles of Chemistry I Lab **1 Credits**
- TCOM 2010 - Technical Writing **3 Credits**
- IT 1113 - Programming Principles **3 Credits**
- EDG 1210 - Survey of Engineering Graphics **2 Credits**
- IET 2305 - The Role of Industrial Engineering Technology in Industrial Systems **4 Credits**

## Major Courses

- ACCT 2101 - Principles of Financial Accounting **3 Credits**

- IET 1000 - Orientation **1 Credits**
- IET 2227 - Introduction to Statistics **3 Credits**
- IET 2449 - Logistics and Supply Chain Management **3 Credits**
- IET 3322 - Work Measurement and Ergonomics **4 Credits**
- IET 3339 - Statistical Quality Control **3 Credits**
- IET 3356 - Quality Concepts and Systems Design **3 Credits**
- IET 3403 - Advanced Statistics with Application **3 Credits**
- IET 3424 - Engineering Economy **3 Credits**
- IET 3433 - Product and Process Costing **3 Credits**
- IET 4405 - Operations Research - Concepts, Models and Methods **3 Credits**
- IET 4422 - Facilities Design, Plant Layout, and Materials Handling **4 Credits**
- IET 4451 - Systems Simulation **3 Credits**
- IET 4475 - Senior Project **3 Credits**
- IET 4810 - Ethics and Safety **1 Credits**
- MGNT 4115 - Human Resource Management **3 Credits**
- MGNT 4135 - Project Management **3 Credits**
- MGNT 4151 - Operations Management **3 Credits**
- SPSU 1001 - Hitch-hiker's Introduction to SPSU **1 Credits**
- Free Electives **6 Credits**

## IET Electives (9 semester hours from the list below)

- IET 3320 - Advanced Logistics **3 Credits**
- IET 3407 - Six Sigma and Lean Manufacturing **3 Credits**
- IET 3410 - Principles of Team Dynamics **3 Credits**
- IET 3511 - Sustainability Engineering **3 Credits**
- IET 3620 - Warehousing Systems **3 Credits**
- IET 4111 - Design of Experiments **3 Credits**
- IET 4121 - Advanced Topics in Quality Assurance **3 Credits**
- IET 4478 - Senior Internship **3 Credits**

## Degree Program Total: 128

*Note 1 - Physics I and Physics II are preferred Area D Sciences, however, any Lab Sciences from the approved list is permissible.*

*Note 2 – Chemistry I is the preferred Area F Science, however, any Lab Science from the approved list is permissible.*

**A grade of "C" or better is required in all courses used in the major prescribed for the bachelor degree program.**

## Concentration in Logistics

The primary objective of the Concentration in Logistics is to provide training and education to students interested in entering the Supply Chain industry.

## Required Courses

- IET 2227 - Introduction to Statistics **3 Credits**
- IET 2449 - Logistics and Supply Chain Management **3 Credits**
- IET 3320 - Advanced Logistics **3 Credits**
  
- IET 3511 - Sustainability Engineering **3 Credits** or
- IET 3620 - Warehousing Systems **3 Credits**
  
- IET 4405 - Operations Research - Concepts, Models and Methods **3 Credits**
- MGNT 4115 - Human Resource Management **3 Credits**
- MGNT 4151 - Operations Management **3 Credits**

**Total: 21**

Students who successfully complete the Concentration with a grade of "C" or better in each course will be awarded a Green Belt Certificate.

## Concentration in Quality Principles

The primary objective of the Concentration in Quality Principles is to provide training and education to students interested in quality system principles, methodology, elements and standards.

### Required Courses:

- IET 3339 - Statistical Quality Control **3 Credits**
- IET 3356 - Quality Concepts and Systems Design **3 Credits**
- IET 3403 - Advanced Statistics with Application **3 Credits**
- IET 3407 - Six Sigma and Lean Manufacturing **3 Credits**
- IET 3410 - Principles of Team Dynamics **3 Credits**
- MGNT 4135 - Project Management **3 Credits**
- MGNT 4151 - Operations Management **3 Credits**

**Total: 21**

Students who successfully complete the Concentration with a grade of "C" or better in each course will be awarded a Green Belt Certificate.

## Information Technology, BAS

This program is designed for students who have completed an AAS or AAT degree from a two year technical college in a computing discipline.



## Requirements

- ENGL 1101 - English Composition I **3 Credits**
- ENGL 1102 - English Composition II **3 Credits**
- MATH 1111 - College Algebra **3 Credits**
- COMM 2400 - Public Speaking **2 Credits**
- STS 2400 - Science, Technology, and Society **2 Credits**
- Area C Group 1 - Take one course from the Literature Group **3 Credits**
- Area C Group 2 - Take one course from the Art and Culture Group **3 Credits**
- Area D - Any two lab-based science courses **8 Credits**
- Area E Group 1 - American Context **3 Credits**
- Area E Group 2 - World History **3 Credits**
- Area E Group 3 - Behavioral Science **3 Credits**
- Area E Group 4 - Cultures and Societies **3 Credits**
- MATH 1113 - Pre-calculus **4 Credits**
- CSE 1301 Programming and Problem Solving I **4 Credits**
- MATH 2345 - Discrete Mathematics **3 Credits**
- IT 1324 - Advanced Programming Principles **4 Credits**
- CSE 3642 - Professional Practices and Ethics **2 Credits**
- CSE 3153 - Database Systems **3 Credits**
- IT 3123 - Hardware/Software Concepts **3 Credits**
- IT 3203 - Introduction to Web Development **3 Credits**
- IT 3223 - Software Acquisition and Project Management **3 Credits**
- IT 3423 - Operating Systems Concepts & Administration **3 Credits**
- IT 3883 - Advanced Applications Development **3 Credits**
- IT 4323 - Data Communications & Networks **3 Credits**
- IT 4823 - Information Security Administration & Privacy **3 Credits**
- CSE 1002 - Introduction to the Computing Disciplines **2 Credits**

Choose two from the following:

- IT 4123 - Electronic Commerce **3 Credits**
- IT 4203 - Advanced Web Development **3 Credits**
- IT 4153 - Advanced Database **3 Credits**
- IT 4333 - Network Configuration & Administration **3 Credits**
- IT 4683 - Management of Information Technology and Human Computer Interaction **3 Credits**
- IT 4723 - IT Policy and Law **3 Credits**
- IT 4833 - Wireless Security **3 Credits**
- IT 4843 - Ethical Hacking for Effective Defense **3 Credits**
- IT 4853 - Computer Forensics **3 Credits**
- IT 3503 - Foundations of Health Information Technology **3 Credits**

## Technical Block (AAS major courses) 37 Credits

Students may receive up to 37 technical block (major courses from the AAS degree) - 7 hours will count in AREA F and 30 hours in the technical block remainder.

Degree Program Total: 122

## Information Technology, BAS-HIT

This degree, which is only open to students who have completed an AAS or AAT degree in a Health Information Technology discipline, prepares students for careers in designing, supporting and administrating health information technology systems, with an emphasis on electronic health record systems.

### Requirements

- ENGL 1101 - English Composition I **3 Credits**
- ENGL 1102 - English Composition II **3 Credits**
- MATH 1111 - College Algebra **3 Credits**
- COMM 2400 - Public Speaking **2 Credits**
- STS 2400 - Science, Technology, and Society **2 Credits**
- Area C Group 1 - Take one course from the Literature Group **3 Credits**
- Area C Group 2 - Take one course from the Art and Culture Group **3 Credits**
- Area D - Any two lab-based science courses **8 Credits**
- Area E Group 1 - American Context **3 Credits**
- Area E Group 2 - World History **3 Credits**
- Area E Group 3 - Behavioral Science **3 Credits**
- Area E Group 4 - Cultures and Societies **3 Credits**
- MATH 1113 - Pre-calculus **4 Credits**
- MATH 2345 - Discrete Mathematics **3 Credits**
- CSE 1301J - Programming & Problem Solving I **4 Credits**
- IT 1324 - Advanced Programming Principles **4 Credits**
- CSE 3642 - Professional Practices and Ethics **2 Credits**
- CSE 3153 - Database Systems **3 Credits**
- IT 3123 - Hardware/Software Concepts **3 Credits**
- IT 3203 - Introduction to Web Development **3 Credits**
- IT 3223 - Software Acquisition and Project Management **3 Credits**
- IT 4323 - Data Communications & Networks **3 Credits**
- IT 4523 - Clinical Processes and Workflows: Analysis and Redesign **3 Credits**
- IT 4533 - Health Information Security and Privacy **3 Credits**
- IT 4823 - Information Security Administration & Privacy **3 Credits**
- TCOM 2010 - Technical Writing **3 Credits**
- CSE 4983 - CSE Computing Internship **3 Credits**

- CSE 1002 - Introduction to the Computing Disciplines **2 Credits**

## Technical Block (AAS major courses) 37 Credits

7 hours go into AREA F and 30 additional tech block hours are transferred

**Degree Program Total: 122**

## Information Technology, BS

### Requirements

- ENGL 1101 - English Composition I **3 Credits**
- ENGL 1102 - English Composition II **3 Credits**
- MATH 1113 - Pre-calculus **4 Credits** (extra hour is applied to area F)
- MATH 2253 - Calculus I **4 Credits** (extra hour is applied to area F) or
- MATH 2240 - Survey of Calculus **3 Credits**
- COMM 2400 - Public Speaking **2 Credits**
- STS 2400 - Science, Technology, and Society **2 Credits**
- Area C Group 1 - Take One Course from the Literature Group **3 Credits**
- Area C Group 2 - Take One Course from the Art and Culture Group **3 Credits**
- Area D - Any two lab-based science courses **8 Credits**
- Area E Group 1 - American Context **3 Credits**
- Area E Group 2 - World History **3 Credits**
- Area E Group 3 - Behavioral Science **3 Credits**
- Area E Group 4 - Cultures and Societies **3 Credits**
- TCOM 2010 - Technical Writing **3 Credits**
- MATH 2345 - Discrete Mathematics **3 Credits**
- MATH 2260 - Introduction to Probability and Statistics **3 Credits** or
- IET 2227 - Introduction to Statistics **3 Credits**
- CSE 1301 - Program and Problem Solving I **4 Credits**
- IT 1324 - Advanced Programming Principles **4 Credits** or CSE 1302
- CSE 1002 - Introduction to the Computing Disciplines **2 Credits**
- CSE 3642 - Professional Practices and Ethics **2 Credits**
- CSE 3153 - Database Systems **3 Credits**
- IT 3123 - Hardware/Software Concepts **3 Credits**
- IT 3203 - Introduction to Web Development **3 Credits**

- IT 3223 - Software Acquisition and Project Management **3 Credits**
- IT 3423 - Operating Systems Concepts & Administration **3 Credits**
- IT 3883 - Advanced Applications Development **3 Credits**
- IT 4123 - Electronic Commerce **3 Credits**
- IT 4323 - Data Communications & Networks **3 Credits**
- IT 4423 - Unix/Linux **3 Credits**
- IT 4683 - Management of Information Technology and Human Computer Interaction **3 Credits**
- IT 4723 - IT Policy and Law **3 Credits**
- IT 4823 - Information Security Administration & Privacy **3 Credits**
- IT 4983 - IT Capstone **3 Credits**
- Free Electives **7 Credits**
- Concentration or Technical Electives (see listing below) **12 Credits**

**Degree Program Total: 122**

## Tracks

Choose one of the tracks below and complete 3 of their courses. The 4th elective can be from the same or different track.

### Enterprise Systems Track

- IT 4203 - Advanced Web Development **3 Credits**
- IT 4153 - Advanced Database **3 Credits**
- IT 4333 - Network Configuration & Administration **3 Credits**
- IT 4903 - Special Topics in Information Technology **3 Credits**
- IT 4673 - Virtual IT Systems **3 Credits**
- IT 4713 - Business Intelligence Systems **3 Credits**

### Information Assurance & Security Track

- IT 4833 - Wireless Security **3 Credits**
- IT 4843 - Ethical Hacking for Effective Defense **3 Credits**
- IT 4853 - Computer Forensics **3 Credits**
- IT 4903 - Special Topics in Information Technology **3 Credits**

### Health Information Technology Track

- IT 3503 - Foundations of Health Information Technology **3 Credits**
- IT 4513 - Electronic Health Record Systems **3 Credits**
- IT 4523 - Clinical Processes and Workflows: Analysis and Redesign **3 Credits**
- IT 4533 - Health Information Security and Privacy **3 Credits**
- IT 4903 - Special Topics in Information Technology **3 Credits**

## Mobile and Web Track

- IT 3203 - Introduction to Web Development **3 Credits**
- IT 4203 - Advanced Web Development **3 Credits**
- IT 4903 - Special Topics in Information Technology **3 Credits**
- CGDD 4203 - Mobile and Casual Game Development **3 Credits**
- IT 4213 - Mobile Web Development **3 Credits**
- CSE 3203 - Overview of Mobile Systems **3 Credits**

## Information Technology, BS (Online) WebBSIT

### WebBSIT Curriculum

- ENGL 1101 - English Composition I **3 Credits**
- ENGL 1102 - English Composition II **3 Credits**
- MATH 1111 - College Algebra **3 Credits**
- MATH 1113 - Pre-calculus **4 Credits**
- COMM 2400 - Public Speaking **2 Credits**
- STS 2400 - Science, Technology, and Society **2 Credits**
- Area C Group 1 - Take one course from the Literature Group **3 Credits**
- Area C Group 2 - Take one course from the Art and Culture Group **3 Credits**
- Area D - Any two lab-based science courses **8 Credits**
- Area E Group 1 - American Context **3 Credits**
- Area E Group 2 - World History **3 Credits**
- Area E Group 3 - Behavioral Science **3 Credits**
- Area E Group 4 - Cultures and Societies **3 Credits**

### Area F (18 Credits)

- WBIT 1100 - Introduction to Information Technology **3 Credits**
- WBIT 1310 - Programming and Problem Solving **3 Credits**

- MATH 1401 - Intro to Statistics **3 Credits** (Available from WebBSIT participating institutions or through eCore®)
- WBIT 2000 - The Enterprise and IT **3 Credits**
- WBIT 2300 - Discrete Mathematics for IT **3 Credits**
- WBIT 2311 - Programming and Problem Solving II **Credits**

## Required Core Courses (42 Credits)

- WBIT 3010 - Technical Communication **3 Credits**
- WBIT 3110 - Systems Analysis and Design **3 Credits**
- WBIT 3111 - Information Technology Project Management **3 Credits**
- WBIT 3200 - Database Design, Development and Deployment **3 Credits**
- WBIT 3400 - Introduction to Multimedia **3 Credits**
- WBIT 3410 - Web Applications Development **3 Credits**
- WBIT 3500 - Architecture and Operating Systems **3 Credits**
- WBIT 3510 - Data Communications and Networking **3 Credits**
- WBIT 3600 - Introduction to E-Commerce **Credits**
- WBIT 4020 - Professional Practices and Ethics **Credits**
- WBIT 4030 - Senior Project **3 Credits**
- WBIT 4112 - Systems Acquisition, Integration and Implementation **Credits**
- WBIT 4120 - Human-Computer Interaction **3 Credits**
- WBIT 4520 - Information Security **Credits**

## Concentration/Electives (18 Credits)

- WBIT 4601 - Customer Relationship Management **3 Credits**
- WBIT 4602 - IT Strategy Seminar **3 Credits**
- WBIT 4610 - IT Policy and Law **3 Credits**
- Free Electives (not within the WebBSIT) - **9 Credits**

## International Studies, BS

By offering an International Studies degree with a required minor, SPSU seeks to produce graduates who not only understand the political and economic processes of globalization, but also possess field-specific skills and knowledge that will allow them to deal with the new demands of the global economy. Companies that will employ our graduates will be global ones, so it is necessary for their employees to understand the political, economic, cultural, as well as technical contexts in which their companies function. The International Studies degree will prepare graduates for graduate study in a number of possible fields and for employment in:

- Government
- Intelligence
- International business

- Pre-law
- Public policy
- The military
- The non-profit sector
- The transportation industry
- The travel industry

## Requirements

### Core Areas A through E

#### Area A: Essential Skills (9 credits)

Grade of C or better required in the courses used to satisfy this requirement. Freshmen must complete Area A by the time they have attempted 30 semester hours of course work.

- ENGL 1101 - English Composition I **3 Credits**
- ENGL 1102 - English Composition II **3 Credits**
- MATH 1111 - College Algebra **3 Credits**  
(or other math as specified in the SPSU core)

#### Area B: Institutional Options (4 credits)

- COMM 2400 - Public Speaking **2 Credits**
- STS 2400 - Science, Technology, and Society **2 Credits**

#### Area C: Humanities / Fine Arts (6 credits)

##### C-1: Literature (3 credits)

Choose ONE of the following:

- ENGL 2111 - Early World Literature **3 Credits**
- ENGL 2112 - World Literature Mid-1600s to Present **3 Credits**
- ENGL 2120 - British Literature Early to Present **3 Credits**
- ENGL 2121 - Early British Literature **3 Credits**
- ENGL 2122 - British Literature Late 1700s to Present **3 Credits**

- ENGL 2130 - American Literature Early to Present **3 Credits**
- ENGL 2131 - Early American Literature **3 Credits**
- ENGL 2132 - American Literature Mid 1800s to Present **3 Credits**
- ENGL 2141 - Early Western Literature **3 Credits**
- ENGL 2142 - Western Literature 1600s to Present **3 Credits**
- ENGL 2300 - African-American Literature and Culture **3 Credits**

## C-2: Humanities (3 credits)

Choose ONE of the following (language course recommended):

- ARTS 2001 - Art Appreciation **3 Credits**
- ARTS 2002 - Drama Appreciation **3 Credits**
- ARTS 2003 - Music Appreciation **3 Credits**
- ARTS 2004 - History of Contemporary American Music **3 Credits**
- FREN 1002 - Elementary French II **3 Credits**
- GRMN 1002 - Elementary German II **3 Credits**
- SPAN 1002 - Elementary Spanish II **3 Credits**

## Area D: Science and Math (11-12 credits)

### D-1: Lab Science (8 credits)

You must take two semesters of lab science *and lab* (lecture = 3 credits; lab = 1 credit; K-course=4 credits, including lab).

Choose TWO science courses with lab:

- ASTR 1000K - Introduction to the Universe **4 Credits**
- ASTR 1010K - Introduction to the Universe II **4 Credits**
- BIOL 2107 - Principles of Biology I **3 Credits**
- BIOL 2107L - Principles of Biology I Laboratory **1 Credits**
- BIOL 2108 - Principles of Biology II **3 Credits**
- BIOL 2108L - Principles of Biology II Laboratory **1 Credits**
- CHEM 1211 - Principles of Chemistry I **3 Credits**
- CHEM 1211L - Principles of Chemistry I Lab **1 Credits**
- CHEM 1212 - Principles of Chemistry II **3 Credits**
- CHEM 1212L - Principles of Chemistry II Lab **1 Credits**
- ENVS 2200K - Geology **4 Credits**
- ENVS 2202K - Introduction to Environmental Science **4 Credits**
- GEOL 1101K - Introductory Geosciences **4 Credits**
- PHYS 1111 - Introductory Physics I **3 Credits**
- PHYS 1111L - Introductory Physics Laboratory I **1 Credits**
- PHYS 1112 - Introductory Physics II **3 Credits**
- PHYS 1112L - Introductory Physics Laboratory II **1 Credits**



- **PHYS 1211K - Principles of Physics I (ECORE) 4 Credits**
- **PHYS 2211 - Principles of Physics I 3 Credits**
- **PHYS 2211L - Principles of Physics Laboratory I 1 Credits**
- **PHYS 2212 - Principles of Physics II 3 Credits**
- **PHYS 2212L - Principles of Physics Laboratory II 1 Credits**

#### D-2: Math (minimum of 3 credits)

- **MATH 1113 - Pre-calculus 4 Credits**  
(or other math as specified in the SPSU core)

#### Area E: Social Sciences (12 credits)

##### E-1: American Perspectives (3 credits)

Satisfies the American Perspectives overlay. Any one of these courses, taken within the University System of Georgia, also satisfies the Legislative Requirement for US and Georgia History and Constitution. Students who fulfill this requirement with transfer credit from outside the USG will need to take HIST 2911 U.S. and Georgia Constitution and History to satisfy the Legislative Requirement for graduation.

Choose ONE of the following:

- **HIST 2111 - United States History to 1877 3 Credits**
- **HIST 2112 - United States History since 1877 3 Credits**
- **POLS 1101 - American Government 3 Credits**

##### E-2: Historical Perspectives (3 credits)

Choose ONE of the following:

- **HIST 1111 - Survey of World Civilization pre 1500 3 Credits**
- **HIST 1112 - Survey of World Civilization post 1500 3 Credits**

##### E-3: Behavioral Science Perspectives (3 credits)

Choose ONE of the following (ECON 1101 Introduction to Economics is required in Area F and may not be used here):

- **PSYC 1101 - Introduction to General Psychology 3 Credits**
- **SOCI 1101 - Introduction to Sociology 3 Credits**

##### E-4: Global Perspectives (3 credits)

Satisfies the Global Perspectives overlay. Choose ONE of the following (POLS 2401 is required in Area F and may not be used here):

- ANTH 1102 - Introduction to Anthropology **3 Credits**
- ES 1100 - Ethnic Studies **3 Credits**
- GEOG 1101 - Introduction to Human Geography **3 Credits**
- RELG 1200 - World Religion **3 Credits**

## Core Area F (18 credits):

Take ALL of the following:

- SPAN 2001 - Intermediate Spanish I **3 Credits**
- SPAN 2002 - Intermediate Spanish II **3 Credits**  
Or 6 credit hours of any non-English language at an equivalent level.
- COMM 2030 - Research for the Humanities & Social Sciences **3 Credits**
- ECON 1101 - Introduction to Economics **3 Credits**
- POLS 2100 - Introduction to Research Methods **3 Credits**
- POLS 2401 - Global Issues **3 Credits**

## Required Courses in Major (29 credits):

Grade of C or better required. Take ALL of the following:

- IS 1000 - International Studies Orientation **1 Credits**
- SPSU 1001 - Hitch-hiker's Introduction to SPSU **1 Credits**
- HIST 3801 - Contemporary World History since 1945 **3 Credits**
- POLS 3001 - Comparative Politics **3 Credits**
- POLS 3009 - Foundations of Public Policy **3 Credits**
- POLS 4009 - Comparative Public Policy Analysis **3 Credits**
- POLS 4301 - International Political Economy **3 Credits**
- PSYC 3101 - International Social Psychology **3 Credits**
- STS 4000 - International Issues in Science and Technology **3 Credits**

Choose ONE Regional Studies Course:

- IS 4000 - Regional Studies - General **3 Credits**
- IS 4001 - Regional Studies/Latin America **3 Credits**
- IS 4002 - Regional Studies/Asia:China **3 Credits**
- IS 4003 - Regional Studies/Asia:Japan **3 Credits**
- IS 4004 - Regional Studies/Middle East **3 Credits**
- IS 4005 - Regional Studies/Russia/Eastern Europe **3 Credits**
- IS 4006 - Regional Studies/Western Europe **3 Credits**
- IS 4007 - Regional Studies/Africa **3 Credits**

To be taken in one of the last two terms before graduation (taught Spring only):

- IS 4800 - International Studies Capstone **3 Credits**

## Directed International Electives (9 credits):

Grade of C or better required. Choose THREE of the following:

Take THREE of the following:

- ECON 2106 - Principles of Microeconomics **3 Credits**
- GEOG 3101 - World Regional Geography **3 Credits**
- HIST 3200 - History of Science Survey **3 Credits**
- HIST 3301 - Diplomatic and Military History since 1815 **3 Credits**
- HIST 3401 - Modern Social and Cultural History Twentieth Century **3 Credits**
- HIST 3501 - Colonization and Rebellion in the Trans-Atlantic World **3 Credits**
- HIST 3601 - History of the Pacific Rim **3 Credits**
- IS 3600 - Comparative Culture **3 Credits**
- IS 4600 - International Studies Internship **3 Credits**
- IS 4000 - Regional Studies - General **3 Credits**  
or any Regional Studies (IS 400X) not used to satisfy Required Courses in the Major
- POLS 3301 - Modern Political Theory **3 Credits**
- POLS 3601 - Contemporary World Politics **3 Credits**
- POLS 4063 - Political Issues in Electronic Government **3 Credits**
- POLS 4101 - Political Economy of Post-Communist Transformation **3 Credits**
- POLS 4201 - International Relations in the Americas **3 Credits**
- PSYC 4000 - International Psychology **3 Credits**
- PSYC 4600 - Conflict Resolution **3 Credits**
- RELG 1200 - World Religion **3 Credits**
- SPAN 3001 - Advanced Conversation **3 Credits**  
or any 3000- or 4000- level SPAN
- STS 4400 - Topical Studies in Science and Technology **3 Credits**  
OR any IS special topics course. Special topics courses in HIST, POLS, PSYC may be used with topic-specific departmental approval.

## Minor 15-18 Hours

International Studies majors must complete at least one of the minors offered at SPSU (in any department or program). Department policy requires that at least 9 hours in a minor not be used to meet any other requirement *except free electives*. University policy requires that no hours used in Core Areas A-E may be used toward any other requirement.

## Free Electives

Additional credit hours to bring the minimum total credits to bring the total hours up to the 120 required for graduation. *Free elective hours may be used toward an additional minor and are exempt from the 9 hours rule.*

**Degree Program Total: 120**

# Management BA

The Bachelor of Arts in Management program provides students with a strong foundation in the management of the employees of a business. The program has a strong interpersonal focus that prepares students for the changing dynamics of management. The program also offers the students the flexibility to tailor their program of study to meet their specific career plans.

## Area A - Essential Skills (9 hours)

- ENGL 1101 - English Composition I **3 Credits**
- ENGL 1102 - English Composition II **3 Credits**
- MATH 1111 - College Algebra **3 Credits**

## Area B - Institutional Options (4 hours)

- COMM 2400 - Public Speaking **2 Credits**
- STS 2400 - Science, Technology, and Society **2 Credits**

## Area C1 - Humanities/Fine Arts - Literature (3 hours)

- ENGL 2111 - Early World Literature **3 Credits**
- ENGL 2112 - World Literature Mid-1600s to Present **3 Credits**
- ENGL 2120 - British Literature Early to Present **3 Credits**
- ENGL 2121 - Early British Literature **3 Credits**
- ENGL 2122 - British Literature Late 1700s to Present **3 Credits**
- ENGL 2130 - American Literature Early to Present **3 Credits**
- ENGL 2131 - Early American Literature **3 Credits**
- ENGL 2132 - American Literature Mid 1800s to Present **3 Credits**
- ENGL 2141 - Early Western Literature **3 Credits**
- ENGL 2142 - Western Literature 1600s to Present **3 Credits**
- ENGL 2300 - African-American Literature and Culture **3 Credits**

## Area C2 - Humanities/Fine Arts - Art and Culture (3 hours)

- ARTS 2001 - Art Appreciation **3 Credits**
- ARTS 2002 - Drama Appreciation **3 Credits**
- ARTS 2003 - Music Appreciation **3 Credits**

- ARTS 2004 - History of Contemporary American Music **3 Credits**
- FREN 1002 - Elementary French II **3 Credits**
- GRMN 1002 - Elementary German II **3 Credits**
- SPAN 1002 - Elementary Spanish II **3 Credits**

## Area D - Science, Mathematics, and Technology (12 hours)

- MATH 1113 - Pre-calculus **4 Credits**  
Take any two courses of the following (course must have a lab that is taken concurrently)
- ASTR 1000K - Introduction to the Universe **4 Credits**
- BIOL 2107 - Principles of Biology I **3 Credits**
- BIOL 2107L - Principles of Biology I Laboratory **1 Credits**
- BIOL 2108 - Principles of Biology II **3 Credits**
- BIOL 2108L - Principles of Biology II Laboratory **1 Credits**
- CHEM 1211 - Principles of Chemistry I **3 Credits**
- CHEM 1211K - Principles of Chemistry (ECORE) **4 Credits**
- CHEM 1211L - Principles of Chemistry I Lab **1 Credits**
- CHEM 1212 - Principles of Chemistry II **3 Credits**
- CHEM 1212K - Principles of Chemistry II (ECORE) **4 Credits**
- CHEM 1212L - Principles of Chemistry II Lab **1 Credits**
- PHYS 1111 - Introductory Physics I **3 Credits**
- PHYS 1111L - Introductory Physics Laboratory I **1 Credits**
- PHYS 1112 - Introductory Physics II **3 Credits**
- PHYS 1112L - Introductory Physics Laboratory II **1 Credits**

## Area E1 - Social Sciences - American Context (3 hours)

- HIST 2111 - United States History to 1877 **3 Credits**
- HIST 2112 - United States History since 1877 **3 Credits**
- POLS 1101 - American Government **3 Credits**  
HIST 2911 (1 credit hour) may be required for students who have a transfer credit for American History or American Government to meet US or GA history or Constitution requirements.

## Area E2 - World History (3 hours)

- HIST 1111 - Survey of World Civilization pre 1500 **3 Credits**
- HIST 1112 - Survey of World Civilization post 1500 **3 Credits**

## Area E3 - Behavioral Science (3 hours)

- ECON 1101 - Introduction to Economics **3 Credits**
- PSYC 1101 - Introduction to General Psychology **3 Credits**
- SOCI 1101 - Introduction to Sociology **3 Credits**

## Area E4- Cultures and Societies

- ANTH 1102 - Introduction to Anthropology **3 Credits**
- ES 1100 - Ethnic Studies **3 Credits**
- GEOG 1101 - Introduction to Human Geography **3 Credits**
- POLS 2401 - Global Issues **3 Credits**
- RELG 1200 - World Religion **3 Credits**

## Area F (18 hours)

- ACCT 2101 - Principles of Financial Accounting **3 Credits**
- ACCT 2102 - Principles of Managerial Accounting **3 Credits**
- COMM 2000 - Business Communication **3 Credits**
- ECON 2105 - Principles of Macroeconomics **3 Credits**
- ECON 2106 - Principles of Microeconomics **3 Credits**
- MGNT 2201 - Business Computer Applications **3 Credits**

## Bachelor of Arts - Management - Required Courses (38 hours)

- MGNT 1000 - Orientation to Business **1 Credits**
- SPSU 1001 - Hitch-hiker's Introduction to SPSU **1 Credits**
- IET 2227 - Introduction to Statistics **3 Credits**
- MGNT 3105 - Management and Organizational Behavior **3 Credits**
- MGNT 3125 - Business Finance **3 Credits**
- MGNT 3135 - Principles of Marketing **3 Credits**
- MGNT 3145 - Legal Environment of Business **3 Credits**
- MGNT 4115 - Human Resource Management **3 Credits**
- MGNT 3170 - Leadership **3 Credits**
- COMM 4100 - Small Group Communication **3 Credits**
- PSYC 4600 - Conflict Resolution **3 Credits**

- MGNT 4145 - International Management **3 Credits**
- MGNT 4595 - Business Strategy **3 Credits**

## Option 1 and Option 2

Bachelor of Arts - Management majors may select Option 1 or Option 2 to complete in addition to the required courses.

**Option 1** - *Select 5 courses (15 hours) from Group 1 and Group 2*

- **Group 1:** Select 3-5 courses of the following courses (9-15 hours)
- MGNT 4103 - Marketing Management **3 Credits**
- MGNT 4125 - Technology and Public Issues **3 Credits**
- MGNT 4135 - Project Management **3 Credits**
- MGNT 4185 - Technology Management **3 Credits**
- MGNT 4075 - Healthcare Management **3 Credits**
- MGNT 4190 - Entrepreneurship **3 Credits**
- MGNT 4195 - Current Readings in Management of Technology and Operations **3 Credits**
- MGNT 4203 Special Topics in Management

- **Group 2** - (select 0 to two of the following courses (0-6 hours)
- TCOM 3030 - Instructional Design **3 Credits**
- COMM 3035 - Organizational Communication **3 Credits**
- COMM 3040 - Health Communication **3 Credits**
- COMM 3065 - International Communication **3 Credits**
- TCOM 3145 - Social Media Integration **3 Credits**

**Option 2** - *Complete one of the following minors (15-18 hours)*

Technical Communication  
 Professional Writing  
 International Studies  
 Psychology  
 Pre-Law  
 Public Policy  
 Global Communication  
 Leadership and Organizational Communication

## Free Electives - 6-9 hours

## Manufacturing Operations, BAS

The Bachelor of Applied Science in Manufacturing Operations has been specifically designed for students who have completed an Associate of Applied Science Degree from a Technical College System of Georgia institution.

The goal of the partnership between SPSU and the TCSG schools is to provide the opportunity for degreed graduates from the technical schools of Georgia to complete a Bachelor's degree in approximately 60 semester credits which is equivalent to about two years as a full time student.

All required major courses to complete the BAS in Manufacturing Operations program are offered totally online by SPSU faculty. All general education requirements are also offered on-line through the university system called E-core.

The BAS Manufacturing Operations program prepares students in the areas of manufacturing, logistics and operations through an industry-driven curriculum encompassing manufacturing processes, quality principles, engineering economy, work measurement and facilities layout.

Companies traditionally who hire SPSU graduates include such leaders as Shaw Industries, Delta Airlines, Georgia Power, Mohawk Industries, Lockheed Martin and UPS.

Since each TCSG program is different, the website <http://iet.spsu.edu/BAS.html> outlines the articulation of each program to SPSU.

Further information on the TCSG and SPSU program can also be found at <http://tcsug.spsu.edu/>.

## Area A

- ENGL 1101 - English Composition I **3 Credits**
- ENGL 1102 - English Composition II **3 Credits**
- MATH 1111 - College Algebra **3 Credits**

## Area B

- COMM 2400 - Public Speaking **2 Credits**
- STS 2400 - Science, Technology, and Society **2 Credits**

## Area C

- Group 1 - Literature of the World **3 Credits**
- Group 2 - Art and Culture of the World **3 Credits**

## Area D

- Sciences - Lab Sciences **8 Credits**
- MATH 1113 - Pre-calculus **4 Credits**

## Area E



- Group 1 - American Context **3 Credits**
- Group 2 - World History **3 Credits**
- Group 3 - Behavioral Science **3 Credits**
- Group 4 - Cultures and Societies **3 Credits**

## Area F

- Technical Block - Up to 17 Semester Hours **17 Credits**
- Major Technical Block - Up to 21 Semester Hours **21 Credits**

## Major Courses

- ACCT 2101 - Principles of Financial Accounting **3 Credits**
- IET 2227 - Introduction to Statistics **3 Credits**
- IET 3322 - Work Measurement and Ergonomics **4 Credits**
- IET 3339 - Statistical Quality Control **3 Credits**
- IET 3356 - Quality Concepts and Systems Design **3 Credits**
- IET 3424 - Engineering Economy **3 Credits**
- IET 3511 - Sustainability Engineering **3 Credits**
- IET 4422 - Facilities Design, Plant Layout, and Materials Handling **4 Credits**
- MATH 2253 - Calculus I **4 Credits**
- MGNT 4151 - Operations Management **3 Credits**
- SPSU 1001 - Hitch-hiker's Introduction to SPSU **1 Credits**

## Technical Electives

Choose any two courses

- IET 2305 - The Role of Industrial Engineering Technology in Industrial Systems **4 Credits**
- IET 2449 - Logistics and Supply Chain Management **3 Credits**
- IET 3403 - Advanced Statistics with Application **3 Credits**
- ECET 3000 - Electrical Principles **4 Credits**
- MET 1311 - Manufacturing Processes **3 Credits**
- MET 2322 - Metrology and CNC Machining **3 Credits**
- TCOM 2010 - Technical Writing **3 Credits**

**Degree Program Total: 120**

## **Mathematics, BS**

## Requirements

- ENGL 1101 - English Composition I **3 Credits**
- ENGL 1102 - English Composition II **3 Credits**
- PHYS 2211 - Principles of Physics I **3 Credits**
- PHYS 2211L - Principles of Physics Laboratory I **1 Credits**
- PHYS 2212 - Principles of Physics II **3 Credits**
- PHYS 2212L - Principles of Physics Laboratory II **1 Credits**
- COMM 2400 - Public Speaking **2 Credits**
- STS 2400 - Science, Technology, and Society **2 Credits**
- Area C Group 1 - Take One Course From the Literature Group **3 Credits**
- Area C Group 2 - Take One Course From the Art and Culture Group **3 Credits**
- Area E Group 1 - American Context **3 Credits**
- Area E Group 2 - World History **3 Credits**
- Area E Group 3 - Behavioral Science **3 Credits**
- Area E Group 4 - Cultures and Societies **3 Credits**
- CSE 1301 - Computer Science I **4 Credits**
- CSE 1302 - Computer Science II **4 Credits**
- SPSU 1001 - Hitch-hiker's Introduction to SPSU **1 Credits**
- MATH 1113 - Pre-calculus **4 Credits**
- MATH 2253 - Calculus I **4 Credits**
- MATH 2254 - Calculus II **4 Credits**
- MATH 2255 - Calculus III **4 Credits**
- MATH 2306 - Ordinary Differential Equations **3 Credits**
- MATH 2345 - Discrete Mathematics **3 Credits**
- MATH 3310 - Introduction to Advanced Mathematics **3 Credits**
- MATH 3312 - Linear Algebra **4 Credits**
- MATH 3320 - Introductory Real Analysis I **4 Credits**
- MATH 3321 - Introductory Real Analysis II **4 Credits**
- MATH 4407 - Vector Analysis **3 Credits**
- MATH 4440 - Abstract Algebra **4 Credits**
- MATH 4451 - Capstone Mathematics Project **3 Credits**

### Mathematics Electives (9 Credits)

Any mathematics course numbered 2300 or above, excluding those for which dual credit is not allowed.

### Guided Electives (20 Credits)

May include additional mathematics courses or other courses chosen in consultation with an advisor. May not include mathematics courses numbered less than 2000, or courses for which dual credit is not allowed.

**Degree Program Total: 121**

## Mathematics Second Major

A student completing the B.S. degree in a field other than Mathematics may receive a second major in Mathematics at the same time to accompany that degree by completing the following courses. Note that additional courses, which are the prerequisites to these courses, are required by implication.

### Mathematics Second Major Requirements

- MATH 2255 - Calculus III **4 Credits**
- MATH 2306 - Ordinary Differential Equations **3 Credits**
- MATH 2345 - Discrete Mathematics **3 Credits**
- MATH 3310 - Introduction to Advanced Mathematics **3 Credits**
- MATH 3312 - Linear Algebra **4 Credits**
- MATH 3320 - Introductory Real Analysis I **4 Credits**
- MATH 3321 - Introductory Real Analysis II **4 Credits**
- MATH 4407 - Vector Analysis **3 Credits**
- MATH 4440 - Abstract Algebra **4 Credits**
- MATH 4451 - Capstone Mathematics Project **3 Credits**

### Second Degree in Mathematics

Students who receive a degree from SPSU in a field other than Mathematics may receive a B.S. with a major in Mathematics by completing all the requirements for the Mathematics degree. The same courses may be used to fulfill requirements for both degrees, but there must be at least 30 semester hours used to fulfill the requirements for the Mathematics degree which are not used to fulfill the requirements for any other degree.

## Mathematics, Education Track, BA

The bachelor's degrees in mathematics or science with the Teacher Education track provides students with a strong foundation in the discipline, giving them maximum flexibility with their degrees. Adding the Teacher Education track can give students immediate job possibilities.

The Teacher Education Program at SPSU provides students with strong, mentored experiences in the schools, a thorough knowledge of the teaching strategies and research on learning science and mathematics, and a nationally renowned teacher preparation program. This program allows students to build confidence in working with a variety of students in multiple school settings, and prepares them for a successful career in teaching mathematics or science in the middle school or high school.

### Requirements

- ENGL 1101 - English Composition I **3 Credits**
- ENGL 1102 - English Composition II **3 Credits**
- Area D - Any Two Lab Sciences **4 Credits**
- Area D - Any Two Lab Sciences **4 Credits**
- COMM 2400 - Public Speaking **2 Credits**
- STS 2400 - Science, Technology, and Society **2 Credits**
- Area C Group 1 - Take One Course From the Literature Group **3 Credits**
- Area C Group 2 - Take One Course From the Art and Culture Group **3 Credits**
- Area E Group 1 - American Context **3 Credits**
- Area E Group 2 - World History **3 Credits**
- Area E Group 3 - Behavioral Science **3 Credits**
- Area E Group 4 - Cultures and Societies **3 Credits**
- CSE 1301 - Computer Science I **4 Credits**
- MATH 1113 - Pre-calculus **4 Credits**
- MATH 2253 - Calculus I **4 Credits**
- MATH 2254 - Calculus II **4 Credits**
- MATH 2255 - Calculus III **4 Credits**
- MATH 2260 - Introduction to Probability and Statistics **3 Credits**
- MATH 2306 - Ordinary Differential Equations **3 Credits**
- MATH 2345 - Discrete Mathematics **3 Credits**
- MATH 3312 - Linear Algebra **4 Credits**
- MATH 3310 - Introduction to Advanced Mathematics **3 Credits**
- MATH 3320 - Introductory Real Analysis I **4 Credits**
- MATH 3321 - Introductory Real Analysis II **4 Credits**
- MATH 3696 - Geometry **3 Credits**
- MATH 4407 - Vector Analysis **3 Credits**
- MATH 4440 - Abstract Algebra **4 Credits**
- MATH 4451 - Capstone Mathematics Project **3 Credits**
- Math Electives - **3 Credits** (Any mathematics course numbered 2300 or above, excluding those for which dual credit is not allowed.)
- EDUC 1101 - UTeach Step 1 **1 Credits**
- EDUC 1102 - UTeach Step 2 **1 Credits**
- EDUC 2010 - UTeach Knowing and Learning **3 Credits**
- EDUC 2020 - Classroom Interactions **3 Credits**
- EDUC 4030 - Project Based Instruction **3 Credits**
- MAED 2010 - Functions and Modeling **3 Credits**
- RSCH 3610 - Research Methods **3 Credits**
- STS 3347 - Perspectives on Science and Math **3 Credits**
- EDUC 4401 - Apprentice Teaching Seminar **1 Credits**
- EDUC 4406 - Apprentice Teaching **6 Credits**

**Degree Program Total: 123**

## **Mechanical Engineering Technology, BS**

## Requirements

- CHEM 1211 - Principles of Chemistry I **3 Credits**
- CHEM 1211L - Principles of Chemistry I Lab **1 Credits**
- ECON 2107 - Introduction to Economic Analysis **3 Credits** (Recommended for Area E-3)
- ENGL 1101 - English Composition I **3 Credits**
- ENGL 1102 - English Composition II **3 Credits**
- TCOM 2010 - Technical Writing **3 Credits**
- MATH 1113 - Pre-calculus **4 Credits** (the extra hour is applied to area F)
- MATH 2254 - Calculus II **4 Credits**
- MATH 2306 - Ordinary Differential Equations **3 Credits**
- MATH 2253 - Calculus I **4 Credits** (the extra hour is applied to Major Req.)
- PHYS 2211 - Principles of Physics I **3 Credits**
- PHYS 2211L - Principles of Physics Laboratory I **1 Credits**
- PHYS 2212 - Principles of Physics II **3 Credits**
- PHYS 2212L - Principles of Physics Laboratory II **1 Credits**
- COMM 2400 - Public Speaking **2 Credits**
- STS 2400 - Science, Technology, and Society **2 Credits**
- Area C Group 1 - Take One Course From the Literature Group **3 Credits**
- Area C Group 2 - Take One Course From the Art and Culture Group **3 Credits**
- Area E Group 1 - American Context **3 Credits**
- Area E Group 2 - World History **3 Credits**
- Area E Group 4 - Cultures and Societies **3 Credits**
- MET 4501 - Engineering Computation using Matlab **3 Credits**
- ECET 3000 - Electrical Principles **4 Credits**
- EDG 1211 - Engineering Graphics I **3 Credits**
- EDG 1212 - Engineering Graphics II **4 Credits**
- ENGR 2214 - Engineering Mechanics – Statics **3 Credits**
- ENGR 3122 - Dynamics **3 Credits**
- ENGR 3131 - Strength of Materials **3 Credits**
- ENGR 3132 - Strength of Materials Lab **1 Credits**
- MET 3101 - Fluid Mechanics Principles & Applications **4 Credits**
- MET 1000 - Mechanical Engineering Technology Orientation **1 Credits**
- SPSU 1001 - Hitch-hiker's Introduction to SPSU **1 Credits**
- MET 1311 - Manufacturing Processes **3 Credits**
- MET 1321 - Machining and Welding **2 Credits**
- MET 2322 - Metrology and CNC Machining **3 Credits**
- MET 3132 - Engineering Materials **4 Credits**
- MET 3401 - Thermodynamics I **3 Credits**
- MET 4141 - Machine Design I **4 Credits**
- MET 4421 - Instruments and Controls **4 Credits**

Select one of the following four courses (3 Credits)

- MET 3123 - Dynamics of Machines **3 Credits**
- MET 3331 - Tool Design **3 Credits**
- MET 3402 - Thermodynamics II **3 Credits**
- MET 4112 - Computer Aided Engineering & Analysis **3 Credits**
- MET XXXX - Major Electives (For Concentration) **12 Credits**
- Free Elective **3 Credits**

**Degree Program Total: 129**

## Note:

Note 1. MET majors are required to earn an overall 2.0 average in all courses designated as MET and ENGR.

Note 2. PHYS 1111, PHYS 1111L and PHYS 1112, PHYS 1112L may be substituted for PHYS 2211, PHYS 2211L and PHYS 2212, PHYS 2212L .

Note 3. The Free Elective may not be MATH 1111 .

## **Mechanical Engineering, BS**

### Requirements

- CHEM 1211 - Principles of Chemistry I **3 Credits**
- CHEM 1211L - Principles of Chemistry I Lab **1 Credits**
- ENGL 1101 - English Composition I **3 Credits**
- ENGL 1102 - English Composition II **3 Credits**
- ENGL 21XX - Core C1-Literature **3 Credits**
- MATH 2253 - Calculus I **4 Credits**
- MATH 2254 - Calculus II **4 Credits**
- MATH 2255 - Calculus III **4 Credits**
- MATH 2260 - Introduction to Probability and Statistics **3 Credits**
- MATH 2306 - Ordinary Differential Equations **3 Credits**
- MATH 2335 - Numerical Methods I **3 Credits** \* May substitute MATH 3312 Linear Algebra (4 credits) or equivalent as approved by SME Chair department chair.
- PHYS 2211 - Principles of Physics I **3 Credits**
- PHYS 2211L - Principles of Physics Laboratory I **1 Credits**
- PHYS 2212 - Principles of Physics II **3 Credits**
- PHYS 2212L - Principles of Physics Laboratory II **1 Credits**
- COMM 2400 - Public Speaking **2 Credits**
- STS 2400 - Science, Technology, and Society **2 Credits**

- TCOM 2010 - Technical Writing **3 Credits**
- Core C2 - Art & Culture **3 Credits**
- Core E1 - American Context **3 Credits**
- Core E2 - World History **3 Credits**
- Core E3 - Behavioral Science Or ECON 2107 - Introduction to Economic Analysis **3 Credits**
- Core E4 - Culture & Societies **3 Credits**
- SPSU 1001 - Hitch-hiker's Introduction to SPSU **1 Credits**
- EDG 1211 - Engineering Graphics I **3 Credits**
- CSE 1301E - C++ Programming for Engineers **4 Credits**
- ENGR 2214 - Engineering Mechanics – Statics **3 Credits**
- ENGR 3122 - Dynamics **3 Credits**
- ENGR 3125 - Machine Dynamics & Vibrations **3 Credits**
- ENGR 3131 - Strength of Materials **3 Credits**
- ENGR 3132 - Strength of Materials Lab **1 Credits**
- ENGR 3343 - Fluid Mechanics **3 Credits**
- ENGR 3345 - Fluid Mechanics Laboratory **1 Credits**
- ENGR 4402 - Engineering Ethics **1 Credits**
- EE 2301 - Circuit Analysis I **4 Credits**
- ME 1001 - Introduction to Mechanical Engineering **2 Credits**
- ME 3101 - Materials Science and Engineering **3 Credits**
- ME 3201 - Product Realization **2 Credits**
- ME 3410 - Thermodynamics **3 Credits**
- ME 3440 - Heat Transfer **3 Credits**
- ME 3501 - Dynamic Systems & Control Theory **3 Credits**
- ME 4141 - Machine Design I **3 Credits**
- ME 4250 - Computer Aided Engineering **3 Credits**
- ME 4403 - Heat Transfer and Thermodynamics Lab **1 Credits**
- ME 4501 - Vibrations & Controls Lab **1 Credits**
- ME 4201 - Senior Design I **1 Credits**
- ME 4202 - Senior Design II **3 Credits**
- Approved technical electives **8 Credits**

## Degree Program Total: 129

The Mechanical Engineering degree requires a grade of "C" or better in all ME and ENGR courses applied to degree requirements.

## Technical Electives

Technical Electives can be any non-required 3000 and/or 4000 level courses from ME, including Special Topics (ME 3903 or ME 4903) and Undergraduate Research (ME 4801, ME 4802, and ME 4803). Some ENGR, EE, MTRE or SYE may be approved for technical electives by the program coordinator or the department chair. Students may focus their technical electives in Aerospace Engineering (SYE 3801, SYE 3802, SYE 3803, SYE 4801, SYE 4802, SYE 4803) or Nuclear Engineering (SYE 3501, SYE 3502, SYE 4501, SYE 4502, or SYE 4503).

\*\*If student doesn't take ECON 2107 for Core E-3, the student must take SYE 3320 - Engineering Economics and Decision Analysis as a Technical Elective.

## **Mechatronics Engineering, BS**

### **Requirements**

- ENGL 1101 - English Composition I **3 Credits**
- ENGL 1102 - English Composition II **3 Credits**
- COMM 2400 - Public Speaking **2 Credits**
- STS 2400 - Science, Technology, and Society **2 Credits**
- Area C Group 1 - Take One Course, Literature Group **3 Credits**
- Area C Group 2 - Take One Course, Art and Culture Group **3 Credits**
- Area E Group 1 - American Context **3 Credits**
- Area E Group 2 - World History **3 Credits**
- Area E Group 4 - Cultures and Societies **3 Credits**
- ECON 2107 - Introduction to Economic Analysis **3 Credits** (Recommended Area E-3)
- CHEM 1211 - Principles of Chemistry I **3 Credits**
- CHEM 1211L - Principles of Chemistry I Lab **1 Credits**
- MATH 2253 - Calculus I **4 Credits** (the extra hour is applied to Major Req.)
- MATH 2254 - Calculus II **4 Credits**
- MATH 2255 - Calculus III **4 Credits**
- MATH 2306 - Ordinary Differential Equations **3 Credits**
- PHYS 2211 - Principles of Physics I **3 Credits**
- PHYS 2211L - Principles of Physics Laboratory I **1 Credits**
- PHYS 2212 - Principles of Physics II **3 Credits**
- PHYS 2212L - Principles of Physics Laboratory II **1 Credits**
- EDG 1211 - Engineering Graphics I **3 Credits**
- EE 2301 - Circuit Analysis I **4 Credits**
- ENGR 2214 - Engineering Mechanics – Statics **3 Credits**
- MATH 3312 - Linear Algebra **4 Credits**
- EE 3401 - Engineering Electronics **4 Credits**
- ENGR 2501 - Engineering Materials **3 Credits**
- ENGR 3122 - Dynamics **3 Credits**
- ENGR 3343 - Fluid Mechanics **3 Credits**
- ENGR 3345 - Fluid Mechanics Laboratory **1 Credits**
- EE 3601 - Electric Machines **4 Credits**
- ENGR 4421 - Instruments and Controls **4 Credits**
- EE 4201 - Control Systems **4 Credits**
- MTRE 1000 - Introduction to Mechatronics Engineering **1 Credits**
- SPSU 1001 - Hitch-hiker's Introduction to SPSU **1 Credits**
- MTRE 3710 - Mechatronics Engineering Fundamentals **4 Credits**
- EE 2501 - Digital Logic Design **4 Credits**
- ENGR 3131 - Strength of Materials **3 Credits**



- ENGR 3132 - Strength of Materials Lab **1 Credits**
- ENGR 3125 - Machine Dynamics & Vibrations **3 Credits**
- MTRE 4000 - Advanced Controls **3 Credits**
- MTRE 4200 - Robotics Analysis and Synthesis **3 Credits**
- MTRE 4400 - Mechatronics System Design **4 Credits**
- CSE 1301E - C++ Programming for Engineers **4 Credits**
- Math Elective **3 Credits**

## Degree Program Total Hours: 130

The Mechatronics Engineering degree requires a grade of "C" or better in all MTRE, EE, ME and ENGR courses applied to degree requirements.

## New Media Arts, BA

The Bachelor of Arts in New Media Arts provides students with an opportunity to develop the technical and artistic skills needed to serve as practitioners in the fields of multimedia development and design, web design, and video production. As a degree that straddles two worlds--the fine and the applied arts--the degree program encourages both creativity and practical application. Students will have an opportunity to develop a strong foundation in the traditional fine arts and learn to translate these skills to new media contexts. They will also learn to approach the technical aspects of new media applications from the sensibilities of an artist as well as a technician.

With its balance between the artistic and technical aspects of new media production, the new media arts degree program should prepare students to meet a growing marketplace need for multimedia artists and to rise to the top of the pack of individuals competing for these positions. While providing an undergraduate degree option for students interested in entering careers in the fine and applied arts, it would also provide appropriate preparation for graduate study.

## Requirements

- ENGL 1101 - English Composition I **3 Credits**
- ENGL 1102 - English Composition II **3 Credits**
- MATH 1111 - College Algebra **3 Credits**
- MATH 1113 - Pre-calculus **4 Credits**
- COMM 2400 - Public Speaking **2 Credits**
- STS 2400 - Science, Technology, and Society **2 Credits**
- Area C Group 1 - Take One Course from the Literature Group **3 Credits**
- Area C Group 2 - Take One Course from the Art and Culture Group **3 Credits**
- Area D - Any Two Lab Sciences **8 Credits**
- Area E Group 1 - American Context **3 Credits**
- Area E Group 2 - World History **3 Credits**
- Area E Group 3 - Behavioral Science **3 Credits**
- Area E Group 4 - Cultures and Societies **3 Credits**

## Area F Core Course in the Major (6 Credits)

- ARTS 2020 - History and Principles of Design **3 Credits**
- COMM 2170 - Introduction to Media Studies **3 Credits**

## Area F Core Studio Course in the Major (9 Credits; Choose 3)

- ARTS 2010 - Introduction to Drawing **3 Credits**
- ARTS 2110 - Introduction to Painting **3 Credits**
- ARTS 2220 - 2D and 3D Design **3 Credits**
- ARTS 2903 - Music Theory **3 Credits**

## Area F Elective Courses in the Major (3 Credits; Choose 1)

- ARTS 2001 - Art Appreciation **3 Credits**
- ARTS 2002 - Drama Appreciation **3 Credits**
- ARTS 2003 - Music Appreciation **3 Credits**

## Basic Required Courses in the Major (24 Credits)

- SPSU 1001 - Hitchhikers Guide to SPSU **1 Credits**
- ARTS 3000 - Visual Thinking **3 Credits**
- ARTS 3100 - History of New Media Arts **3 Credits**
- COMM 3160 - Media Theory and Practice **3 Credits**
- ARTS 4100 - Media Arts Studio **3 Credits**
- ENGL 3045 - New Media Writing **3 Credits**
- TCOM 3430 - Foundations of Graphics **3 Credits**
- TCOM 3400 - Foundations of Design for the Web **3 Credits**
- ARTS 4800 - Senior Portfolio **3 Credits**

## Additional Courses in the Major (18 Credits; Choose 6)

- ARTS 3170 - Digital Photography **3 Credits**

- ARTS 4600 - Directed Study **3 Credits**
- CGDD 3103 - Application Extension and Scripting **3 Credits**
- CGDD 4003 - Digital Media and Interaction **3 Credits**
- CGDD 4203 - Mobile and Casual Game Development **3 Credits**
- COMM 3060 - Media, Culture, and Society **3 Credits**
- ENGL 3180 - Film as Literature **3 Credits**
- ENGL 4170 - Media and Narrative **3 Credits**
- TCOM 4040 - Applied Graphics for Technical Communicators **3 Credits**
- TCOM 4045 - Foundations of Multimedia **3 Credits**
- TCOM 4170 - Film and Video Production **3 Credits**
- TCOM 4175 - Animation Design, 2D **3 Credits**
- TCOM 4400 - Advanced Design for the Web **3 Credits**
- Free Electives **18 Credits**

## Degree Program Total: 121

For additional information about the B.A. program, contact the English, Technical Communication, and Media Arts Department at 678-915-7202, or email to [TCOM@spsu.edu](mailto:TCOM@spsu.edu). You can also visit our website at [etcm.spsu.edu](http://etcm.spsu.edu).

## Physics, BS

### Requirements

- ENGL 1101 - English Composition I **3 Credits**
- ENGL 1102 - English Composition II **3 Credits**
- TCOM 2010 - Technical Writing **3 Credits**
- COMM 2400 - Public Speaking **2 Credits**
- STS 2400 - Science, Technology, and Society **2 Credits**
- Area C Group 1 - Take One Course from the Literature Group **3 Credits**
- Area C Group 2 - Take One Course from the Art and Culture Group **3 Credits**
- Area D - Any Two Lab Sciences **8 Credits**
- Area E Group 1 - American Context **3 Credits**
- Area E Group 2 - World History **3 Credits**
- Area E Group 3 - Behavioral Science **3 Credits**
- Area E Group 4 - Cultures and Societies **3 Credits**
- SPSU 1001 - Hitch-hiker's Introduction to SPSU **1 Credits**
- MATH 1113 - Pre-calculus **4 Credits** (extra hour is applied to area F)
- MATH 2253 - Calculus I **4 Credits** (extra hour is applied to area F)
- MATH 2254 - Calculus II **4 Credits**
- MATH 2255 - Calculus III **4 Credits**
- MATH 2306 - Ordinary Differential Equations **3 Credits**
- PHYS 2211 - Principles of Physics I **3 Credits**
- PHYS 2211L - Principles of Physics Laboratory I **1 Credits**

- PHYS 2212 - Principles of Physics II **3 Credits**
- PHYS 2212L - Principles of Physics Laboratory II **1 Credits**
- PHYS 2213 - Introduction to Thermal and Modern Physics **2 Credits**
- PHYS 3210 - Mechanics I **4 Credits**
- PHYS 3410K - Electronics Laboratory **2 Credits**
- PHYS 3220 - Electromagnetism I **3 Credits**
- PHYS 3500K - Introduction to Computational Physics **3 Credits**
- PHYS 3710 - Modern Physics **4 Credits**
- PHYS 3720L - Modern Physics Laboratory **1 Credits**
- PHYS 4210 - Quantum Physics **4 Credits**
- PHYS 4230 - Thermal Physics **4 Credits**
- PHYS 4410K - Advanced Measurements Laboratory **2 Credits**
- PHYS 4430 - Capstone Physics Project **1 Credits**
- PHYS 4250 - Quantum Theory of Two-State Systems **2 Credits**
- Directed Electives approved by the program **9 - 15 Credits**
- Upper Division Physics Electives/Concentrations **4 - 10 Credits**

**Degree Program Total: 121**

## A Second Degree in Physics

Students who are earning B.S. degrees in other fields at Southern Polytechnic State University may also earn a second major in Physics.

SPSU students who wish to earn a second major in physics will be required to take the following 22 hours of course work:

## Second Degree Requirements

- PHYS 3210 - Mechanics I **4 Credits**
- PHYS 3220 - Electromagnetism I **3 Credits**
- PHYS 3410K - **2 Credits**
- PHYS 3500K - Introduction to Computational Physics **3 Credits**
- PHYS 3710 - Modern Physics **4 Credits**
- PHYS 3720L - Modern Physics Laboratory **1 Credits**
- PHYS 4230 - Thermal Physics **4 Credits**
- PHYS 4410K - Advanced Measurements Laboratory **2 Credits**

## **Physics, Electrical Engineering Concentration, BS**

## Requirements

- ENGL 1101 - English Composition I **3 Credits**
- ENGL 1102 - English Composition II **3 Credits**
- TCOM 2010 - Technical Writing **3 Credits**
- COMM 2400 - Public Speaking **2 Credits**
- STS 2400 - Science, Technology, and Society **2 Credits**
- Area C Group 1 - Take One Course from the Literature Group **3 Credits**
- Area C Group 2 - Take One Course from the Art and Culture Group **3 Credits**
- Area D - Any Two Lab Sciences **8 Credits**
- Area E Group 1 - American Context **3 Credits**
- Area E Group 2 - World History **3 Credits**
- Area E Group 3 - Behavioral Science **3 Credits**
- Area E Group 4 - Cultures and Societies **3 Credits**
- SPSU 1001 - Hitch-hiker's Introduction to SPSU **1 Credits**
- MATH 1113 - Pre-calculus **4 Credits** (extra hour is applied to area F)
- MATH 2253 - Calculus I **4 Credits** (extra hour is applied to area F)
- MATH 2254 - Calculus II **4 Credits**
- MATH 2306 - Ordinary Differential Equations **3 Credits**
- PHYS 2211 - Principles of Physics I **3 Credits**
- PHYS 2211L - Principles of Physics Laboratory I **1 Credits**
- PHYS 2212 - Principles of Physics II **3 Credits**
- PHYS 2212L - Principles of Physics Laboratory II **1 Credits**
- PHYS 3220 - Electromagnetism I **3 Credits**
- PHYS 3500K - Introduction to Computational Physics **3 Credits**
- PHYS 3710 - Modern Physics **4 Credits**
- PHYS 3720L - Modern Physics Laboratory **1 Credits**
- PHYS 4210 - Quantum Physics **4 Credits**
- PHYS 4230 - Thermal Physics **4 Credits**
- PHYS 4240 - Solid State Physics **3 Credits**
- EE 3301 - Circuits Analysis I **4 Credits**
- EE 2501 - Digital Logic Design **4 Credits**
- EE 2401 - Semiconductor Devices **3 Credits**
- EE 3705 - Signals and Systems **3 Credits**
- EE 3401 - Engineering Electronics **4 Credits**
- EE 4201 - Control Systems **4 Credits**
- ENGR 2214 - Engineering Mechanics – Statics **3 Credits**
- Free Electives **4 Credits**

**Degree Program Total: 121**

# Physics, Mechanical Engineering Concentration, BS

## Requirements

- ENGL 1101 - English Composition I **3 Credits**
- ENGL 1102 - English Composition II **3 Credits**
- TCOM 2010 - Technical Writing **3 Credits**
- COMM 2400 - Public Speaking **2 Credits**
- STS 2400 - Science, Technology, and Society **2 Credits**
- Area C Group 1 - Take One Course from the Literature Group **3 Credits**
- Area C Group 2 - Take One Course from the Art and Culture Group **3 Credits**
- Area D - Any Two Lab Sciences **8 Credits**
- Area E Group 1 - American Context **3 Credits**
- Area E Group 2 - World History **3 Credits**
- Area E Group 3 - Behavioral Science **3 Credits**
- Area E Group 4 - Cultures and Societies **3 Credits**
- SPSU 1001 - Hitch-hiker's Introduction to SPSU **1 Credits**
- MATH 1113 - Pre-calculus **4 Credits** (extra hour is applied to area F)
- MATH 2253 - Calculus I **4 Credits** (extra hour is applied to area F)
- MATH 2254 - Calculus II **4 Credits**
- MATH 2255 - Calculus III **4 Credits**
- MATH 2306 - Ordinary Differential Equations **3 Credits**
- PHYS 2211 - Principles of Physics I **3 Credits**
- PHYS 2211L - Principles of Physics Laboratory I **1 Credits**
- PHYS 2212 - Principles of Physics II **3 Credits**
- PHYS 2212L - Principles of Physics Laboratory II **1 Credits**
- PHYS 2213 - Introduction to Thermal and Modern Physics **2 Credits**
- PHYS 3410K - Electronics Laboratory **2 Credits**
- PHYS 3220 - Electromagnetism I **3 Credits**
- PHYS 3500K - Introduction to Computational Physics **3 Credits**
- PHYS 3710 - Modern Physics **4 Credits**
- PHYS 3720L - Modern Physics Laboratory **1 Credits**
- PHYS 4210 - Quantum Physics **4 Credits**
- PHYS 4230 - Thermal Physics **4 Credits**
- PHYS 4240 - Solid State Physics **3 Credits**
- EDG 2160 - Civil Graphics and Computer Aided Drafting **3 Credits**
- ENGR 2214 - Engineering Mechanics – Statics **3 Credits**
- ENGR 3122 - Dynamics **3 Credits**
- ENGR 3131 - Strength of Materials **3 Credits**
- ENGR 3132 - Strength of Materials Lab **1 Credits**
- ENGR 3343 - Fluid Mechanics **3 Credits**
- ENGR 3345 - Fluid Mechanics Laboratory **1 Credits**
- ENGR 2501 - Material Science **3 Credits**
- ME 3201 - Product Realization **2 Credits**

- ENGR 3125 - Machine Dynamics & Vibrations **3 Credits**
- Free Electives **2 Credits**
- ME 3501 - Dynamic Systems & Control Theory **3 Credits**
- ME 4501 - Vibrations & Controls Lab **1 Credits**

**Degree Program Total: 121**

## **Concentration in Mechanical Engineering**

- EDG 2160 - Civil Graphics and Computer Aided Drafting **3 Credits**
- ENGR 2214 - Engineering Mechanics – Statics **3 Credits**
- ENGR 3122 - Dynamics **3 Credits**
- ENGR 3131 - Strength of Materials **3 Credits**
- ENGR 3132 - Strength of Materials Lab **1 Credits**
- ENGR 3343 - Fluid Mechanics **3 Credits**
- ENGR 3345 - Fluid Mechanics Laboratory **1 Credits**
- ENGR 2501 - Material Science **3 Credits**
- ME 3201 - Product Realization **2 Credits**
- ENGR 3125 - Machine Dynamics & Vibrations **3 Credits**
- ME 3501 - Dynamic Systems & Control Theory **3 Credits**
- ME 4501 - Vibrations & Controls Lab **1 Credits**

## **Physics, Teacher Education Concentration, BS**

The bachelor's degrees in mathematics or science with the Teacher Education track provides students with a strong foundation in the discipline, giving them maximum flexibility with their degrees. Adding the Teacher Education track can give students immediate job possibilities.

The Teacher Education Program at SPSU provides students with strong, mentored experiences in the schools, a thorough knowledge of the teaching strategies and research on learning science and mathematics, and a nationally renowned teacher preparation program. This program allows students to build confidence in working with a variety of students in multiple school settings, and prepares them for a successful career in teaching mathematics or science in the middle school or high school.

## **Requirements**

- ENGL 1101 - English Composition I **3 Credits**
- ENGL 1102 - English Composition II **3 Credits**

- TCOM 2010 - Technical Writing **3 Credits**
- COMM 2400 - Public Speaking **2 Credits**
- STS 2400 - Science, Technology, and Society **2 Credits**
- Area C Group 1 - Take One Course from the Literature Group **3 Credits**
- Area C Group 2 - Take One Course from the Art and Culture Group **3 Credits**
- Area D - Any Two Lab Sciences (Physics or Chemistry Recommended) **8 Credits**
- Area E Group 1 - American Context **3 Credits**
- Area E Group 2 - World History **3 Credits**
- Area E Group 3 - Behavioral Science **3 Credits**
- Area E Group 4 - Cultures and Societies **3 Credits**
- SPSU 1001 - Hitch-hiker's Introduction to SPSU **1 Credits**
- MATH 1113 - Pre-calculus **4 Credits** (extra hour is applied to area F)
- MATH 2253 - Calculus I **4 Credits** (extra hour is applied to area F)
- MATH 2254 - Calculus II **4 Credits**
- MATH 2255 - Calculus III **4 Credits**
- MATH 2306 - Ordinary Differential Equations **3 Credits**
- PHYS 2211 - Principles of Physics I **3 Credits**
- PHYS 2211L - Principles of Physics Laboratory I **1 Credits**
- PHYS 2212 - Principles of Physics II **3 Credits**
- PHYS 2212L - Principles of Physics Laboratory II **1 Credits**
- PHYS 2213 - Introduction to Thermal and Modern Physics **2 Credits**
- PHYS 3210 - Mechanics I **4 Credits**
- PHYS 3220 - Electromagnetism I **3 Credits**
- PHYS 3410K Electronics Laboratory **2 Credits**
- PHYS 3500K - Introduction to Computational Physics **3 Credits**
- PHYS 3710 - Modern Physics **4 Credits**
- PHYS 3720L - Modern Physics Laboratory **1 Credits**
- PHYS 4210 - Quantum Physics **4 Credits**
- PHYS 4230 - Thermal Physics **4 Credits**
- PHYS 4410K - Advanced Measurements Laboratory **2 Credits**

## Physics Education

- EDUC 1101 - UTeach Step 1 **1 Credits**
- EDUC 1102 - UTeach Step 2 **1 Credits**
- EDUC 2010 - UTeach Knowing and Learning **3 Credits**
- EDUC 2020 - Classroom Interactions **3 Credits**
- EDUC 4030 - Project Based Instruction **3 Credits**
- RSCH 3610 - Research Methods **3 Credits**
- STS 3347 - Perspectives on Science and Math **3 Credits**
- EDUC 4401 - Apprentice Teaching Seminar **1 Credits**
- EDUC 4406 - Apprentice Teaching **6 Credits**

**Degree Program Total: 120**



# Political Science, BS

There is a growing need for graduates in political science. The acquisition of methodological skills, coupled with an understanding of the political process at local, state, national and international levels, allows for employment in a variety of public and private venues where research techniques are highly prized. As well, the communication, analysis, and critical reasoning skills that our graduates obtain place them well in a competitive job market, where continual learning is essential and interpersonal and cross-cultural competencies are greatly needed.

While there are other political science programs offered in Georgia, SPSU's program will be unique in several respects:

- The SPSU program is highly quantitative in focus, offering students three additional quantitative courses in political science research methods and analysis beyond the norm required in other political science programs.
- The SPSU program offers students various inter-disciplinary course options through its Directed International Electives module.
- The SPSU program further establishes a strong international focus by encouraging students to become proficient in a second language.

Students who complete the program have the knowledge, skills, and real-world context to be productive and flexible in a rapidly changing workplace. Graduates with a bachelor's degree in political science find positions as committee staffers, budget analysts, communications consultants, research/policy analysts, corporate public affairs advisors, foreign service officers, writers/authors/political commentators, journalists, foundation staffers, lobbyists, marketing analysts, or public opinion analysts. Additionally, SPSU's program's training in the development of research, critical thinking, and communication skills will open opportunities in for-profit/non-profit business settings, international and U.S.-based non-governmental organizations and foundations. Graduates of SPSU's BS in Political Science will be more than qualified to take advantage of the local, regional, national, and international employment opportunities offered by metro Atlanta and the State of Georgia, as well as to pursue post-baccalaureate educational opportunities in either political science or the field of law.

## Requirements

All students must take:

- SPSU 1001 - Hitch-hiker's Introduction to SPSU **1 Credits**

## Core Areas A-E

### Area A: Essential Skills (9 credits)

Grade of C or better required in courses used to satisfy this requirement. Freshmen must complete Area A by the time they have attempted 30 semester hours of course work.

- ENGL 1101 - English Composition I **3 Credits**

- ENGL 1102 - English Composition II **3 Credits**
- MATH 1111 - College Algebra **3 Credits**  
(or other math as specified in the SPSU core)

## Area B: Institutional Options (4 credits)

- COMM 2400 - Public Speaking **2 Credits**
- STS 2400 - Science, Technology, and Society **2 Credits**

## Area C: Humanities / Fine Arts (6 credits)

### C-1: Literature (3 credits)

Choose ONE of the following:

- ENGL 2111 - Early World Literature **3 Credits**
- ENGL 2112 - World Literature Mid-1600s to Present **3 Credits**
- ENGL 2120 - British Literature Early to Present **3 Credits**
- ENGL 2121 - Early British Literature **3 Credits**
- ENGL 2122 - British Literature Late 1700s to Present **3 Credits**
- ENGL 2130 - American Literature Early to Present **3 Credits**
- ENGL 2131 - Early American Literature **3 Credits**
- ENGL 2132 - American Literature Mid 1800s to Present **3 Credits**
- ENGL 2141 - Early Western Literature **3 Credits**
- ENGL 2142 - Western Literature 1600s to Present **3 Credits**
- ENGL 2300 - African-American Literature and Culture **3 Credits**

### C-2: Humanities (3 credits)

Choose ONE of the following (language recommended):

- ARTS 2001 - Art Appreciation **3 Credits**
- ARTS 2002 - Drama Appreciation **3 Credits**
- ARTS 2003 - Music Appreciation **3 Credits**
- ARTS 2004 - History of Contemporary American Music **3 Credits**
- FREN 1002 - Elementary French II **3 Credits**
- GRMN 1002 - Elementary German II **3 Credits**
- SPAN 1002 - Elementary Spanish II **3 Credits**

## Area D: Science and Math (12 credits)

## D-1: Lab Science (8 credits)

You must take two semesters of lab science *and lab* (lecture=3 credits; lab=1 credit; K-courses=4 credits, lab is included)

- ASTR 1000K - Introduction to the Universe **4 Credits**
- ASTR 1010K - Introduction to the Universe II **4 Credits**
- BIOL 2107 - Principles of Biology I **3 Credits**
- BIOL 2107L - Principles of Biology I Laboratory **1 Credits**
- BIOL 2108 - Principles of Biology II **3 Credits**
- BIOL 2108L - Principles of Biology II Laboratory **1 Credits**
- CHEM 1211 - Principles of Chemistry I **3 Credits**
- CHEM 1211L - Principles of Chemistry I Lab **1 Credits**
- CHEM 1211K - Principles of Chemistry (ECORE) **4 Credits**
- CHEM 1212 - Principles of Chemistry II **3 Credits**
- CHEM 1212L - Principles of Chemistry II Lab **1 Credits**
- CHEM 1212K - Principles of Chemistry II (ECORE) **4 Credits**
- ENVS 2200K - Geology **4 Credits**
- ENVS 2202K - Introduction to Environmental Science **4 Credits**
- GEOL 1101K - Introductory Geosciences **4 Credits**
- PHYS 1111 - Introductory Physics I **3 Credits**
- PHYS 1111L - Introductory Physics Laboratory I **1 Credits**
- PHYS 1112 - Introductory Physics II **3 Credits**
- PHYS 1112L - Introductory Physics Laboratory II **1 Credits**
- PHYS 1211K - Principles of Physics I (ECORE) **4 Credits**
- PHYS 2211 - Principles of Physics I **3 Credits**
- PHYS 2211L - Principles of Physics Laboratory I **1 Credits**
- PHYS 2212 - Principles of Physics II **3 Credits**
- PHYS 2212L - Principles of Physics Laboratory II **1 Credits**

## D-2: Math (Minimum of 3 credits)

- MATH 1113 - Pre-calculus **4 Credits**  
(or other math as specified in the SPSU core)

## Area E: Social Sciences (12 credits)

### E-1: American Perspectives (3 credits)

Satisfies the American Perspectives overlay. Any one of these courses, taken within the University System of Georgia, also satisfies the Legislative Requirement for US and Georgia Constitution and History. Students who fulfill this

requirement with transfer credit from outside the USG *may* need to take HIST 2911: U.S. and Georgia Constitution and History to satisfy the Legislative Requirement for graduation. Please check with your advisor.

Choose ONE of the following (POLS 1101 American Government is required in Area F and may not be used here):

- HIST 2111 - United States History to 1877 **3 Credits**
- HIST 2112 - United States History since 1877 **3 Credits**

## E-2: Historical Perspectives (3 credits)

Choose ONE of the following:

- HIST 1111 - Survey of World Civilization pre 1500 **3 Credits**
- HIST 1112 - Survey of World Civilization post 1500 **3 Credits**

## E-3: Behavioral Science Perspectives (3 credits)

Choose ONE of the following (ECON 1101 Introduction to Economics is required in Area F and may not be used here):

- PSYC 1101 - Introduction to General Psychology **3 Credits**
- SOCI 1101 - Introduction to Sociology **3 Credits**

## E-4: Global Perspectives (3 credits)

Satisfies Global Perspectives overlay. Choose ONE of the following (POLS 2401 is required in Area F and may not be used here):

- ANTH 1102 - Introduction to Anthropology **3 Credits**
- ES 1100 - Ethnic Studies **3 Credits**
- GEOG 1101 - Introduction to Human Geography **3 Credits**
- RELG 1200 - World Religion **3 Credits**

## Core Area F (18 credits)

- SPAN 2001 - Intermediate Spanish I **3 Credits**
- SPAN 2002 - Intermediate Spanish II **3 Credits**  
or 6 credits of any non-English language at an equivalent level
- ECON 1101 - Introduction to Economics **3 Credits**
- POLS 1101 - American Government **3 Credits**
- POLS 2100 - Introduction to Research Methods **3 Credits**
- POLS 2401 - Global Issues **3 Credits**

## Required Courses in Major (36 credits):

Grade of C or better required.

- POLS 3001 - Comparative Politics **3 Credits**
  - POLS 3100 - Research Design **3 Credits**
  - POLS 3209 - U.S. Constitutional Law **3 Credits**
  - POLS 3301 - Modern Political Theory **3 Credits**
  - POLS 3601 - Contemporary World Politics **3 Credits**
  - POLS 3701 - American Institutions **3 Credits**
  - POLS 3801 - Political Behavior **3 Credits**
  - POLS 4100 - Applied Methodology **3 Credits**
  - POLS 4301 - International Political Economy **3 Credits**
- Choose ONE of the following:
- GEOG 4101 - Geographic Information Systems **3 Credits**
  - POLS 4201 - International Relations in the Americas **3 Credits**
- Choose ONE Regional Studies Course:
- IS 4000 - Regional Studies - General **3 Credits**
  - IS 4001 - Regional Studies/Latin America **3 Credits**
  - IS 4002 - Regional Studies/Asia:China **3 Credits**
  - IS 4003 - Regional Studies/Asia:Japan **3 Credits**
  - IS 4004 - Regional Studies/Middle East **3 Credits**
  - IS 4005 - Regional Studies/Russia/Eastern Europe **3 Credits**
  - IS 4006 - Regional Studies/Western Europe **3 Credits**
  - IS 4007 - Regional Studies/Africa **3 Credits**
- In one of final two semesters:
- POLS 4801 - Capstone: Political Science Practicum **3 Credits**

## Directed International Electives: (12 credits)

Grade of C or better required. Take any FOUR of the following courses:

- GEOG 3101 - World Regional Geography **3 Credits**
- HIST 3200 - History of Science Survey **3 Credits**
- HIST 3301 - Diplomatic and Military History since 1815 **3 Credits**
- HIST 3401 - Modern Social and Cultural History Twentieth Century **3 Credits**
- HIST 3501 - Colonization and Rebellion in the Trans-Atlantic World **3 Credits**
- HIST 3601 - History of the Pacific Rim **3 Credits**
- HIST 3801 - Contemporary World History since 1945 **3 Credits**
- IS 3600 - Comparative Culture **3 Credits**
- IS 4800 - International Studies Capstone **3 Credits**
- POLS 2903 - Special Topics in Political Science **3 Credits**
- POLS 3009 - Foundations of Public Policy **3 Credits**
- POLS 3401 - Environmental Law and Policy **3 Credits**
- POLS 3501 - Intellectual Property Issues **3 Credits**
- POLS 4009 - Comparative Public Policy Analysis **3 Credits**

- POLS 4063 - Political Issues in Electronic Government **3 Credits**
  - POLS 4101 - Political Economy of Post-Communist Transformation **3 Credits**
  - POLS 4201 - International Relations in the Americas **3 Credits**
  - POLS 4903 - Special Topics in Political Science **3 Credits**
  - PSYC 3101 - International Social Psychology **3 Credits**
  - PSYC 4000 - International Psychology **3 Credits**
  - PSYC 4600 - Conflict Resolution **3 Credits**
  - SPAN 3001 - Advanced Conversation **3 Credits**
  - SPAN 3002 - Grammar and Composition **3 Credits**
  - SPAN 3003 - Hispanic Cultures and Civilizations **3 Credits**
  - SPAN 3901 - Special Topics **1 to 5 Credits**
  - SPAN 3902 - Special Topics **1 to 5 Credits**
  - SPAN 3903 - Special Topics **1 to 5 Credits**
  - SPAN 3904 - Special Topics **1 to 5 Credits**
  - SPAN 3905 - Special Topics **1 to 5 Credits**
  - STS 4000 - International Issues in Science and Technology **3 Credits**
  - STS 4400 - Topical Studies in Science and Technology **3 Credits**
- Up to 6 additional credits in Regional Studies:
- IS 4000 - Regional Studies - General **3 Credits**
  - IS 4001 - Regional Studies/Latin America **3 Credits**
  - IS 4002 - Regional Studies/Asia:China **3 Credits**
  - IS 4003 - Regional Studies/Asia:Japan **3 Credits**
  - IS 4004 - Regional Studies/Middle East **3 Credits**
  - IS 4005 - Regional Studies/Russia/Eastern Europe **3 Credits**
  - IS 4006 - Regional Studies/Western Europe **3 Credits**
  - IS 4007 - Regional Studies/Africa **3 Credits**

## Free Electives (12 credits):

Any college-level credit not used above may be applied here. *Free electives may be used toward a minor and are exempt from the 9 hour rule.*

**Degree Program Total: 121**

## Psychology, BS

Southern Polytechnic State University's Bachelor of Science degree in Psychology provides students a program of study in modern psychology. Specifically, the program embraces a strong international component with a multi-disciplinary curriculum that provides a balanced, career-based education in psychology with a wide range of skills and practical knowledge. The concentrations offered cover the subject matter from seventeen major subfields coupling science and practice. This broad spectrum provides a rich context so that students who complete the program have the knowledge, skills, and real-world context to be productive and flexible in a rapidly changing workplace.

Career opportunities for graduates with a B.S. in Psychology include: employment counselors, corporate counselor trainees, interviewers, personnel analysts, systems analysts, rehabilitation assistants, mental health assistants, probation

officers and writers. Additionally, training in the development of research and writing skills will open opportunities in profit/non-profit business settings, public affairs, public health, sales and administrative support.

The concentrations offered are:

- Engineering Psychology (involves the science of applying an understanding of human behavior interacting with the design of systems and products that improve human performance)
- Industrial/Organizational Psychology (involves the science of applying an understanding of human behavior with improving productivity and the workplace quality)
- Clinical and Counseling Psychology (involves the science of applying an understanding of human behavior with an emphasis on mental disorders and their treatment)

## Requirements

### Core Areas A-E

#### Area A: Essential Skills (9 credits)

Grade of C or better required in the courses used to satisfy this requirement. Freshmen must complete Area A by the time they have attempted 30 semester hours of course work.

- ENGL 1101 - English Composition I **3 Credits**
- ENGL 1102 - English Composition II **3 Credits**
- MATH 1111 - College Algebra **3 Credits**  
(or other math as specified in the SPSU core)

#### Area B: Institutional Options (4 credits)

- COMM 2400 - Public Speaking **2 Credits**
- STS 2400 - Science, Technology, and Society **2 Credits**

#### Area C: Humanities / Fine Arts (6 credits)

##### C-1: Literature (3 credits)

Choose ONE of the following:

- ENGL 2111 - Early World Literature **3 Credits**
- ENGL 2112 - World Literature Mid-1600s to Present **3 Credits**

- ENGL 2120 - British Literature Early to Present **3 Credits**
- ENGL 2121 - Early British Literature **3 Credits**
- ENGL 2122 - British Literature Late 1700s to Present **3 Credits**
- ENGL 2130 - American Literature Early to Present **3 Credits**
- ENGL 2131 - Early American Literature **3 Credits**
- ENGL 2132 - American Literature Mid 1800s to Present **3 Credits**
- ENGL 2141 - Early Western Literature **3 Credits**
- ENGL 2142 - Western Literature 1600s to Present **3 Credits**
- ENGL 2300 - African-American Literature and Culture **3 Credits**

## C-2: Humanities (3 credits)

Choose ONE of the following:

- ARTS 2001 - Art Appreciation **3 Credits**
- ARTS 2002 - Drama Appreciation **3 Credits**
- ARTS 2003 - Music Appreciation **3 Credits**
- ARTS 2004 - History of Contemporary American Music **3 Credits**
- FREN 1002 - Elementary French II **3 Credits**
- FREN 2001 - Intermediate French I **3 Credits**
- FREN 2002 - Intermediate French II **3 Credits**
- GRMN 1002 - Elementary German II **3 Credits**
- GRMN 2001 - Intermediate German I **3 Credits**
- GRMN 2002 - Intermediate German II **3 Credits**
- SPAN 1002 - Elementary Spanish II **3 Credits**
- SPAN 2001 - Intermediate Spanish I **3 Credits**
- SPAN 2002 - Intermediate Spanish II **3 Credits**

## Area D: Science and Math (11-12 credits)

### D-1: Lab Science (8 credits)

You must take two semesters of lab science *and lab* (lecture=3 credits; lab=1 credit; K courses=4 credits, including lab). Biology recommended.

- ASTR 1000K - Introduction to the Universe **4 Credits**
- ASTR 1010K - Introduction to the Universe II **4 Credits**
- BIOL 2107 - Principles of Biology I **3 Credits**
- BIOL 2107L - Principles of Biology I Laboratory **1 Credits**
- BIOL 2108 - Principles of Biology II **3 Credits**
- BIOL 2108L - Principles of Biology II Laboratory **1 Credits**
- CHEM 1211 - Principles of Chemistry I **3 Credits**
- CHEM 1211L - Principles of Chemistry I Lab **1 Credits**
- CHEM 1211K - Principles of Chemistry (ECORE) **4 Credits**



- CHEM 1212 - Principles of Chemistry II **3 Credits**
- CHEM 1212L - Principles of Chemistry II Lab **1 Credits**
- CHEM 1212K - Principles of Chemistry II (ECORE) **4 Credits**
- ENV5 2200K - Geology **4 Credits**
- ENV5 2202K - Introduction to Environmental Science **4 Credits**
- GEOL 1101K - Introductory Geosciences **4 Credits**
- PHYS 1111 - Introductory Physics I **3 Credits**
- PHYS 1111L - Introductory Physics Laboratory I **1 Credits**
- PHYS 1112 - Introductory Physics II **3 Credits**
- PHYS 1112L - Introductory Physics Laboratory II **1 Credits**
- PHYS 1211K - Principles of Physics I (ECORE) **4 Credits**
- PHYS 2211 - Principles of Physics I **3 Credits**
- PHYS 2211L - Principles of Physics Laboratory I **1 Credits**
- PHYS 2212 - Principles of Physics II **3 Credits**
- PHYS 2212L - Principles of Physics Laboratory II **1 Credits**

#### D-2: Math (Minimum of 3 credits)

- MATH 1113 - Pre-calculus **4 Credits**  
(or other math as specified in the SPSU core)

#### Area E: Social Sciences (12 credits)

##### E-1: American Perspectives (3 credits)

Satisfies the American Perspectives overlay. Any one of these courses, taken within the University System of Georgia, also satisfies the Legislative Requirement for US and Georgia History and Constitution. Students who fulfill this requirement with transfer credit from outside the USG will need to take U.S. and Georgia Constitution and History to satisfy the Legislative Requirement for graduation.

- HIST 2111 - United States History to 1877 **3 Credits**
- HIST 2112 - United States History since 1877 **3 Credits**
- POLS 1101 - American Government **3 Credits**

##### E-2: Historical Perspectives (3 credits)

Choose ONE of the following:

- HIST 1111 - Survey of World Civilization pre 1500 **3 Credits**
- HIST 1112 - Survey of World Civilization post 1500 **3 Credits**

##### E-3: Behavioral Science Perspectives (3 credits)

Choose ONE course (sociology recommended):

- ECON 1101 - Introduction to Economics **3 Credits**
- PSYC 1101 - Introduction to General Psychology **3 Credits**
- SOCI 1101 - Introduction to Sociology **3 Credits**

#### E-4: Global Perspectives (3 credits)

Satisfies the Global Perspectives overlay. Choose ONE of the following:

- ANTH 1102 - Introduction to Anthropology **3 Credits**
- ES 1100 - Ethnic Studies **3 Credits**
- GEOG 1101 - Introduction to Human Geography **3 Credits**
- POLS 2401 - Global Issues **3 Credits**
- RELG 1200 - World Religion **3 Credits**

#### Core Area F (18 credits)

- COMM 2030 - Research for the Humanities & Social Sciences **3 Credits**
- IET 2227 - Introduction to Statistics **3 Credits**
- PSYC 1101 - Introduction to General Psychology **3 Credits**  
(or 3 hours of PSYC 1XXX or 2XXX elective credit if PSYC 1101 has been used in Area E-3)
- PSYC 2011 - Cognitive Psychology **3 Credits**
- PSYC 2270 - Engineering Psychology **3 Credits**
- PSYC 2271 - Clinical and Counseling Psychology **3 Credits**

#### Required Courses in Major (32 credits):

Grade of C or better required; take all of the following:

- SPSU 1001 - Hitch-hiker's Introduction to SPSU **1 Credits**
- MGNT 3105 - Management and Organizational Behavior **3 Credits**
- PSYC 1000 - Orientation to Psychology **2 Credits**
- PSYC 2100 - Basic Quantitative Research Methods for Psychology **3 Credits**
- PSYC 2401 - Psychology of Diversity **3 Credits**
- PSYC 3000 - Junior Seminar **3 Credits**
- PSYC 3020 - Physiological Psychology **3 Credits**
- PSYC 3031 - Experimental Psychology **4 Credits**
- PSYC 3101 - International Social Psychology **3 Credits**
- PSYC 4050 - History and Systems of Psychology **3 Credits**
- PSYC 4800 - Psychology Capstone Seminar **3 Credits**

#### Concentrations

Choose and complete one of the concentrations below:

## Engineering Psychology (28 credits)

### Required Courses (22 credits):

Grade of C or better required; take all of the following:

- IET 2305 - The Role of Industrial Engineering Technology in Industrial Systems **4 Credits**
- IET 3322 - Work Measurement and Ergonomics **4 Credits**  
*The following must be taken in the order listed:*
- CSE 1301J - Programming & Problem Solving I **4 Credits**  
(be sure it's 1301J)
- IT 1324 - Advanced Programming Principles **4 Credits**
- SWE 4324 - User-Centered Design **4 Credits**
- SWE 4783 - User Interaction Engineering **3 Credits**

### Free Electives (6 credits)

Credit from any college-level course may be applied here. *Free elective hours may be used toward an additional minor and are exempt from the 9 hours rule.*

## Industrial / Organizational Psychology (28 credits)

### Required Courses (12 credits):

Grade of C or better required; take all of the following:

- MGNT 4115 - Human Resource Management **3 Credits**
- PSYC 3301 - Psychological Testing **3 Credits**
- PSYC 4000 - International Psychology **3 Credits**
- PSYC 4600 - Conflict Resolution **3 Credits**

### Concentration Electives (9 credits):

Grade of C or better required; choose THREE of the following:

- PSYC 3010 - Educational Psychology **3 Credits**
- PSYC 3015 - Theories of Personality **3 Credits**
- PSYC 3040 - Motivation and Emotion **Credits**
- PSYC 4130 - Psychology of Aging **3 Credits**
- PSYC 4220 - Psychoactive Drugs, Behavior, and Society **3 Credits**

## Free Electives (7 credits)

Credit from any college-level course may be applied here. *Free elective hours may be used toward an additional minor and are exempt from the 9 hours rule.*

## Clinical and Counseling Psychology (28 credits)

### Required Courses:

Grade of C or better required; take all of the following:

- PSYC 3015 - Theories of Personality **3 Credits**
- PSYC 3230 - Abnormal Psychology **3 Credits**
- PSYC 3301 - Psychological Testing **3 Credits**

### Concentration Electives (9 credits):

Grade of C or better required; choose THREE from the following:

- PSYC 2273 - Forensic Psychology **3 Credits**
- PSYC 3010 - Educational Psychology **3 Credits**
- PSYC 3040 - Motivation and Emotion **Credits**
- PSYC 3305 - Developmental Psychology **3 Credits**
- PSYC 4000 - International Psychology **3 Credits**
- PSYC 4130 - Psychology of Aging **3 Credits**
- PSYC 4220 - Psychoactive Drugs, Behavior, and Society **3 Credits**
- PSYC 4600 - Conflict Resolution **3 Credits**

## Free Electives (10 credits)

Credit from any college-level course may be applied here. *Free elective hours may be used toward an additional minor and are exempt from the 9 hours rule.*

**Degree Program Total: 120**

## **Software Engineering, BS**

### Requirements

- ENGL 1101 - English Composition I **3 Credits**
- ENGL 1102 - English Composition II **3 Credits**
- TCOM 2010 - Technical Writing **3 Credits**
- ECON 2107 - Introduction to Economic Analysis **3 Credits**
- MATH 2253 - Calculus I **4 Credits** (extra hour is applied to area F)
- MATH 2254 - Calculus II **4 Credits**
- MATH 2345 - Discrete Mathematics **3 Credits**
- MATH 2260 - Introduction to Probability and Statistics **3 Credits**
- Math/Science Electives - (Math at the level of MATH 2253 or higher; Science at the level of Area D or higher) **6 Credits**
- COMM 2400 - Public Speaking **2 Credits**
- STS 2400 - Science, Technology, and Society **2 Credits**
- Area C Group 1 - Take One Course From the Literature Group **3 Credits**
- Area C Group 2 - Take One Course From the Art and Culture Group **3 Credits**
- Area D - Take Two Courses From the Laboratory Sciences Group excluding PHYS 1111, 1111L & PHYS 1112, 1112L) **8 Credits**
- PHYS 2211 - Principles of Physics I **3 Credits** (see note below)
- Area E Group 1 - American Context **3 Credits**
- Area E Group 2 - World History **3 Credits**
- Area E Group 3 - Behavioral Sciences **3 Credits**
- Area E Group 4 - Cultures and Societies **3 Credits**
- PHYS 2211L - Principles of Physics Laboratory I **1 Credits**
- SPSU 1001 - Hitch-hiker's Introduction to SPSU **1 Credits**
- CSE 1002 - Introduction to the Computing Disciplines **2 Credits**
- CSE 1301C or CSE 1301J - Programming & Problem Solving I **4 Credits**
- CSE 1302C or CSE 1302J - Programming & Problem Solving II **4 Credits**
- CSE 3642 - Professional Practices and Ethics **2 Credits**
- CSE 3153 - Database Systems **3 Credits**
- CS 3224 - Computer Organization & Architecture **4 Credits**
- CS 3424 - Data Structures **4 Credits**
- CS 3243 - Operating Systems **3 Credits**
- SWE 2313 - Introduction to Software Engineering **3 Credits**
- SWE 3623 - Software Systems Requirements **3 Credits**
- SWE 3633 - Software Architecture & Design **3 Credits**
- SWE 3643 - Software Testing and Quality Assurance **3 Credits**
- SWE 4324 - User-Centered Design **4 Credits**
- SWE 4663 - Software Project Management **3 Credits**
- SWE 4713 - SWE Application Domain **3 Credits**
- SWE 4724 - Software Engineering Project **4 Credits**
- SWE Upper Level Electives - Choose 2 courses from the approved list, at least one must be an SWE course **6 Credits**
- Free Electives - (Excludes MATH 1111, PHYS 1111, 1111L and PHYS 1112, 1112L) **5 Credits**

**Degree Program Total: 128+**

## Note:

In lieu of PHYS 2211, 2211L, an additional lab science course may be taken to form a sequence with one of the science courses in area D.

A grade of "C" or better must be earned in all CSE, CS, SWE, CGDD, and IT courses applied to degree requirement.

# Structural Engineering Technology, BS

(pending BOR approval)

## Requirements

- ENGL 1101 - English Composition I **3 Credits**
- ENGL 1102 - English Composition II **3 Credits**
- COMM 2400 - Public Speaking **2 Credits**
- STS 2400 - Science, Technology, and Society **2 Credits**
- Area C Group 1 - Take One Course from the Literature Group **3 Credits**
- Area C Group 2 - Take One Course from the Art and Culture Group **3 Credits**
- Area D - CHEM 1211, 1211L and PHYS 2211, 2211L **8 Credits**
- Area E Group 1 - American Context **3 Credits**
- Area E Group 2 - World History **3 Credits**
- Area E Group 3 - Behavioral Science **3 Credits**
- Area E Group 4 - Cultures and Societies **3 Credits**
- MATH 1113 - Pre-calculus **4 Credits** (extra hour is applied to core related to major)
- MATH 2253 - Calculus I **4 Credits** (extra hour is applied to core related to major)
- MATH 2254 - Calculus II **4 Credits**
- MATH 3312 - Linear Algebra **4 Credits**
- EDG 2160 - Civil Graphics and Computer Aided Drafting **3 Credits**
- ENGR 2214 - Engineering Mechanics – Statics **3 Credits**
- CE 1000 - Orientation to Engineering and Surveying Professions **1 Credits**
- SPSU 1001 - Hitch-hiker's Introduction to SPSU **1 Credits**
- CET 2110 - Problem Solving Methods in CET **3 Credits**
- ENGR 3131 - Strength of Materials **3 Credits**
- ENGR 3132 - Strength of Materials Lab **1 Credits**
- CET 3110 - Construction Materials and Sustainability **3 Credits**
- CET 3210 - Structural Mechanics **3 Credits**
- CET 3120 - Cost Estimating and Scheduling in CET **3 Credits**
- CET 3130 - Applied Fluid Mechanics and Hydraulics **2 Credits**
- CET 3220 - Applied Structural Steel Design **3 Credits**
- CET 3230 - Concrete Infrastructure Design **3 Credits**
- CET 3410 - Soil Properties and Site Exploration **3 Credits**
- CET 4410 - Foundation and Retaining Wall Design **3 Credits**

- SET 3260 - Masonry and Timber Design **4 Credits**
- SET 3250 - Structural Loads and Connections **3 Credits**
- SET 4240 - Structural Rehabilitation **3 Credits**
- CET 4210 - Computer Methods in Structures **4 Credits**
- CET 4230 - Advanced Concrete Design **4 Credits**
- SET 4250 - Bridge Design **3 Credits**
- CET 4110 - Ethics of Engineering **1 Credits**
- CET 4120 - Senior Design and Engineering Documentation **3 Credits**
- MGNT 3105 - Management and Organizational Behavior **3 Credits**

## CET Electives

Take a minimum 8 hours from the courses listed below:

- CET 4220 - LFRD Steel Design **4 Credits**
- CET 4310 - Stormwater Management and Erosion Control **2 Credits**
- SET 3240 - Hydraulic Structures **3 Credits**
- CET 4420 - Earth Dam and Levee Design **3 Credits**

## Degree Program Total 130

CET students are required to earn a grade of "C" or better in all courses required in the major and all courses used as electives.

## Supply Chain Logistics, BAS

The Bachelor of Applied Science in Supply Chain Logistics has been specifically designed for students who have completed an Associate of Applied Science Degree from a Technical College System of Georgia institution.

The goal of the partnership between SPSU and the TCSG schools is to provide the opportunity for degreed graduates from the technical schools of Georgia to complete a Bachelor's degree in approximately 60 semester credits which in equivalent to about two years as a full time student.

All required major courses to complete the BAS in Supply Chain Logistics are offered totally online by SPSU faculty. All general education requirements are also offered on-line through the university system called E-core.

The BAS Supply Chain Logistics prepares students for careers in managing raw materials, work-in-process and finished goods inventories and how to efficiently control the movement of those inventories.

Graduates in this type program are engaged in challenging and demanding careers in responsible positions such as Logistics Manager, Demand Planning Analyst, Senior Buyer, Purchasing Agent and Supply Chain Manager.

Companies traditionally who hire SPSU graduates include such leaders as Shaw Industries, Delta Airlines, Georgia Power, Mohawk Industries, Lockheed Martin and UPS.

Since each TCSG program is different, the website <http://iet.spsu.edu/BASSC.html> outlines the articulation of each program to SPSU.

Further information on the TCSG and SPSU program can also be found at <http://tcsг.spsu.edu/>.

## Area A

- ENGL 1101 - English Composition I **3 Credits**
- ENGL 1102 - English Composition II **3 Credits**
- MATH 1111 - College Algebra **3 Credits**

## Area B

- COMM 2400 - Public Speaking **2 Credits**
- STS 2400 - Science, Technology, and Society **2 Credits**

## Area C

- Group 1 - Literature of the World **3 Credits**
- Group 2 - Art and Culture of the World **3 Credits**

## Area D

- Sciences - Lab Sciences **8 Credits**
- MATH 1113 - Pre-calculus **4 Credits**

## Area E

- Group 1 - American Context **3 Credits**
- Group 2 - World History **3 Credits**
- Group 3 - Behavioral Science **3 Credits**
- Group 4 - Cultures and Societies **3 Credits**

## Area F

- Technical Block - Up to 17 Semester Hours **17 Credits**
- Major Technical Block - Up to 21 Semester Hours **21 Credits**

## Major Courses

- ACCT 2101 - Principles of Financial Accounting **3 Credits**



- IET 2227 - Introduction to Statistics **3 Credits**
- IET 2449 - Logistics and Supply Chain Management **3 Credits**
- IET 3320 - Advanced Logistics **3 Credits**
- IET 3339 - Statistical Quality Control **3 Credits**
- IET 3356 - Quality Concepts and Systems Design **3 Credits**
- IET 3424 - Engineering Economy **3 Credits**
- IET 3511 - Sustainability Engineering **3 Credits**
- IET 3620 - Warehousing Systems **3 Credits**
- MGNT 3105 - Management and Organizational Behavior **3 Credits**
- MGNT 3135 - Principles of Marketing **3 Credits**
- MGNT 4135 - Project Management **3 Credits**
- TCOM 2010 - Technical Writing **3 Credits**
- SPSU 1001 - Hitch-hiker's Introduction to SPSU **1 Credits**

Degree Program Total: 120

## Surveying and Mapping, BS

### Requirements:

- ENGL 1101 - English Composition I **3 Credits**
- ENGL 1102 - English Composition II **3 Credits**
- TCOM 2010 - Technical Writing **3 Credits**
- STS 2400 - Science, Technology, and Society **2 Credits**
- Area C Group 1 - Take One Course From the Literature Group **3 Credits**
- Area C Group 2 - Take One Course From the Art and Culture Group **3 Credits**
- COMM 2400 - Public Speaking **2 Credits**
- MATH 1113 - Pre-calculus **4 Credits** (extra hour is applied to area F)
- MATH 2253 - Calculus I **4 Credits** (extra hour is applied to area F)
- MATH 2254 - Calculus II **4 Credits**
- MATH 2260 - Introduction to Probability and Statistics **3 Credits**
- Math Elective - **3 Credits**
- Area D - Any Two Lab Sciences **8 Credits**
- PHYS 1111 - Introductory Physics I **3 Credits**
- PHYS 1111L - Introductory Physics Laboratory I **1 Credits**
- PHYS 1112 - Introductory Physics II **3 Credits**
- Area E Group 1 - American Context **3 Credits**
- Area E Group 2 - World History **3 Credits**
- Area E Group 3 - Behavioral Science **3 Credits**
- Area E Group 4 - Cultures and Societies **3 Credits**
- PHYS 1112L - Introductory Physics Laboratory II **1 Credits**

- IT 1113 - Programming Principles **3 Credits** or
- CS 2123 - C Programming **3 Credits**
  
- CET 3130 - Applied Fluid Mechanics and Hydraulics **2 Credits**
- CE 1000 - Orientation to Engineering and Surveying Professions **1 Credits**
- SPSU 1001 - Hitch-hiker's Introduction to SPSU **1 Credits**
- MGNT 3105 - Management and Organizational Behavior **3 Credits**
- EDG 2160 - Civil Graphics and Computer Aided Drafting **3 Credits**
- CET 2200 - Introduction to Structures **4 Credits**
- CET 3510 - Traffic Analysis and Road Design **2 Credits**
- CET 4310 - Stormwater Management and Erosion Control **2 Credits**
- CET 3120 - Cost Estimating and Scheduling in CET **3 Credits**
- SURV 2221 - Surveying I **4 Credits**
- SURV 3222 - Surveying II **4 Credits**
- SURV 4410 - Surveying Computations and Adjustments **4 Credits**
- SURV 3421 - Geographic Information Systems I **4 Credits**
- SURV 4465 - Legal Aspects of Land Surveying **4 Credits**
- SURV 4470 - Land Development Design **4 Credits**
- SURV 4415 - Geodetic Surveying Methods **4 Credits**
- SURV 4475 - Land Surveying Practice **2 Credits**
- SURV Electives **4 Credits**
- Free Elective **3 Credits**

**Degree Program Total: 129 hours**

## Note:

*Surveying students are required to earn a grade of "C" or better in all courses required in the major and all courses used as electives.*

*PHYS 1111 and PHYS 1112 are required.*

*If you use PHYS 1111/PHYS 1112 in Area D then you may use 4 hours of either CET or SURV 1-2000 level courses or any Lab Science to fulfill the Area F requirement.*

*If you use PHYS 1111/PHYS 1112 in Area D then you may use 4 hours of either CET or SURV 3-4000 level courses or any Lab Science to fulfill the major requirement.*

## **Systems Engineering, BS**

### Requirements

- ENGL 1101 - English Composition I **3 Credits**
- ENGL 1102 - English Composition II **3 Credits**
- COMM 2400 - Public Speaking **2 Credits**
- TCOM 2010 - Technical Writing **3 Credits**
- STS 2400 - Science, Technology, and Society **2 Credits**
- Area C Group 1 - Take One Course From the Literature Group **3 Credits**
- Area C Group 2 - Take One Course From the Art and Culture Group **3 Credits**
- Area E Group 1 - American Context **3 Credits**
- Area E Group 2 - World History **3 Credits**
- Area E Group 3 - Behavioral Science **3 Credits**
- Area E Group 4 - Cultures and Societies **3 Credits**
- CHEM 1211 - Principles of Chemistry I **3 Credits**
- CHEM 1211L - Principles of Chemistry I Lab **1 Credits**
  
- CSE 1301E - C++ Programming for Engineers **4 Credits** or
- CSE 1301J - Programming & Problem Solving I **4 Credits**
  
- CSE 1302E - Object Oriented C++ Programming for Engineers **4 Credits** or
- CSE 1302J - Programming & Problem Solving II **4 Credits**
  
- SPSU 1001 - Hitch-hiker's Introduction to SPSU **1 Credits**
- EE 2301 - Circuit Analysis I **4 Credits**
- ENGR 2214 - Engineering Mechanics – Statics **3 Credits**
- ENGR 3122 - Dynamics **3 Credits**
- MATH 2253 - Calculus I **4 Credits**
- MATH 2254 - Calculus II **4 Credits**
- MATH 2255 - Calculus III **4 Credits**
- MATH 3312 - Linear Algebra **4 Credits**
- PHYS 2211 - Principles of Physics I **3 Credits**
- PHYS 2211L - Principles of Physics Laboratory I **1 Credits**
- PHYS 2212 - Principles of Physics II **3 Credits**
- PHYS 2212L - Principles of Physics Laboratory II **1 Credits**
- SYE 2100 - Systems Analysis and Design **3 Credits**
- SYE 3320 - Engineering Economics and Decision Analysis **3 Credits**
- SYE 2600 - Applications of Probability **3 Credits**
- SYE 3100 - Systems Reliability and Maintainability **3 Credits**
- SYE 3120 - Contemporary Technological Systems: Design, Analysis, and Architecture **3 Credits**
- SYE 3200 - Human Machine Systems **3 Credits**
- SYE 3300 - Program Management **3 Credits**
- SYE 3400 - Engineering Optimization I: Deterministic Decision Models **3 Credits**
- SYE 3600 - Statistics with Applications **3 Credits**
  
- SYE 3700 - Manufacturing and Production Systems **3 Credits** or
- SYE 3710 - Logistics and Supply Chain Systems **3 Credits**
  
- SYE 4400 - Engineering Optimization II: Stochastic Decision Models **3 Credits**
- SYE 4500 - System Modeling and Simulation **3 Credits**
- SYE 4900 - System Design Project **3 Credits**

- Approved technical electives **12 Credits**

## Degree Program Total: 129

The Systems Engineering degree requires a grade of 'C' or better for any course with an ENGR or SYE prefix and ENGL 1101. A 'D' or better is required for any other course.

## Technical Electives

Technical Electives can be 3000 and/or 4000 level courses from SYE, SWE, MTRE, ME, CE, EE or MATH. Other courses may be approved by the department chair. Students may focus their technical electives in Aerospace Engineering or Nuclear Engineering.

## Technical Communication, BS

With our TCOM degree, you will learn much more than just how to use words effectively—you will have opportunities to learn document design, graphics, multimedia, web design, and video production as well as science and environmental writing, proposal writing, and medical communication.

Students in other majors can minor in technical communication through a range of campus-based and online course offerings.

Many TCOM courses are taught using a combination of on-site and online sessions that students with jobs especially appreciate. We make sure we offer enough late-afternoon and evening courses so that working students can make steady progress toward their degree.

## Requirements

- ENGL 1101 - English Composition I **3 Credits**
- ENGL 1102 - English Composition II **3 Credits**
- MATH 1111 - College Algebra **3 Credits**
- MATH 1113 - Pre-calculus **4 Credits**
- COMM 2400 - Public Speaking **2 Credits**
- STS 2400 - Science, Technology, and Society **2 Credits**
- Area C Group 1 - Take One Course from the Literature Group **3 Credits**
- Area C Group 2 - Take One Course from the Art and Culture Group **3 Credits**
- Area D - Any Two Lab Sciences **8 Credits**
- Area E Group 1 - American Context **3 Credits**
- Area E Group 2 - World History **3 Credits**
- Area E Group 3 - Behavioral Science **3 Credits**
- Area E Group 4 - Cultures and Societies **3 Credits**

## Required Area F Foundations Courses (9 Credits)

- COMM 2000 - Business Communication **3 Credits**
- TCOM 2010 - Technical Writing **3 Credits**
- TCOM 2020 - Intro to Professional & Technical Communication **3 Credits**

## Area F Required Research Methods Course (3 Credits; Choose One)

- TCOM 2030 - Research in Technical Communication **3 Credits** or
- ENGL 2030 - Research in Professional and Critical Writing **3 Credits**

## Area F Electives (6 Credits; Choose Two)

- ARTS 2020 - History and Principles of Design **3 Credits**
- ENGL 2xxx - Any 2000-level literature survey **3-6 Credits**
- COMM 2065 - Cross-Cultural Communication **3 Credits**
- COMM 2170 - Introduction to Media Studies **3 Credits**
- COMM 2150 - Ethics and Communication **3 Credits**
- Other coursework appropriate to major, as approved by the department (3 credits max) **3 Credits**
- Any foreign language, 2001 or higher **3 Credits**

## Basic Required Courses in the Major (18 Credits)

- SPSU 1001 - Hitch-hiker's Introduction to SPSU **1 Credits**
- ENGL 3030 - English Grammar for Professional Writing **3 Credits**
- TCOM 3430 - Foundations of Graphics **3 Credits**
- TCOM 3400 - Foundations of Design for the Web **3 Credits**
- COMM 4100 - Small Group Communication **3 Credits**
- ENGL 3100 - Rhetoric: History, Theory, and Practice **3 Credits**
- TCOM 4800 - Project Portfolio **3 Credits**
- Technical Communication Electives **12 Credits**
- Take any 3000-level or higher ARTS, COMM, ENGL, or TCOM Course, or other courses (not to exceed 6 credits) as approved by the department.
- Free Electives **15 Credits**
- Courses in Major Concentrations (Information Design or Digital Media and Graphics) **15 Credits**

## Major Concentrations

Choose one concentration from the following: (Information Design or Digital Media and Graphics)

## Information Design (15 Credits)

- TCOM 3020 - Proposal Writing **3 Credits**
- TCOM 3030 - Instructional Design **3 Credits**
- TCOM 3045 - Fundamentals of Information Design **3 Credits**
- TCOM 3145 - Social Media Integration **3 Credits**
- TCOM 4000 - Professional Editing **3 Credits**
- TCOM 4045 - Foundations of Multimedia **3 Credits**
- TCOM 4070 - User Documentation **3 Credits**
- TCOM 4120 - Usability Testing **3 Credits**
- TCOM 4130 - Online Documentation **3 Credits**

## Digital Media and Graphics (15 Credits)

- ARTS 2010 - Introduction to Drawing **3 Credits**
- ARTS 3000 - Visual Thinking **3 Credits**
- ARTS 3170 - Digital Photography **3 Credits**
- TCOM 3145 - Social Media Integration **3 Credits**
- TCOM 4045 - Foundations of Multimedia **3 Credits**
- TCOM 4040 - Applied Graphics for Technical Communicators **3 Credits**
- TCOM 4170 - Film and Video Production **3 Credits**
- TCOM 4175 - Animation Design, 2D **3 Credits**
- TCOM 4400 - Advanced Design for the Web **3 Credits**

## Degree Program Total: 121

For additional information about the B.S. program, contact the English, Technical Communication, and Media Arts Department at 678-915-7202, or email to [TCOM@spsu.edu](mailto:TCOM@spsu.edu). You can also visit our website at [etcma.spsu.edu](http://etcma.spsu.edu).

## **Telecommunications Engineering Technology, BS**

### Requirements

- ENGL 1101 - English Composition I **3 Credits**
- ENGL 1102 - English Composition II **3 Credits**
- MATH 1113 - Pre-calculus **4 Credits** (extra hour is applied to area F)
- MATH 2253 - Calculus I **4 Credits** (extra hour is applied to area F)
- MATH 2254 - Calculus II **4 Credits**

- MATH 2260 - Introduction to Probability and Statistics **3 Credits**
- MATH 2306 - Ordinary Differential Equations **3 Credits**
- PHYS 2211 - Principles of Physics I **3 Credits \***
- PHYS 2211L - Principles of Physics Laboratory I **1 Credits**
- PHYS 2212 - Principles of Physics II **3 Credits \***
- PHYS 2212L - Principles of Physics Laboratory II **1 Credits**
- COMM 2400 - Public Speaking **2 Credits**
- STS 2400 - Science, Technology, and Society **2 Credits**
- TCOM 2010 - Technical Writing **3 Credits**
- Area C Group 1 - Take One Course From the Literature Group **3 Credits**
- Area C Group 2 - Take One Course From the Art and Culture Group **3 Credits**
- Area E Group 1 - American Context **3 Credits**
- Area E Group 2 - World History **3 Credits**
- Area E Group 3 - Behavioral Science **3 Credits**
- Area E Group 4 - Cultures and Societies **3 Credits**
- ECET 1001 - Orientation **1 Credits**
- SPSU 1001 - Hitch-hiker's Introduction to SPSU **1 Credits**
- ECET 1012 - Design Fundamentals **2 Credits**
- ECET 1101 - Circuits I **4 Credits**
- ECET 1200 - Digital I **4 Credits**
- ECET 2111 - Circuits II **4 Credits**
- ECET 2300 - Electronics I **4 Credits**
- ECET 2210 - Digital II **4 Credits**
- ECET 2310 - Electronics II **4 Credits**
- ECET 3400 - Data Communications **4 Credits**
- ECET 3410 - High Frequency Systems **4 Credits**
- ECET 3810 - Applications of C++, JAVA and HTML **3 Credits**
- ECET 4820 - Communications Networks and the Internet **4 Credits**
- ECET 4830 - Telecommunications Management **3 Credits**
- ECET 4840 - Advanced Telecommunications **4 Credits**
- ECET 4850 - Telecommunications Project **4 Credits**
- ECET 4860 - Network Security **4 Credits**
- EDG 1210 - Survey of Engineering Graphics **2 Credits**
- MGNT 3105 - Management and Organizational Behavior **3 Credits**
- MGNT 4135 - Project Management **3 Credits**
- TCET Electives **6 Credits**

**Degree Program Total: 128**

**Note:**

*\* PHYS 1111/PHYS 1111L and PHYS 1112/PHYS 1112L may be substituted for PHYS 2211/PHYS 2211L and PHYS 2212/PHYS 2212L .*

*TCET majors are required to earn a "C" or better in their ECET courses, except one "D" in a 3000 or 4000 level non-prerequisite course may be used for graduation purposes. A grade of "C" or better is required in the project-based capstone course.*

## TCET Electives

Students may take any *non-required* 3000 or 4000 level ECET or MGNT course to satisfy the TCET elective requirement of 6 credit hours.

## Minor

### Accounting Minor

Students who wish to receive a concentration or minor in Accounting must take:

#### Accounting Minor Courses

- ACCT 3230 - Intermediate Accounting I **3 Credits**
- ACCT 3231 - Intermediate Accounting II **3 Credits**
- ACCT 3530 - Cost Accounting **3 Credits**
- ACCT 4535 - Accounting Information Systems **3 Credits**  
Select one of the following:
- ACCT 4530 - Advanced Accounting **3 Credits** or
- ACCT 4560 - Intro to Federal Income Taxes **3 Credits**

Minor Program Total: 15

### Aerospace Engineering Minor

#### Requirements

- SYE 3801 - Aerodynamics (Aeronautic Elective) **3 Credits**
- SYE 4803 - Aeronautics Project **3 Credits**

Choose 3 courses from the following:

- SYE 3802 - Aircraft Design and Performance (Aeronautic Elective) **3 Credits**
- SYE 3803 - Fundamentals of Avionics **3 Credits**



- SYE 4801 - Aircraft Propulsion **3 Credits**
- SYE 4802 - Helicopter Theory **3 Credits**
- SYE 4804 - Special Topics **Credits** related to aerospace engineering **3 Credits**

Minor Program Total: 15

## Apparel and Textiles Minor

To be eligible for a minor in Apparel and Textile Technology, the student must complete 15 credit hours from the following courses with at least 9 hours of upper division course work.

### Requirements

- ATT 1200 - Apparel Design Graphics **2 Credits**
- ATT 1300 - International Sourcing **3 Credits**
- ATT 1400 - Principles of Merchandising **3 Credits**
- ATT 2301 - Apparel Computer-Aided Technical Design I **4 Credits**
- ATT 3100 - Fashion Merchandising **3 Credits**
- ATT 3505 - Fabric Formation and Design **3 Credits**
- ATT 3600 - Apparel Analysis and Product Development **3 Credits**
- ATT 3602 - Apparel Computer-Aided Technical Design II **4 Credits**
- ATT 3800 - Fashion Forecasting, Data Analysis & Consumer Trends **3 Credits**
- ATT 4444 - Quality Assurance for Textiles and Apparel **4 Credits**
- ATT 4670 - Apparel/Textile Business Practices **3 Credits**
- ATT 4750 - Advanced Design and Product Development **3 Credits**

Minor Program Total: 15

## Architecture Minor

Minor in Architecture for non-architecture majors, provides a focused exposure to the varied dimensions of design, critical thinking and application while exercising restraint on time to complete. Students who change their major from Architecture to another major or discipline of their choice can get a Minor in Architecture after fulfilling its course requirements. Students complete a major in a Program to be awarded with a Minor in Architecture. Minor in Architecture will not be substituted with Certificate in Architectural Studies. All studio and lecture courses must be passed with a minimum grade of "C". All studios should be taken in sequence.

### Architecture Minor

- DFN 1001 - Design Foundation I **4 Credits**
- DFN 1002 - Design Foundation II **4 Credits**
- DFN 2003 - Design Foundation III **4 Credits**
- DFN 2004 - Design Foundation IV **4 Credits**
- DFN 1241 - Design Communication I **2 Credits**
- DFN 2242 - Design Communication II **2 Credits**
- DFN 2311 - Environmental Tech I -Systems Selection and Materials **3 Credits**
- DFN 2112 - Architecture Culture II - The Renaissance through 1850 **3 Credits**
- DFN 2211 - Architecture Structures I - Introduction to Structures **3 Credits**

Minor Program Total: 29

## **Biology Minor**

To be eligible for a minor in Biology, the student must complete:

- A minimum of 18 semester hours of BIOL or BIOC coursework
- 9 of the 18 hours in BIOL/BIOC must be above the 2199 level
- Students who use BIOL 2107/BIOL 2107L and/or BIOL 2108/BIOL 2108L to satisfy Core D requirements cannot use these courses to satisfy requirements of the minor

## **Business Minor**

Students wishing to receive a minor in Business Administration must take:

ACCT 2101 - Principles of Financial Accounting

MGNT 3105 - Management and Organizational Behavior

Plus three additional business courses (9 hours), two of which must be upper division.

- You may not use MGNT 1000 to satisfy a requirement in the minor.
- Additionally, accounting courses beyond ACCT 2101 may not be used for the business minor.
- Students majoring in Accounting are not eligible for the minor in Business Administration.

## **Chemistry Minor**

### Requirements

- CHEM 1211 - Principles of Chemistry I **3 Credits**

- CHEM 1211L - Principles of Chemistry I Lab **1 Credits**
- CHEM 1212 - Principles of Chemistry II **3 Credits**
- CHEM 1212L - Principles of Chemistry II Lab **1 Credits**
- CHEM 2511K - Organic Chemistry I **4 Credits**
- CHEM 2512K - Organic Chemistry II **4 Credits**
- 10 additional hours of upper division (3000 level or higher) Chemistry or Biochemistry courses.

## Computer Game Design and Development Minor

To be eligible for a minor in Computer Game Design and Development, the student must complete the following courses with a grade of "C" or better. Any upper level (3000+) courses that are required in the major may not be used as credit for the minor. Other upper level CGDD courses may be used as substituted. Students must have at least 9 upper level CGDD hours not required for their major (CGDD courses taken as electives for your major bachelor degree can be used to complete the minor).

Minor in Game Design and Development Program Objectives:

- Provide students with game design and development knowledge that can be applied in their major area of study
- Provide students with fundamental game design and development skills

Minor in Game Design and Development Learning Outcomes

- Demonstrate skills fundamental to game design and development
- Demonstrate knowledge in at least two subfields of game design and development

## Required Courses

- CSE 1301 - Programming and Problem Solving **1 4 Credits**
- CGDD 2002 - Fundamentals of Game Design **2 Credits**
- CGDD 4003 - Digital Media and Interaction **3 Credits**
- Three additional upper-level CGDD courses **9+ Credits**

Minor Program Total: **18+ Credits**

## Computer Science Minor

To be eligible for a minor in Computer Science, the student must complete the following courses with a grade of "C" or better. Students must have at least 9 upper level CS hours.

### Minor in CS Program Objectives

- Provide students with computing knowledge that can be applied in their major area of study.

- To provide students with fundamental programming skills.

## Minor in CS Learning Outcomes

- Demonstrate programming skills in 2 different programming languages.
- Demonstrate knowledge of at least one additional area of computing.

## Requirements:

- CSE 1301 - Programming & Problem Solving I 4
- CSE 1302 - Programming & Problem Solving II 4
- CS 3424 - Data Structures **4 Credits**
- Two additional upper-level CS courses 6+

## Note:

*CS 3424 requires MATH 2345 - Discrete Mathematics as a pre-requisite.*

## Construction Minor

## Requirements

To be eligible for a minor in Construction Management, the student must complete the following courses:

- CM 2000 - Construction Graphics **3 Credits \***
- CM 3000 - Computer Applications in Construction **3 Credits \***
- CM 3110 - Residential and Light Construction Methods **3 Credits**
- CM 3410 - Construction Quantity Surveying **3 Credits**
- CM 4510 - Construction Scheduling **3 Credits**

## Note:

Students who have the prerequisite knowledge in these courses may substitute courses of greater or equal credit from the following list with the consent of the CM Department Chair:

- CM 3411 - Construction Estimating Software **2 Credits**
- CM 3420 - Construction Estimating and Bid Preparation **4 Credits**
- CM 4511 - Construction Scheduling Software **2 Credits**
- CM 4560 - Construction Project Management **3 Credits**
- CM 4760 - Construction and Real Property Law **3 Credits**

# Engineering Design Graphics Minor

Students who wish to receive a minor in Engineering Design Graphics must take:

- EDG 1212 - Engineering Graphics II **4 credits**

Select four additional courses from the following:

- EDG 3112 - Advanced Engineering Graphics **3 credits**
- EDG 4111 - Surface Modeling **3 credits**
- EDG 4222 - CAD Customization and Standards **3 credits**
- EDG 4224 - Engineering Graphics for Manufacturing **3 credits**
- MET 3332 - Rapid Design and Manufacture **3 credits**
- MET 4112 - Computer Aided Engineering & Analysis **3 credits**
- OR
- ME 4250 - Computer Aided Engineering **3 credits**

Minor Program Total: 16

Not available to MET students with a concentration in Engineering Design Graphics.

# Entrepreneurship Minor

## Entrepreneurship Minor

- ACCT 2101 - Principles of Financial Accounting **3 Credits**
- MGNT 3105 - Management and Organizational Behavior **3 Credits**
- MGNT 3120 - Entrepreneurial Finance **3 Credits**
- MGNT 3135 - Principles of Marketing **3 Credits**
- MGNT 3170 - Leadership **3 Credits**
- MGNT 4190 - Entrepreneurship **3 Credits**

# Environmental Science Minor

## Requirements

- ENVS 2202K - Introduction to Environmental Science **4 Credits**
- BIOL 3300K - Ecology **4 Credits**

Electives - Choose 7+ credits from the list below

- BIOL 3600 - Freshwater Biology **3 Credits**
- BIOL 3650 - Marine Biology **3 Credits**
- BIOL 4400K - Human Physiology **4 Credits**
- CHEM 3150K - Environmental Chemistry **4 Credits**
- ENGL 3015 - Environmental Writing **3 Credits**
- ENVS 3100K - Soil & Water Science **4 Credits**
- ENVS 3350 - Oceanography **3 Credits**
- ENVS 3000 - Environmental Science Seminar **1 Credits**
- GEOG 4101 - Geographic Information Systems **3 Credits**
- POLS 3401 - Environmental Law and Policy **3 Credits**
- STS 4300 - Environmental Ethics **3 Credits**

Minor Program Total: 15-18 Credits

## **Finance Minor**

### Finance Minor

- MGNT 3125 - Business Finance **3 Credits**  
plus 12 hours of Finance Electives such as:
- MGNT 3120 - Entrepreneurial Finance **3 Credits**
- MGNT 3231 - Management of Financial Institutions **3 Credits**
- MGNT 4232 - Financial Planning and Capital Budgeting **3 Credits**
- MGNT 4233 - Investment Analysis and Portfolio Management **3 Credits**
- MGNT 4234 - International Finance **3 Credits**

## **Global Communication Minor**

After taking COMM 2500—Advanced Public Speaking and COMM 2150—Ethics and Communication, you will take **only 9 more hours** of coursework. If you earn a grade of "C" or better in each course, your minor credential will be designated on your SPSU transcript.

### Required Foundational Courses (6 Credits)

- COMM 2500 - Advanced Public Speaking **3 Credits**
- COMM 2150 - Ethics and Communication **3 Credits**

## Additional Courses for Minor (9 Credits)

*This minor is not available to students majoring in either Technical Communication or English and Professional Communication.*

- COMM 2065 - Cross-Cultural Communication **3 Credits**
  - COMM 3065 - International Communication **3 Credits**
  - COMM 3060 - Media, Culture, and Society **3 Credits**
  - COMM 4100 - Small Group Communication **3 Credits**
- Students may take 2000 level or higher in Foreign Language.  
Students may count Study Abroad credits.

## History Minor

All courses must be completed with grade of C or better. No more than 9 hours may also be used to satisfy requirements in a major or another minor except free electives. No courses used to satisfy Core Areas A-E may be used in a minor.

### World History (3 credits):

Choose ONE course not used to satisfy core Area E-2:

- HIST 1111 - Survey of World Civilization pre 1500 **3 Credits**
- HIST 1112 - Survey of World Civilization post 1500 **3 Credits**

### US History (6 credits):

- HIST 2111 - United States History to 1877 **3 Credits**
  - HIST 2112 - United States History since 1877 **3 Credits**
- If HIST 2111 or HIST 2112 has been used to satisfy Core Area E-1, any 3-hour HIST course may be substituted.

### Upper-Division History courses (9 credits):

Any **9 credits** of 3000- or 4000-level HIST courses.

**Total Program Hours: 18**

## Industrial Engineering Technology Minor

To be eligible for a minor in Industrial Engineering Technology,

**Students must complete the following three courses:**

- IET 2227 - Introduction to Statistics **3 Credits**
- IET 2305 - The Role of Industrial Engineering Technology in Industrial Systems **4 Credits**
- IET 3356 - Quality Concepts and Systems Design **3 Credits**

**And choose two courses from the following list:**

- IET 2449 - Logistics and Supply Chain Management **3 Credits**
- IET 3320 - Advanced Logistics **3 Credits**
- IET 3322 - Work Measurement and Ergonomics **4 Credits**
- IET 3339 - Statistical Quality Control **3 Credits**
- IET 3403 - Advanced Statistics with Application **3 Credits**
- IET 3407 - Six Sigma and Lean Manufacturing **3 Credits**
- IET 3410 - Principles of Team Dynamics **3 Credits**
- IET 3424 - Engineering Economy **3 Credits**
- IET 3511 - Sustainability Engineering **3 Credits**
- IET 4405 - Operations Research - Concepts, Models and Methods **3 Credits**
- IET 4422 - Facilities Design, Plant Layout, and Materials Handling **4 Credits**

**Minor Program Total: 16-18**

**Note:**

*An overall 2.0 GPA is required in the courses for the IET Minor (excluding the international studies minor courses).*

## **Information Technology Minor**

To be eligible for a minor in Information Technology, the student must complete 18 credit hours of the following courses with a grade of "C" or better:

### **Information Technology Minor Requirements**

- CSE 1301 - Programming and Problem Solving I **4 Credits**



- IT 1324 - Advanced Programming Principles **4 Credits** or
- CSE 1302 - Programming & Problem Solving **2 4 Credits**
- IT 3123 - Hardware/Software Concepts **3 Credits** or
- CS 3224 - Computer Organization & Architecture **4 Credits**
- IT 3203 - Introduction to Web Development **3 Credits** or
- CSE 3153 - Database Systems **3 Credits**

And one of the Following:

- IT 4123 - Electronic Commerce **3 Credits**
- IT 4323 - Data Communications & Networks **3 Credits**
- IT 4823 - Information Security Administration & Privacy **3 Credits**

## **International Business Minor**

International Business Minor

- ACCT 2101 - Principles of Financial Accounting **3 Credits**
- MGNT 3105 - Management and Organizational Behavior **3 Credits**
- MGNT 3125 - Business Finance **3 Credits**
- MGNT 3135 - Principles of Marketing **3 Credits**
- MGNT 4145 - International Management **3 Credits**
- POLS 4301 - International Political Economy **3 Credits**
- SPAN 2002 - Intermediate Spanish II **3 Credits**  
or equivalent language course

## **International Studies Minor**

All courses must be completed with grade of C or better. No more than 9 hours may also be used to satisfy requirements in a major or another minor *except free electives*. No courses used to satisfy Core Areas A-E may be used in a minor.

**Regional Studies (3 credits):**

Choose ONE of the following:

- IS 4000 - Regional Studies - General **3 Credits**
- IS 4001 - Regional Studies/Latin America **3 Credits**
- IS 4002 - Regional Studies/Asia:China **3 Credits**
- IS 4003 - Regional Studies/Asia:Japan **3 Credits**
- IS 4004 - Regional Studies/Middle East **3 Credits**
- IS 4005 - Regional Studies/Russia/Eastern Europe **3 Credits**
- IS 4006 - Regional Studies/Western Europe **3 Credits**
- IS 4007 - Regional Studies/Africa **3 Credits**

## Language Requirement:

Student must complete FREN 1002, GRMN 1002, or SPAN 1002 OR demonstrate proficiency in a non-English language at an equivalent level.

## Electives (12 credits):

Choose FOUR courses from the following list NOT used to satisfy core requirements in Areas A-E. No more than TWO may be numbered below 3000.

- ANTH 1102 - Introduction to Anthropology **3 Credits**
  - ECON 1101 - Introduction to Economics **3 Credits**
  - ECON 2106 - Principles of Microeconomics **3 Credits**
  - ES 1100 - Ethnic Studies **3 Credits**
  - GEOG 1101 - Introduction to Human Geography **3 Credits**
  - GEOG 3101 - World Regional Geography **3 Credits**
  - HIST 1111 - Survey of World Civilization pre 1500 **3 Credits**
  - HIST 1112 - Survey of World Civilization post 1500 **3 Credits**
  - HIST 3200 - History of Science Survey **3 Credits**
  - HIST 3301 - Diplomatic and Military History since 1815 **3 Credits**
  - HIST 3401 - Modern Social and Cultural History Twentieth Century **3 Credits**
  - HIST 3501 - Colonization and Rebellion in the Trans-Atlantic World **3 Credits**
  - HIST 3601 - History of the Pacific Rim **3 Credits**
  - HIST 3801 - Contemporary World History since 1945 **3 Credits**
  - IS 3600 - Comparative Culture **3 Credits**
  - IS 3901 - Special Topics in International Studies **1 Credits**
  - IS 3902 - Special Topics in International Studies **1 to 5 Credits**
- Any regional studies course NOT used to satisfy the Regional Studies requirement above.
- IS 4000 - Regional Studies - General **3 Credits**
  - IS 4001 - Regional Studies/Latin America **3 Credits**
  - IS 4002 - Regional Studies/Asia:China **3 Credits**
  - IS 4003 - Regional Studies/Asia:Japan **3 Credits**
  - IS 4004 - Regional Studies/Middle East **3 Credits**
  - IS 4005 - Regional Studies/Russia/Eastern Europe **3 Credits**
  - IS 4006 - Regional Studies/Western Europe **3 Credits**
  - IS 4007 - Regional Studies/Africa **3 Credits**
  - IS 4600 - International Studies Internship **3 Credits**
  - IS 4800 - International Studies Capstone **3 Credits**

- MGNT 4145 - International Management **3 Credits**
  - POLS 2401 - Global Issues **3 Credits**
  - POLS 3001 - Comparative Politics **3 Credits**
  - POLS 3009 - Foundations of Public Policy **3 Credits**
  - POLS 3301 - Modern Political Theory **3 Credits**
  - POLS 3601 - Contemporary World Politics **3 Credits**
  - POLS 4009 - Comparative Public Policy Analysis **3 Credits**
  - POLS 4063 - Political Issues in Electronic Government **3 Credits**
  - POLS 4101 - Political Economy of Post-Communist Transformation **3 Credits**
  - POLS 4201 - International Relations in the Americas **3 Credits**
  - POLS 4301 - International Political Economy **3 Credits**
  - PSYC 3101 - International Social Psychology **3 Credits**
  - PSYC 4000 - International Psychology **3 Credits**
  - PSYC 4600 - Conflict Resolution **3 Credits**
  - RELG 1200 - World Religion **3 Credits**
  - SPAN 3001 - Advanced Conversation **3 Credits**
  - SPAN 3002 - Grammar and Composition **3 Credits**
  - SPAN 3003 - Hispanic Cultures and Civilizations **3 Credits**
  - SPAN 4001 - Professional Spanish **3 Credits**
  - SPAN 4002 - Techniques in Translation for Professional Spanish **3 Credits**
  - SPAN 4003 - Service Learning Project **3 Credits**
  - STS 4000 - International Issues in Science and Technology **3 Credits**
  - STS 4400 - Topical Studies in Science and Technology **3 Credits**
- Special topics courses in HIST, POLS, PSYC may be used as electives with topic-specific departmental approval.

**Total Program Hours: 15**

## **Latin American Studies Minor**

All courses must be completed with grade of C or better. No more than 9 hours may also be used to satisfy requirements in a major or another minor except free electives. No courses used to satisfy Core Areas A-E may be used in a minor.

### **Required Courses:**

- ES 1100 - Ethnic Studies **3 Credits**  
Latino / Hispanic Ethnic Studies ONLY; may not also be used to satisfy E-4 core
- HIST 3501 - Colonization and Rebellion in the Trans-Atlantic World **3 Credits**
- POLS 4201 - International Relations in the Americas **3 Credits**
- IS 4001 - Regional Studies/Latin America **3 Credits**
- SPAN 3003 - Hispanic Cultures and Civilizations **3 Credits**

Total Program Hours: 15

## **Leadership and Organizational Communication Minor**

After taking COMM 2500—Advanced Public Speaking and COMM 2150—Ethics and Communication, you will take **only 9 more hours** of coursework. If you earn a grade of "C" or better in each course, your minor credential will be designated on your SPSU transcript.

### **Required Foundational Courses (6 Credits)**

- COMM 2500 - Advanced Public Speaking **3 Credits**
- COMM 2150 - Ethics and Communication **3 Credits**

### **Additional Courses for Minor (9 Credits)**

*This minor is not available to students majoring in either Technical Communication or English and Professional Communication.*

- COMM 2000 - Business Communication **3 Credits**
- COMM 2065 - Cross-Cultural Communication **3 Credits**
- COMM 3035 - Organizational Communication **3 Credits**
- COMM 3040 - Health Communication **3 Credits**
- COMM 4100 - Small Group Communication **3 Credits**
- COMM 4200 - New Media Leadership Strategies **3 Credits**

## **Logistics Minor**

Students must complete the following courses:

- IET 2227 - Introduction to Statistics **3 Credits**
- IET 2449 - Logistics and Supply Chain Management **3 Credits**
- IET 3320 - Advanced Logistics **3 Credits**
- IET 3620 - Warehousing Systems **3 Credits**

Students choose one from the following:

- IET 3403 - Advanced Statistics with Application 3 Credits
- IET 3410 - Principles of Team Dynamics 3 Credits
- IET 3511 - Sustainability Engineering 3 Credits
- IET 4405 - Operations Research - Concepts, Models and Methods 3 Credits
- MGNT 4115 - Human Resource Management 3 Credits
- MGNT 4135 - Project Management 3 Credits
- MGNT 4151 - Operations Management 3 Credits

Minor Program Total: 15

## **Management Information Systems minor**

### Management Information Systems Minor

- MGNT 3205 - Management Information Systems 3 Credits
- MGNT 3500 - Database Management 3 Credits
- MGNT 4100 - Business Systems Analysis and Design 3 Credits
- MGNT 4140 - Management of Networks and Telecommunications 3 Credits
- TCOM 3400 - Foundations of Design for the Web 3 Credits

## **Management Minor**

### Management Minor

- MGNT 3105 - Management and Organizational Behavior 3 Credits
- MGNT 3170 - Leadership 3 Credits  
plus 3 of the following (9 hours):
- MGNT 4100 - Business Systems Analysis and Design 3 Credits
- MGNT 4103 - Marketing Management 3 Credits
- MGNT 4185 - Technology Management 3 Credits
- MGNT 4190 - Entrepreneurship 3 Credits
- MGNT 4195 - Current Readings in Management of Technology and Operations 3 Credits

## **Management of Operations and Technology Minor**

## Management of Operations and Technology Minor

- MGNT 4125 - Technology and Public Issues **3 Credits**
- MGNT 4135 - Project Management **3 Credits**
- MGNT 4140 - Management of Networks and Telecommunications **3 Credits**
- MGNT 4151 - Operations Management **3 Credits**
- MGNT 4185 - Technology Management **3 Credits**
- MGNT 4195 - Current Readings in Management of Technology and Operations **3 Credits**

## Manufacturing Engineering Technology Minor

Students who wish to receive a minor in Manufacturing Engineering Technology must take the following two courses:

- MET 1311 - Manufacturing Processes **3 credits**
- MET 2322 - Metrology and CNC Machining **3 credits**

Select three additional courses from the following:

- EDG 4224 - Engineering Graphics for Manufacturing **3 credits**
- IET 3407 - Six Sigma and Lean Manufacturing **3 credits**
- MET 3331 - Tool Design **3 credits**
- MET 3332 - Rapid Design and Manufacture **3 credits**
- MET 4342 - Numerical Control of Machines **3 credits**
- MGNT 4135 - Project Management **3 credits**

Minor Program Total: 15

Note: Not available to MET students with a concentration in Manufacturing

## Marketing Minor

### Marketing Minor

- MGNT 3135 - Principles of Marketing **3 Credits**  
Plus four of the following courses:
- MGNT 3210 - Professional Selling and Customer Relationship Management **3 Credits**
- MGNT 3224 - Business Marketing **3 Credits**
- MGNT 3228 - Market Research **3 Credits**
- MGNT 4103 - Marketing Management **3 Credits**
- MGNT 394x Special Topics in Marketing **3 Credits**

## **Mathematics Minor**

To obtain a minor in Mathematics, the student must complete:

- MATH 2255
- An additional 14 semester hours of Mathematics courses at the 2300 level or higher

At least 9 of these additional 14 hours must be at the 3000 level or higher.

Courses used to fill other requirements at SPSU (excluding core areas A through E) may also be used to obtain a minor in Mathematics.

For example, if you take MATH 2306 to fulfill a requirement in the Management curriculum, you may also use it in a math minor. However, you may not use MATH 1113 to fulfill the math minor because it is in area A of the core curriculum.

## **Nuclear Engineering Minor**

### **Requirements**

- SYE 3501 - Fundamentals of Nuclear Engineering **3 Credits**
- SYE 3502 - Radiation Detection and Measurement **3 Credits**
- SYE 4501 - Nuclear Power Generation **3 Credits**
- SYE 4502 - Radiation Protection and Health Physics **3 Credits**
- SYE 4503 - Nuclear Fuel Cycle **3 Credits**

Minor Program Total: 15

## **Physics Minor**

To be eligible for a minor in Physics, the student must complete at least 15 hours of course work in physics with at least 10 hours in upper division physics courses.

## **Political Science Minor**

All courses must be completed with grade of C or better. No more than 9 hours may also be used to satisfy requirements in a major or another minor except free electives. No courses used to satisfy Core Areas A-E may be used in a minor.

**Required Courses:**

- POLS 1101 - American Government **3 Credits**
- POLS 2401 - Global Issues **3 Credits**
- POLS 3001 - Comparative Politics **3 Credits**
- POLS 3301 - Modern Political Theory **3 Credits**  
Choose ONE of the following:
- POLS 3601 - Contemporary World Politics **3 Credits**  
OR
- POLS 4301 - International Political Economy **3 Credits**  
Choose ONE of the following:
- POLS 3701 - American Institutions **3 Credits**  
OR
- POLS 3801 - Political Behavior **3 Credits**

**Total Program Hours: 18**

## **Pre-Law Minor**

All courses must be completed with grade of C or better. No more than 9 hours may also be used to satisfy requirements in a major or another minor except free electives. No courses used to satisfy Core Areas A-E may be used in a minor.

### **Required Courses (6 credits):**

Take TWO of the following courses NOT used to satisfy Core Area E-1:

- HIST 2111 - United States History to 1877 **3 Credits**
- HIST 2112 - United States History since 1877 **3 Credits**
- POLS 1101 - American Government **3 Credits**

### **Elective Courses (12 credits):**

Pick any FOUR of the following:

- MGNT 3145 - Legal Environment of Business **3 Credits**
- POLS 3209 - U.S. Constitutional Law **3 Credits**
- POLS 3301 - Modern Political Theory **3 Credits**
- POLS 3401 - Environmental Law and Policy **3 Credits**
- POLS 3501 - Intellectual Property Issues **3 Credits**
- POLS 3701 - American Institutions **3 Credits**

**Total Program Hours: 18**



# Professional Writing Minor

## Professional Writing

After taking COMM 2000, Business Communication, **take only 12 more hours**, 9 of which must be at the 3000 or 4000 level, to receive a Minor in Professional Writing. Your minor credential will be designated on your SPSU transcript provided you earn a C or better in each course.

## Requirements

- COMM 2000 - Business Communication **3 Credits**

## Additional Courses for Minor (12 credits)

*Students majoring in Business Administration are required to take COMM 2000 as part of their existing program of study. TCOM 2010 will serve as a blanket substitution for COMM 2000 for Business Administration students interested in Professional Writing minor.*

*This minor is not available to students majoring in either Technical Communication or English and Professional Communication.*

- COMM 3035 - Organizational Communication **3 Credits**
- COMM 3040 - Health Communication **3 Credits**
- COMM 3050 - Journalism **3 Credits**
- ENGL 3010 - Science Writing **3 Credits**
- ENGL 3015 - Environmental Writing **3 Credits**
- ENGL 3020 - Proposal Writing **3 Credits**
- ENGL 3025 - Creative Writing Workshop **3 Credits**
- ENGL 3040 - Article and Essay Workshop **3 Credits**
- ENGL 4010 - Publishing for New Media **3 Credits**
- TCOM 4000 - Professional Editing **3 Credits**

## Psychology Minor

All courses must be completed with grade of C or better. No more than 9 hours may also be used to satisfy requirements in a major or another minor *except free electives*. No courses used to satisfy Core Areas A-E may be used in a minor.

## Required Courses:

- PSYC 1101 - Introduction to General Psychology **3 Credits**  
(If PSYC 1101 has been used for Core Area E-3, any 2000-Level PSYC course may be substituted in the minor)
- IET 2227 - Introduction to Statistics **3 Credits**
- PSYC 2100 - Basic Quantitative Research Methods for Psychology **3 Credits**  
(has IET 2227 prereq)
- PSYC 3101 - International Social Psychology **3 Credits**  
AND **6 Credits** in any PSYC 3000- or 4000- level courses

Total Program Hours: 18

## Public Policy Minor

All courses must be completed with grade of C or better. No more than 9 hours may also be used to satisfy requirements in a major or another minor except free electives. No courses used to satisfy Core Areas A-E may be used in a minor.

## Required Courses (6 credits):

- POLS 3009 - Foundations of Public Policy **3 Credits**
- POLS 4009 - Comparative Public Policy Analysis **3 Credits**

## Electives (9 credits):

Choose THREE of the following:

- POLS 3401 - Environmental Law and Policy **3 Credits**
- POLS 3701 - American Institutions **3 Credits**
- PSYC 4600 - Conflict Resolution **3 Credits**
- STS 4000 - International Issues in Science and Technology **3 Credits**

## Special Topics

Special Topics in POLS, STS, or IS may also be used as electives with topic-specific approval of the department.

Total Program Hours: 15

## **Quality Principles Minor**

Students must complete the following courses:

- IET 2227 - Introduction to Statistics **3 Credits**
- IET 3339 - Statistical Quality Control **3 Credits**
- IET 3356 - Quality Concepts and Systems Design **3 Credits**
- IET 3407 - Six Sigma and Lean Manufacturing **3 Credits**

Students choose one from the following:

- IET 3403 - Advanced Statistics with Application **3 Credits**
- IET 3410 - Principles of Team Dynamics **3 Credits**
- IET 4405 - Operations Research - Concepts, Models and Methods **3 Credits**
- MGNT 4135 - Project Management **3 Credits**
- MGNT 4151 - Operations Management **3 Credits**

Minor Program Total: 15

## **Software Engineering Minor**

To be eligible for a minor in Software Engineering, the student must complete the following courses with a grade of "C" or better. Students must have at least 9 upper level SWE hours.

### **Minor in SWE Program Objectives**

Students earning a minor in Software Engineering will:

- Possess broad foundations in software engineering concepts and methodologies so they may contribute to the effective design and implementation of large scale software.

### **Minor in SWE Learning Outcomes**

Students earning a Software Engineering minor will have demonstrated the ability to:

- Apply SWE practices and process to software design and development.

- Demonstrate the ability to gather, analyze, develop, verify and/or validate artifacts of software engineering systems.
- Use software tools effectively in some phases of software development.

## Minor in Software Engineering

- CSE 1302 - Programming & Problem Solving II **4 Credits**
- SWE 2313 - Introduction to Software Engineering **3 Credits**
- Three additional upper-level SWE courses **9 Credits**

### Note:

SWE 1302 has a pre-requisite of SWE 1301.

## Spanish Minor

All courses must be completed with grade of C or better. No more than 9 hours may also be used to satisfy requirements in a major or another minor except free electives. No courses used to satisfy Core Areas A-E may be used in a minor.

### 2000-Level (6 credits):

May not also be used to satisfy Core Area C-2:

- SPAN 2001 - Intermediate Spanish I **3 Credits**
- SPAN 2002 - Intermediate Spanish II **3 Credits**

### 3000-Level (9 credits):

Any 9 credits in 3000-level SPAN courses.

**Total Program Hours: 15**

Consider the Certificate in Professional Spanish as well:

Requirements for Professional Certificate

## Technical Communication Minor

## Technical Communication

After taking TCOM 2010 Technical Writing, you will take **only 12 more hours**, 9 of which must be at the 3000 or 4000 level. If you earn a grade of "C" or better in each course, your minor credential will be designated on your SPSU transcript.

### Requirements (6 credits)

- TCOM 2010 - Technical Writing **3 Credits**
- TCOM 2020 - Intro to Professional & Technical Communication **3 Credits**  
OR
- TCOM 2030 - Research in Technical Communication **3 Credits**

Students whose major already requires TCOM 2010 should take TCOM 2020 **and** TCOM 2030 (blanket substitution will apply).

### Additional Courses for Minor (9 credits)

Choose any class with the TCOM course prefix, 3000-level or higher.

*This minor is not available to students majoring in either Technical Communication or English and Professional Communication.*

## Transfer Program

### General Studies, A.S.

The Associate of Science General Studies Transfer Program is designed for students who wish to complete the core at SPSU and then transfer to another institution.

#### All students must take:

- SPSU 1001 - Hitch-hiker's Introduction to SPSU **1 Credits**

### Area A: Essential Skills (9 credits)

Grade of C or better required in the courses used to satisfy this requirement. Freshmen must complete Area A by the time they have attempted 30 semester hours of course work.

- ENGL 1101 - English Composition I **3 Credits**
- ENGL 1102 - English Composition II **3 Credits**
- MATH 1111 - College Algebra **3 Credits**  
(or other math as specified in the University core)

## Area B: Institutional Options (4 credits)

- COMM 2400 - Public Speaking **2 Credits**
- STS 2400 - Science, Technology, and Society **2 Credits**

## Area C: Humanities / Fine Arts (6 credits)

Choose ONE Literature Course:

- ENGL 2111 - Early World Literature **3 Credits**
- ENGL 2112 - World Literature Mid-1600s to Present **3 Credits**
- ENGL 2120 - British Literature Early to Present **3 Credits**
- ENGL 2121 - Early British Literature **3 Credits**
- ENGL 2122 - British Literature Late 1700s to Present **3 Credits**
- ENGL 2130 - American Literature Early to Present **3 Credits**
- ENGL 2131 - Early American Literature **3 Credits**
- ENGL 2132 - American Literature Mid 1800s to Present **3 Credits**
- ENGL 2141 - Early Western Literature **3 Credits**
- ENGL 2142 - Western Literature 1600s to Present **3 Credits**
- ENGL 2300 - African-American Literature and Culture **3 Credits**

Choose ONE Arts or Language Course:

- ARTS 2001 - Art Appreciation **3 Credits**
- ARTS 2002 - Drama Appreciation **3 Credits**
- ARTS 2003 - Music Appreciation **3 Credits**
- ARTS 2004 - History of Contemporary American Music **3 Credits**
- FREN 1002 - Elementary French II **3 Credits**
- FREN 2001 - Intermediate French I **3 Credits**
- FREN 2002 - Intermediate French II **3 Credits**

- GRMN 1002 - Elementary German II **3 Credits**
- GRMN 2001 - Intermediate German I **3 Credits**
- GRMN 2002 - Intermediate German II **3 Credits**
- SPAN 1002 - Elementary Spanish II **3 Credits**
- SPAN 2001 - Intermediate Spanish I **3 Credits**
- SPAN 2002 - Intermediate Spanish II **3 Credits**

## Area D: Science and Math (11-12 credits)

### 8 hours science (two courses with labs):

You must take two semesters of lab science *and lab* (lecture=3 credits; lab=1 credit; K-courses=4 credits, lab is included)

- ASTR 1000K - Introduction to the Universe **4 Credits**
- ASTR 1010K - Introduction to the Universe II **4 Credits**
- BIOL 2107 - Principles of Biology I **3 Credits**
- BIOL 2107L - Principles of Biology I Laboratory **1 Credits**
- BIOL 2108 - Principles of Biology II **3 Credits**
- BIOL 2108L - Principles of Biology II Laboratory **1 Credits**
- CHEM 1211 - Principles of Chemistry I **3 Credits**
- CHEM 1211L - Principles of Chemistry I Lab **1 Credits**
- CHEM 1211K - Principles of Chemistry (ECORE) **4 Credits**
- CHEM 1212 - Principles of Chemistry II **3 Credits**
- CHEM 1212L - Principles of Chemistry II Lab **1 Credits**
- CHEM 1212K - Principles of Chemistry II (ECORE) **4 Credits**
- ENVS 2200K - Geology **4 Credits**
- ENVS 2202K - Introduction to Environmental Science **4 Credits**
- GEOL 1101K - Introductory Geosciences **4 Credits**
- PHYS 1111 - Introductory Physics I **3 Credits**
- PHYS 1111L - Introductory Physics Laboratory I **1 Credits**
- PHYS 1112 - Introductory Physics II **3 Credits**
- PHYS 1112L - Introductory Physics Laboratory II **1 Credits**
- PHYS 1211K - Principles of Physics I (ECORE) **4 Credits**
- PHYS 2211 - Principles of Physics I **3 Credits**
- PHYS 2211L - Principles of Physics Laboratory I **1 Credits**
- PHYS 2212 - Principles of Physics II **3 Credits**
- PHYS 2212L - Principles of Physics Laboratory II **1 Credits**

### Math:

- MATH 1113 - Pre-calculus **4 Credits**

(or other math as specified in the University core)

## Area E: Social Sciences (12 credits)

### Group 1 American Perspectives- (3 credits):

Satisfies the American Perspectives overlay. Any one of these courses, taken within the University System of Georgia, also satisfies the Legislative Requirement for US and Georgia Constitution and History. Students who fulfill this requirement with transfer credit from outside the USG will need to take HIST 2911 U.S. and Georgia Constitution and History to satisfy the Legislative Requirement for graduation.

Choose ONE of the following:

- HIST 2111 - United States History to 1877 **3 Credits**
- HIST 2112 - United States History since 1877 **3 Credits**
- POLS 1101 - American Government **3 Credits**

### Group 2 Historical Perspectives (3 credits):

Choose ONE of the following:

- HIST 1111 - Survey of World Civilization pre 1500 **3 Credits**
- HIST 1112 - Survey of World Civilization post 1500 **3 Credits**

### Group 3 Behavioral Science Perspectives (3 credits):

Choose ONE of the following:

- ECON 1101 - Introduction to Economics **3 Credits**
- PSYC 1101 - Introduction to General Psychology **3 Credits**
- SOCI 1101 - Introduction to Sociology **3 Credits**

### Group 4 Global Perspectives (3 credits):

Satisfies the Global Perspectives overlay.

Choose ONE of the following:

- ANTH 1102 - Introduction to Anthropology **3 Credits**
- ES 1100 - Ethnic Studies **3 Credits**
- GEOG 1101 - Introduction to Human Geography **3 Credits**
- POLS 2401 - Global Issues **3 Credits**
- RELG 1200 - World Religion **3 Credits**



## Elective Courses:

- At least one additional course in humanities (Area C ) **3 Credits**
- At least one additional course in social sciences (Area E) **3 Credits**
- Any humanities, social science, math, lab science or any area F course from any program. **11-12 Credits**

Total Program Hours: 60

## Certification

### Apparel Product Development Certificate

The Fashion Design and Product Development program offers a Certificate in Apparel Product Development. The objective is to provide training and education to members of the apparel industry, graduates of fashion and design schools and other interested parties seeking to improve their skills. The courses may also be applied toward completing the Bachelor of Apparel and Textiles degree. All requirements for normal admissions are applicable. Certificate students must complete five courses from the following list:

### Requirements

Certificate students must complete five classes from the following list:

- ATT 1300 - International Sourcing **3 Credits**
- ATT 1400 - Principles of Merchandising **3 Credits**
- ATT 2301 - Apparel Computer-Aided Technical Design I **4 Credits**
- ATT 3100 - Fashion Merchandising **3 Credits**
- ATT 3505 - Fabric Formation and Design **3 Credits**
- ATT 3600 - Apparel Analysis and Product Development **3 Credits**
- ATT 3602 - Apparel Computer-Aided Technical Design II **4 Credits**
- ATT 3800 - Fashion Forecasting, Data Analysis & Consumer Trends **3 Credits**
- ATT 4444 - Quality Assurance for Textiles and Apparel **4 Credits**
- ATT 4670 - Apparel/Textile Business Practices **3 Credits**
- ATT 4750 - Advanced Design and Product Development **3 Credits**

Certificate Program Total: 15

### Geographical Information Systems Certificate

The Geographical Information Systems (GIS) Certificate program is designed to prepare students with a practical set of GIS marketable skills who have a background in GIS applications such as surveying, real estate, marketing, geography or business background. There are five courses required in the certificate program.

## Required Courses (19 Credits)

- SURV 2110 - Introduction to Mapping **4 Credits**
- SURV 3421 - Geographic Information Systems I **4 Credits**
- SURV 4420 - Remote Sensing **4 Credits**
- SURV 4422 - Geographic Information Systems II **4 Credits**
- SURV 4110 - Geographical Information Systems (GIS) Practice **3 Credits**

Certificate Program Total: 19

## Highway Project Management Certificate

The Certificate in Highway Construction Project Management provides training and education for working professionals who wish to pursue a career in highway and infrastructure construction. Prerequisites must be met prior to enrollment in certain certificate courses.

### Required Courses:

- CE 3701 - Geotechnical Engineering **3 Credits**
- CE 3501 - Materials for Civil & Construction Engineering **3 Credits**
- CM 2000 - Construction Graphics **3 Credits**
- CM 3410 - Construction Quantity Surveying **3 Credits**
- CM 4510 - Construction Scheduling **3 Credits**
- CM 4560 - Construction Project Management **3 Credits**
- CM 4760 - Construction and Real Property Law **3 Credits**

Subtotal: 21 Credits

### Elective Courses:

- CM 3420 - Construction Estimating and Bid Preparation **4 Credits**

- CM 3260 - Temporary Structures **3 Credits**
- CM 4710 - Construction Safety **4 Credits**

Subtotal: 3 Credits (minimum)

Certificate Program Total: 24 Credits (minimum)

## **Land Development Certificate**

The Certificate in Land Development provides training and education to members of the real estate and land development field in construction and land development principles and practices. Students can complete the requirements in 3-4 semesters. These courses may also be applied toward completing a B.S. degree in Construction Management upon acceptance to SPSU.

Prerequisites must be met prior to enrollment in certain certificate courses.

### **Required Courses:**

- CM 3310 - Introduction to Development **3 Credits**
- CM 3710 - Site Planning **4 Credits**
- CM 4570 - Development Process I **4 Credits**
- CM 3110 - Residential and Light Construction Methods **3 Credits**

Subtotal: 14 Credits

\*may substitute courses from electives list if competency can be demonstrated

### **Elective Courses:**

- CM 2000 - Construction Graphics **3 Credits**
- CM 3410 - Construction Quantity Surveying **3 Credits**
- CM 3430 - Construction Estimating for Development **3 Credits**
- CM 4510 - Construction Scheduling **3 Credits**
- CM 4620 - Development Process II **3 Credits**

Subtotal: 7 Credits (minimum)

Certificate Program Total: 21 Credits (minimum)

## **Land Surveying Certificate**

The Land Surveying Certificate program is designed to prepare surveyors with the basic education necessary to take the Fundamentals of Land Surveying Exam and exceeds the State of Georgia academic registration requirements to become a Registered Land Surveyor. There are six courses required in the certificate program.

### **Required Courses (22 Credits)**

- SURV 2221 - Surveying I **4 Credits**
- SURV 3222 - Surveying II **4 Credits**
- SURV 4465 - Legal Aspects of Land Surveying **4 Credits**
- SURV 4475 - Land Surveying Practice **2 Credits**
- SURV 4470 - Land Development Design **4 Credits**
- CET 4310 - Stormwater Management and Erosion Control **2 Credits**

Certificate Program Total: 21

## **Logistics Certificate**

The primary objective of the Certificate in Logistics is to provide training and education to members of the Supply Chain industry that need to improve skills and knowledge in the latest technology available in their field. Students can complete the requirements in 4-6 semesters. The courses may also be applied toward completing a B. S. degree in Industrial Engineering Technology. The program will be offered on campus, through distance learning, and over the Internet.

### **Admission Requirements:**

Applicants must have earned a High School degree or GED and been out of high school for at least five years or have earned 30 college credits from an accredited institution of higher learning with a minimum GPA of 2.0.

### **Required Courses:**

- IET 2227 - Introduction to Statistics **3 Credits**
- IET 2449 - Logistics and Supply Chain Management **3 Credits**

- IET 3320 - Advanced Logistics **3 Credits**
- IET 3620 - Warehousing Systems **3 Credits**
- IET 4405 - Operations Research - Concepts, Models and Methods **3 Credits**
- MGNT 4115 - Human Resource Management **3 Credits**
- MGNT 4151 - Operations Management **3 Credits**

Certificate Program Total: 21

## **Production Design Certificate**

The primary objective of the Certificate in Production Design is to provide training and education to members of the Industrial Engineering field in the measurement and analysis of work and in the design or improvement of facilities. Students can complete the requirements in 3-4 semesters. These courses may also be applied toward completing a B.S. degree in Industrial Engineering Technology upon acceptance to SPSU.

### **Admission Requirements:**

Applicants must meet all undergraduate admission requirements.

### **Required Courses:**

- IET 2227 - Introduction to Statistics **3 Credits**
- IET 3322 - Work Measurement and Ergonomics **4 Credits**
- ACCT 2101 - Principles of Financial Accounting **3 Credits**
- IET 4422 - Facilities Design, Plant Layout, and Materials Handling **4 Credits**
- IET 4405 - Operations Research - Concepts, Models and Methods **3 Credits**
- MGNT 4151 - Operations Management **3 Credits**

Certificate Program Total: 20

## **Project Management Construction Certificate**

The professional Certificate in Project management is designed for working professionals who wish to further their knowledge in Construction Project Management. The certificate will also be useful for those individuals who wish to make a career change to the construction industry, or to those people who find themselves in the construction industry without first gaining a background in construction.

Prerequisites must be met prior to enrollment in certain certificate courses.

## Required Courses:

- CM 2000 - Construction Graphics **3 Credits**
- CM 3000 - Computer Applications in Construction **3 Credits**
  
- CM 3110 - Residential and Light Construction Methods **3 Credits** OR
- CM 3160 - Commercial and Heavy Construction Methods **3 Credits**
  
- CM 4560 - Construction Project Management **3 Credits**
- CM 3620 - Construction Finance and Feasibility **4 Credits**

Subtotal: 11-12 Credits

## Elective Courses:

- CM 3410 - Construction Quantity Surveying **3 Credits**
- CM 3420 - Construction Estimating and Bid Preparation **4 Credits**
- CM 4510 - Construction Scheduling **3 Credits**
- CM 4760 - Construction and Real Property Law **3 Credits**

Subtotal: 9+ Credits

Certificate Program Total: 20+ Credits

## Quality Principles Certificate

The primary objective of the Certificate in Quality Principles is to provide training and education to members of the Industrial Engineering field in quality system principles, methodology, elements and standards. Students can complete the requirements in 3–4 semesters. These courses may also be applied toward completing a B.S. degree in Industrial Engineering technology upon acceptance to SPSU.

## Admission Requirements:

Applicants must meet all undergraduate admission requirements.

## Required Courses:

- IET 2227 - Introduction to Statistics **3 Credits**
- IET 3339 - Statistical Quality Control **3 Credits**
- IET 3356 - Quality Concepts and Systems Design **3 Credits**
- IET 3403 - Advanced Statistics with Application **3 Credits**
- IET 3410 - Principles of Team Dynamics **3 Credits**
- MGNT 4135 - Project Management **3 Credits**
- MGNT 4151 - Operations Management **3 Credits**

Certificate Program Total: 21

## Spanish Professional Certificate (Undergraduate)

All courses must be completed with grade of C or better. No more than 9 hours may also be used to satisfy requirements in a major or another minor except free electives. No courses used to satisfy Core Areas A-E may be used in a minor.

## All Courses Required for the Spanish Minor

Requirements for Spanish Minor

### 4000-Level Electives (6 credits):

Chose SIX credits from the following:

- SPAN 4001 - Professional Spanish **3 Credits**
- SPAN 4002 - Techniques in Translation for Professional Spanish **3 Credits**
- SPAN 4003 - Service Learning Project **3 Credits**
- SPAN 4901 - Special Topics for Professional Spanish **1 to 5 Credits**
- SPAN 4902 - Special Topics for Professional Spanish **1 to 5 Credits**
- SPAN 4903 - Special Topics for Professional Spanish **1 to 5 Credits**
- SPAN 4904 - Special Topics for Professional Spanish **1 to 5 Credits**
- SPAN 4905 - Special Topics for Professional Spanish **1 to 5 Credits**

### Learning Project (3 credits):

- SPAN 4003 - Service Learning Project **3 Credits**

Oral Proficiency Interview (OPI):

After all coursework is completed, student must take the American Council on the Teaching of Foreign Language OPI.

Total Program Hours: 9 credits beyond the minor

## **Course Descriptions**

### **Accounting**

### **Accounting**

**ACCT 2101 - Principles of Financial Accounting**

**ACCT 2102 - Principles of Managerial Accounting**

**ACCT 3230 - Intermediate Accounting I**

**ACCT 3231 - Intermediate Accounting II**

**ACCT 3530 - Cost Accounting**

**ACCT 4530 - Advanced Accounting**



**ACCT 4535 - Accounting Information Systems**

**ACCT 4555 - Auditing and Assurance**

**ACCT 4560 - Intro to Federal Income Taxes**

**ACCT 4562 - Federal Taxation II**

**ACCT 4565 - Fraud Examination**

**ACCT 4568 - Accounting Software Applications**

**Anthropology**

**Anthropology**

**ANTH 1102 - Introduction to Anthropology**

**Apparel and Textile Technology**

**Apparel and Textile Technology**

**ATT 1000 - Orientation**

**ATT 1200 - Apparel Design Graphics**

**ATT 1300 - International Sourcing**

**ATT 1400 - Principles of Merchandising**

**ATT 2301 - Apparel Computer-Aided Technical Design I**

**ATT 3100 - Fashion Merchandising**

**ATT 3505 - Fabric Formation and Design**

**ATT 3600 - Apparel Analysis and Product Development**

**ATT 3602 - Apparel Computer-Aided Technical Design II**

**ATT 3800 - Fashion Forecasting, Data Analysis & Consumer Trends**

**ATT 4444 - Quality Assurance for Textiles and Apparel**

**ATT 4670 - Apparel/Textile Business Practices**

**ATT 4750 - Advanced Design and Product Development**

**ATT 4820 - Senior Internship**

**ATT 4840 - Textile/Apparel Business Project**

**Architecture**

**Architecture**

**ARCH 39X1 - Special Topics**

**ARCH 39X2 - Special Topics**

**ARCH 39X3 - Special Topics**

**ARCH 39X4 - Special Topics**

**ARCH 49X1 - Directed Study**

**ARCH 49X2 - Directed Study**

**ARCH 49X3 - Directed Study**

**ARCH 49X4 - Directed Study**

**ARCH 2020 - Design Communication**

**ARCH 2030 - Global Sustainability Strategies**

**ARCH 2040 - History & Culture of Architecture**

**ARCH 2050 - Architectural Technology**

**ARCH 3011 - Architecture Studio I**

**ARCH 3012 - Architecture Studio II**

**ARCH 3060 - Design Laboratory I**

**ARCH 3070 - Design Laboratory II**

**ARCH 3113 - Architecture Culture III - 1850 through 1945**

**ARCH 3116 - Urban Planning and Design Theory**

**ARCH 3211 - Architecture Structures II: Steel and Wood**

**ARCH 3212 - Architecture Structures III: Concrete and Lateral Loads**

**ARCH 3313 - Environmental Technology II: Human Comfort, Sustainability and HVAC Systems:**

**ARCH 3314 - Environmental Technology III: Natural & Artificial Lighting, Electrical Systems & Vertical Circulation:**

**ARCH 4013 - Architecture Studio III**

**ARCH 4014 - Architecture Studio IV**

**ARCH 4114 - Architecture Cultures IV: 1945-Current**

**ARCH 4224 - Environmental Technology IV: Codes and Technical Documentation**

**ARCH 4411 - Design Cost Control**

**ARCH 5313 - Professional Practice and Ethics**

**ARCH 5593 - Thesis Prep/Research**

**ARCH 5998F - Focus Studio**

**ARCH 5999R - Thesis Research S/U**

**ARCH 5999T - Thesis Project**

**Arts**

## **Arts**

**ARTS 290 - Special Topics**

**ARTS 2001 - Art Appreciation**

**ARTS 2002 - Drama Appreciation**

**ARTS 2003 - Music Appreciation**

**ARTS 2004 - History of Contemporary American Music**

**ARTS 2005 - University Bands**

**ARTS 2010 - Introduction to Drawing**

**ARTS 2020 - History and Principles of Design**

**ARTS 2110 - Introduction to Painting**

**ARTS 2220 - 2D and 3D Design**

**ARTS 2903 - Music Theory**

**ARTS 3000 - Visual Thinking**

**ARTS 3100 - History of New Media Arts**

**ARTS 3170 - Digital Photography**

**ARTS 4100 - Media Arts Studio**

**ARTS 4600 - Directed Study**

**ARTS 4800 - Senior Portfolio**

**Astronomy**

**Astronomy**

**ASTR 1000K - Introduction to the Universe**

**ASTR 1010K - Introduction to the Universe II**

**Biochemistry**

**Biochemistry**

**BIOC 3111K - Biochemistry I**

**BIOC 3112K - Biochemistry II**

**BIOC 3115K - Physical Biochemistry**

**BIOC 3901 - Special Topics**

**BIOC 3902 - Special Topics**

**BIOC 3903 - Special Topics**

**BIOC 3904 - Special Topics**

**BIOC 3905 - Special Topics**

**BIOC 4200 - Medicinal Chemistry and Drug Discovery**

**BIOC 4901 - Special Topics**

**BIOC 4902 - Special Topics**

**BIOC 4903 - Special Topics**



**BIOC 4904 - Special Topics**

**BIOC 4905 - Special Topics**

**Biology**

**Biology**

**BIOL 2050 - Fundamentals of Human Anatomy & Physiology I**

**BIOL 2050L - FUndamentals of Human Anatomy & Physiology Lab**

**BIOL 2051 - Fundamentals of Humany Anatomy & Physiology II**

**BIOL 2051L - Human Anatomy & Physiology Lab II**

**BIOL 2107 - Principles of Biology I**

**BIOL 2107L - Principles of Biology I Laboratory**

**BIOL 2108 - Principles of Biology II**

**BIOL 2108L - Principles of Biology II Laboratory**

**BIOL 2500K - Bioinformatics I - Tools & Databases**

**BIOL 2800 - Drug Development and Regulation**

**BIOL 3000K - Genetics**

**BIOL 3100K - Microbiology**

**BIOL 3200K - Applied Molecular Biology Laboratory**

**BIOL 3201 - Biophysics I**

**BIOL 3202 - Biophysics II**

**BIOL 3250K - Ecosystem Ecology**

**BIOL 3300K - Ecology**

**BIOL 3310K - Molecular Biology**

**BIOL 3400K - Cell Physiology**

**BIOL 3500 - Biostatistics**

**BIOL 3600 - Freshwater Biology**

**BIOL 3650 - Marine Biology**

**BIOL 3700K - Ichthyology**

**BIOL 4100K - Entomology**

**BIOL 4110 - Parasitology**

**BIOL 4200K - Zoology**

**BIOL 4300 - Virology**

**BIOL 4350K - Cell and Tissue Culture**

**BIOL 4400K - Human Physiology**

**BIOL 4410 - Immunology**

**BIOL 4420K - Advanced Immunology**

**BIOL 4430K - Animal Physiology**

**BIOL 4440K - Botany**

**BIOL 4460K - Human Anatomy**

**BIOL 4470 - Plant Physiology**

**BIOL 4480 - Evolution**

**BIOL 4510K - Bioinformatics II**

**BIOL 4550 - Cancer Biology**

**BIOL 4600K - Biotechnology**

**BIOL 4700 - Internship**

**BIOL 4900 - Special Topics**

**BIOL 4901 - Special Topics**

**BIOL 4902 - Special Topics**

**BIOL 4903 - Special Topics**

**BIOL 4904 - Special Topics**

**BIOL 4905 - Special Topics**

**Business, Marketing and Finance**

**Business, Marketing and Finance**

**MGNT 390x - Special Topics**

**MGNT 490x - Special Topics**

**MGNT 1000 - Orientation to Business**

**MGNT 2201 - Business Computer Applications**

**MGNT 3105 - Management and Organizational Behavior**

**MGNT 3120 - Entrepreneurial Finance**

**MGNT 3125 - Business Finance**

**MGNT 3135 - Principles of Marketing**

**MGNT 3145 - Legal Environment of Business**

**MGNT 3170 - Leadership**

**MGNT 3205 - Management Information Systems**

**MGNT 3210 - Professional Selling and Customer Relationship Management**

**MGNT 3224 - Business Marketing**

**MGNT 3228 - Market Research**

**MGNT 3231 - Management of Financial Institutions**

**MGNT 3500 - Database Management**

**MGNT 4075 - Healthcare Management**

**MGNT 4100 - Business Systems Analysis and Design**

**MGNT 4103 - Marketing Management**

**MGNT 4115 - Human Resource Management**

**MGNT 4125 - Technology and Public Issues**

**MGNT 4135 - Project Management**

**MGNT 4140 - Management of Networks and Telecommunications**

**MGNT 4145 - International Management**

**MGNT 4151 - Operations Management**

**MGNT 4185 - Technology Management**

**MGNT 4190 - Entrepreneurship**

**MGNT 4195 - Current Readings in Management of Technology and Operations**

**MGNT 4232 - Financial Planning and Capital Budgeting**

**MGNT 4233 - Investment Analysis and Portfolio Management**

**MGNT 4234 - International Finance**

**MGNT 4545 - Legal Environment of Business II**

**MGNT 4595 - Business Strategy**

**Chemistry**

**Chemistry**

**CHEM 1211 - Principles of Chemistry I**

**CHEM 1211K - Principles of Chemistry (ECORE)**

**CHEM 1211L - Principles of Chemistry I Lab**

**CHEM 1212 - Principles of Chemistry II**

**CHEM 1212K - Principles of Chemistry II (ECORE)**

**CHEM 1212L - Principles of Chemistry II Lab**

**CHEM 2510 - Survey of Organic Chemistry**

**CHEM 2511K - Organic Chemistry I**

**CHEM 2512K - Organic Chemistry II**



**CHEM 2601 - Chemical Literature**

**CHEM 3100K - Analytical Chemistry**

**CHEM 3150K - Environmental Chemistry**

**CHEM 3200K - Atmospheric Chemistry**

**CHEM 3300K - Instrumental Analysis**

**CHEM 3901 - Special Topics**

**CHEM 3902 - Special Topics**

**CHEM 3903 - Special Topics**

**CHEM 3904 - Special Topics**

**CHEM 3905 - Special Topics**

**CHEM 4111K - Physical Chemistry I**

**CHEM 4112 - Physical Chemistry II**

**CHEM 4112L - Physical Chemistry II Lab**

**CHEM 4121 - Quantum Chemistry**

**CHEM 4411 - Inorganic Chemistry**

**CHEM 4412 - Main Group Inorganic Chemistry**

**CHEM 4413 - Transition Metal Chemistry**

**CHEM 4415 - Solid State Chemistry**

**CHEM 4511 - Advanced Organic Chemistry**

**CHEM 4901 - Special Topics**

**CHEM 4902 - Special Topics**

**CHEM 4903 - Special Topics**

**CHEM 4904 - Special Topics**

**CHEM 4905 - Special Topics**

## **Civil and Construction Engineering**

## **Civil and Construction Engineering**

**CE 1000 - Orientation to Engineering and Surveying Professions**

**CE 3201 - Structural Analysis**

**CE 3202 - Design of Concrete Structures**

**CE 3501 - Materials for Civil & Construction Engineering**

**CE 3502 - Materials for Civil & Construction Engineering Lab**

**CE 3701 - Geotechnical Engineering**

**CE 3702 - Environmental Engineering**

**CE 3703 - Environmental Engineering II**

**CE 3708 - Geotechnical Engineering Lab**

**CE 3901 - Special Topics**

**CE 3902 - Special Topics**

**CE 3903 - Special Topics**

**CE 4103 - Design of Steel Structures**

**CE 4105 - Foundation Design**

**CE 4177 - Transportation Engineering**

**CE 4178 - Highway Design and Construction**

**CE 4179 - Transportation Engineering Lab**

**CE 4202 - Steel and Concrete Design**

**CE 4703 - Engineering Hydrology**

**CE 4704 - Engineering Hydraulic Analysis and Design**

**CE 4705 - Advanced Soil Mechanics**

**CE 4706 - Pavement Engineering**

**CE 4707 - Design of Wood Structures**

**CE 4708 - Hazardous Waste Engineering**

**CE 4709 - Matrix Structural Analysis**

**CE 4800 - Senior Project**

**CE 4901 - Special Topics**

**CE 4902 - Special Topics**

**CE 4903 - Special Topics**

**Civil Engineering Technology**

**Civil Engineering Technology**

**CET 1000 - Orientation to Civil Engineering Technology**

**CET 1002 - Orientation to CET Computer Practices**

**CET 2110 - Problem Solving Methods in CET**

**CET 2200 - Introduction to Structures**

**CET 3110 - Construction Materials and Sustainability**

**CET 3110L - Construction Materials Lab**

**CET 3120 - Cost Estimating and Scheduling in CET**

**CET 3120L - Plan Reading and Take Offs Lab**

**CET 3130 - Applied Fluid Mechanics and Hydraulics**

**CET 3130L - Fluids and Hydraulics Lab**

**CET 3210 - Structural Mechanics**

**CET 3220 - Applied Structural Steel Design**

**CET 3230 - Concrete Infrastructure Design**

**CET 3310 - Water Treatment and Distribution**

**CET 3310L - Water Treatment and Distribution Lab**

**CET 3320 - Wastewater Collection and Treatment**

**CET 3320L - Wastewater Collection and Treatment Lab**

**CET 3410 - Soil Properties and Site Exploration**

**CET 3410L - Soil Properties Lab**

**CET 3420 - Geosynthetics**

**CET 3430L - Site Exploration and Field Testing Lab**

**CET 3510 - Traffic Analysis and Road Design**

**CET 3510L - Traffic Analysis and Road Design Lab**

**CET 3901 - Special Topics**

**CET 3902 - Special Topics**

**CET 3903 - Special Topics**

**CET 3904 - Special Topics**

**CET 4110 - Ethics of Engineering**

**CET 4120 - Senior Design and Engineering Documentation**

**CET 4130 - Special Inspections**

**CET 4210 - Computer Methods in Structures**

**CET 4220 - LFRD Steel Design**

**CET 4230 - Advanced Concrete Design**

**CET 4240L - Structural Detailing Lab**

**CET 4310 - Stormwater Management and Erosion Control**

**CET 4310L - Erosion Control Lab**

**CET 4320 - Unit Operations in Environmental Engineering**

**CET 4330 - Solid Waste Management**

**CET 4331 - Highway Design**



**CET 4340 - Air Pollution Control**

**CET 4410 - Foundation and Retaining Wall Design**

**CET 4411 - FE Exam Preparation - Civil Discipline**

**CET 4418 - Engineering Geology**

**CET 4420 - Earth Dam and Levee Design**

**CET 4430 - Slope Stability**

**CET 4450 - Pavement Design and Maintenance**

**CET 4484 - Hydraulic Analysis and Design**

**CET 4510 - Transportation Network Design**

**SET 3240 - Hydraulic Structures**

**SET 3250 - Structural Loads and Connections**

**SET 3260 - Masonry and Timber Design**

**SET 4240 - Structural Rehabilitation**

**SET 4250 - Bridge Design**

**Communication**

**Communication**

**COMM 1000 - Integrated Skills for International Students**

**COMM 1050 - Holistic Communication for Non-Native Speakers of English**

**COMM 1100 - Human Communications**

**COMM 2000 - Business Communication**

**COMM 2030 - Research for the Humanities & Social Sciences**

**COMM 2065 - Cross-Cultural Communication**

**COMM 2150 - Ethics and Communication**

**COMM 2170 - Introduction to Media Studies**

**COMM 2400 - Public Speaking**

**COMM 2500 - Advanced Public Speaking**

**COMM 2510 - Intercollegiate Forensics**

**COMM 3000 - Oral Communication for International Students**

**COMM 3035 - Organizational Communication**

**COMM 3040 - Health Communication**

**COMM 3050 - Journalism**

**COMM 3060 - Media, Culture, and Society**

**COMM 3065 - International Communication**

**COMM 3100 - Rhetoric: History, Theory, and Practice**

**COMM 3150 - Public Relations Practice**

**COMM 3160 - Media Theory and Practice**

**COMM 3250 - Newspaper Practicum**

**COMM 4100 - Small Group Communication**

**COMM 4200 - New Media Leadership Strategies**

**COMM 4600 - Directed Study**

**Computer Game Design and Development**

**Computer Game Design and Development**

**CGDD 490x - Special Topics in Game Design and Development**

**CGDD 2002 - Fundamentals of Game Design**

**CGDD 3103 - Application Extension and Scripting**

**CGDD 4003 - Digital Media and Interaction**

**CGDD 4113 - 3D Modeling and Animation**

**CGDD 4203 - Mobile and Casual Game Development**

**CGDD 4303 - Educational and Serious Game Design**

**CGDD 4313 - Designing Online Learning Content and Environments**

**CGDD 4603 - Production Pipeline and Asset Management**

**CGDD 4703 - Data Modeling and Simulation**

**CGDD 4803 - Studio**

**CGDD 4814 - Capstone**

**Computer Science**

**Computer Science**

**CS 2123 - C Programming**

**CS 2223 - Digital Design**

**CS 3123 - Programming Language Concepts**

**CS 3223 - Computer Architecture**

**CS 3224 - Computer Organization & Architecture**

**CS 3243 - Operating Systems**

**CS 3424 - Data Structures**

**CS 3693 - Applications Programming**

**CS 3901 - Special Topics**

**CS 3902 - Special Topics**

**CS 3903 - Special Topics**

**CS 3904 - Special Topics**

**CS 4133 - Programming PDA's**

**CS 4243 - Systems Programming**

**CS 4253 - Distributed Computing**

**CS 4263 - Computer Networks**

**CS 4283 - Real-Time Systems**

**CS 4363 - Computer Graphics and Multimedia**

**CS 4413 - Algorithm Analysis**

**CS 4423 - Logical Foundations of Computer Science**

**CS 4523 - Artificial Intelligence**

**CS 4533 - Digital Image Processing**

**CS 4543 - Neural Computation**

**CS 4553 - Expert Systems**

**CS 4893 - Computer Science Capstone**

**CS 4901 - Special Topics**

**CS 4902 - Special Topics**

**CS 4903 - Special Topics**

**CS 4904 - Special Topics**

**CSE 3153 - Database Systems**

**Computing and Software Engineering**

**Computing and Software Engineering**

**CSE 1002 - Introduction to the Computing Disciplines**

**CSE 1301C - Programming & Problem Solving I**

**CSE 1301E - C++ Programming for Engineers**

**CSE 1301J - Programming & Problem Solving I**

**CSE 1302C - Programming & Problem Solving II**

**CSE 1302E - Object Oriented C++ Programming for Engineers**

**CSE 1302J - Programming & Problem Solving II**

**CSE 3642 - Professional Practices and Ethics**



**CSE 4983 - CSE Computing Internship**

**Construction Management**

**Construction Management**

**CM 710 - Construction Safety**

**CM 1000 - Orientation to Construction and Development**

**CM 2000 - Construction Graphics**

**CM 2901 - Special Topics**

**CM 2902 - Special Topics**

**CM 2903 - Special Topics**

**CM 2904 - Special Topics**

**CM 3000 - Computer Applications in Construction**

**CM 3040 - Building Information Modeling Applications I**

**CM 3110 - Residential and Light Construction Methods**

**CM 3160 - Commercial and Heavy Construction Methods**

**CM 3180 - Mechanical and Electrical Building Systems**

**CM 3190 - Sustainable Construction**

**CM 3210 - Applied Structures**

**CM 3260 - Temporary Structures**

**CM 3280 - Building Mechanical and Electrical Codes and Loads**

**CM 3290 - Facilities Management**

**CM 3310 - Introduction to Development**

**CM 3410 - Construction Quantity Surveying**

**CM 3411 - Construction Estimating Software**

**CM 3420 - Construction Estimating and Bid Preparation**

**CM 3430 - Construction Estimating for Development**

**CM 3480 - Mechanical and Electrical Systems Estimating**

**CM 3500 - Building Codes**

**CM 3620 - Construction Finance and Feasibility**

**CM 3710 - Site Planning**

**CM 3800 - Construction Seminar**

**CM 3810 - Advanced Construction Practice**

**CM 3901 - Special Topics**

**CM 3902 - Special Topics**

**CM 3903 - Special Topics**

**CM 3904 - Special Topics**

**CM 3912 - Workplace Law**

**CM 4190 - Sustainable Operation & Maintenance**

**CM 4480 - Design/Build MEP Systems**

**CM 4510 - Construction Scheduling**

**CM 4511 - Construction Scheduling Software**

**CM 4560 - Construction Project Management**

**CM 4570 - Development Process I**

**CM 4620 - Development Process II**

**CM 4710 - Construction Safety**

**CM 4760 - Construction and Real Property Law**

**CM 4770 - Development Law**

**CM 4800 - Construction Process Simulation**

**CM 4900 - Capstone Project**

## **Design Foundation**

## **Design Foundation**

**DFN 1000 - Orientation to Architecture (Summer Design Workshop)**

**DFN 1001 - Design Foundation I**

**DFN 1002 - Design Foundation II**

**DFN 1111 - Architecture Culture I: Early Civilizations & Medieval**

**DFN 1241 - Design Communication I**

**DFN 2003 - Design Foundation III**

**DFN 2004 - Design Foundation IV**

**DFN 2112 - Architecture Culture II - The Renaissance through 1850**

**DFN 2211 - Architecture Structures I - Introduction to Structures**

**DFN 2242 - Design Communication II**

**DFN 2311 - Environmental Tech I -Systems Selection and Materials**

## **Economics**

## **Economics**

**ECON 1101 - Introduction to Economics**

**ECON 2105 - Principles of Macroeconomics**

**ECON 2106 - Principles of Microeconomics**

**ECON 2107 - Introduction to Economic Analysis**

## **Education**

## **Education**

**EDUC 1101 - UTeach Step 1**

**EDUC 1102 - UTeach Step 2**

**EDUC 1103 - UTeach Integrated Steps 1 and 2**

**EDUC 2010 - UTeach Knowing and Learning**

**EDUC 2020 - Classroom Interactions**

**EDUC 4030 - Project Based Instruction**

**EDUC 4401 - Apprentice Teaching Seminar**

**EDUC 4406 - Apprentice Teaching**

**MAED 2010 - Functions and Modeling**

**RSCH 3610 - Research Methods**

**STS 3347 - Perspectives on Science and Math**

**Electrical and Computer Engineering Technology**

**Electrical and Computer Engineering Technology**

**ECET 1001 - Orientation**

**ECET 1012 - Design Fundamentals**

**ECET 1101 - Circuits I**

**ECET 1200 - Digital I**

**ECET 2000 - Introduction to Biomedical Engineering Technology**

**ECET 2111 - Circuits II**

**ECET 2210 - Digital II**

**ECET 2300 - Electronics I**

**ECET 2310 - Electronics II**

**ECET 2800 - Introduction to Telecommunications**

**ECET 3000 - Electrical Principles**

**ECET 3010 - Health Care Safety**

**ECET 3020 - Biomedical Instrumentation**

**ECET 3030 - Biomechanics**

**ECET 3220 - Digital III**



**ECET 3400 - Data Communications**

**ECET 3410 - High Frequency Systems**

**ECET 3500 - Survey of Electric Machines**

**ECET 3600 - Test Engineering**

**ECET 3620 - Signals and Systems Analysis**

**ECET 3640 - Introduction to Systems Engineering and Robotics**

**ECET 3701 - Embedded PCs**

**ECET 3710 - Hardware Programming and Interfacing**

**ECET 3810 - Applications of C++, JAVA and HTML**

**ECET 3901 - Special Topics**

**ECET 3902 - Special Topics**

**ECET 3903 - Special Topics**

**ECET 3904 - Special Topics**

**ECET 4010 - Virtual Biomedical Instrumentation**

**ECET 4020 - Biomedical Imaging**

**ECET 4030 - Bioinformatics and Telemedicine**

**ECET 4040 - Biometrics**

**ECET 4050 - BMET Capstone (Internship)**

**ECET 4050 - BMET Capstone (Project)**

**ECET 4320 - Active Filters**

**ECET 4330 - Audio Technology**

**ECET 4420 - Communications Circuit Applications**

**ECET 4431 - Wireless Communications Systems**

**ECET 4432 - Fiber-optic Communications Systems**

**ECET 4450 - RF Electronics**

**ECET 4510 - Power System Analysis**

**ECET 4520 - Industrial Distribution Systems, Illumination, and the NEC**

**ECET 4530 - Industrial Motor Control**

**ECET 4540 - Introduction to Power Electronics**

**ECET 4550 - Alternate Energy**

**ECET 4560 - Electric Drives**

**ECET 4610 - Control Systems**

**ECET 4630 - Digital Signal Processing**

**ECET 4710 - Network Programming and Interfacing**

**ECET 4720 - Distributed Microcontrollers and PCs**

**ECET 4730 - VHDL and Field Programmable Gate Arrays**

**ECET 4820 - Communications Networks and the Internet**

**ECET 4830 - Telecommunications Management**

**ECET 4840 - Advanced Telecommunications**

**ECET 4850 - Telecommunications Project**

**ECET 4860 - Network Security**

**ECET 4901 - Special Topics**

**ECET 4902 - Special Topics**

**ECET 4903 - Special Topics**

**ECET 4904 - Special Topics**

**Electrical Engineering**

**Electrical Engineering**

**EE 1000 - Orientation and Foundations of Electrical Engineering**

**EE 2301 - Circuit Analysis I**

**EE 2302 - Circuit Analysis II**

**EE 2401 - Semiconductor Devices**

**EE 2501 - Digital Logic Design**

**EE 3401 - Engineering Electronics**

**EE 3501 - Microprocessors & Embedded Systems**

**EE 3601 - Electric Machines**

**EE 3605 - Electromagnetics**

**EE 3701 - Signals and Systems**

**EE 3702 - Communication Systems**

**EE 4201 - Control Systems**

**EE 4701 - Professional Practice**

**EE 4800 - Senior Project**

**Engineering**

**Engineering**

**ENGR 2214 - Engineering Mechanics – Statics**

**ENGR 2710 - Engineering Calculations**

**ENGR 3122 - Dynamics**

**ENGR 3125 - Machine Dynamics & Vibrations**

**ENGR 3131 - Strength of Materials**

**ENGR 3132 - Strength of Materials Lab**

**ENGR 3305 - Data Collection and Analysis in Engineering**

**ENGR 3324 - Project Cost Analysis**

**ENGR 3343 - Fluid Mechanics**

**ENGR 3345 - Fluid Mechanics Laboratory**

**ENGR 4402 - Engineering Ethics**

**ENGR 4421 - Instruments and Controls**

**Engineering Design Graphics**

**Engineering Design Graphics**

**EDG 1210 - Survey of Engineering Graphics**

**EDG 1211 - Engineering Graphics I**

**EDG 1212 - Engineering Graphics II**

**EDG 2160 - Civil Graphics and Computer Aided Drafting**

**EDG 3112 - Advanced Engineering Graphics**

**EDG 4111 - Surface Modeling**

**EDG 4222 - CAD Customization and Standards**

**EDG 4224 - Engineering Graphics for Manufacturing**

**Engineering Technology**

**Engineering Technology**

**ENGT 3124 - Strength of Materials with Applications**

**English**

**English**

**ENGL 1000 - Writing Skills for International Students**

**ENGL 1101 - English Composition I**

**ENGL 1102 - English Composition II**

**ENGL 2030 - Research in Professional and Critical Writing**

**ENGL 2111 - Early World Literature**

**ENGL 2112 - World Literature Mid-1600s to Present**

**ENGL 2120 - British Literature Early to Present**



**ENGL 2121 - Early British Literature**

**ENGL 2122 - British Literature Late 1700s to Present**

**ENGL 2130 - American Literature Early to Present**

**ENGL 2131 - Early American Literature**

**ENGL 2132 - American Literature Mid 1800s to Present**

**ENGL 2141 - Early Western Literature**

**ENGL 2142 - Western Literature 1600s to Present**

**ENGL 2300 - African-American Literature and Culture**

**ENGL 3001 - Written Communication for International Students**

**ENGL 3010 - Science Writing**

**ENGL 3015 - Environmental Writing**

**ENGL 3020 - Proposal Writing**

**ENGL 3025 - Creative Writing Workshop**

**ENGL 3030 - English Grammar for Professional Writing**

**ENGL 3035 - Problems in Language**

**ENGL 3040 - Article and Essay Workshop**

**ENGL 3045 - New Media Writing**

**ENGL 3050 - Journalism**

**ENGL 3100 - Rhetoric: History, Theory, and Practice**

**ENGL 3180 - Film as Literature**

**ENGL 4010 - Publishing for New Media**

**ENGL 4170 - Media and Narrative**

**ENGL 4800 - Project Portfolio**

**ENGL 4901 - Special Topics**

**ENGL 4902 - Special Topics**

**ENGL 4903 - Special Topics**

**Environmental Science**

**Environmental Science**

**ENVS 2200K - Geology**

**ENVS 2202 - Environmental Science (ECORE)**

**ENVS 2202K - Introduction to Environmental Science**

**ENVS 3000 - Environmental Science Seminar**

**ENVS 3100K - Soil & Water Science**

**ENVS 3150K - Environmental Toxicology**

**ENVS 3250 - Natural Resource Management**

**ENVS 3350 - Oceanography**

**ENVS 3450 - Conservation Biology**

**ENVS 4000K - Wetlands and Mitigation**

**ENVS 4120 - Senior Project**

**ENVS 4500 - Environmental Science Internship**

**Ethnic Studies**

**Ethnic Studies**

**ES 1100 - Ethnic Studies**

**ES 2100 - Ethnic Literature and Cultures**

**French**

**French**

**FREN 1001 - Elementary French I**

**FREN 1002 - Elementary French II**

**FREN 2001 - Intermediate French I**

**FREN 2002 - Intermediate French II**

**Geography**

**Geography**

**GEOG 1101 - Introduction to Human Geography**

**GEOG 3101 - World Regional Geography**

**GEOG 4101 - Geographic Information Systems**

**German**

**German**

**GRMN 1001 - Elementary German I**

**GRMN 1002 - Elementary German II**

**GRMN 2001 - Intermediate German I**

**GRMN 2002 - Intermediate German II**

## **History**

## **History**

**HIST 390x - Special Topics**

**HIST 490x - Special Topics in the History of Science and Technology**

**HIST 1111 - Survey of World Civilization pre 1500**

**HIST 1112 - Survey of World Civilization post 1500**

**HIST 2111 - United States History to 1877**

**HIST 2112 - United States History since 1877**

**HIST 2911 - U.S. and Georgia Constitution and History**

**HIST 3200 - History of Science Survey**

**HIST 3250 - History of American Technology**

**HIST 3260 - History of American Science and Medicine**

**HIST 3301 - Diplomatic and Military History since 1815**

**HIST 3401 - Modern Social and Cultural History Twentieth Century**

**HIST 3501 - Colonization and Rebellion in the Trans-Atlantic World**

**HIST 3601 - History of the Pacific Rim**

**HIST 3801 - Contemporary World History since 1945**

**HIST 3901 - Special Topics**

**HIST 3902 - Special Topics**

**HIST 3903 - Special Topics**

**HIST 4901 - Special Topics in the History of Science and Technology**

**HIST 4902 - Special Topics in the History of Science and Technology**

**HIST 4903 - Special Topics in History Science and Technology**

**Honors**

## **Honors**

**HNRS 2001 - Introduction to Honors Research**

**HNRS 3002 - Honors Research**

**HNRS 3102 - Honors Peer Mentoring**

**HNRS 3203 - Honors Teaching Assistance**

**HNRS 3301 - Honors Interdisciplinary Seminar**

**HNRS 4400 - Honors Thesis**

## **Industrial Engineering Technology**

## **Industrial Engineering Technology**

**IET 1000 - Orientation**

**IET 2227 - Introduction to Statistics**

**IET 2305 - The Role of Industrial Engineering Technology in Industrial Systems**



**IET 2449 - Logistics and Supply Chain Management**

**IET 3320 - Advanced Logistics**

**IET 3322 - Work Measurement and Ergonomics**

**IET 3339 - Statistical Quality Control**

**IET 3356 - Quality Concepts and Systems Design**

**IET 3403 - Advanced Statistics with Application**

**IET 3407 - Six Sigma and Lean Manufacturing**

**IET 3410 - Principles of Team Dynamics**

**IET 3424 - Engineering Economy**

**IET 3433 - Product and Process Costing**

**IET 3501 - Service Systems Engineering**

**IET 3511 - Sustainability Engineering**

**IET 3620 - Warehousing Systems**

**IET 4111 - Design of Experiments**

**IET 4121 - Advanced Topics in Quality Assurance**

**IET 4326 - Wage and Salary**

**IET 4354 - Principles of Transportation**

**IET 4375 - Engineering Sales Law**

**IET 4405 - Operations Research - Concepts, Models and Methods**

**IET 4422 - Facilities Design, Plant Layout, and Materials Handling**

**IET 4427 - Methods-Time-Measurement**

**IET 4435 - Fundamentals of Engineering Sales**

**IET 4447 - Industrial Sales Development & Control**

**IET 4451 - Systems Simulation**

**IET 4460 - Warehouse Operations**

**IET 4475 - Senior Project**

**IET 4478 - Senior Internship**

**IET 4500 - Technical Sciences Survey**

**IET 4555 - Auditing and Assurance**

**IET 4810 - Ethics and Safety**

**IET 4901 - Special Topics**

**IET 4902 - Special Topics**

**IET 4903 - Special Topics**

**IET 4904 - Special Topics**

**IET 4905 - Special Topics**

**Information Technology**

# **Information Technology**

**IT 1113 - Programming Principles**

**IT 1324 - Advanced Programming Principles**

**IT 3123 - Hardware/Software Concepts**

**IT 3203 - Introduction to Web Development**

**IT 3223 - Software Acquisition and Project Management**

**IT 3423 - Operating Systems Concepts & Administration**

**IT 3503 - Foundations of Health Information Technology**

**IT 3653 - Client Server System Administration**

**IT 3883 - Advanced Applications Development**

**IT 4123 - Electronic Commerce**

**IT 4153 - Advanced Database**

**IT 4203 - Advanced Web Development**

**IT 4213 - Mobile Web Development**

**IT 4323 - Data Communications & Networks**

**IT 4333 - Network Configuration & Administration**

**IT 4423 - Unix/Linux**

**IT 4513 - Electronic Health Record Systems**

**IT 4523 - Clinical Processes and Workflows: Analysis and Redesign**

**IT 4533 - Health Information Security and Privacy**

**IT 4673 - Virtual IT Systems**

**IT 4683 - Management of Information Technology and Human Computer Interaction**

**IT 4713 - Business Intelligence Systems**

**IT 4723 - IT Policy and Law**

**IT 4823 - Information Security Administration & Privacy**

**IT 4833 - Wireless Security**

**IT 4843 - Ethical Hacking for Effective Defense**

**IT 4853 - Computer Forensics**

**IT 4903 - Special Topics in Information Technology**

**IT 4983 - IT Capstone**

**WBIT 1100 - Introduction to Information Technology**

**WBIT 1310 - Programming and Problem Solving**

**WBIT 2000 - The Enterprise and IT**

**WBIT 2300 - Discrete Mathematics for IT**

**WBIT 2311 - Programming and Problem Solving II**

**WBIT 3010 - Technical Communication**

**WBIT 3110 - Systems Analysis and Design**

**WBIT 3111 - Information Technology Project Management**

**WBIT 3200 - Database Design, Development and Deployment**

**WBIT 3400 - Introduction to Multimedia**

**WBIT 3410 - Web Applications Development**

**WBIT 3500 - Architecture and Operating Systems**

**WBIT 3510 - Data Communications and Networking**

**WBIT 3600 - Introduction to E-Commerce**

**WBIT 4020 - Professional Practices and Ethics**

**WBIT 4030 - Senior Project**

**WBIT 4112 - Systems Acquisition, Integration and Implementation**

**WBIT 4120 - Human-Computer Interaction**

**WBIT 4520 - Information Security**

**WBIT 4601 - Customer Relationship Management**

**WBIT 4602 - IT Strategy Seminar**

**WBIT 4610 - IT Policy and Law**

**International Studies**

**International Studies**

**IS 1000 - International Studies Orientation**

**IS 3600 - Comparative Culture**

**IS 3901 - Special Topics in International Studies**

**IS 3902 - Special Topics in International Studies**

**IS 4000 - Regional Studies - General**



**IS 4001 - Regional Studies/Latin America**

**IS 4002 - Regional Studies/Asia:China**

**IS 4003 - Regional Studies/Asia:Japan**

**IS 4004 - Regional Studies/Middle East**

**IS 4005 - Regional Studies/Russia/Eastern Europe**

**IS 4006 - Regional Studies/Western Europe**

**IS 4007 - Regional Studies/Africa**

**IS 4600 - International Studies Internship**

**IS 4800 - International Studies Capstone**

**Materials Science**

**Materials Science**

**MSCI 3101K - Introduction to Material Science**

**Mathematics**

## **Mathematics**

**MATH 1101 - Introduction to Mathematical Modeling**

**MATH 1111 - College Algebra**

**MATH 1113 - Pre-calculus**

**MATH 1401 - Intro to Statistics**

**MATH 1501 - Calculus I**

**MATH 2240 - Survey of Calculus**

**MATH 2253 - Calculus I**

**MATH 2254 - Calculus II**

**MATH 2255 - Calculus III**

**MATH 2260 - Introduction to Probability and Statistics**

**MATH 2306 - Ordinary Differential Equations**

**MATH 2335 - Numerical Methods I**

**MATH 2345 - Discrete Mathematics**

**MATH 2901 - Special Topics**

**MATH 2902 - Special Topics**

**MATH 2903 - Special Topics**

**MATH 2904 - Special Topics**

**MATH 2905 - Special Topics**

**MATH 3261 - Statistical Methods**

**MATH 3268 - Probability Theory**

**MATH 3310 - Introduction to Advanced Mathematics**

**MATH 3312 - Linear Algebra**

**MATH 3320 - Introductory Real Analysis I**

**MATH 3321 - Introductory Real Analysis II**

**MATH 3336 - Numerical Methods II**

**MATH 3396 - Combinatorics**

**MATH 3496 - Number Theory**

**MATH 3596 - Topology**

**MATH 3696 - Geometry**

**MATH 3796 - Symbolic Computation**

**MATH 3901 - Special Topics**

**MATH 3902 - Special Topics**

**MATH 3903 - Special Topics**

**MATH 3904 - Special Topics**

**MATH 3905 - Special Topics**

**MATH 4406 - Differential Equations II**

**MATH 4407 - Vector Analysis**

**MATH 4417 - Functions of a Complex Variable**

**MATH 4440 - Abstract Algebra**

**MATH 4451 - Capstone Mathematics Project**

**MATH 4901 - Special Topics**

**MATH 4902 - Special Topics**

**MATH 4903 - Special Topics**

**MATH 4904 - Special Topics**

**MATH 4905 - Special Topics**

**Mechanical Engineering Technology**

**Mechanical Engineering Technology**

**MET 1000 - Mechanical Engineering Technology Orientation**

**MET 1311 - Manufacturing Processes**

**MET 1321 - Machining and Welding**

**MET 1901 - Special Topics**

**MET 1902 - Special Topics**

**MET 1903 - Special Topics**

**MET 1904 - Special Topics**

**MET 1905 - Special Topics**

**MET 2322 - Metrology and CNC Machining**

**MET 2901 - Special Topics**

**MET 2902 - Special Topics**

**MET 2903 - Special Topics**

**MET 2904 - Special Topics**

**MET 2905 - Special Topics**

**MET 3101 - Fluid Mechanics Principles & Applications**

**MET 3123 - Dynamics of Machines**

**MET 3132 - Engineering Materials**

**MET 3331 - Tool Design**

**MET 3332 - Rapid Design and Manufacture**

**MET 3400 - Thermodynamics and Heat Transfer**

**MET 3401 - Thermodynamics I**

**MET 3402 - Thermodynamics II**

**MET 3410 - Thermodynamics**

**MET 3901 - Special Topics**

**MET 3902 - Special Topics**

**MET 3903 - Special Topics**

**MET 3904 - Special Topics**

**MET 3905 - Special Topics**

**MET 4112 - Computer Aided Engineering & Analysis**

**MET 4124 - Vibrations and Advanced Dynamics**

**MET 4133 - Advanced Engineering Materials**

**MET 4141 - Machine Design I**

**MET 4142 - Mechanical Systems Design**

**MET 4341 - Automation Systems and Controls**

**MET 4342 - Numerical Control of Machines**

**MET 4351 - Manufacturing System Design Project**



**MET 4401 - Heat Transfer**

**MET 4411 - Refrigeration**

**MET 4412 - Air Conditioning**

**MET 4421 - Instruments and Controls**

**MET 4431 - Plant and Power Applications**

**MET 4501 - Engineering Computation using Matlab**

**MET 4801 - Special Projects**

**MET 4802 - Special Projects**

**MET 4803 - Special Projects**

**MET 4804 - Special Projects**

**MET 4805 - Special Projects**

**MET 4901 - Special Topics**

**MET 4902 - Special Topics**

**MET 4903 - Special Topics**

**MET 4904 - Special Topics**

**MET 4905 - Special Topics**

**Mechanical Engineering**

**Mechanical Engineering**

**ME 1001 - Introduction to Mechanical Engineering**

**ME 3101 - Materials Science and Engineering**

**ME 3201 - Product Realization**

**ME 3410 - Thermodynamics**

**ME 3440 - Heat Transfer**

**ME 3501 - Dynamic Systems & Control Theory**

**ME 3901 - ME Special Topics Course**

**ME 3902 - ME Special Topics Course**

**ME 3903 - ME Special Topics Course**

**ME 4141 - Machine Design I**

**ME 4201 - Senior Design I**

**ME 4202 - Senior Design II**

**ME 4250 - Computer Aided Engineering**

**ME 4403 - Heat Transfer and Thermodynamics Lab**

**ME 4501 - Vibrations & Controls Lab**

**ME 4801 - URME (Undergraduate Research in Mechanical Engineering)**

**ME 4802 - URME (Undergraduate Research in Mechanical Engineering)**

**ME 4803 - URME (Undergraduate Research in Mechanical Engineering)**

**ME 4804 - URME (Undergraduate Research in Mechanical Engineering)**

**ME 4901 - ME Special Topics Course**

**ME 4902 - ME Special Topics Course**

**ME 4903 - ME Special Topics Course**

**ME 4904 - ME Special Topics Course**

**Mechatronics Engineering**

**Mechatronics Engineering**

**MTRE 1000 - Introduction to Mechatronics Engineering**

**MTRE 3710 - Mechatronics Engineering Fundamentals**

**MTRE 4000 - Advanced Controls**

**MTRE 4200 - Robotics Analysis and Synthesis**

**MTRE 4400 - Mechatronics System Design**

**Modern Foreign Languages**

## **Modern Foreign Languages**

**MFLA 190x - Special Topics**

**MFLA 290x - Special Topics**

## **Physics**

## **Physics**

**PHYS 1111 - Introductory Physics I**

**PHYS 1111L - Introductory Physics Laboratory I**

**PHYS 1112 - Introductory Physics II**

**PHYS 1112L - Introductory Physics Laboratory II**

**PHYS 1211 - Principles of Physics I**

**PHYS 1211K - Principles of Physics I (ECORE)**

**PHYS 2211 - Principles of Physics I**

**PHYS 2211L - Principles of Physics Laboratory I**

**PHYS 2212 - Principles of Physics II**

**PHYS 2212L - Principles of Physics Laboratory II**

**PHYS 2213 - Introduction to Thermal and Modern Physics**

**PHYS 3210 - Mechanics I**

**PHYS 3220 - Electromagnetism I**

**PHYS 3230 - Optics**

**PHYS 3410 - Electronics Laboratory**

**PHYS 3500K - Introduction to Computational Physics**

**PHYS 3710 - Modern Physics**

**PHYS 3720L - Modern Physics Laboratory**

**PHYS 3730 - Relativity**

**PHYS 3901 - Special Topics**

**PHYS 3902 - Special Topics**

**PHYS 3903 - Special Topics**

**PHYS 3904 - Special Topics**

**PHYS 3905 - Special Topics**

**PHYS 4200 - Mechanics II**

**PHYS 4210 - Quantum Physics**

**PHYS 4230 - Thermal Physics**

**PHYS 4240 - Solid State Physics**

**PHYS 4250 - Quantum Theory of Two-State Systems**

**PHYS 4410K - Advanced Measurements Laboratory**

**PHYS 4430 - Capstone Physics Project**

**PHYS 4901 - Special Topics**

**PHYS 4902 - Special Topics**

**PHYS 4903 - Special Topics**

**PHYS 4904 - Special Topics**

**PHYS 4905 - Special Topics**

**Political Science**

**Political Science**

**POLS 1101 - American Government**

**POLS 2100 - Introduction to Research Methods**

**POLS 2401 - Global Issues**

**POLS 2903 - Special Topics in Political Science**

**POLS 3001 - Comparative Politics**



**POLS 3009 - Foundations of Public Policy**

**POLS 3100 - Research Design**

**POLS 3209 - U.S. Constitutional Law**

**POLS 3301 - Modern Political Theory**

**POLS 3401 - Environmental Law and Policy**

**POLS 3501 - Intellectual Property Issues**

**POLS 3601 - Contemporary World Politics**

**POLS 3701 - American Institutions**

**POLS 3801 - Political Behavior**

**POLS 4009 - Comparative Public Policy Analysis**

**POLS 4063 - Political Issues in Electronic Government**

**POLS 4100 - Applied Methodology**

**POLS 4101 - Political Economy of Post-Communist Transformation**

**POLS 4201 - International Relations in the Americas**

**POLS 4301 - International Political Economy**

**POLS 4801 - Capstone: Political Science Practicum**

**POLS 4903 - Special Topics in Political Science**

**Psychology**

**Psychology**

**PSYC 390x - Special Topics**

**PSYC 1000 - Orientation to Psychology**

**PSYC 1101 - Introduction to General Psychology**

**PSYC 2011 - Cognitive Psychology**

**PSYC 2100 - Basic Quantitative Research Methods for Psychology**

**PSYC 2270 - Engineering Psychology**

**PSYC 2271 - Clinical and Counseling Psychology**

**PSYC 2273 - Forensic Psychology**

**PSYC 2401 - Psychology of Diversity**

**PSYC 2903 - Special Topics in Psychology**

**PSYC 3000 - Junior Seminar**

**PSYC 3010 - Educational Psychology**

**PSYC 3015 - Theories of Personality**

**PSYC 3020 - Physiological Psychology**

**PSYC 3031 - Experimental Psychology**

**PSYC 3040 - Motivation and Emotion**

**PSYC 3101 - International Social Psychology**

**PSYC 3230 - Abnormal Psychology**

**PSYC 3265 - Human Sexuality**

**PSYC 3301 - Psychological Testing**

**PSYC 3305 - Developmental Psychology**

**PSYC 4000 - International Psychology**

**PSYC 4050 - History and Systems of Psychology**

**PSYC 4130 - Psychology of Aging**

**PSYC 4220 - Psychoactive Drugs, Behavior, and Society**

**PSYC 4600 - Conflict Resolution**

**PSYC 4800 - Psychology Capstone Seminar**

**PSYC 4903 - Special Topics in Psychology**

**Religion**

## **Religion**

**RELG 1200 - World Religion**

## **Science, Technology, Society**

## **Science, Technology, Society**

**STS 390x - Special Topics**

**STS 490x - Special Topics**

**STS 2400 - Science, Technology, and Society**

**STS 4000 - International Issues in Science and Technology**

**STS 4300 - Environmental Ethics**

**STS 4400 - Topical Studies in Science and Technology**

## **Sociology**

## **Sociology**

**SOCI 1101 - Introduction to Sociology**

**Software Engineering**

**Software Engineering**

**SWE 1301 - Software Development I**

**SWE 1302 - Software Development II**

**SWE 2313 - Introduction to Software Engineering**

**SWE 2642 - Professional Practices and Ethics**

**SWE 3613 - Software System Engineering**

**SWE 3623 - Software Systems Requirements**

**SWE 3624 - Software Engineering**

**SWE 3633 - Software Architecture & Design**

**SWE 3643 - Software Testing and Quality Assurance**

**SWE 3683 - Embedded Systems Analysis & Design**

**SWE 3843 - Embedded Systems Construction and Testing**

**SWE 4324 - User-Centered Design**

**SWE 4633 - Component-Based Software Development**

**SWE 4663 - Software Project Management**

**SWE 4713 - SWE Application Domain**

**SWE 4724 - Software Engineering Project**

**SWE 4743 - Object-Oriented Development**

**SWE 4783 - User Interaction Engineering**

**SWE 4901 - Special Topics**

**SWE 4902 - Special Topics**

**SWE 4903 - Special Topics**

**SWE 4904 - Special Topics**

**Spanish**

**Spanish**

**SPAN 1001 - Elementary Spanish I**

**SPAN 1002 - Elementary Spanish II**

**SPAN 2001 - Intermediate Spanish I**

**SPAN 2002 - Intermediate Spanish II**

**SPAN 3001 - Advanced Conversation**

**SPAN 3002 - Grammar and Composition**

**SPAN 3003 - Hispanic Cultures and Civilizations**

**SPAN 3901 - Special Topics**

**SPAN 3902 - Special Topics**



**SPAN 3903 - Special Topics**

**SPAN 3904 - Special Topics**

**SPAN 3905 - Special Topics**

**SPAN 4001 - Professional Spanish**

**SPAN 4002 - Techniques in Translation for Professional Spanish**

**SPAN 4003 - Service Learning Project**

**SPAN 4901 - Special Topics for Professional Spanish**

**SPAN 4902 - Special Topics for Professional Spanish**

**SPAN 4903 - Special Topics for Professional Spanish**

**SPAN 4904 - Special Topics for Professional Spanish**

**SPAN 4905 - Special Topics for Professional Spanish**

**Surveying and Mapping**

## **Surveying and Mapping**

**SURV 2110 - Introduction to Mapping**

**SURV 2200 - Construction Measurements**

**SURV 2221 - Surveying I**

**SURV 3222 - Surveying II**

**SURV 3320 - Photogrammetry and Remote Sensing**

**SURV 3330 - Construction Surveying**

**SURV 3421 - Geographic Information Systems I**

**SURV 3441 - Vector & Raster Analysis**

**SURV 3451 - Terrain Analysis**

**SURV 3901 - Special Topics**

**SURV 3902 - Special Topics**

**SURV 3903 - Special Topics**

**SURV 3904 - Special Topics**

**SURV 4110 - Geographical Information Systems (GIS) Practice**

**SURV 4410 - Surveying Computations and Adjustments**

**SURV 4415 - Geodetic Surveying Methods**

**SURV 4420 - Remote Sensing**

**SURV 4422 - Geographic Information Systems II**

**SURV 4423 - Advanced Field Operations**

**SURV 4465 - Legal Aspects of Land Surveying**

**SURV 4470 - Land Development Design**

**SURV 4475 - Land Surveying Practice**

**SURV 4901 - Special Topics**

**SURV 4902 - Special Topics**

**SURV 4903 - Special Topics**

**SURV 4904 - Special Topics**

**Systems Engineering**

**Systems Engineering**

**SYE 2100 - Systems Analysis and Design**

**SYE 2600 - Applications of Probability**

**SYE 3100 - Systems Reliability and Maintainability**

**SYE 3120 - Contemporary Technological Systems: Design, Analysis, and Architecture**

**SYE 3200 - Human Machine Systems**

**SYE 3300 - Program Management**

**SYE 3320 - Engineering Economics and Decision Analysis**

**SYE 3400 - Engineering Optimization I: Deterministic Decision Models**

**SYE 3501 - Fundamentals of Nuclear Engineering**

**SYE 3502 - Radiation Detection and Measurement**

**SYE 3600 - Statistics with Applications**

**SYE 3650 - Process Engineering and Improvement**

**SYE 3700 - Manufacturing and Production Systems**

**SYE 3710 - Logistics and Supply Chain Systems**

**SYE 3801 - Aerodynamics (Aeronautic Elective)**

**SYE 3802 - Aircraft Design and Performance (Aeronautic Elective)**

**SYE 3803 - Fundamentals of Avionics**

**SYE 3850 - Experimental Design**

**SYE 4400 - Engineering Optimization II: Stochastic Decision Models**

**SYE 4500 - System Modeling and Simulation**

**SYE 4501 - Nuclear Power Generation**

**SYE 4502 - Radiation Protection and Health Physics**

**SYE 4503 - Nuclear Fuel Cycle**

**SYE 4801 - Aircraft Propulsion**

**SYE 4802 - Helicopter Theory**

**SYE 4803 - Aeronautics Project**

**SYE 4804 - Special Topics**

**SYE 4900 - System Design Project**

**SYE 5000 - Quantitative Foundations for Systems Engineering**

**Technical Communication**

**Technical Communication**

**TCOM 2010 - Technical Writing**

**TCOM 2020 - Intro to Professional & Technical Communication**

**TCOM 2030 - Research in Technical Communication**

**TCOM 3010 - Science Writing**

**TCOM 3015 - Environmental Writing**

**TCOM 3020 - Proposal Writing**

**TCOM 3030 - Instructional Design**

**TCOM 3045 - Fundamentals of Information Design**

**TCOM 3145 - Social Media Integration**

**TCOM 3400 - Foundations of Design for the Web**

**TCOM 3430 - Foundations of Graphics**

**TCOM 3901 - Special Topics**

**TCOM 3902 - Special Topics**

**TCOM 3903 - Special Topics**

**TCOM 4000 - Professional Editing**

**TCOM 4035 - Fundamentals of Website Design**

**TCOM 4040 - Applied Graphics for Technical Communicators**

**TCOM 4045 - Foundations of Multimedia**

**TCOM 4070 - User Documentation**

**TCOM 4120 - Usability Testing**

**TCOM 4130 - Online Documentation**

**TCOM 4170 - Film and Video Production**

**TCOM 4175 - Animation Design, 2D**

**TCOM 4400 - Advanced Design for the Web**



**TCOM 4600 - Directed Study**

**TCOM 4600 - Independent Study**

**TCOM 4700 - Internship**

**TCOM 4800 - Project Portfolio**

**Other Courses**

**Other Courses**

**CM 4639 - Construction Safety & Law**

**CSE 3203 - Overview of Mobile Systems**

**ENGT 2124 - Statics with Applications**

**ENGT 3124L - Strength of Materials Lab**

**ETEC 1101 - Electronic Technology in the Educational Environment**

**GEOL 1101K - Introductory Geosciences**

**PHIL 2010 - Introduction to Philosophy**

**SPSU 1001 - Hitch-hiker's Introduction to SPSU**

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**Schroeder, Ronald N.**, Associate Professor Emeritus

## **Department of Information Technology Faculty**

**Brown, Robert L.**

*Lecturer*

M.S., Southern Polytechnic State University  
B.S., State University of New York Regents College

**Halstead-Nussloch, Richard**

*Professor*

Ph.D., University of Michigan  
B.A., Macalester College

**Peltsverger, Svetlana**

*Assistant Professor*

Ph.D., Russian Academy of Science, Moscow  
M.S., Chelyabinsk Polytechnic Institute, Russia  
B.S., Chelyabinsk Polytechnic Institute, Russia

**Reichgelt, Han**

*Professor and Dean, School of Computing and Software Engineering*



Ph.D., University of Edinburgh, United Kingdom  
M.S., University of Nijmegen, Netherlands  
B.A., University of Nijmegen, Netherlands

**Rutherford, Rebecca**

*Professor*

Ed.D., Indiana State University  
M.S., Southern Polytechnic State University  
M.S., Indiana State University  
B.S., Indiana State University  
CDP

**Vande-Ven, Susan**

*Lecturer*

M.S., Georgia Institute of Technology  
M.B.A., University of Akron  
B.S., Purdue University

**Yang, Ming**

*Assistant Professor*

Ph.D., Wright State University  
M.S., Tianjin University  
B.S., Tianjin University

**Zhang, Chi**

*Assistant Professor*

Ph.D., University of Nebraska, Omaha  
M.S., University of Nebraska, Omaha  
M.S. Ed., University of Nebraska, Kearney  
B.S., Beijing Normal University

**Zheng, Guangzhi (Jack)**

*Assistant Professor*

Ph.D., Georgia State University  
M.S., San Francisco State University  
B.S., Southwestern University

# **Faculty of the School of Engineering Technology & Management**

**Ray, Jeffrey**

*Professor and Dean, School of Engineering Technology and Management*

D.BA., Vanderbilt University  
M.S., Tennessee Technological University  
B.S., Tennessee Technological University

## Department of Business Administration Faculty

### **Ariail, Don**

*Associate Professor*

Ph.D., Nova Southern University  
M.P.A., Georgia State University  
B.A., Georgia State University

### **Hiatt, Mark**

*Assistant Professor*

Ph.D., Northcentral University  
M.M., Northwestern University  
B.S., U.S. Military Academy - West Point

### **Kelani, Zeynep**

*Lecturer*

M.S., Southern Polytechnic State University  
M.S., Marmara University  
B.S., Mimar Sinan University

### **Khayati, Amine**

*Assistant Professor*

Ph.D., Southern Illinois University  
M.S., University of Memphis  
B.A., University of Tunis

### **Melnik, Mikhail**

*Associate Professor*

Ph.D., Georgia State University  
M.A., Boston University  
B.A., Georgia State University

### **North, Max M.**

*Professor*

Ph.D., Clark Atlanta University  
M.S., Jackson State University  
B.S., Karaj College, Iran

### **Obeidat, Muhammad A.**

*Professor*

Ph.D., Illinois Institute of Technology  
M.S., Western Michigan University  
B.S., Yarmouk University, Jordan

**Quinet, Greg**

*Assistant Professor*

M.S., Southern Polytechnic State University  
B.S., Embry-Riddle Aeronautical University

**Richardson, Ronny**

*Professor and Department Chair*

Ph.D., Georgia State University  
M.S., Georgia State University  
M.B.A., Georgia State University  
B.S., University of Southern Mississippi

**Shumate, Shannon**

*Lecturer*

M.A., Auburn University  
B.S., Auburn University

**Sinha, Mona**

*Assistant Professor*

Ph.D., Texas A & M  
M.MSM., University of Bombay  
B.S., Thackersey Women's University

**Smith, Sondra**

*Temporary Full-time Instructor*

M.PAcc., University of West Georgia  
B.B.A., University of West Georgia

**Stephenson, Sandria**

*Assistant Professor*

Ph.D., University of Georgia  
M.B.A., Florida A & M University  
B.A., University of the Virgin Islands

**Toson, Sonia**

*Assistant Professor*

J.D., American University  
M.B.A., American University  
B.A., University of Illinois

**Tsay, Bor-Yi**

*Professor*

Ph.D., University of Houston  
M.B.A., Eastern Washington University  
B.S., National Taiwan University

**Vasa-Sideris, Sandra**

*Professor*

Ph.D., Georgia State University  
M.B.A., Georgia State University  
M.A., University of Tennessee  
B.A., University of Tennessee

## **Department of Business Administration Faculty Emeriti**

**Yancy, Robert**, Professor Emeritus

## **Department of Electrical and Computer Engineering Technology Faculty**

**Asgill, Austin B.**

*Professor and Department Chair*

Ph.D., University of South Florida  
M.Sc., University of Aston in Birmingham  
M.B.A., Florida State University  
B.Eng.(Hons), Fourah-Bay College, University of Sierra Leone  
P.E., Florida.

**Bachman, Charles L.**

*Professor Emeritus*

M.Engr., Pennsylvania State University  
M.S.E.E., University of Pittsburgh  
B.S.E.E., Pennsylvania State University  
P.E., Pennsylvania

**Chin, Craig A.**

*Assistant Professor*

Ph.D., Florida International University  
M.S.E.E., Florida International University  
B.S.E.E., University of the West Indies

**Davis, Kim**

*Associate Professor*

M.S.E.T., Rochester Institute of Technology  
B.E.E.T., Southern Polytechnic State University  
P.E., California

**Fallon, Thomas**

*Associate Professor*

Ph.D., Georgia State University  
M.S.E.E., Georgia Institute of Technology  
B.S.E.E., Georgia Institute of Technology

**Frinzi, Pamela S.**

*Professor*

M.S., Southern Polytechnic State University  
B.S., Southern Polytechnic State University

**Ho, Hai T.**

*Associate Professor*

Ph.D., University of Colorado at Boulder  
M.S.E.E., University of Colorado at Denver  
B.S.E.E., University of Colorado at Boulder

**Jenkins, L. Brent**

*Associate Professor*

M.S.E.E., Georgia Institute of Technology  
B.S.E.E., University of Missouri - Rolla  
P.E., Georgia

**Larisch, Scott**

*Assistant Professor*

M.S.E.E., University of Southern California  
B.S.E.E., University of Colorado at Boulder

**Misoc, Florian**

*Associate Professor*

Ph.D., Kansas State University  
M.S.E.T., Pittsburg State University  
B.S., University of Bucharest, Romania

**Preethy, Adimathara P.**

*Assistant Professor*

Ph.D., Nanyang Technological University, Singapore  
M.Tech., Cochin University of Science and Technology, India  
B.S.E.E., Cochin University of Science and Technology, India

**Thain, Walter E., Jr.**

*Associate Professor*

Ph.D., Georgia Institute of Technology  
M.S.E.E., Georgia Institute of Technology  
B.S.E.E., Georgia Institute of Technology

**Tippens, Scott J.**

*Professor*

M.S.E.E., Georgia Institute of Technology  
B.S.E.E., Georgia Institute of Technology

**Wagner, Jeff H.**

*Assistant Professor*

M.S.E.E., Georgia Institute of Technology  
B.S.E.E., Georgia Institute of Technology

**Wilcox, Daren R.**

*Assistant Professor*

M.S.E.E., University of Central Florida  
B.S.E.E., University of Central Florida

**Zia, Omar**

*Professor Emeritus*

Ph.D., Warsaw Technical University  
M.S.E.E., Warsaw Technical University  
B.S.E.E., Warsaw Technical University  
P.E., California, Oregon, Georgia

## **Department of Electrical and Computer Engineering Technology Faculty Emeriti**

**Bachman, Charles L.**, Professor Emeritus

**Burton, Walter E.**, Professor Emeritus

**Castellucis, Richard L.** Professor Emeritus

**Carter, Robert C.**, Professor Emeritus

**Cowan, Clifford W.**, Professor Emeritus

**Dreyer, Robert N.**, Professor Emeritus  
**Keown, John L.**, Professor Emeritus  
**Summers, David E.**, Professor Emeritus  
**Wojnowiak, Paul**, Professor Emeritus  
**Wilson, Julian A.**, Professor Emeritus

## Department of Industrial Engineering Technology Faculty

**Atkins, Robert W.**

*Professor*

M.B.A., Georgia State University  
B.S., Virginia Poly Tech and State University  
P.E., Georgia

**Ball, Thomas**

*Assistant Professor and Chair*

M.B.A., Georgia State University  
B.A., Oglethorpe University

**Caudill, David F.**

*Professor and Associate VPAA*

M.S.I.E., Lehigh University  
B.S., North Carolina State University

**Dollar, E. Lester, III**

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M.S., Georgia Institute of Technology  
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**Hunt, Ruston**

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Ph.D., University of Illinois  
M.S.I.E., University of Illinois  
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**Jackson, Kenneth J.**

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Ph.D., Georgia Institute of Technology  
M.S.I.E., Georgia Institute of Technology

M.S.M.E., Georgia Institute of Technology  
B.S.M.E., Auburn University

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M.B.A., Georgia State University  
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B.S., Georgia Institute of Technology  
A.T.E.T., Southern Polytechnic State University

## **Department of Industrial Engineering Technology Faculty Emeriti**

**Bannerman, James W.**, Professor Emeritus

**Brooks, Glen E.**, Professor Emeritus

**Carden, Patricia**, Professor Emerita

**Carmichael, Thomas H.**, Professor Emeritus

**Franklin, Patricia S.**, Professor Emerita

**Hamrick, Janes**, Professor Emeritus

**McClure, Hoyt L.**, Professor Emeritus

**McGuire, Richard W.**, Professor Emeritus

**McKee, James**, Associate Professor Emeritus

**McPherson, Jack**, Professor Emeritus

**Stephens, Kenneth S.**, Professor Emeritus

**Wimberly, Charles A.**, Professor Emeritus

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B.S., Tennessee Technological University



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B.S.M.E., University of Missouri-Columbia  
P.E., Georgia

**Como, Joseph A.**

*Lecturer*

M.Ed., Georgia State University  
B.S., Mechanical Engineering, University of Hartford

**Conrey, Gregory M.**

*Associate Professor*

M.Ed., Georgia State University  
B.S., Eastern Kentucky University

**Dhanasekaran, Puttagounder Swaminathan**

*Assistant Professor*

PhD., Wichita  
State University  
  
University  
B.S., Eastern Kentucky University

M.Ed., Georgia State

**Emert, Randall**

*Assistant Professor*

M.S. Western Illinois University  
B.S., Western Illinois University

**Horton, Donald D.**

*Associate Professor*

M.S.M.E., Michigan Technological University  
B.S.M.E., Michigan Technological University  
P.E., Georgia

**Khazaei, Ali**

*Associate Professor*

Ph.D., Tehran Azad University  
M.Sc., University of Tehran  
B.Sc., University of Tehran

**Nasseri, Simin**

*Assistant Professor*

Ph.D., University of Sydney, Australia  
M.E., Iran University of Science and Technology  
B.Sc., Iran University of Science and Technology

**Russell, Norman A.**

*Associate Professor*

Ph.D., Institute of Paper Chemistry  
M.S., Institute of Paper Chemistry  
B.S., Pulp and Paper Technology, North Carolina State University  
P.E., Alabama

## **Mechanical Engineering Technology Faculty Emeriti**

**Lee, Julian R.**, Professor Emeritus

**Logue, Laurence J.**, Professor Emeritus

**Pearce, Britt**, Professor Emeritus

**Taylor, Leonard H.**, Head and Professor Emeritus

**Williams, Orren W.**, Professor Emeritus

**Young, Ronald C.**, Professor Emeritus

## **Faculty of the School of Engineering**

**Currin, Thomas R.**

*Professor and Dean, School of Engineering*

Ph.D., University of Connecticut  
M.C.E., North Carolina State University  
B.S., Southeastern Massachusetts University  
P.E., Georgia, Massachusetts

## **Department of Civil and Construction Engineering Faculty**

**Barham, Wasim**

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Ph.D., University at Buffalo, State University of New York  
M.S., Jordan University of Science and Technology  
B.S., Jordan University of Science and Technology

**Beadles, Sam**

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M.S., University of California, Los Angeles  
B.S., Northern Arizona University  
P.E., Georgia

**Karim, M.A.**

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Ph.D., Cleveland State University, Cleveland, OH  
M.S., Bangladesh University of Engineering and Technology  
B.S., Bangladesh University of Engineering and Technology

**Kim, Sung-Hee**

*Associate Professor*

Ph.D., Texas A&M University, College Station, TX  
M.S., Georgia Institute of Technology, Atlanta, GA  
B.S., Inha University, Incheon, South Korea

**Oguzmert, Metin**

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M.S., Istanbul Technical University  
B.S., Istanbul Technical University

**Yang, Jidong**

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M.S., University of South Florida, Tampa, FL  
B.S., Hebei Agricultural University, Hebei, China

**Yee, Tien M.**

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B.S., University of Kentucky, Lexington, KY

## **Department of Electrical and Mechatronics Engineering Faculty**

**Crimm, Lance**

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M.S.E.E., Georgia Institute of Technology  
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M.S., Columbia University  
M.S., Korea Aerospace University  
B.S., Korea Aerospace University

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Ph.D., University of Central Florida  
M.S.EE, University of Central Florida  
B.E., Dongguk University

**Hodges, Deidra**

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Ph.D., University of South Florida  
M.S., Columbia University  
B.S., Columbia University  
B.S., Dillard University

**Lee, Hoseon**

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M.S., Georgia Institute of Technology  
B.S., Georgia Institute of Technology

**Ma, Kuo-Sheng**

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Ph.D., University of California, Irvine  
M.S., University of California, Irvine  
M.S., University of California, Riverside  
B.S., TamKang University

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Ph.D., Georgia Institute of Technology  
M.S., University of Florida  
B.S., University of Florida

**McFall, Kevin**

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Ph.D., Georgia Institute of Technology  
M.S., Massachusetts Institute of Technology  
B.S., Virginia Polytechnic Institute and State University

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M.S., Shanghai Jiao Tong University  
B.S., Shanghai Jiao Tong University

**Department of Systems and Mechanical Engineering  
Faculty**

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M.S.O.R., Georgia Institute of Technology  
B.I.E., Georgia Institute of Technology  
P.E., Georgia

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M.S.M.E., Purdue University, Indiana  
B.S.M.E., Bangladesh University of Engineering & Technology

**Ghavi, Mahmoud**

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M.S.N.E., University of Arkansas  
B.S.M.E., University of Tulsa

**Ilksoy, Erhan**

*Senior Lecturer*

M.S.M.E., Georgia Institute of Technology  
B.S.M.E., Bosphorus University (Formerly, American Robert College)

**Khalid, Adeel**

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M.S.I.E., Georgia Institute of Technology  
M.S.A.E., Georgia Institute of Technology  
M.S.M.E., Michigan State University  
B.S.M.E., GIK Institute of Technology (Pakistan)

**Lowder, Margaret Loraine**

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M.S., Mechanical Engineering, Georgia Institute of Technology  
B.S., Mechanical Engineering, Georgia Institute of Technology

**Mayeed, Mohammed**

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M.S.M.E., Bangladesh University of Engineering & Technology  
B.S.M.E., Bangladesh University of Engineering & Technology

**Moghaddam, Kamran**

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Ph.D., University of Louisville  
M.S.I.E., Tehran Polytechnic  
B.S., Applied Mathematics, University of Tehran  
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**Ruhala, Laura**

*Associate Professor*

Ph.D., Engineering Science and Mechanics, August 1999, College of Engineering,  
Pennsylvania State University State College,  
B.Sc., Mechanical Engineering, Minor in Applied Mathematics  
Specialty in Machine Design, June 1991  
GMI Engineering & Management Institute, Flint, MI, USA

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**Salman, Muhammad**

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M.S., Mechanical Engineering, University of Engineering and Technology, Lahore, Pakistan  
B.S., Mechanical Engineering, University of Engineering and Technology, Lahore, Pakistan

**Sooklal, Valmiki**

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B.S., Mechanical Engineering, University of the West Indies

**Winchester III, Woodrow W.**

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M.S., Industrial & Systems Engineering, NC A&T SU  
B.S., Industrial & Systems Engineering, NC A&T SU

**Veazie, David**

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Ph.D., Georgia Institute of Technology  
M.S.M.E., Georgia Institute of Technology  
B.S.M.E., Minor Math/Physics, Southern University – Baton Rouge, Louisiana

**Chen, Li**

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M.L.I.S., University of Western Ontario  
B.A., Beijing Foreign Language University

**Kim, Hyun Chu "Leah"**

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M.L.I.S., Valdosta State University  
B.A., University of Washington - Seattle

**Ma, Yongli**

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M.L.I.S., University of South Carolina  
M.Ed., University of South Carolina  
B.A., Shanghai Foreign Languages Institute

**Mills, Joyce White**

*Librarian, Associate Professor and Library Director*

Ph.D., Florida State University  
D.A.S.L., Emory University  
M.S.L.S., University of Wisconsin  
B.A., Spelman College

**Vincent, Steven F.**

*Librarian, Associate Professor*

M.A., Western Michigan University  
M.S.L., Western Michigan University  
A.B., University of Michigan

**Wimer, Aaron**

*Librarian-Assistant Professor*



M.L.I.S., Clarion University of Pennsylvania  
B.S., Clarion University of Pennsylvania  
A.A., Butler County Community College

# Institutions of the University System of Georgia

## Research Universities

Georgia Institute of Technology	Atlanta
Georgia Regents University	Augusta
Georgia State University	Atlanta
University of Georgia	Athens

## Regional Universities

Georgia Southern University	Statesboro
Valdosta State University	Valdosta

## State Universities

Albany State University	Albany
Armstrong Atlantic State University	Savannah
Clayton State University	Morrow
Columbus State University	Columbus
Fort Valley State University	Fort Valley
Georgia College & State University	Milledgeville
Georgia Southwestern State University	Americus
Kennesaw State University	Kennesaw
Savannah State University	Savannah
Southern Polytechnic State University	Marietta
University of North Georgia	Dahlonega
University of West Georgia	Carrollton

## State Colleges

Abraham Baldwin Agricultural College	Tifton
Atlanta Metropolitan State College	Atlanta
Bainbridge State College	Bainbridge
College of Coastal Georgia	Brunswick
Dalton State College	Dalton
Darton State College	Albany
East Georgia State College	Swainsboro
Georgia Gwinnett College	Lawrenceville
Georgia Highlands College	Rome
Georgia Perimeter College	Decatur
Gordon College	Barnesville
Middle Georgia State College	Macon
South Georgia State College	Douglas

## Athletics

### Athletics

Southern Polytechnic State University is a member of the National Association of Intercollegiate Athletics (NAIA) and the Southern States Athletic Conference (SSAC). The University competes in four intercollegiate sports, including men's soccer in the fall, men's and women's basketball during the winter, and baseball in the spring. All four of the Southern Polytechnic teams have enjoyed much success over the years. The squads use the nickname "Hornets" and the school colors are forest green, white and black.

### Athletic Facilities

Southern Polytechnic features several on-campus athletic facilities. An athletic training room located in the Hornets Nest, the University's gymnasium, serves the medical needs of all student-athletes.

The men's soccer team plays at Neusoft Technologies Field, located on the far west side of campus. Locker room space and a building for storage are near the field.

Serving as the home court for the Southern Polytechnic men's and women's basketball squads is the Hornets Nest, located on the south side of campus. The athletic training room is just a few steps from the court and locker room space for Southern Poly's teams, visiting squads and game officials is nearby.

Sir Walter J. Kelly Sr. Memorial Field, located near the gymnasium on the far south end of campus, is where the Hornets play baseball. The facility features new seating, a new scoreboard and a new press box. An indoor facility, located down the left-field line just a few steps from SPSU's dugout, includes two full-size batting cages, two soft-toss areas, a bullpen with a mound and weight training equipment. There is locker room space and buildings for storage near the field.

For more information, please visit us at [www.SPSUHornets.com](http://www.SPSUHornets.com).

## Bookstore

The Southern Polytechnic State University bookstore is located on the lower level of the Student Center. In addition to new and used textbooks, you can also purchase software, reference books, school supplies, engineering supplies, calculators, SPSU apparel, greeting cards, health and beauty aids, drinks, and snacks.

On the last day of registration and the first week of classes, the bookstore is open for extended hours.

Please visit us to find more information and purchase your books online at [www.spsu.edu/bookstore](http://www.spsu.edu/bookstore).

## Career and Counseling Center

### Counseling Services

The Career and Counseling Center offers a variety of counseling services to help students succeed. The Center provides counseling for personal, academic, and career concerns.

Personal concerns such as anxiety, depression, relationship problems, low self-esteem, low self-confidence, and communication issues can make it very difficult for students to gain the most from the university and from their classes. Professional counselors provide time limited **individual and/or group sessions for students** seeking confidential assistance with these and other personal issues.

Part of the career development process involves increasing self-understanding in such areas as values, life goals, interests, and skills. **Counselors can help students increase their self-understanding and learn how to match their personal characteristics with the work environments that a university education makes possible for them.**

Academic concerns center on more effective time management, study skills and dealing with test anxiety. Counselors can assist students in identifying deficiencies in these areas to make the overall academic experience more successful. Many students find university work more difficult than they expected and find that it strains their abilities.

**Counselors can assist students in developing skills** to manage stress, overcome test anxiety, improve test-taking strategies, enhance memory and better understand their learning style. The Career and Counseling Center provides a variety of assessments to assist students in clarifying and/or confirming their goals.

**Counselors provide outreach programs on many topics**, including stress management, anxiety, depression, relationship building, procrastination and other student concerns (a detailed list can be found on the Center's website at [www.spsu.edu/counselingservices/index.htm](http://www.spsu.edu/counselingservices/index.htm).)

All counseling services are **free of charge**, confidential, and **are available by appointment**. Counseling staff members are also available for consultation with SPSU faculty and staff who are concerned about specific situations and/or individuals.

## Career Services

The Career and Counseling Center provides job search assistance for graduates and for students seeking full-time, part-time, temporary and on-campus employment. The Center provides assistance to students in preparing for the job search and obtaining employment suited to their career goals and aspirations, but can never guarantee employment for any student or graduate. Services offered include:

- Assisting in resume preparation
- Offering career search workshops and mock interviews
- Access to Jobs and career database (Career Link)
- On-campus interviews **and/or information sessions**

Students are encouraged to make use of career services as early as possible during their stay at Southern Polytechnic. **Degree candidates should begin the job search process at least two semesters prior to their graduation.**

## On-Campus Employment

There are two kinds of on-campus positions for students: College Work Study (from funds awarded by the Financial Aid Office) and Student Assistants (from funds that are allocated to the department). Undergraduate students seeking on-campus employment should begin their search by registering in the Career Link database. International students should begin the job search process in the ATTIC.

Alumni assistance: Job search assistance for alumni includes web registration in the **CAREER LINK** (jobs) database on the Center's web page. Alumni may attend any skillshop sessions offered by the Center and career fairs sponsored by the Center.

## Experiential Education (Cooperative Education and Internship)

Southern Polytechnic State University offers its students the opportunity to gain valuable work experience directly related to their academic majors through a University sponsored experiential education program. Students interested in either program should attend an orientation session or should complete the online orientation session (dates and links posted on the Career and Counseling Center's website).

Benefits of participating in Cooperative Education or an Internship include:

- Providing career related hands-on work experience
- Earning a competitive salary for school and tuition expenses
- Learning the company culture
- Networking with professionals in your field
- Helping get your foot in-the-door for full-time employment

- Developing self-confidence
- Establishing valuable contacts for letters and references
- Gaining practical experience in the work environment
- Helps students in their career decision making process
- Provides substantial support for education expenses

### *Cooperative Education (Co-op)*

Co-op is founded on the principle that learning takes place through practical experience as well as through academic achievement. Students participating in the co-op program alternate school and work.

Co-op students are required to follow all guidelines set forth by the Career and Counseling Center, as well as the rules and regulations of the University. In addition to university requirements, students must meet any additional co-op requirements set forth by the co-op employer. Students unable to maintain university or company co-op requirements may be given one probationary term to correct deficiencies before being withdrawn from the co-op program.

The Career and Counseling Center refers students to employers after they have been approved as a co-op applicant (Note that acceptance as a co-op applicant does not guarantee a student's employment in a co-op position). The employer has the final decision regarding offering co-op employment. Upon acceptance of a co-op position, the student is expected to remain with their co-op employer for a minimum of three (3) co-op work terms. In addition to Career Services referrals, co-op participation can also be started through student self-referral. Students and employers must meet program requirements and guidelines (contact program coordinator for details).

Students with metro-Atlanta co-op assignments may live in Southern Polytechnic State University housing. In addition, students with local co-op work assignments are eligible to participate in all co-curricular, intramural, and health service activities on campus with the payment of the regular student athletic, activity, and health fees. Although no credit is awarded (students receive a grade of 'S' or 'U'), the university views co-op students as active, continuing, full-time students during their periods of approved work experience.

Although neither the student nor the employer makes a commitment for full-time employment upon completion of the co-op program, many SPSU co-op students are offered career employment with their co-op employers. Satisfactory completion of both requirements for graduation and co-op guidelines make an undergraduate student eligible to receive recognition for participation in the co-op program on their Southern Polytechnic State University diploma and academic record.

### *Internship Program*

The Southern Polytechnic State University Internship program is a short-term or time-limited work experience in a professional environment. It is designed to enhance academic, personal, and professional development and will assist students in making a smooth transition from the classroom to the world of work, and to provide students with insight about potential careers. Usually, an internship is a one-time experience for a student who has attained at least some academic preparation in a professional field.

### Co-op and Internship Eligibility and Requirements for Undergraduate Students

- Be a registered, full-time student at the time of application to the program and during the semester prior to going to work (i.e., carry at least 12 hours fall and spring and 6 hours during the summer)
- Have and maintain a minimum 2.00 GPA (many employers require higher averages)
- Have completed at least 24 semester hours of academic credit toward their degree
- Must have completed at least one semester at SPSU
- Attend an orientation session (can be online) and meet with the program coordinator, and
- Co-op applicants must commit to participate in a minimum of three (3) alternating co-op work terms with the same employer

Students must be fully authorized to work in the United States to participate in the co-op program.

### International Students

Must obtain written eligibility authorization from the International Services Coordinator in the ATTIC before beginning **EACH** working assignment. Due to the INS regulations, International students are not permitted to Intern more than one and a half-academic years for undergraduates and one academic year for graduates. Once an Internship is obtained, International students **MUST** return to the International Services Coordinator to complete additional paperwork. International students failing to do so will be **DROPPED** from the Internship Program.

## **Degrees and Certificates Offered**

### **Bachelor of Arts**

### **Computer Science, BA**

#### **BACS Program Objectives**

- To meet the educational needs of the students and prepare them for careers using their computing knowledge. Students should be well versed in not only the fundamentals but also develop skills in problem solving, logic, organization, and ethics.
- To provide graduates with a thorough grounding in key principles and practices of computing.
- To provide graduates with an understanding of the ethical aspects of computing within society.
- To provide graduates with applicable communication and team skills to be used in computing careers.
- To provide graduates with another area of study where they can apply their computing knowledge or expand the context for their computing knowledge.
- To prepare graduates for employment using their computing knowledge.

#### **BACS Learning Outcomes**

Each graduate of the program should be able to:

- Convey the understanding of, and ability to solve, problems through artifacts of computing such as specifications, code and other written documents.
- Demonstrate and apply their knowledge of fundamental data structures and algorithms to solve problems.
- Describe and explain the major concepts in the areas of operating systems, programming languages, architecture, and distributed computing.
- Demonstrate an ability to work effectively in teams on computing related projects.
- Demonstrate an ability to effectively communicate technical information.
- Demonstrate an understanding of social, professional and ethical issues related to computing.

- Obtain the skills and knowledge to be employable in positions that utilize their computing education.
- Demonstrate an understanding of a minor field of study, where computing can be applied.

## Requirements

- ENGL 1101 - English Composition I **3 Credits**
- ENGL 1102 - English Composition II **3 Credits**
- TCOM 2010 - Technical Writing **3 Credits**
- MATH 1113 - Pre-calculus **4 Credits**
- MATH 2253 - Calculus I **4 Credits**
- MATH 2254 - Calculus II **4 Credits**
- MATH 2345 - Discrete Mathematics **3 Credits**
- MATH 2260 - Introduction to Probability and Statistics **3 Credits**
- COMM 2400 - Public Speaking **2 Credits**
- COMM 2400 - Public Speaking **2 Credits**
- STS 2400 - Science, Technology, and Society **2 Credits**
- Area C Group 1 - Take One Course from the Literature Group **3 Credits**
- Area C Group 2 - Take a foreign language **3 Credits**
- Area D - Two lab science courses required **8 Credits**
- Area E Group 1 - American Context **3 Credits**
- Area E Group 2 - World History **3 Credits**
- Area E Group 3 - Behavioral Science **3 Credits**
- Area E Group 4 - Cultures and Societies **3 Credits**
- CSE 1002 - Introduction to the Computing Disciplines **2 Credits**
- CSE 1301 - Programming & Problem Solving I **4 Credits**
- CSE 1302 - Programming & Problem Solving II **4 Credits**
- CSE 3642 - Professional Practices and Ethics **2 Credits**
- CS 3123 - Programming Language Concepts **3 Credits**
- CSE 3153 - Database Systems **3 Credits**
- CS 3224 - Computer Organization & Architecture **4 Credits**
- CS 3243 - Operating Systems **3 Credits**
- CS 3424 - Data Structures **4 Credits**
- SWE 2313 - Introduction to Software Engineering **3 Credits**
- SWE 3613 - Software System Engineering **3 Credits**
- Upper-Level CS Elective (or Approved UL CGGD/SWE/IT Elective) **4 Credits**
- Approved Minor **15 Credits**
- Upper-Level Free Electives (UL CS must be at least 4 hours, and the total of CS UL and UL free electives is 10 hours) **6 Credits**
- Free Electives **5 Credits**

**Degree Program Total: 123**

# English and Professional Communication, BA

Our Bachelor of Arts in English and Professional Communication degree is not your typical B.A. in English. Our program emphasizes the role and place of text and image within a world increasingly dependent upon clear communication. Our project-driven courses challenge students to implement real-world applications in nearly every class. Specialized course-work and individual attention allow graduates to begin work immediately, satisfying the demand for professionals who can communicate technical, international, scientific, and computer-related information to both technical and non-technical users.

The required communication courses equip students with the most advanced communication skills in writing, editing, graphics, information design and collaboration. In addition, students study classical rhetoric, develop high-level computer skills, and produce a portfolio that demonstrates their communication proficiency to potential employers. Our literature courses help students understand the diversity of genres, cultures, and authors that contribute to literary production. With offerings in journalism, creative writing, science writing, and environmental writing, our Professional Writing and Communication concentration prepares students for careers in media writing, freelance writing, marketing, public relations, and publishing. Our concentration in Media, Communication, and Culture combines hands-on production courses with a study of media and culture to prepare students for careers in marketing, mass communication, and entertainment, where media savvy can really pay off.

## Requirements

- ENGL 1101 - English Composition I **3 Credits**
- ENGL 1102 - English Composition II **3 Credits**
- MATH 1111 - College Algebra **3 Credits**
- MATH 1113 - Pre-calculus **4 Credits**
- COMM 2400 - Public Speaking **2 Credits**
- STS 2400 - Science, Technology, and Society **2 Credits**
- Area C1 - Course in Literature **3 Credits**
- Area C2 - Course in Art and Culture **3 Credits**
- Area D - Two courses in Laboratory Science **8 Credits**
- Area E1 - American Context **3 Credits**
- Area E2 - World History **3 Credits**
- Area E3 - Course in Behavioral Science **3 Credits**
- Area E4 - Course in Cultures and Societies **3 Credits**

## Required Area F Foundations Courses (9 Credits)

- COMM 2000 - Business Communication **3 Credits**
- TCOM 2010 - Technical Writing **3 Credits**
- TCOM 2020 - Intro to Professional & Technical Communication **3 Credits**

## Area F Required Research Methods Course (3 Credits; Choose One)



- TCOM 2030 - Research in Technical Communication **3 Credits** or
- ENGL 2030 - Research in Professional and Critical Writing **3 Credits**

## Area F Electives (6 Credits; Choose Two)

- ARTS 2020 - History and Principles of Design **3 Credits**
- ENGL 2xxx - Any 2000-level literature survey **3-6 Credits**
- COMM 2065 - Cross-Cultural Communication **3 Credits**
- COMM 2170 - Introduction to Media Studies **3 Credits**
- COMM 2150 - Ethics and Communication **3 Credits**
- Other coursework appropriate to major, as approved by the department (3 credits max) **3 Credits**
- Any foreign language, 2001 or higher **3 Credits**

## Basic Required Courses in the Major (15 Credits)

- ENGL 3030 - English Grammar for Professional Writing **3 Credits**
- ENGL 3100 - Rhetoric: History, Theory, and Practice **3 Credits**
- TCOM 3400 - Foundations of Design for the Web **3 Credits**
- TCOM 3430 - Foundations of Graphics **3 Credits**
- COMM 4100 - Small Group Communication **3 Credits**
- ENGL 4800 - Project Portfolio **3 Credits**
- English and Professional Communication Electives Take any 3000-level or higher ARTS, COMM, ENGL, or TCOM Course, or other courses (not to exceed 6 credits) as approved by the department. **12 Credits**
- Free Electives **15 Credits**
- Concentration Courses (Professional Writing and Communication or Media, Communication and Culture) or Minor Courses (International Studies or Spanish) **15 Credits**
- SPSU 1001 - Hitch-hiker's Introduction to SPSU **1 Credits**

## Professional Writing and Communication (15 Credits)

- COMM 3035 - Organizational Communication **3 Credits**
- COMM 3040 - Health Communication **3 Credits**
- COMM 3050 - Journalism **3 Credits**
- COMM 3150 - Public Relations Practice **3 Credits**
- ENGL 3010 - Science Writing **3 Credits**
- ENGL 3015 - Environmental Writing **3 Credits**
- ENGL 3025 - Creative Writing Workshop **3 Credits**
- ENGL 3035 - Problems in Language **3 Credits**

- ENGL 3040 - Article and Essay Workshop **3 Credits**
- ENGL 3081 - Studies in Genre **3 Credits**
- ENGL 3082 - Science & Literature **3 Credits**
- ENGL 4010 - Publishing for New Media **3 Credits**
- TCOM 3020 - Proposal Writing **3 Credits**
- TCOM 4000 - Professional Editing **3 Credits**

or

## Media, Communication, and Culture (15 Credits)

- ARTS 3000 - Visual Thinking **3 Credits**
- COMM 3060 - Media, Culture, and Society **3 Credits**
- COMM 3065 - International Communication **3 Credits**
- COMM 3160 - Media Theory and Practice **3 Credits**
- ENGL 3045 - New Media Writing **3 Credits**
- ENGL 3180 - Film as Literature **3 Credits**
- ENGL 4170 - Media and Narrative **3 Credits**
- TCOM 3145 - Social Media Integration **3 Credits**
- TCOM 4045 - Foundations of Multimedia **3 Credits**
- TCOM 4170 - Film and Video Production **3 Credits**

## Degree Program Total: 121

For additional information about the B.A. program, contact the English, Technical Communication, and Media Arts Department at 678-915-7202, or email to [TCOM@spsu.edu](mailto:TCOM@spsu.edu). You can also visit our website at [etema.spsu.edu](http://etema.spsu.edu).

## Minors:

### International Studies (15 Credits)

In place of a concentration, students can choose to complete the BA in English and Professional Communication with an International Studies minor . To be eligible for a minor in International Studies, the student must complete all courses with a grade of C or better.

### Spanish (15 Credits)

In place of a concentration, students can choose to complete the BA in English and Professional Communication with a Spanish Minor . To be eligible for a minor in Spanish, the student must complete all courses with a grade of C or better.

- SPAN 2001 - Intermediate Spanish I **3 Credits**
- SPAN 2002 - Intermediate Spanish II **3 Credits**
- Additional courses in Spanish at the 3000 level **9 Credits**

# Management BA

The Bachelor of Arts in Management program provides students with a strong foundation in the management of the employees of a business. The program has a strong interpersonal focus that prepares students for the changing dynamics of management. The program also offers the students the flexibility to tailor their program of study to meet their specific career plans.

## Area A - Essential Skills (9 hours)

- ENGL 1101 - English Composition I **3 Credits**
- ENGL 1102 - English Composition II **3 Credits**
- MATH 1111 - College Algebra **3 Credits**

## Area B - Institutional Options (4 hours)

- COMM 2400 - Public Speaking **2 Credits**
- STS 2400 - Science, Technology, and Society **2 Credits**

## Area C1 - Humanities/Fine Arts - Literature (3 hours)

- ENGL 2111 - Early World Literature **3 Credits**
- ENGL 2112 - World Literature Mid-1600s to Present **3 Credits**
- ENGL 2120 - British Literature Early to Present **3 Credits**
- ENGL 2121 - Early British Literature **3 Credits**
- ENGL 2122 - British Literature Late 1700s to Present **3 Credits**
- ENGL 2130 - American Literature Early to Present **3 Credits**
- ENGL 2131 - Early American Literature **3 Credits**
- ENGL 2132 - American Literature Mid 1800s to Present **3 Credits**
- ENGL 2141 - Early Western Literature **3 Credits**
- ENGL 2142 - Western Literature 1600s to Present **3 Credits**
- ENGL 2300 - African-American Literature and Culture **3 Credits**

## Area C2 - Humanities/Fine Arts - Art and Culture (3 hours)

- ARTS 2001 - Art Appreciation **3 Credits**
- ARTS 2002 - Drama Appreciation **3 Credits**

- ARTS 2003 - Music Appreciation **3 Credits**
- ARTS 2004 - History of Contemporary American Music **3 Credits**
- FREN 1002 - Elementary French II **3 Credits**
- GRMN 1002 - Elementary German II **3 Credits**
- SPAN 1002 - Elementary Spanish II **3 Credits**

## Area D - Science, Mathematics, and Technology (12 hours)

- MATH 1113 - Pre-calculus **4 Credits**  
Take any two courses of the following (course must have a lab that is taken concurrently)
- ASTR 1000K - Introduction to the Universe **4 Credits**
- BIOL 2107 - Principles of Biology I **3 Credits**
- BIOL 2107L - Principles of Biology I Laboratory **1 Credits**
- BIOL 2108 - Principles of Biology II **3 Credits**
- BIOL 2108L - Principles of Biology II Laboratory **1 Credits**
- CHEM 1211 - Principles of Chemistry I **3 Credits**
- CHEM 1211K - Principles of Chemistry (ECORE) **4 Credits**
- CHEM 1211L - Principles of Chemistry I Lab **1 Credits**
- CHEM 1212 - Principles of Chemistry II **3 Credits**
- CHEM 1212K - Principles of Chemistry II (ECORE) **4 Credits**
- CHEM 1212L - Principles of Chemistry II Lab **1 Credits**
- PHYS 1111 - Introductory Physics I **3 Credits**
- PHYS 1111L - Introductory Physics Laboratory I **1 Credits**
- PHYS 1112 - Introductory Physics II **3 Credits**
- PHYS 1112L - Introductory Physics Laboratory II **1 Credits**

## Area E1 - Social Sciences - American Context (3 hours)

- HIST 2111 - United States History to 1877 **3 Credits**
- HIST 2112 - United States History since 1877 **3 Credits**
- POLS 1101 - American Government **3 Credits**  
HIST 2911 (1 credit hour) may be required for students who have a transfer credit for American History or American Government to meet US or GA history or Constitution requirements.

## Area E2 - World History (3 hours)

- HIST 1111 - Survey of World Civilization pre 1500 **3 Credits**
- HIST 1112 - Survey of World Civilization post 1500 **3 Credits**

## Area E3 - Behavioral Science (3 hours)

- ECON 1101 - Introduction to Economics **3 Credits**
- PSYC 1101 - Introduction to General Psychology **3 Credits**
- SOCI 1101 - Introduction to Sociology **3 Credits**

## Area E4- Cultures and Societies

- ANTH 1102 - Introduction to Anthropology **3 Credits**
- ES 1100 - Ethnic Studies **3 Credits**
- GEOG 1101 - Introduction to Human Geography **3 Credits**
- POLS 2401 - Global Issues **3 Credits**
- RELG 1200 - World Religion **3 Credits**

## Area F (18 hours)

- ACCT 2101 - Principles of Financial Accounting **3 Credits**
- ACCT 2102 - Principles of Managerial Accounting **3 Credits**
- COMM 2000 - Business Communication **3 Credits**
- ECON 2105 - Principles of Macroeconomics **3 Credits**
- ECON 2106 - Principles of Microeconomics **3 Credits**
- MGNT 2201 - Business Computer Applications **3 Credits**

## Bachelor of Arts - Management - Required Courses (38 hours)

- MGNT 1000 - Orientation to Business **1 Credits**
- SPSU 1001 - Hitch-hiker's Introduction to SPSU **1 Credits**
- IET 2227 - Introduction to Statistics **3 Credits**
- MGNT 3105 - Management and Organizational Behavior **3 Credits**
- MGNT 3125 - Business Finance **3 Credits**
- MGNT 3135 - Principles of Marketing **3 Credits**
- MGNT 3145 - Legal Environment of Business **3 Credits**
- MGNT 4115 - Human Resource Management **3 Credits**
- MGNT 3170 - Leadership **3 Credits**
- COMM 4100 - Small Group Communication **3 Credits**
- PSYC 4600 - Conflict Resolution **3 Credits**

- MGNT 4145 - International Management **3 Credits**
- MGNT 4595 - Business Strategy **3 Credits**

## Option 1 and Option 2

Bachelor of Arts - Management majors may select Option 1 or Option 2 to complete in addition to the required courses.

**Option 1** - *Select 5 courses (15 hours) from Group 1 and Group 2*

- **Group 1:** Select 3-5 courses of the following courses (9-15 hours)
- MGNT 4103 - Marketing Management **3 Credits**
- MGNT 4125 - Technology and Public Issues **3 Credits**
- MGNT 4135 - Project Management **3 Credits**
- MGNT 4185 - Technology Management **3 Credits**
- MGNT 4075 - Healthcare Management **3 Credits**
- MGNT 4190 - Entrepreneurship **3 Credits**
- MGNT 4195 - Current Readings in Management of Technology and Operations **3 Credits**
- MGNT 4203 Special Topics in Management
- **Group 2** - (select 0 to two of the following courses (0-6 hours)
- TCOM 3030 - Instructional Design **3 Credits**
- COMM 3035 - Organizational Communication **3 Credits**
- COMM 3040 - Health Communication **3 Credits**
- COMM 3065 - International Communication **3 Credits**
- TCOM 3145 - Social Media Integration **3 Credits**

**Option 2** - *Complete one of the following minors (15-18 hours)*

Technical Communication  
 Professional Writing  
 International Studies  
 Psychology  
 Pre-Law  
 Public Policy  
 Global Communication  
 Leadership and Organizational Communication

## Free Electives - 6-9 hours

## Mathematics, Education Track, BA

The bachelor's degrees in mathematics or science with the Teacher Education track provides students with a strong foundation in the discipline, giving them maximum flexibility with their degrees. Adding the Teacher Education track can give students immediate job possibilities.

The Teacher Education Program at SPSU provides students with strong, mentored experiences in the schools, a thorough knowledge of the teaching strategies and research on learning science and mathematics, and a nationally renowned teacher preparation program. This program allows students to build confidence in working with a variety of students in multiple school settings, and prepares them for a successful career in teaching mathematics or science in the middle school or high school.

## Requirements

- ENGL 1101 - English Composition I **3 Credits**
- ENGL 1102 - English Composition II **3 Credits**
- Area D - Any Two Lab Sciences **4 Credits**
- Area D - Any Two Lab Sciences **4 Credits**
- COMM 2400 - Public Speaking **2 Credits**
- STS 2400 - Science, Technology, and Society **2 Credits**
- Area C Group 1 - Take One Course From the Literature Group **3 Credits**
- Area C Group 2 - Take One Course From the Art and Culture Group **3 Credits**
- Area E Group 1 - American Context **3 Credits**
- Area E Group 2 - World History **3 Credits**
- Area E Group 3 - Behavioral Science **3 Credits**
- Area E Group 4 - Cultures and Societies **3 Credits**
- CSE 1301 - Computer Science I **4 Credits**
- MATH 1113 - Pre-calculus **4 Credits**
- MATH 2253 - Calculus I **4 Credits**
- MATH 2254 - Calculus II **4 Credits**
- MATH 2255 - Calculus III **4 Credits**
- MATH 2260 - Introduction to Probability and Statistics **3 Credits**
- MATH 2306 - Ordinary Differential Equations **3 Credits**
- MATH 2345 - Discrete Mathematics **3 Credits**
- MATH 3312 - Linear Algebra **4 Credits**
- MATH 3310 - Introduction to Advanced Mathematics **3 Credits**
- MATH 3320 - Introductory Real Analysis I **4 Credits**
- MATH 3321 - Introductory Real Analysis II **4 Credits**
- MATH 3696 - Geometry **3 Credits**
- MATH 4407 - Vector Analysis **3 Credits**
- MATH 4440 - Abstract Algebra **4 Credits**
- MATH 4451 - Capstone Mathematics Project **3 Credits**
- Math Electives - **3 Credits** (Any mathematics course numbered 2300 or above, excluding those for which dual credit is not allowed.)
- EDUC 1101 - UTeach Step 1 **1 Credits**
- EDUC 1102 - UTeach Step 2 **1 Credits**
- EDUC 2010 - UTeach Knowing and Learning **3 Credits**
- EDUC 2020 - Classroom Interactions **3 Credits**
- EDUC 4030 - Project Based Instruction **3 Credits**
- MAED 2010 - Functions and Modeling **3 Credits**

- RSCH 3610 - Research Methods **3 Credits**
- STS 3347 - Perspectives on Science and Math **3 Credits**
- EDUC 4401 - Apprentice Teaching Seminar **1 Credits**
- EDUC 4406 - Apprentice Teaching **6 Credits**

**Degree Program Total: 123**

## **New Media Arts, BA**

The Bachelor of Arts in New Media Arts provides students with an opportunity to develop the technical and artistic skills needed to serve as practitioners in the fields of multimedia development and design, web design, and video production. As a degree that straddles two worlds--the fine and the applied arts--the degree program encourages both creativity and practical application. Students will have an opportunity to develop a strong foundation in the traditional fine arts and learn to translate these skills to new media contexts. They will also learn to approach the technical aspects of new media applications from the sensibilities of an artist as well as a technician.

With its balance between the artistic and technical aspects of new media production, the new media arts degree program should prepare students to meet a growing marketplace need for multimedia artists and to rise to the top of the pack of individuals competing for these positions. While providing an undergraduate degree option for students interested in entering careers in the fine and applied arts, it would also provide appropriate preparation for graduate study.

## **Requirements**

- ENGL 1101 - English Composition I **3 Credits**
- ENGL 1102 - English Composition II **3 Credits**
- MATH 1111 - College Algebra **3 Credits**
- MATH 1113 - Pre-calculus **4 Credits**
- COMM 2400 - Public Speaking **2 Credits**
- STS 2400 - Science, Technology, and Society **2 Credits**
- Area C Group 1 - Take One Course from the Literature Group **3 Credits**
- Area C Group 2 - Take One Course from the Art and Culture Group **3 Credits**
- Area D - Any Two Lab Sciences **8 Credits**
- Area E Group 1 - American Context **3 Credits**
- Area E Group 2 - World History **3 Credits**
- Area E Group 3 - Behavioral Science **3 Credits**
- Area E Group 4 - Cultures and Societies **3 Credits**

## **Area F Core Course in the Major (6 Credits)**

- ARTS 2020 - History and Principles of Design **3 Credits**



- COMM 2170 - Introduction to Media Studies 3 Credits

## Area F Core Studio Course in the Major (9 Credits; Choose 3)

- ARTS 2010 - Introduction to Drawing 3 Credits
- ARTS 2110 - Introduction to Painting 3 Credits
- ARTS 2220 - 2D and 3D Design 3 Credits
- ARTS 2903 - Music Theory 3 Credits

## Area F Elective Courses in the Major (3 Credits; Choose 1)

- ARTS 2001 - Art Appreciation 3 Credits
- ARTS 2002 - Drama Appreciation 3 Credits
- ARTS 2003 - Music Appreciation 3 Credits

## Basic Required Courses in the Major (24 Credits)

- SPSU 1001 - Hitchhikers Guide to SPSU 1 Credits
- ARTS 3000 - Visual Thinking 3 Credits
- ARTS 3100 - History of New Media Arts 3 Credits
- COMM 3160 - Media Theory and Practice 3 Credits
- ARTS 4100 - Media Arts Studio 3 Credits
- ENGL 3045 - New Media Writing 3 Credits
- TCOM 3430 - Foundations of Graphics 3 Credits
- TCOM 3400 - Foundations of Design for the Web 3 Credits
- ARTS 4800 - Senior Portfolio 3 Credits

## Additional Courses in the Major (18 Credits; Choose 6)

- ARTS 3170 - Digital Photography 3 Credits
- ARTS 4600 - Directed Study 3 Credits
- CGDD 3103 - Application Extension and Scripting 3 Credits
- CGDD 4003 - Digital Media and Interaction 3 Credits
- CGDD 4203 - Mobile and Casual Game Development 3 Credits
- COMM 3060 - Media, Culture, and Society 3 Credits
- ENGL 3180 - Film as Literature 3 Credits

- ENGL 4170 - Media and Narrative **3 Credits**
- TCOM 4040 - Applied Graphics for Technical Communicators **3 Credits**
- TCOM 4045 - Foundations of Multimedia **3 Credits**
- TCOM 4170 - Film and Video Production **3 Credits**
- TCOM 4175 - Animation Design, 2D **3 Credits**
- TCOM 4400 - Advanced Design for the Web **3 Credits**
- Free Electives **18 Credits**

**Degree Program Total: 121**

For additional information about the B.A. program, contact the English, Technical Communication, and Media Arts Department at 678-915-7202, or email to [TCOM@spsu.edu](mailto:TCOM@spsu.edu). You can also visit our website at [etema.spsu.edu](http://etema.spsu.edu).

## **Bachelor of Architecture**

## **Bachelor of Architecture**

**[5 Year Professional Degree]**

### Requirements

#### USG Core

- ENGL 1101 - English Composition I **3 Credits**
- ENGL 1102 - English Composition II **3 Credits**
- COMM 2400 - Public Speaking **2 Credits**
- STS 2400 - Science, Technology, and Society **2 Credits**
- Area C Group 1 Take One Course from the Literature Group [See ARCH Matrix] **3 Credits**
- Area C Group 2 Take One Course from the Art and Culture Group [See ARCH Matrix] **3 Credits**
- MATH 1113 - Pre-calculus **4 Credits**
- MATH 2253 - Calculus I **4 Credits**
- Area D Lab Sciences (Two courses with Labs) – PHYS 1111L [required] – **8 Credits Hours Total**
- Area E Group 1 American Context, One Course [See ARCH Matrix] **3 Credits**
- Area E Group 2 World History, One Course [See ARCH Matrix] **3 Credits**
- Area E Group 3 Behavioral Science, One Course [See ARCH Matrix] **3 Credits**
- Area E Group 4 Cultures and Societies, One Course [See ARCH Matrix] **3 Credits**

#### Design Foundation

- SPSU 1001 - Hitch-hiker's Introduction to SPSU **1 Credits**
- DFN 1000 - Orientation to Architecture (Summer Design Workshop) **2 Credits**
- DFN 1001 - Design Foundation I **4 Credits**
- DFN 1002 - Design Foundation II **4 Credits**
- DFN 1241 - Design Communication I **2 Credits**
- DFN 2003 - Design Foundation III **4 Credits**
- DFN 2004 - Design Foundation IV **4 Credits**
- DFN 1111 - Architecture Culture I: Early Civilizations & Medieval **3 Credits**
- DFN 2112 - Architecture Culture II - The Renaissance through 1850 **3 Credits**
- DFN 2211 - Architecture Structures I - Introduction to Structures **3 Credits**
- DFN 2311 - Environmental Tech I -Systems Selection and Materials **3 Credits**
- DFN 2242 - Design Communication II **2 Credits**

## Architecture

- ARCH 3011 - Architecture Studio I **4 Credits**
- ARCH 3012 - Architecture Studio II **4 Credits**
- ARCH 3113 - Architecture Culture III - 1850 through 1945 **3 Credits**
- ARCH 3116 - Urban Planning and Design Theory **3 Credits**
- ARCH 3211 - Architecture Structures II: Steel and Wood **4 Credits**
- ARCH 3212 - Architecture Structures III: Concrete and Lateral Loads **3 Credits**
- ARCH 3313 - Environmental Technology II: Human Comfort, Sustainability and HVAC Systems: **3 Credits**
- ARCH 3314 - Environmental Technology III: Natural & Artificial Lighting, Electrical Systems & Vertical Circulation: **3 Credits**
- ARCH 4013 - Architecture Studio III **4 Credits**
- ARCH 4014 - Architecture Studio IV **4 Credits**
- ARCH 4114 - Architecture Cultures IV: 1945-Current **3 Credits**
- ARCH 4224 - Environmental Technology IV: Codes and Technical Documentation **3 Credits**
- ARCH 4411 - Design Cost Control **2 Credits**
- ARCH 5313 - Professional Practice and Ethics **3 Credits**
- ARCH 5593 - Thesis Prep/Research **2 Credits**
- ARCH 5998F - Focus Studio **4 Credits**
- ARCH 5999R - Thesis Research S/U **Credits**
- ARCH 5999T - Thesis Project **5 Credits**
- Electives **17 Credits**

Degree Program Total: 153

## Bachelor of Apparel and Textiles Technology

# **Bachelor of Apparel and Textiles**

## **Area A**

- ENGL 1101 - English Composition I **3 Credits**
- ENGL 1102 - English Composition II **3 Credits**
- MATH 1111 - College Algebra **3 Credits**

## **Area B**

- COMM 2400 - Public Speaking **2 Credits**
- STS 2400 - Science, Technology, and Society **2 Credits**

## **Area C**

- C1 - Literature of the World **3 Credits**
- C2 - Art and Culture of the World **3 Credits**

## **Area D**

- Sciences - Two Area D Lab Science Courses **8 Credits**
- Math - One Area D Math Course **4 Credits**

## **Area E**

- E1 - US History **3 Credits**
- E2 - World History **3 Credits**
- E3 - Behavioral Science **3 Credits**
- E4 - Cultures and Societies **3 Credits**

## **Area F**

- ACCT 2101 - Principles of Financial Accounting **3 Credits**
- ATT 1200 - Apparel Design Graphics **2 Credits**

- ATT 1300 - International Sourcing **3 Credits**
- ECON 1101 - Introduction to Economics **3 Credits**
- MGNT 2201 - Business Computer Applications **3 Credits**
- TCOM 2010 - Technical Writing **3 Credits**

## Major Courses

- ATT 1000 - Orientation **1 Credits**
- ATT 1400 - Principles of Merchandising **3 Credits**
- ATT 2301 - Apparel Computer-Aided Technical Design I **4 Credits**
- ATT 3100 - Fashion Merchandising **3 Credits**
- ATT 3505 - Fabric Formation and Design **3 Credits**
- ATT 3600 - Apparel Analysis and Product Development **3 Credits**
- ATT 3602 - Apparel Computer-Aided Technical Design II **4 Credits**
- ATT 3800 - Fashion Forecasting, Data Analysis & Consumer Trends **3 Credits**
- ATT 4444 - Quality Assurance for Textiles and Apparel **4 Credits**
- ATT 4670 - Apparel/Textile Business Practices **3 Credits**
- ATT 4750 - Advanced Design and Product Development **3 Credits**
- ATT 4840 - Textile/Apparel Business Project **3 Credits**
- IET 4810 - Ethics and Safety **1 Credits**
- MGNT 3135 - Principles of Marketing **3 Credits**
- SPSU 1001 - Hitch-hiker's Introduction to SPSU **1 Credits**

## ATT Related Electives: Select four courses: \* 12

- ARTS 2010 - Introduction to Drawing **3 Credits**
- ATT 4820 - Senior Internship **3 Credits**
- IET 2227 - Introduction to Statistics **3 Credits**
- IET 2449 - Logistics and Supply Chain Management **3 Credits**
- IET 3511 - Sustainability Engineering **3 Credits**
- MGNT 3105 - Management and Organizational Behavior **3 Credits**
- MGNT 3205 - Management Information Systems **3 Credits**
- MGNT 4145 - International Management **3 Credits**
- Free Electives **6 Credits**

## Degree Program Total: 120

\* At least six hours of Related Elective must be upper level courses

## Bachelor of Applied Science

# **Business Management, BAS**

The Bachelor of Applied Science degree is designed to cap designated associate degree programs. Admission to this program requires completion of an associate of applied science or associate of applied technology degree in Business Management or Marketing from a SACS accredited school in the Technical College System of Georgia. The program covers the common professional component in Business Administration with additional courses to fulfill the requirements of Areas A through E of the core. This coursework will prepare a candidate for a supervisory role in business or industry.

## **Area A - Essentials Skills**

- ENGL 1101 - English Composition I **3 Credits**
- ENGL 1102 - English Composition II **3 Credits**
- MATH 1111 - College Algebra **3 Credits**

## **Area B - Institutional Options (4 hours)**

- COMM 2400 - Public Speaking **2 Credits**
- STS 2400 - Science, Technology, and Society **2 Credits**

## **Area C1 - Literature of the World (3 hours)**

- ENGL 2111 - Early World Literature **3 Credits**
- ENGL 2112 - World Literature Mid-1600s to Present **3 Credits**
- ENGL 2120 - British Literature Early to Present **3 Credits**
- ENGL 2121 - Early British Literature **3 Credits**
- ENGL 2122 - British Literature Late 1700s to Present **3 Credits**
- ENGL 2130 - American Literature Early to Present **3 Credits**
- ENGL 2131 - Early American Literature **3 Credits**
- ENGL 2132 - American Literature Mid 1800s to Present **3 Credits**
- ENGL 2141 - Early Western Literature **3 Credits**
- ENGL 2142 - Western Literature 1600s to Present **3 Credits**
- ENGL 2300 - African-American Literature and Culture **3 Credits**

## **Area C2 - Art and Culture**

- ARTS 2001 - Art Appreciation **3 Credits**
- ARTS 2002 - Drama Appreciation **3 Credits**
- ARTS 2003 - Music Appreciation **3 Credits**
- ARTS 2004 - History of Contemporary American Music **3 Credits**
- FREN 1002 - Elementary French II **3 Credits**
- GRMN 1002 - Elementary German II **3 Credits**
- SPAN 1002 - Elementary Spanish II **3 Credits**

## Area D1 - Mathematics (4 hours)

- MATH 1113 - Pre-calculus **4 Credits**

## Area D2 - Science (8 hours)

- ASTR 1000K - Introduction to the Universe **4 Credits**
- BIOL 2107 - Principles of Biology I **3 Credits**
- BIOL 2107L - Principles of Biology I Laboratory **1 Credits**
- CHEM 1211 - Principles of Chemistry I **3 Credits**
- CHEM 1211K - Principles of Chemistry (ECORE) **4 Credits**
- CHEM 1211L - Principles of Chemistry I Lab **1 Credits**
- CHEM 1212 - Principles of Chemistry II **3 Credits**
- CHEM 1212K - Principles of Chemistry II (ECORE) **4 Credits**
- CHEM 1212L - Principles of Chemistry II Lab **1 Credits**
- PHYS 1111 - Introductory Physics I **3 Credits**
- PHYS 1111L - Introductory Physics Laboratory I **1 Credits**
- PHYS 1112 - Introductory Physics II **3 Credits**
- PHYS 1112L - Introductory Physics Laboratory II **1 Credits**
- GEOL 1101K - Introductory Geosciences **4 Credits**

## Area E1 - Social Sciences - American Context (3 hours)

- HIST 2111 - United States History to 1877 **3 Credits**
- HIST 2112 - United States History since 1877 **3 Credits**
- POLS 1101 - American Government **3 Credits**

## Area E2 - Social Sciences - World History (3 hours)

- HIST 1111 - Survey of World Civilization pre 1500 **3 Credits**
- HIST 1112 - Survey of World Civilization post 1500 **3 Credits**

### Area E3 - Social Sciences - Behavioral Science (3 hours)

- ECON 1101 - Introduction to Economics **3 Credits**
- PSYC 1101 - Introduction to General Psychology **3 Credits**
- SOCI 1101 - Introduction to Sociology **3 Credits**

### Area E4 - Social Sciences - Cultures and Societies

- ANTH 1102 - Introduction to Anthropology **3 Credits**
- ES 1100 - Ethnic Studies **3 Credits**
- GEOG 1101 - Introduction to Human Geography **3 Credits**
- RELG 1200 - World Religion **3 Credits**
- POLS 2401 - Global Issues **3 Credits**

### Technical Block

Students who have completed an A.A.S. in Business Management/Supervision or Marketing from a SACS accredited school in the Technical College System of Georgia may obtain transfer credit in the Technical Block for up to 38 credit hours in business.

### Required Business Administration Courses (outside of Technical Block)

- SPSU 1001 - Hitch-hiker's Introduction to SPSU **1 Credits**
- MGNT 1000 - Orientation to Business **1 Credits**
- MATH 2240 - Survey of Calculus **3 Credits**
- IET 2227 - Introduction to Statistics **3 Credits**
- MGNT 3105 - Management and Organizational Behavior **3 Credits**
- MGNT 3125 - Business Finance **3 Credits**
- MGNT 3145 - Legal Environment of Business **3 Credits**
- MGNT 3205 - Management Information Systems **3 Credits**
- MGNT 4115 - Human Resource Management **3 Credits**
- MGNT 4135 - Project Management **3 Credits**
- MGNT 4145 - International Management **3 Credits**



- MGNT 4151 - Operations Management **3 Credits**
- MGNT 4595 - Business Strategy **3 Credits**
- Upper level Management elective

**Degree Program Total: 122**

## **Information Technology, BAS**

This program is designed for students who have completed an AAS or AAT degree from a two year technical college in a computing discipline.

### **Requirements**

- ENGL 1101 - English Composition I **3 Credits**
- ENGL 1102 - English Composition II **3 Credits**
- MATH 1111 - College Algebra **3 Credits**
- COMM 2400 - Public Speaking **2 Credits**
- STS 2400 - Science, Technology, and Society **2 Credits**
- Area C Group 1 - Take one course from the Literature Group **3 Credits**
- Area C Group 2 - Take one course from the Art and Culture Group **3 Credits**
- Area D - Any two lab-based science courses **8 Credits**
- Area E Group 1 - American Context **3 Credits**
- Area E Group 2 - World History **3 Credits**
- Area E Group 3 - Behavioral Science **3 Credits**
- Area E Group 4 - Cultures and Societies **3 Credits**
- MATH 1113 - Pre-calculus **4 Credits**
- CSE 1301 Programming and Problem Solving I **4 Credits**
- MATH 2345 - Discrete Mathematics **3 Credits**
- IT 1324 - Advanced Programming Principles **4 Credits**
- CSE 3642 - Professional Practices and Ethics **2 Credits**
- CSE 3153 - Database Systems **3 Credits**
- IT 3123 - Hardware/Software Concepts **3 Credits**
- IT 3203 - Introduction to Web Development **3 Credits**
- IT 3223 - Software Acquisition and Project Management **3 Credits**
- IT 3423 - Operating Systems Concepts & Administration **3 Credits**
- IT 3883 - Advanced Applications Development **3 Credits**
- IT 4323 - Data Communications & Networks **3 Credits**
- IT 4823 - Information Security Administration & Privacy **3 Credits**
- CSE 1002 - Introduction to the Computing Disciplines **2 Credits**

**Choose two from the following:**

- IT 4123 - Electronic Commerce **3 Credits**
- IT 4203 - Advanced Web Development **3 Credits**
- IT 4153 - Advanced Database **3 Credits**
- IT 4333 - Network Configuration & Administration **3 Credits**
- IT 4683 - Management of Information Technology and Human Computer Interaction **3 Credits**
- IT 4723 - IT Policy and Law **3 Credits**
- IT 4833 - Wireless Security **3 Credits**
- IT 4843 - Ethical Hacking for Effective Defense **3 Credits**
- IT 4853 - Computer Forensics **3 Credits**
- IT 3503 - Foundations of Health Information Technology **3 Credits**

## Technical Block (AAS major courses) 37 Credits

Students may receive up to 37 technical block (major courses from the AAS degree) - 7 hours will count in AREA F and 30 hours in the technical block remainder.

**Degree Program Total: 122**

## Information Technology, BAS-HIT

This degree, which is only open to students who have completed an AAS or AAT degree in a Health Information Technology discipline, prepares students for careers in designing, supporting and administrating health information technology systems, with an emphasis on electronic health record systems.

## Requirements

- ENGL 1101 - English Composition I **3 Credits**
- ENGL 1102 - English Composition II **3 Credits**
- MATH 1111 - College Algebra **3 Credits**
- COMM 2400 - Public Speaking **2 Credits**
- STS 2400 - Science, Technology, and Society **2 Credits**
- Area C Group 1 - Take one course from the Literature Group **3 Credits**
- Area C Group 2 - Take one course from the Art and Culture Group **3 Credits**
- Area D - Any two lab-based science courses **8 Credits**
- Area E Group 1 - American Context **3 Credits**
- Area E Group 2 - World History **3 Credits**
- Area E Group 3 - Behavioral Science **3 Credits**
- Area E Group 4 - Cultures and Societies **3 Credits**
- MATH 1113 - Pre-calculus **4 Credits**
- MATH 2345 - Discrete Mathematics **3 Credits**

- CSE 1301J - Programming & Problem Solving I **4 Credits**
- IT 1324 - Advanced Programming Principles **4 Credits**
- CSE 3642 - Professional Practices and Ethics **2 Credits**
- CSE 3153 - Database Systems **3 Credits**
- IT 3123 - Hardware/Software Concepts **3 Credits**
- IT 3203 - Introduction to Web Development **3 Credits**
- IT 3223 - Software Acquisition and Project Management **3 Credits**
- IT 4323 - Data Communications & Networks **3 Credits**
- IT 4523 - Clinical Processes and Workflows: Analysis and Redesign **3 Credits**
- IT 4533 - Health Information Security and Privacy **3 Credits**
- IT 4823 - Information Security Administration & Privacy **3 Credits**
- TCOM 2010 - Technical Writing **3 Credits**
- CSE 4983 - CSE Computing Internship **3 Credits**
- CSE 1002 - Introduction to the Computing Disciplines **2 Credits**

## Technical Block (AAS major courses) 37 Credits

7 hours go into AREA F and 30 additional tech block hours are transferred

**Degree Program Total: 122**

## **Manufacturing Operations, BAS**

The Bachelor of Applied Science in Manufacturing Operations has been specifically designed for students who have completed an Associate of Applied Science Degree from a Technical College System of Georgia institution.

The goal of the partnership between SPSU and the TCSG schools is to provide the opportunity for degreed graduates from the technical schools of Georgia to complete a Bachelor's degree in approximately 60 semester credits which in equivalent to about two years as a full time student.

All required major courses to complete the BAS in Manufacturing Operations program are offered totally online by SPSU faculty. All general education requirements are also offered on-line through the university system called E-core.

The BAS Manufacturing Operations program prepares students in the areas of manufacturing, logistics and operations through an industry-driven curriculum encompassing manufacturing processes, quality principles, engineering economy, work measurement and facilities layout.

Companies traditionally who hire SPSU graduates include such leaders as Shaw Industries, Delta Airlines, Georgia Power, Mohawk Industries, Lockheed Martin and UPS.

Since each TCSG program is different, the website <http://iet.spsu.edu/BAS.html> outlines the articulation of each program to SPSU.

Further information on the TCSG and SPSU program can also be found at <http://tcsг.spsu.edu/>.

## **Area A**

- ENGL 1101 - English Composition I **3 Credits**
- ENGL 1102 - English Composition II **3 Credits**
- MATH 1111 - College Algebra **3 Credits**

## Area B

- COMM 2400 - Public Speaking **2 Credits**
- STS 2400 - Science, Technology, and Society **2 Credits**

## Area C

- Group 1 - Literature of the World **3 Credits**
- Group 2 - Art and Culture of the World **3 Credits**

## Area D

- Sciences - Lab Sciences **8 Credits**
- MATH 1113 - Pre-calculus **4 Credits**

## Area E

- Group 1 - American Context **3 Credits**
- Group 2 - World History **3 Credits**
- Group 3 - Behavioral Science **3 Credits**
- Group 4 - Cultures and Societies **3 Credits**

## Area F

- Technical Block - Up to 17 Semester Hours **17 Credits**
- Major Technical Block - Up to 21 Semester Hours **21 Credits**

## Major Courses

- ACCT 2101 - Principles of Financial Accounting **3 Credits**
- IET 2227 - Introduction to Statistics **3 Credits**
- IET 3322 - Work Measurement and Ergonomics **4 Credits**

- IET 3339 - Statistical Quality Control **3 Credits**
- IET 3356 - Quality Concepts and Systems Design **3 Credits**
- IET 3424 - Engineering Economy **3 Credits**
- IET 3511 - Sustainability Engineering **3 Credits**
- IET 4422 - Facilities Design, Plant Layout, and Materials Handling **4 Credits**
- MATH 2253 - Calculus I **4 Credits**
- MGNT 4151 - Operations Management **3 Credits**
- SPSU 1001 - Hitch-hiker's Introduction to SPSU **1 Credits**

## Technical Electives

Choose any two courses

- IET 2305 - The Role of Industrial Engineering Technology in Industrial Systems **4 Credits**
- IET 2449 - Logistics and Supply Chain Management **3 Credits**
- IET 3403 - Advanced Statistics with Application **3 Credits**
- ECET 3000 - Electrical Principles **4 Credits**
- MET 1311 - Manufacturing Processes **3 Credits**
- MET 2322 - Metrology and CNC Machining **3 Credits**
- TCOM 2010 - Technical Writing **3 Credits**

**Degree Program Total: 120**

## Supply Chain Logistics, BAS

The Bachelor of Applied Science in Supply Chain Logistics has been specifically designed for students who have completed an Associate of Applied Science Degree from a Technical College System of Georgia institution.

The goal of the partnership between SPSU and the TCSG schools is to provide the opportunity for degreed graduates from the technical schools of Georgia to complete a Bachelor's degree in approximately 60 semester credits which is equivalent to about two years as a full time student.

All required major courses to complete the BAS in Supply Chain Logistics are offered totally online by SPSU faculty. All general education requirements are also offered on-line through the university system called E-core.

The BAS Supply Chain Logistics prepares students for careers in managing raw materials, work-in-process and finished goods inventories and how to efficiently control the movement of those inventories.

Graduates in this type program are engaged in challenging and demanding careers in responsible positions such as Logistics Manager, Demand Planning Analyst, Senior Buyer, Purchasing Agent and Supply Chain Manager.

Companies traditionally who hire SPSU graduates include such leaders as Shaw Industries, Delta Airlines, Georgia Power, Mohawk Industries, Lockheed Martin and UPS.

Since each TCSG program is different, the website <http://iet.spsu.edu/BASSC.html> outlines the articulation of each program to SPSU.

Further information on the TCSG and SPSU program can also be found at <http://tcsг.spsu.edu/>.

## Area A

- ENGL 1101 - English Composition I **3 Credits**
- ENGL 1102 - English Composition II **3 Credits**
- MATH 1111 - College Algebra **3 Credits**

## Area B

- COMM 2400 - Public Speaking **2 Credits**
- STS 2400 - Science, Technology, and Society **2 Credits**

## Area C

- Group 1 - Literature of the World **3 Credits**
- Group 2 - Art and Culture of the World **3 Credits**

## Area D

- Sciences - Lab Sciences **8 Credits**
- MATH 1113 - Pre-calculus **4 Credits**

## Area E

- Group 1 - American Context **3 Credits**
- Group 2 - World History **3 Credits**
- Group 3 - Behavioral Science **3 Credits**
- Group 4 - Cultures and Societies **3 Credits**

## Area F

- Technical Block - Up to 17 Semester Hours **17 Credits**
- Major Technical Block - Up to 21 Semester Hours **21 Credits**

## Major Courses

- ACCT 2101 - Principles of Financial Accounting **3 Credits**
- IET 2227 - Introduction to Statistics **3 Credits**
- IET 2449 - Logistics and Supply Chain Management **3 Credits**
- IET 3320 - Advanced Logistics **3 Credits**
- IET 3339 - Statistical Quality Control **3 Credits**
- IET 3356 - Quality Concepts and Systems Design **3 Credits**
- IET 3424 - Engineering Economy **3 Credits**
- IET 3511 - Sustainability Engineering **3 Credits**
- IET 3620 - Warehousing Systems **3 Credits**
- MGNT 3105 - Management and Organizational Behavior **3 Credits**
- MGNT 3135 - Principles of Marketing **3 Credits**
- MGNT 4135 - Project Management **3 Credits**
- TCOM 2010 - Technical Writing **3 Credits**
- SPSU 1001 - Hitch-hiker's Introduction to SPSU **1 Credits**

Degree Program Total: 120

## **Bachelor of Science**

### **Accounting, BS**

The Bachelor of Science in Accounting (BSA) is designed to give students a broad understanding of the major components of the accounting industry and the foundation requirements for taking the certified public accountant (CPA) exam as specified by the Georgia State Board of Accountancy. Included in the 122 hours required to earn this degree is a comprehensive coverage of business principles.

### **Requirements**

#### **Area A Essential Skills**

- ENGL 1101 - English Composition I **3 Credits**
- ENGL 1102 - English Composition II **3 Credits**
- MATH 1113 - Pre-calculus **4 Credits**

#### **Area B Institutional Options**

- COMM 2400 - Public Speaking **2 Credits**
- STS 2400 - Science, Technology, and Society **2 Credits**

## Area C Humanities/Fine Arts

Group 1: Literature (Select one)

- ENGL 2111 - Early World Literature **3 Credits**
- ENGL 2112 - World Literature Mid-1600s to Present **3 Credits**
- ENGL 2120 - British Literature Early to Present **3 Credits**
- ENGL 2121 - Early British Literature **3 Credits**
- ENGL 2122 - British Literature Late 1700s to Present **3 Credits**
- ENGL 2130 - American Literature Early to Present **3 Credits**
- ENGL 2131 - Early American Literature **3 Credits**
- ENGL 2132 - American Literature Mid 1800s to Present **3 Credits**
- ENGL 2141 - Early Western Literature **3 Credits**
- ENGL 2142 - Western Literature 1600s to Present **3 Credits**
- ENGL 2300 - African-American Literature and Culture **3 Credits**

Group 2: Art and Culture (Select one)

- ARTS 2001 - Art Appreciation **3 Credits**
- ARTS 2002 - Drama Appreciation **3 Credits**
- ARTS 2003 - Music Appreciation **3 Credits**
- ARTS 2004 - History of Contemporary American Music **3 Credits**
- FREN 1002 - Elementary French II **3 Credits**
- GRMN 1002 - Elementary German II **3 Credits**
- SPAN 1002 - Elementary Spanish II **3 Credits**

## Area D Science, Mathematics, and Technology

- MATH 2240 - Survey of Calculus **3 Credits**
- plus Science: select two (2) science courses with labs (labs must be taken concurrently) - **8 Credits**
- ASTR 1000K - Introduction to the Universe **4 Credits**
- ASTR 1010K - Introduction to the Universe II **4 Credits**
- BIOL 2107 - Principles of Biology I **3 Credits**
- BIOL 2107L - Principles of Biology I Laboratory **1 Credits**
- BIOL 2108 - Principles of Biology II **3 Credits**
- BIOL 2108L - Principles of Biology II Laboratory **1 Credits**
- CHEM 1211 - Principles of Chemistry I **3 Credits**
- CHEM 1211L - Principles of Chemistry I Lab **1 Credits**
- CHEM 1212 - Principles of Chemistry II **3 Credits**



- CHEM 1212L - Principles of Chemistry II Lab **1 Credits**
- PHYS 1111 - Introductory Physics I **3 Credits**
- PHYS 1111L - Introductory Physics Laboratory I **1 Credits**
- PHYS 1112 - Introductory Physics II **3 Credits**
- PHYS 1112L - Introductory Physics Laboratory II **1 Credits**
- PHYS 2211 - Principles of Physics I **3 Credits**
- PHYS 2211L - Principles of Physics Laboratory I **1 Credits**
- PHYS 2212 - Principles of Physics II **3 Credits**
- PHYS 2212L - Principles of Physics Laboratory II **1 Credits**
- GEOL 1101K - Introductory Geosciences **4 Credits**
- ENVS 2202K - Introduction to Environmental Science **4 Credits**

## Area E Social Sciences

Group 1: American Context (select one)

- HIST 2111 - United States History to 1877 **3 Credits**
- HIST 2112 - United States History since 1877 **3 Credits**
- POLS 1101 - American Government **3 Credits**

Area E-2: World History (select one)

- HIST 1111 - Survey of World Civilization pre 1500 **3 Credits**
- HIST 1112 - Survey of World Civilization post 1500 **3 Credits**

Area E-3: Behavioral Science (select one)

- ECON 1101 - Introduction to Economics **3 Credits**
- ECON 2107 - Introduction to Economic Analysis **3 Credits**
- PSYC 1101 - Introduction to General Psychology **3 Credits**
- SOCI 1101 - Introduction to Sociology **3 Credits**

Area E-4: Cultures and Societies (select one)

- ANTH 1102 - Introduction to Anthropology **3 Credits**
- ES 1100 - Ethnic Studies **3 Credits**
- GEOG 1101 - Introduction to Human Geography **3 Credits**
- POLS 2401 - Global Issues **3 Credits**
- RELG 1200 - World Religion **3 Credits**

## Area F

- ACCT 2101 - Principles of Financial Accounting **3 Credits**
- ACCT 2102 - Principles of Managerial Accounting **3 Credits**
- ECON 2105 - Principles of Macroeconomics **3 Credits**
- ECON 2106 - Principles of Microeconomics **3 Credits**
- COMM 2000 - Business Communication **3 Credits**
- MGNT 2201 - Business Computer Applications **3 Credits**

## Common Professional Core

- MGNT 1000 - Orientation to Business **1 Credits**
- SPSU 1001 - Hitch-hiker's Introduction to SPSU **1 Credits**
- IET 2227 - Introduction to Statistics **3 Credits**
- MGNT 3105 - Management and Organizational Behavior **3 Credits**
- MGNT 3135 - Principles of Marketing **3 Credits**
- MGNT 3125 - Business Finance **3 Credits**
- MGNT 3145 - Legal Environment of Business **3 Credits**
- MGNT 3205 - Management Information Systems **3 Credits**
- MGNT 4135 - Project Management **3 Credits**
- MGNT 4151 - Operations Management **3 Credits**

## Core Accounting Courses

- ACCT 3230 - Intermediate Accounting I **3 Credits**
- ACCT 3231 - Intermediate Accounting II **3 Credits**
- ACCT 4530 - Advanced Accounting **3 Credits**
- ACCT 3530 - Cost Accounting **3 Credits**
- ACCT 4535 - Accounting Information Systems **3 Credits**
- MGNT 4545 - Legal Environment of Business II **3 Credits**
- MGNT 4545 - Legal Environment of Business II **3 Credits**
- ACCT 4555 - Auditing and Assurance **3 Credits**
- ACCT 4560 - Intro to Federal Income Taxes **3 Credits**

## Electives (Select 3 courses)

- ACCT 4562 - Federal Taxation II **3 Credits**
- ACCT 4565 - Fraud Examination **3 Credits**
- MGNT 4115 - Human Resource Management **3 Credits**
- MGNT 4125 - Technology and Public Issues **3 Credits**
- MGNT 4145 - International Management **3 Credits**
- MGNT 4190 - Entrepreneurship **3 Credits**
- MGNT 4595 - Business Strategy **3 Credits**
- Free Elective - 2 credit hours

**Degree Program Total: 122**

# **Biology, B.S.**

## **Area A**

- ENGL 1101 - English Composition I **3 Credits**
- ENGL 1102 - English Composition II **3 Credits**
- MATH 1113 - Pre-calculus **4 Credits**

## **Area B**

- COMM 2400 - Public Speaking **2 Credits**
- STS 2400 - Science, Technology, and Society **2 Credits**

## **Area C**

- Group 1 - Literature of the World **3 Credits**
- Group 2 - Art and Culture of the World **3 Credits**

## **Area D**

- MATH 2253 - Calculus I **4 Credits**  
Take any 2 of the courses below (with labs):
- BIOL 2107 - Principles of Biology I **3 Credits**
- BIOL 2107L - Principles of Biology I Laboratory **1 Credits**
- BIOL 2108 - Principles of Biology II **3 Credits**
- BIOL 2108L - Principles of Biology II Laboratory **1 Credits**
- CHEM 1211 - Principles of Chemistry I **3 Credits**
- CHEM 1211L - Principles of Chemistry I Lab **1 Credits**
- CHEM 1212 - Principles of Chemistry II **3 Credits**
- CHEM 1212L - Principles of Chemistry II Lab **1 Credits**
- PHYS 1111 - Introductory Physics I **3 Credits**
- PHYS 1111L - Introductory Physics Laboratory I **1 Credits**
- PHYS 1112 - Introductory Physics II **3 Credits**
- PHYS 1112L - Introductory Physics Laboratory II **1 Credits**

## Note:

*PHYS 2211/PHYS 2211L and PHYS 2212/PHYS 2212L may be taken instead of PHYS 1111/PHYS 1111L and PHYS 1112/PHYS 1112L*

## Area E

- Group 1 - American Context **3 Credits**
- Group 2 - World History **3 Credits**
- Group 3 - Behavioral Science **3 Credits**
- Group 4 - Cultures and Societies **3 Credits**

## Area F

Take any 4 courses (with labs) from the list below. Courses used as Area D requirements may not be selected.

- BIOL 2107 - Principles of Biology I **3 Credits**
- BIOL 2107L - Principles of Biology I Laboratory **1 Credits**
- BIOL 2108 - Principles of Biology II **3 Credits**
- BIOL 2108L - Principles of Biology II Laboratory **1 Credits**
- CHEM 1211 - Principles of Chemistry I **3 Credits**
- CHEM 1211L - Principles of Chemistry I Lab **1 Credits**
- CHEM 1212 - Principles of Chemistry II **3 Credits**
- CHEM 1212L - Principles of Chemistry II Lab **1 Credits**
- PHYS 1111 - Introductory Physics I **3 Credits**
- PHYS 1111L - Introductory Physics Laboratory I **1 Credits**
- PHYS 1112 - Introductory Physics II **3 Credits**
- PHYS 1112L - Introductory Physics Laboratory II **1 Credits**

## Note:

*PHYS 2211/PHYS 2211L and PHYS 2212/PHYS 2212L may be taken instead of PHYS 1111/PHYS 1111L and PHYS 1112/PHYS 1112L*

## Common Biology Major Requirements

A grade of "C" or better must be earned in all courses (excluding core areas A-E and free electives).

- BIOL 3000K - Genetics **4 Credits**
- BIOC 3111K - Biochemistry I **4 Credits**
- CHEM 2511K - Organic Chemistry I **4 Credits**
- CHEM 2512K - Organic Chemistry II **4 Credits**
- MATH 2260 - Introduction to Probability and Statistics **3 Credits**
- TCOM 2010 - Technical Writing **3 Credits**
- A Biology major must complete one program track (see below).

## General Biology Track Requirements

- BIOL 3300K - Ecology **4 Credits**
- BIOL 4480 - Evolution **3 Credits**
- At least 5 additional BIOL or BIOC courses above 2199 (excluding track requirements), with **at least one course** from each of the **Cellular Form and Function group** and the **Organismal Form and Function group 17-21 Credits**
- Free Electives **10-14 Credits**

## Cellular Form and Function group

- BIOL 3100K - Microbiology **4 Credits**
- BIOL 3400K - Cell Physiology **4 Credits**
- BIOL 4410 - Immunology **3 Credits**
- BIOL 4470 - Plant Physiology **3 Credits**

## Organismal Form and Function group

- BIOL 3700K - Ichthyology **4 Credits**
- BIOL 4100K - Entomology **4 Credits**
- BIOL 4110 - Parasitology **3 Credits**
- BIOL 4200K - Zoology **4 Credits**
- BIOL 4400K - Human Physiology **4 Credits**
- BIOL 4440K - Botany **4 Credits**
- BIOL 4460K - Human Anatomy **4 Credits**

## Biochemistry & Molecular Biology Track Requirements

- BIOL 3200K - Applied Molecular Biology Laboratory **4 Credits**
- BIOL 3310K - Molecular Biology **4 Credits**
- BIOC 3112K - Biochemistry II **4 Credits**
- At Least 4 additional BIOL or BIOC courses above 2199 (excluding track requirements) **12-16 Credits**
- Free Electives **10 – 14 Credits**

## Bioinformatics Track Requirements

- BIOL 2500K - Bioinformatics I - Tools & Databases **4 Credits**
- BIOL 3310K - Molecular Biology **4 Credits**
- BIOL 4510K - Bioinformatics II **4 Credits**
- CSE 1301J - Programming & Problem Solving I **4 Credits**
- CSE 1302J - Programming & Problem Solving II **4 Credits**
- CSE 3153 - Database Systems **3 Credits**
- At least 3 additional BIOL or BIOC courses above 2199 (excluding track requirements) **9 – 12 Credits**
- Free Electives **3 – 6 Credits**

## Biotechnology Track Requirements

- BIOL 3100K - Microbiology **4 Credits**
- BIOL 3310K - Molecular Biology **4 Credits**
- BIOL 3400K - Cell Physiology **4 Credits**
- BIOL 4350K - Cell and Tissue Culture **4 Credits**
- BIOL 4600K - Biotechnology **4 Credits**
- At Least 3 additional BIOL or BIOC courses above 2199 (excluding track requirements) **9-11 Credits**
- Free electives **7-9 Credits**

## Pre-Health Professional Track Requirements

- BIOL 3400K - Cell Physiology **4 Credits**
- BIOL 4400K - Human Physiology **4 Credits**
- BIOL 4460K - Human Anatomy **4 Credits**
- At Least 4 additional BIOL or BIOC Courses Above 2199 (excluding track requirements) **12-16 Credits**
- Free Electives **10-14 Credits**

**Degree Program Total: 120**

## **Biology, Education Track, BS**

The bachelor's degrees in mathematics or science with the Teacher Education track provides students with a strong foundation in the discipline, giving them maximum flexibility with their degrees. Adding the Teacher Education track can give students immediate job possibilities.

The Teacher Education Program at SPSU provides students with strong, mentored experiences in the schools, a thorough knowledge of the teaching strategies and research on learning science and mathematics, and a nationally renowned teacher preparation program. This program allows students to build confidence in working with a variety of

students in multiple school settings, and prepares them for a successful career in teaching mathematics or science in the middle school or high school.

## Requirements

- ENGL 1101 - English Composition I **3 Credits**
- ENGL 1102 - English Composition II **3 Credits**
- MATH 1113 - Pre-calculus **4 Credits**
- MATH 2253 - Calculus I **4 Credits**
- MATH 2260 - Introduction to Probability and Statistics **3 Credits**
- COMM 2400 - Public Speaking **2 Credits**
- STS 2400 - Science, Technology, and Society **2 Credits**
- Area C Group 1 Take One Course from the Literature Group **3 Credits**
- Area C Group 2 Take One Course from the Art and Culture Group **3 Credits**
- Area E Group 1 American Context **3 Credits**
- Area E Group 2 World History **3 Credits**
- Area E Group 3 Behavioral Science **3 Credits**
- Area E Group 4 Cultures and Societies **3 Credits**
- SPSU 1001 - Hitch-hiker's Introduction to SPSU **1 Credits**
- CHEM 1211 - Principles of Chemistry I **3 Credits**
- CHEM 1211L - Principles of Chemistry I Lab **1 Credits**
- CHEM 1212 - Principles of Chemistry II **3 Credits**
- CHEM 1212L - Principles of Chemistry II Lab **1 Credits**
- CHEM 2511K - Organic Chemistry I **4 Credits**
- CHEM 2512K - Organic Chemistry II **4 Credits**
- PHYS 1111 - Introductory Physics I **3 Credits**
- PHYS 1111L - Introductory Physics Laboratory I **1 Credits**
- BIOL 3000K - Genetics **4 Credits**
- BIOL 3300K - Ecology **4 Credits**
- BIOL 3400K - Cell Physiology **4 Credits**
- BIOL 4200K - Zoology **4 Credits**
- BIOL 4400K - Human Physiology **4 Credits**
- BIOL 4460K - Human Anatomy **4 Credits**
- BIOL 4440K - Botany **4 Credits**
- BIOL 4480 - Evolution **3 Credits**
- EDUC 1101 - UTeach Step 1 **1 Credits**
- EDUC 1102 - UTeach Step 2 **1 Credits**
- EDUC 2010 - UTeach Knowing and Learning **3 Credits**
- EDUC 2020 - Classroom Interactions **3 Credits**
- EDUC 4030 - Project Based Instruction **3 Credits**
- RSCH 3610 - Research Methods **3 Credits**
- STS 3347 - Perspectives on Science and Math **3 Credits**
- EDUC 4401 - Apprentice Teaching Seminar **1 Credits**
- EDUC 4406 - Apprentice Teaching **6 Credits**

Degree Program Total: 126

Note:

*PHYS 2211, PHYS 2211L and PHYS 2212, PHYS 2212L may be taken instead of PHYS 1111, PHYS 1111L and PHYS 1112, PHYS 1112L*

## **Business Administration, BS**

### Area A - Essential Skills (10 hours)

- ENGL 1101 - English Composition I **3 Credits**
- ENGL 1102 - English Composition II **3 Credits**
- MATH 1113 - Pre-calculus **4 Credits**

### Area B - Institutional Options (4 hours)

- COMM 2400 - Public Speaking **2 Credits**
- STS 2400 - Science, Technology, and Society **2 Credits**

### Area C1 - Humanities (3 hours)

- ENGL 2111 - Early World Literature **3 Credits**
- ENGL 2112 - World Literature Mid-1600s to Present **3 Credits**
- ENGL 2120 - British Literature Early to Present **3 Credits**
- ENGL 2121 - Early British Literature **3 Credits**
- ENGL 2122 - British Literature Late 1700s to Present **3 Credits**
- ENGL 2130 - American Literature Early to Present **3 Credits**
- ENGL 2131 - Early American Literature **3 Credits**
- ENGL 2132 - American Literature Mid 1800s to Present **3 Credits**
- ENGL 2141 - Early Western Literature **3 Credits**
- ENGL 2142 - Western Literature 1600s to Present **3 Credits**
- ENGL 2300 - African-American Literature and Culture **3 Credits**



## Area C2 - Fine Arts (3 hours)

- ARTS 2001 - Art Appreciation **3 Credits**
- ARTS 2002 - Drama Appreciation **3 Credits**
- ARTS 2003 - Music Appreciation **3 Credits**
- ARTS 2004 - History of Contemporary American Music **3 Credits**
- FREN 1002 - Elementary French II **3 Credits**
- GRMN 1002 - Elementary German II **3 Credits**
- SPAN 1002 - Elementary Spanish II **3 Credits**

## Area D1 - Mathematics (4 hours)

- MATH 2240 - Survey of Calculus **3 Credits**

## Area D2 - Science (8 hours)

- ASTR 1000K - Introduction to the Universe **4 Credits**
- BIOL 2107 - Principles of Biology I **3 Credits**
- BIOL 2108 - Principles of Biology II **3 Credits**
- CHEM 1211 - Principles of Chemistry I **3 Credits**
- CHEM 1212 - Principles of Chemistry II **3 Credits**
- PHYS 1111 - Introductory Physics I **3 Credits**
- PHYS 1112 - Introductory Physics II **3 Credits**
- PHYS 2211 - Principles of Physics I **3 Credits**
- PHYS 2212 - Principles of Physics II **3 Credits**

## Area E1 - Social Sciences - American Context (3 hours)

- HIST 2111 - United States History to 1877 **3 Credits**
- HIST 2112 - United States History since 1877 **3 Credits**
- POLS 1101 - American Government **3 Credits**

## Area E2 - Social Sciences - World History (3 hours)

- HIST 1111 - Survey of World Civilization pre 1500 **3 Credits**
- HIST 1112 - Survey of World Civilization post 1500 **3 Credits**

### Area E3 - Behavioral Science (3 hours)

- ECON 1101 - Introduction to Economics **3 Credits**
- PSYC 1101 - Introduction to General Psychology **3 Credits**
- SOCI 1101 - Introduction to Sociology **3 Credits**

### Area E4 - Cultures and Societies (3 hours)

- ANTH 1102 - Introduction to Anthropology **3 Credits**
- ES 1100 - Ethnic Studies **3 Credits**
- GEOG 1101 - Introduction to Human Geography **3 Credits**
- POLS 2401 - Global Issues **3 Credits**
- RELG 1200 - World Religion **3 Credits**

### Area F (18 hours)

- ACCT 2101 - Principles of Financial Accounting **3 Credits**
- ACCT 2102 - Principles of Managerial Accounting **3 Credits**
- COMM 2400 - Public Speaking **2 Credits**
- ECON 2105 - Principles of Macroeconomics **3 Credits**
- ECON 2106 - Principles of Microeconomics **3 Credits**
- MGNT 2201 - Business Computer Applications **3 Credits**

### Required Courses

- MGNT 1000 - Orientation to Business **1 Credits**
- IET 2227 - Introduction to Statistics **3 Credits**
- IET 3356 - Quality Concepts and Systems Design **3 Credits**
- IET 4405 - Operations Research - Concepts, Models and Methods **3 Credits**
- MGNT 3105 - Management and Organizational Behavior **3 Credits**
- MGNT 3125 - Business Finance **3 Credits**
- MGNT 3135 - Principles of Marketing **3 Credits**
- MGNT 3145 - Legal Environment of Business **3 Credits**

- MGNT 3205 - Management Information Systems 3 Credits
- MGNT 4115 - Human Resource Management 3 Credits
- MGNT 4125 - Technology and Public Issues 3 Credits
- MGNT 4135 - Project Management 3 Credits
- MGNT 4145 - International Management 3 Credits
- MGNT 4151 - Operations Management 3 Credits
- MGNT 4595 - Business Strategy 3 Credits

## Business Administration Options

### **Concentration, Business Electives, Directed Electives, or a Minor in Another Discipline**

Students in the Bachelor of Science in Business Administration program may complete the remaining 17 hours of credit by taking electives in a concentration (management, marketing, management of information systems), directed electives, or by completing a minor in another field. At least three courses must be at the 3000-level or above.

#### **Option 1: Concentration**

Students may complete 12 hours (four courses) in Accounting, Management, Marketing, or MIS by completing four electives in the selected area (see the elective lists that follows). At least three courses must be at the 3000-level or above.

#### **Option 2: Business Electives**

Students may complete 12 hours of elective credit from all of the business electives. At least three courses must be at the 3000-level or above.

#### **Option 3: Directed Electives**

Students may create a customized group of four electives from business and other disciplines, subject to advisor approval. At least three of the courses must be at the 3000-level or above.

#### **\*Option 4: Minor in another field of study**

Students may complete a Minor in another field (15-18 hours). See the catalog for requirements in a specific minor. Must complete free electives if the minor is less than 17 hours. Note that some minors require 18 hours.

#### **Accounting Concentration Electives (15 Credits)**

- ACCT 3230 - Intermediate Accounting I 3 Credits

- ACCT 3231 - Intermediate Accounting II **3 Credits**
- ACCT 3530 - Cost Accounting **3 Credits**
- ACCT 4535 - Accounting Information Systems **3 Credits**
- ACCT 4530 - Advanced Accounting **3 Credits** or
- ACCT 4560 - Intro to Federal Income Taxes **3 Credits**

## Finance Concentration Electives (12 Credits)

- MGNT 3231 - Management of Financial Institutions **3 Credits**
- MGNT 4232 - Financial Planning and Capital Budgeting **3 Credits**
- MGNT 4233 - Investment Analysis and Portfolio Management **3 Credits**
- MGNT 4234 - International Finance **3 Credits**

## Management Concentration Electives: Select 4 courses from the list below

- MGNT 4100 - Business Systems Analysis and Design **3 Credits**
- MGNT 4140 - Management of Networks and Telecommunications **3 Credits**
- MGNT 4185 - Technology Management **3 Credits**
- MGNT 4195 - Current Readings in Management of Technology and Operations **3 Credits**
- MGNT 4903 - Special Topics in Management
- MGNT 4103 - Marketing Management **3 Credits**
- MGNT 3170 - Leadership **3 Credits**
- MGNT 4190 - Entrepreneurship **3 Credits**

## Management Information Systems Concentration Electives (12 Credits)

- IT 1113 - Programming Principles **3 Credits**
- MGNT 3500 - Database Management **3 Credits**
- MGNT 4100 - Business Systems Analysis and Design **3 Credits**
- MGNT 4140 - Management of Networks and Telecommunications **3 Credits**

## Marketing Concentration Electives (12 Credits)

- MGNT 3210 - Professional Selling and Customer Relationship Management **3 Credits**
- MGNT 3224 - Business Marketing **3 Credits**
- MGNT 3228 - Market Research **3 Credits**

- MGNT 4103 - Marketing Management **3 Credits**
- MGNT 4903 - Special Topics in Marketing

## Chemistry, BS

### Area A

- ENGL 1101 - English Composition I **3 Credits**
- ENGL 1102 - English Composition II **3 Credits**
- MATH 1113 - Pre-calculus **4 Credits**

### Area B

- COMM 2400 - Public Speaking **2 Credits**
- STS 2400 - Science, Technology, and Society **2 Credits**

### Area C

- Group 1 - Literature of the World **3 Credits**
- Group 2 - Art and Culture of the World **3 Credits**

### Area D

- MATH 2253 - Calculus I **4 Credits**  
Take any 2 of the courses below (with labs):
- BIOL 2107 - Principles of Biology I **3 Credits**
- BIOL 2107L - Principles of Biology I Laboratory **1 Credits**
- BIOL 2108 - Principles of Biology II **3 Credits**
- BIOL 2108L - Principles of Biology II Laboratory **1 Credits**
- CHEM 1211 - Principles of Chemistry I **3 Credits**
- CHEM 1211L - Principles of Chemistry I Lab **1 Credits**
- CHEM 1212 - Principles of Chemistry II **3 Credits**
- CHEM 1212L - Principles of Chemistry II Lab **1 Credits**
- PHYS 2211 - Principles of Physics I **3 Credits**
- PHYS 2211L - Principles of Physics Laboratory I **1 Credits**
- PHYS 2212 - Principles of Physics II **3 Credits**
- PHYS 2212L - Principles of Physics Laboratory II **1 Credits**

## Area E

- Group 1 - American Context **3 Credits**
- Group 2 - World History **3 Credits**
- Group 3 - Behavioral Science **3 Credits**
- Group 4 - Cultures and Societies **3 Credits**

## Area F

Take any 4 courses (with labs) from the list below. Courses used as Area D requirements may not be selected.

- CHEM 1211 - Principles of Chemistry I **3 Credits**
- CHEM 1211L - Principles of Chemistry I Lab **1 Credits**
- CHEM 1212 - Principles of Chemistry II **3 Credits**
- CHEM 1212L - Principles of Chemistry II Lab **1 Credits**
- PHYS 2211 - Principles of Physics I **3 Credits**
- PHYS 2211L - Principles of Physics Laboratory I **1 Credits**
- PHYS 2212 - Principles of Physics II **3 Credits**
- PHYS 2212L - Principles of Physics Laboratory II **1 Credits**
- CHEM 2511K - Organic Chemistry I **4 Credits**
- CHEM 2512K - Organic Chemistry II **4 Credits**

## Chemistry Major Requirements

- MATH 2254 - Calculus II **4 Credits**
- CHEM 2601 - Chemical Literature **2 Credits**
- CHEM 3100K - Analytical Chemistry **5 Credits**
- CHEM 3300K - Instrumental Analysis **4 Credits**
- CHEM 4411 - Inorganic Chemistry **3 Credits**
- CHEM 4111K - Physical Chemistry I **4 Credits**
- CHEM 4112 - Physical Chemistry II **3 Credits**
- CHEM 4112L - Physical Chemistry II Lab **1 Credits**
- BIOC 3111K - Biochemistry I **4 Credits**
- TCOM 2010 - Technical Writing **3 Credits**
- A Chemistry major must complete one program track (see below).

## General Chemistry Track

- Four additional BIOC, CHEM, MATH, or Science electives at the 3000 level or higher. **12-16 Credits**
- Free electives **11-15 Credits**

## Materials Science Track

- MSCI 3101K - Introduction to Material Science **4 Credits**
- CHEM 4412 - Main Group Inorganic Chemistry **3 Credits**
- CHEM 4415 - Solid State Chemistry **3 Credits**
- Upper-level CHEM elective **3-4 Credits**
- Free electives **13-14 Credits**

## Chemistry, Education Track, BS

The bachelor's degrees in mathematics or science with the Teacher Education track provides students with a strong foundation in the discipline, giving them maximum flexibility with their degrees. Adding the Teacher Education track can give students immediate job possibilities.

The Teacher Education Program at SPSU provides students with strong, mentored experiences in the schools, a thorough knowledge of the teaching strategies and research on learning science and mathematics, and a nationally renowned teacher preparation program. This program allows students to build confidence in working with a variety of students in multiple school settings, and prepares them for a successful career in teaching mathematics or science in the middle school or high school.

## Requirements

- ENGL 1101 - English Composition I **3 Credits**
- ENGL 1102 - English Composition II **3 Credits**
- TCOM 2010 - Technical Writing **3 Credits**
- COMM 2400 - Public Speaking **2 Credits**
- STS 2400 - Science, Technology, and Society **2 Credits**
- Area C1 - Course in Literature **3 Credits**
- Area C2 - Course in Art and Culture **3 Credits**
- Area D - Two courses in Laboratory Science (Physics recommended) **8 Credits**
- Area E1 - American Perspective **3 Credits**
- Area E2 - World History **3 Credits**
- Area E3 - Course in Behavioral Science **3 Credits**
- Area E4 - Course in Cultures and Societies **3 Credits**
- SPSU 1001 - Hitch-hiker's Introduction to SPSU **1 Credits**
- BIOC 3111K - Biochemistry I **4 Credits**
- CHEM 1211 - Principles of Chemistry I **3 Credits**
- CHEM 1212 - Principles of Chemistry II **3 Credits**
- CHEM 2511K - Organic Chemistry I **4 Credits**
- CHEM 2512K - Organic Chemistry II **4 Credits**
- CHEM 3100K - Analytical Chemistry **5 Credits**
- CHEM 3300K - Instrumental Analysis **4 Credits**
- CHEM 4111K - Physical Chemistry I **4 Credits**
- CHEM 4112 - Physical Chemistry II **3 Credits**
- CHEM 4112L - Physical Chemistry II Lab **1 Credits**
- CHEM 4411 - Inorganic Chemistry **3 Credits**

- MATH 1113 - Pre-calculus **4 Credits**
- MATH 2253 - Calculus I **4 Credits**
- MATH 2254 - Calculus II **4 Credits**

## Chemistry Education

- EDUC 1101 - UTeach Step 1 **1 Credits**
- EDUC 1102 - UTeach Step 2 **1 Credits**
- EDUC 2010 - UTeach Knowing and Learning **3 Credits**
- EDUC 2020 - Classroom Interactions **3 Credits**
- EDUC 4030 - Project Based Instruction **3 Credits**
- RSCH 3610 - Research Methods **3 Credits**
- STS 3347 - Perspectives on Science and Math **3 Credits**
- EDUC 4401 - Apprentice Teaching Seminar **1 Credits**
- EDUC 4406 - Apprentice Teaching **6 Credits**
- Chemistry Electives **6 Credits**
- Free Electives **2 Credits**

Degree Program Total: 120

## Civil Engineering Technology, BS

### Requirements

- ENGL 1101 - English Composition I **3 Credits**
- ENGL 1102 - English Composition II **3 Credits**
- COMM 2400 - Public Speaking **2 Credits**
- STS 2400 - Science, Technology, and Society **2 Credits**
- Area C Group 1 Take One Course from the Literature Group **3 Credits**
- Area C Group 2 Take One Course from the Art and Culture Group **3 Credits**
- Area D CHEM 1211, CHEM 1211L and PHYS 2211, PHYS 2211L **8 Credits**
- Area E Group 1 American Context **3 Credits**
- Area E Group 2 World History **3 Credits**
- Area E Group 3 Behavioral Science **3 Credits**
- Area E Group 4 Cultures and Societies **3 Credits**
- MATH 1113 - Pre-calculus **4 Credits**
- MATH 2253 - Calculus I **4 Credits**
- MATH 2254 - Calculus II **4 Credits**



- SPSU 1001 - Hitch-hiker's Introduction to SPSU **1 Credits**
- CET 1000 - Orientation to Civil Engineering Technology **1 Credits**
- CET 2110 - Problem Solving Methods in CET **3 Credits**
- CET 3410 - Soil Properties and Site Exploration **3 Credits**
- CET 3410L - Soil Properties Lab **1 Credits**
- CET 3110 - Construction Materials and Sustainability **3 Credits**
- CET 3110L - Construction Materials Lab **1 Credits**
- CET 3120 - Cost Estimating and Scheduling in CET **3 Credits**
- CET 3120L - Plan Reading and Take Offs Lab **1 Credits**
- CET 3210 - Structural Mechanics **3 Credits**
- CET 3510 - Traffic Analysis and Road Design **2 Credits**
- CET 3510L - Traffic Analysis and Road Design Lab **1 Credits**
- CET 3130 - Applied Fluid Mechanics and Hydraulics **2 Credits**
- CET 3130L - Fluids and Hydraulics Lab **1 Credits**
- CET 3310 - Water Treatment and Distribution **2 Credits**
- CET 3310L - Water Treatment and Distribution Lab **1 Credits**
- CET 3320 - Wastewater Collection and Treatment **2 Credits**
- CET 3320L - Wastewater Collection and Treatment Lab **1 Credits**
- CET 3220 - Applied Structural Steel Design **3 Credits**
- CET 3230 - Concrete Infrastructure Design **3 Credits**
- CET 3430L - Site Exploration and Field Testing Lab **1 Credits**
- CET 4110 - Ethics of Engineering **1 Credits**
- CET 4120 - Senior Design and Engineering Documentation **3 Credits**
- CET 4130 - Special Inspections **2 Credits**
- CET 4240L - Structural Detailing Lab **1 Credits**
- CET 4310 - Stormwater Management and Erosion Control **2 Credits**
- CET 4310L - Erosion Control Lab **1 Credits**
- SURV 2221 - Surveying I **4 Credits**
- SURV 3421 - Geographic Information Systems I **4 Credits**
- EDG 2160 - Civil Graphics and Computer Aided Drafting **3 Credits**
- ENGT 2124 - Statics with Applications **3 Credits**
- ENGT 3124 - Strength of Materials with Applications **3 Credits**
- ENGT 3124L - Strength of Materials Lab **1 Credits**
- CET Electives **9 Credits**

**Degree Program Total: 123**

CET students are required to earn a grade of "C" or better in all courses required in the major and all courses used as electives.

## **Civil Engineering, BS**

### **Requirements**

- CHEM 1211 - Principles of Chemistry I **3 Credits**
- CHEM 1212 - Principles of Chemistry II **3 Credits**
- ENGL 1101 - English Composition I **3 Credits**
- ENGL 1102 - English Composition II **3 Credits**
- MATH 2253 - Calculus I **4 Credits**
- COMM 2400 - Public Speaking **2 Credits**
- STS 2400 - Science, Technology, and Society **2 Credits**
- Area C1 - Course in English Literature **3 Credits**
- Area C2 - Course in Art and Culture **3 Credits**
- Area E1 - Course in History: Political Science **3 Credits**
- Area E2 - World Civilization **3 Credits**
- Area E3 - Course in Behavioral Science **3 Credits**
- Area E4 - International Issues **3 Credits**
- MATH 2254 - Calculus II **4 Credits**
- MATH 2260 - Introduction to Probability and Statistics **3 Credits**  
\*\*or equivalent as approved by CCE Chair
- MATH 2306 - Ordinary Differential Equations **3 Credits**
- BIOL 2107 - Principles of Biology I **3 Credits**
- BIOL 2107L - Principles of Biology I Laboratory **1 Credits**
- PHYS 2211 - Principles of Physics I **3 Credits**
- PHYS 2212 - Principles of Physics II **3 Credits**
- ENGR 2214 - Engineering Mechanics – Statics **3 Credits**
- ENGR 3131 - Strength of Materials **3 Credits**
- ENGR 3132 - Strength of Materials Lab **1 Credits**
- ENGR 3324 - Project Cost Analysis **4 Credits**
- ENGR 3305 - Data Collection and Analysis in Engineering **4 Credits**
- ENGR 3343 - Fluid Mechanics **3 Credits**
- ENGR 3345 - Fluid Mechanics Laboratory **1 Credits**
- CE 1000 - Orientation to Engineering and Surveying Professions **1 Credits**
- SPSU 1001 - Hitch-hiker's Introduction to SPSU **1 Credits**
- CE 3201 - Structural Analysis **3 Credits**
- CE 3202 - Design of Concrete Structures **3 Credits**
- CE 3501 - Materials for Civil & Construction Engineering **3 Credits**
- CE 3502 - Materials for Civil & Construction Engineering Lab **1 Credits**
- CE 3701 - Geotechnical Engineering **3 Credits**
- CE 3708 - Geotechnical Engineering Lab **1 Credits**
- CE 3702 - Environmental Engineering **3 Credits**
- CE 3704 - Environmental Engineering Lab **1 Credits**
- CE 3703 - Environmental Engineering II **3 Credits**
- CE 4103 - Design of Steel Structures **3 Credits**
- CE 4105 - Foundation Design **3 Credits**
- CE 4177 - Transportation Engineering **3 Credits**
- CE 4178 - Highway Design and Construction **3 Credits**
- CE 4703 - Engineering Hydrology **3 Credits**
- CE XXXX Technical Electives **6 Credits**
- CE 4800 - Senior Project **3 Credits**
- SURV 4470 - Land Development Design **4 Credits**

## Degree Program Total: 130

The Civil Engineering degree requires a grade of "C" or better in all CE, SURV, and ENGR courses applied to degree requirements.

### CE Technical Electives: (6 hrs)

- CE 4704 - Engineering Hydraulic Analysis and Design **3 Credits**
- CE 4705 - Advanced Soil Mechanics **3 Credits**
- CE 4706 - Pavement Engineering **3 Credits**
- CE 4707 - Design of Wood Structures **3 Credits**
- CE 4708 - Hazardous Waste Engineering **3 Credits**
- CE 4709 - Matrix Structural Analysis **3 Credits**

## Computer Engineering Technology, BS

### Requirements

- ENGL 1101 - English Composition I **3 Credits**
- ENGL 1102 - English Composition II **3 Credits**
- MATH 1113 - Pre-calculus **4 Credits** (extra hour is applied to area F)
- MATH 2253 - Calculus I **4 Credits** (extra hour is applied to area F)
- MATH 2254 - Calculus II **4 Credits**
- MATH 2335 - Numerical Methods I **3 Credits**
- MATH 2306 - Ordinary Differential Equations **3 Credits**
- PHYS 2211 - Principles of Physics I **3 Credits**
- PHYS 2211L - Principles of Physics Laboratory I **1 Credits**
- PHYS 2212 - Principles of Physics II **3 Credits**
- PHYS 2212L - Principles of Physics Laboratory II **1 Credits**
- COMM 2400 - Public Speaking **2 Credits**
- STS 2400 - Science, Technology, and Society **2 Credits**
- TCOM 2010 - Technical Writing **3 Credits**
- Area C Group 1 Take One Course from the Literature Group **3 Credits**
- Area C Group 2 Take One Course from the Art and Culture Group **3 Credits**
- Area E Group 1 American Context **3 Credits**
- Area E Group 2 World History **3 Credits**
- Area E Group 3 Behavioral Science **3 Credits**
- Area E Group 4 Cultures and Societies **3 Credits**
- ECET 1001 - Orientation **1 Credits**
- SPSU 1001 - Hitch-hiker's Introduction to SPSU **1 Credits**

- ECET 1012 - Design Fundamentals **2 Credits**
- ECET 1101 - Circuits I **4 Credits**
- ECET 1200 - Digital I **4 Credits**
- ECET 2111 - Circuits II **4 Credits**
- ECET 2300 - Electronics I **4 Credits**
- ECET 2210 - Digital II **4 Credits**
- ECET 2310 - Electronics II **4 Credits**
- ECET 3220 - Digital III **4 Credits**
- ECET 3400 - Data Communications **4 Credits**
- ECET 3600 - Test Engineering **4 Credits**
- ECET 3410 - High Frequency Systems **4 Credits**
- ECET 3701 - Embedded PCs **4 Credits**
- ECET 3710 - Hardware Programming and Interfacing **4 Credits**
- ECET 3810 - Applications of C++, JAVA and HTML **3 Credits**
- ECET 4610 - Control Systems **4 Credits**
- EDG 1210 - Survey of Engineering Graphics **2 Credits**
- CpET Electives **11 Credits**

**Degree Program Total: 128**

## Note:

*\* PHYS 1111/PHYS 1111L and PHYS 1112 /PHYS 1112L may be substituted for PHYS 2211/PHYS 2211L and PHYS 2212/PHYS 2212L .*

*CpET majors are required to earn a "C" or better in their ECET courses, except one "D" in a 3000 or 4000 level non-prerequisite course may be used for graduation purposes. A grade of "C" or better is required in the project-based capstone course.*

## CpET Electives

### Embedded Systems (take 2 of the following courses)

Graduate will specialize in the design and implementation of smart devices used in products ranging from audio to medical to security systems. Both hardware design and programming at the system level will be stressed. The specialist will gain resume skills such as DSP and VHDL design, embedded micro-controller and embedded PC interfacing and programming.

- ECET 3640 - Introduction to Systems Engineering and Robotics **4 Credits**
- ECET 4630 - Digital Signal Processing **4 Credits**
- ECET 4720 - Distributed Microcontrollers and PCs **4 Credits**
- ECET 4730 - VHDL and Field Programmable Gate Arrays **4 Credits**

## Networks (take 2 of the following courses)

Graduate will specialize in the development and implementation of networks of computers and micro-controllers. Applications include Telemedicine, factory automation systems, point-of-sales systems, and robotics. There will be heavy emphasis of high-level programming using C, Visual C++, JAVA, Visual BASIC, HTML, Windows, LINUX, TCP/IP, etc. Hardware will emphasize PCs and embedded PCs, smart devices, LAN technologies, and remote sensing and control.

- ECET 4710 - Network Programming and Interfacing **4 Credits**
  - ECET 4720 - Distributed Microcontrollers and PCs **4 Credits**
  - ECET 48XX - BS Telecom 3000-4000 course
  - ECET 48XX - BS Telecom 3000-4000 course
- Note: *ECET 4830 cannot be used as an elective.*

## Computer Game Design and Development, BS

Students must earn a C or better in all the major courses (CSE, CS, SWE, and CGDD).

### Requirements

- ENGL 1101 - English Composition I **3 Credits**
- ENGL 1102 - English Composition II **3 Credits**
- MATH 2253 - Calculus I **4 Credits**
- MATH 2254 - Calculus II **4 Credits**
- MATH 2345 - Discrete Mathematics **3 Credits**
- MATH 2260 - Introduction to Probability and Statistics **3 Credits**
- COMM 2400 - Public Speaking **2 Credits**
- STS 2400 - Science, Technology, and Society **2 Credits**
- Area C Group 1 Take One Course From the Literature Group **3 Credits**
- Area C Group 2 Take One Course From the Art and Culture Group **3 Credits**
- Area D See your advisor before you select science courses **8 Credits**
- Area E Group 1 American Context **3 Credits**
- Area E Group 2 World History **3 Credits**
- Area E Group 3 Behavioral Science **3 Credits**
- Area E Group 4 Cultures and Societies **3 Credits**
- CSE 1301 Programming & Problem Solving I **4 Credits**
- CSE 1302 Programming & Problem Solving II **4 Credits**
- CSE 1002 - Introduction to the Computing Disciplines **2 Credits**
- CSE 3642 - Professional Practices and Ethics **2 Credits**
- CS 3224 - Computer Organization & Architecture **4 Credits**
- CS 3424 - Data Structures **4 Credits**
- CS 4363 - Computer Graphics and Multimedia **3 Credits**
- CS 4523 - Artificial Intelligence **3 Credits**

- SWE 2313 - Introduction to Software Engineering **3 Credits**
- SWE 3643 - Software Testing and Quality Assurance **3 Credits**
- SWE 4324 - User-Centered Design **4 Credits**
- CGDD 2002 - Fundamentals of Game Design **2 Credits**
- CGDD 3103 - Application Extension and Scripting **3 Credits**
- CGDD 4003 - Digital Media and Interaction **3 Credits**
- CGDD 4203 - Mobile and Casual Game Development **3 Credits**
- CGDD 4303 - Educational and Serious Game Design **3 Credits**
- CGDD 4803 - Studio **3 Credits**
- CGDD 4814 - Capstone **4 Credits**
- Upper-level Concentration (see below for options or as approved) **9 Credits**
- Free Electives **6 Credits**

**Degree Program Total: 122**

## Note:

Students are strongly recommended to take at least one Physics course for their Area D because some later courses in this program (in particular the CGDD 4113 and CGDD 4603) may rely upon Physics. Students who are interested in the Simulation-Informatics concentration (see below) may find Biology or Chemistry beneficial instead of Physics.

## BS CGDD Upper-level Concentration

While the required courses in the degree ensure students are exposed to the breadth of the field of computer game design and development, it is also imperative that students are given flexibility to customize their experience and apply the knowledge gained in their required courses. To this end, the degree requires students select a concentration in which they may gain a depth of knowledge within their chosen area.

The following are suggested concentrations, but students may select a customized plan of study and set of courses under with their advisor's approval.

### Media-Production

- MATH 3312 - Linear Algebra **4 Credits**
- CGDD 4113 - 3D Modeling and Animation **3 Credits**
- CGDD 4603 - Production Pipeline and Asset Management **3 Credits**

### Distributed-Mobile

- SWE 3683 - Embedded Systems Analysis & Design **3 Credits**
- CS 4253 - Distributed Computing **3 Credits**

- CS 4263 - Computer Networks **3 Credits**

## Educational-Serious

- 6 hours of approved TCOM courses
- CGDD 4313 - Designing Online Learning Content and Environments **3 Credits**

## Planning-Management (pick 3 of 4)

- MGNT 3105 - Management and Organizational Behavior **3 Credits**
- MGNT 4185 - Technology Management **3 Credits**
- SWE 3623 - Software Systems Requirements **3 Credits**
- SWE 4663 - Software Project Management **3 Credits**

## Simulation-Informatics

- CSE 3153 - Database Systems **3 Credits**
- CS 4253 - Distributed Computing **3 Credits**
- CGDD 4703 - Data Modeling and Simulation **3 Credits**

## BS CGDD Program Objectives

Meet the educational needs of students and prepare them for careers within the discipline

Expand the visibility of SPSU and the University System of Georgia (USG) in the field of game design and development

Create a strong community of students and alumni

Serve the community and industry

## BS CGDD Learning Outcomes

Upon graduation, students will be able to:

- Decompose and solve complex problems through artifacts of computing such as hardware, software specifications, code and other written documents
- Demonstrate an understanding of computing principles in the areas of programming, data structures, architecture, systems, graphics, and artificial intelligence and how they relate to computer game design and development

- Utilize mathematics and science in game design and development
- Apply principles of game design and development to generate a portfolio showcasing their successful industrial experience, research, and/or creative works
- Demonstrate a breadth of knowledge in historic and emerging domains and genres of computer gaming and interaction
- Demonstrate an understanding of social, professional global, and ethical issues related to computing
- Work effectively in teams on system development projects
- Demonstrate effective oral and written communication skills

## Computer Science, BS

### BSCS Program Educational Objectives (PEOs)

The Bachelor of Science in Computer Science prepares our graduates to reach the following goals 3 to 5 years beyond graduation:

- Computer Science graduates will be successful professionals in the field with solid fundamental knowledge of computer science, making valuable technical contributions to the design, development, and production of computing systems and related areas.
- Graduates utilize and exhibit strong communication and interpersonal skills, as well as professional and ethical principles when functioning as members and leaders of multi-disciplinary teams.
- Graduates are sufficiently prepared for their first and subsequent positions, as they are independent learners, including being accepted into or completing advanced degree programs.

### BSCS Student Outcomes (SOs)

Each graduate of the program should be able to:

- Convey the understanding of, and ability to solve, problems through artifacts of computing such as specifications, code and other written documents.
- Demonstrate and apply their knowledge of fundamental data structures and algorithms to solve problems.
- Describe and explain the major concepts in the areas of operating systems, programming languages, architecture, and distributed computing.
- Demonstrate an ability to work effectively in teams on computing related projects.
- Demonstrate an ability to effectively communicate technical information.
- Demonstrate an understanding of social, professional and ethical issues related to computing.
- Obtain the skills and knowledge to be employable in positions that utilize their computing education.

### Requirements

- ENGL 1101 - English Composition I **3 Credits**
- ENGL 1102 - English Composition II **3 Credits**
- TCOM 2010 - Technical Writing **3 Credits**
- MATH 1113 - Pre-calculus **4 Credits**
- MATH 2253 - Calculus I **4 Credits**



- MATH 2254 - Calculus II **4 Credits**
- MATH 2345 - Discrete Mathematics **3 Credits**
- MATH 2260 - Introduction to Probability and Statistics **3 Credits**
- STS 2400 - Science, Technology, and Society **2 Credits**
- Area C Group 1 Take One Course from the Literature Group **3 Credits**
- Area C Group 2 Take One Course from the Art and Culture Group **3 Credits**
- Area D Two lab science courses required **8 Credits**
- Area E Group 1 American Context **3 Credits**
- Area E Group 2 World History **3 Credits**
- Area E Group 3 Behavioral Science **3 Credits**
- Area E Group 4 Cultures and Societies **3**
- COMM 2400 - Public Speaking **2 Credits**
- CSE 1002 - Introduction to the Computing Disciplines **2 Credits**
- CSE 1301 Programming & Problem Solving I **4 Credits**
- CSE 1302 Programming & Problem Solving II **4 Credits**
- SPSU 1001 - Hitch-hiker's Introduction to SPSU **1 Credits**
- CSE 3642 - Professional Practices and Ethics **2 Credits**
- CS 3123 - Programming Language Concepts **3 Credits**
- CSE 3153 - Database Systems **3 Credits**
- CS 3224 - Computer Organization & Architecture **4 Credits**
- CS 3243 - Operating Systems **3 Credits**
- CS 3424 - Data Structures **4 Credits**
- CS 4253 - Distributed Computing **3 Credits**
- CS 4413 - Algorithm Analysis **3 Credits**
- CS 4893 - Computer Science Capstone **3 Credits**
- SWE 2313 - Introduction to Software Engineering **3 Credits**
- SWE 3613 - Software System Engineering **3 Credits**
- Approved Science Elective **4 Credits**
- Approved Math Elective (MATH 2255, MATH 2306, MATH 2335, or 3000 level or above) **3 Credits**
- Upper-level CS Electives (or Approved UL CGDD/SWE/IT Electives) **9 Credits**
- Free Electives (\* MATH 1111 may not be used as free elective hours) **4 Credits**

**Degree Program Total: 122**

## The Five-Year BSCS-MSSWE Program

This program is likely to be of great interest to those who pursue the BSCS program and are interested in entering the job market with a high degree of preparedness by completing the requirements for a Master's degree in Software Engineering. On top of a strong CS foundation, graduates from this combined program will be trained in software project management, an in-depth understanding of requirements, design, testing, support, metrics, etc. and the processes of software development and management. Students can start taking MSSWE core graduate classes right away, even before graduating with the BSCS. Specifically, while still working on the BSCS, students can take two graduate courses applicable to the MSSWE program as electives in their BSCS degree, and the courses also count towards the MSSWE program. Students will be able to complete the MSSWE program by taking only 10 more graduate courses in an additional year.

Specific features of the combined 5-year BSCS+MS program include:

1. A waiver of all MSSWE or MSCS prerequisites with careful advisement and planning.
2. The ability to take and count two approved graduate courses – toward target MS program, taken as upper level electives in BSCS.
3. Taking the remaining ten graduate courses toward the MSSWE program during a 12-month period, including a summer. A third graduate course can be taken as an undergraduate that counts solely for the MSSWE (it does not count towards the BSCS), leaving only nine remaining courses for the MSSWE.

Note: The student must graduate with the BSCS before being fully admitted into the MSSWE program and still meet its entrance requirements.

## **Construction Engineering, BS**

### **Requirements**

- CHEM 1211 - Principles of Chemistry I **3 Credits**
- CHEM 1211L - Principles of Chemistry I Lab **1 Credits**
- CHEM 1212 - Principles of Chemistry II **3 Credits**
- CHEM 1212L - Principles of Chemistry II Lab **1 Credits**
- ENGL 1101 - English Composition I **3 Credits**
- ENGL 1102 - English Composition II **3 Credits**
- MATH 2253 - Calculus I **4 Credits**
- MATH 2254 - Calculus II **4 Credits**
- MATH 2260 - Introduction to Probability and Statistics **3 Credits**
- MATH 2306 - Ordinary Differential Equations **3 Credits**
- MATH 2335 - Numerical Methods I **3 Credits**
- PHYS 2211 - Principles of Physics I **3 Credits**
- PHYS 2211L - Principles of Physics Laboratory I **1 Credits**
- PHYS 2212 - Principles of Physics II **3 Credits**
- PHYS 2212L - Principles of Physics Laboratory II **1 Credits**
- COMM 2400 - Public Speaking **2 Credits**
- STS 2400 - Science, Technology, and Society **2 Credits**
- Area C1 - Course in English Literature **3 Credits**
- Area C2 - Course in Art and Culture **3 Credits**
- Area E1 - Course in History: American Perspective **3 Credits**
- Area E2 - World History **3 Credits**
- Area E3 - Course in Behavioral Science **3 Credits**
- Area E4 - Cultures and Societies **3 Credits**
- EDG 2160 - Civil Graphics and Computer Aided Drafting **3 Credits**
- ENGR 2214 - Engineering Mechanics – Statics **3 Credits**
- ENGR 3131 - Strength of Materials **3 Credits**
- ENGR 3132 - Strength of Materials Lab **1 Credits**
- ENGR 3324 - Project Cost Analysis **4 Credits**
- ENGR 3343 - Fluid Mechanics **3 Credits**
- CE 1000 - Orientation to Engineering and Surveying Professions **1 Credits**

- SPSU 1001 - Hitch-hiker's Introduction to SPSU **1 Credits**
- CE 3201 - Structural Analysis **3 Credits**
- CE 3501 - Materials for Civil & Construction Engineering **3 Credits**
- CE 3502 - Materials for Civil & Construction Engineering Lab **1 Credits**
- CE 3701 - Geotechnical Engineering **3 Credits**
- CE 3702 - Environmental Engineering **3 Credits**
- CE 4177 - Transportation Engineering **3 Credits**
- CE 4178 - Highway Design and Construction **3 Credits**
- CE 4703 - Engineering Hydrology **3 Credits**
- CE 4800 - Senior Project **3 Credits**
- CM 3160 - Commercial and Heavy Construction Methods **3 Credits**
- CM 3420 - Construction Estimating and Bid Preparation **4 Credits**
- CM 4510 - Construction Scheduling **3 Credits**
- CM 4560 - Construction Project Management **3 Credits**
- CM 4639 - Construction Safety & Law **4 Credits**
- SURV 2221 - Surveying I **4 Credits**
- CE 4202 - Steel and Concrete Design **4 Credits**

## Degree Program Total: 130

The Construction Engineering degree requires a grade of "C" or better in all CE, SURV, ENGR and CM courses applied to degree requirements.

## Construction Management, BS

### Area A:

- ENGL 1101 - English Composition I **3 Credits**
- ENGL 1102 - English Composition II **3 Credits**
- MATH 1113 - Pre-calculus **4 Credits**

### Area B:

- COMM 2400 - Public Speaking **2 Credits**
- STS 2400 - Science, Technology, and Society **2 Credits**

### Area C:

- Group 1 - Take One Course from the Literature Group **3 Credits**

- Group 2 - Take One Course from the Art and Culture Group **3 Credits**

## Area D: Laboratory Sciences

- Group 1 - Any Two Lab Sciences (PHYS 1111, PHYS 1111L required and CHEM 1211, CHEM 1211L recommended) \*See Note 2 for PHYS 1111, PHYS 1111L **8 Credits**
- PHYS 1111 - Introductory Physics I **3 Credits** recommended for Area D– **See Note 2**
- PHYS 1111L - Introductory Physics Laboratory I **1 Credits**
- Group 2 - MATH 2240 - Survey of Calculus **3 Credits**

## Area E: Social Sciences

- Group 1 - American Context **3 Credits**
- Group 2 - World History **3 Credits**
- Group 3 - Behavioral Science **3 Credits**
- ECON 1101 - Introduction to Economics **3 Credits** recommended for Area E– **See Note 1**
- Group 4 - Cultures and Societies **3 Credits**

## Area F:

- MGNT 3145 - Legal Environment of Business **3 Credits**
- CET 2200 - Introduction to Structures **4 Credits**
- SURV 2200 - Construction Measurements **4 Credits**
- TCOM 2010 - Technical Writing **3 Credits**
- MGNT 3205 - Management Information Systems **3 Credits**

## Major-CM Courses

- ACCT 2101 - Principles of Financial Accounting **3 Credits**
- CM 1000 - Orientation to Construction and Development **2 Credits**
- CM 2000 - Construction Graphics **3 Credits**
- CM 3000 - Computer Applications in Construction **3 Credits**
- CM 3110 - Residential and Light Construction Methods **3 Credits**
- CM 3180 - Mechanical and Electrical Building Systems **4 Credits**
- CM 3410 - Construction Quantity Surveying **3 Credits**
- CM 3500 - Building Codes **2 Credits**
- CM 4510 - Construction Scheduling **3 Credits**

- CM 4760 - Construction and Real Property Law **3 Credits**
- CM 4900 - Capstone Project **3 Credits**
- CM 3040 - Building Information Modeling Applications I **3 Credits**

## Other Major Requirements:

- MGNT 3105 - Management and Organizational Behavior **3 Credits**
- ECON 1101 - Introduction to Economics **3 Credits** (if needed)
- PHYS 1111 - Introductory Physics I **3 Credits** (if needed)
- PHYS 1111L - Introductory Physics Laboratory I **1 Credits** (if needed)

## Concentration

Choose one Concentration from below.

### General Concentration

- CM 3210 - Applied Structures **4 Credits**
- CM 3260 - Temporary Structures **3 Credits**
- CM 3420 - Construction Estimating and Bid Preparation **4 Credits**
- CM 3620 - Construction Finance and Feasibility **4 Credits**
- CM 4560 - Construction Project Management **3 Credits**
- CM 4800 - Construction Process Simulation **3 Credits**

### Development Concentration

- CM 3310 - Introduction to Development **3 Credits**
- CM 3430 - Construction Estimating for Development **3 Credits**
- CM 3710 - Site Planning **4 Credits**
- CM 4570 - Development Process I **4 Credits**
- CM 3620 - Construction Finance and Feasibility **4 Credits**
- CM 4620 - Development Process II **3 Credits**

### Specialty Concentration

- CM 3280 - Building Mechanical and Electrical Codes and Loads **4 Credits**

- CM 3190 - Sustainable Construction **3 Credits**
- CM 3480 - Mechanical and Electrical Systems Estimating **4 Credits**
- CM 4480 - Design/Build MEP Systems **4 Credits**
- CM 4560 - Construction Project Management **3 Credits**
- CM 4800 - Construction Process Simulation **3 Credits**

## Facilities Management Concentration

- CM 3190 - Sustainable Construction **3 Credits**
- CM 3620 - Construction Finance and Feasibility **4 Credits**
- CM 3290 - Facilities Management **4 Credits**
- CM 4480 - Design/Build MEP Systems **4 Credits**
- CM 4560 - Construction Project Management **3 Credits**
- CM 4620 - Development Process II **3 Credits**

Degree Program Total: 128

### Note:

*Specialty Prerequisite for CM 4800 is CM 4480 in addition to the other prerequisites.*

*If ECON 1101 was taken to satisfy Area E, Group 3, a 3-hour Construction Elective can be substituted.*

*If PHYS 1111, PHYS 1111L were taken to satisfy Area D, Lab Science, a 4-hour Construction Elective can be substituted.*

## Electrical Engineering Technology, BS

### Requirements

- CHEM 1211 - Principles of Chemistry I **3 Credits** \*
- CHEM 1211L - Principles of Chemistry I Lab **1 Credits**
- ENGL 1101 - English Composition I **3 Credits**
- ENGL 1102 - English Composition II **3 Credits**
- MATH 1113 - Pre-calculus **4 Credits** (extra hour is applied to area F)
- MATH 2253 - Calculus I **4 Credits** (extra hour is applied to area F)
- MATH 2254 - Calculus II **4 Credits**
- MATH 2306 - Ordinary Differential Equations **3 Credits**
- PHYS 2211 - Principles of Physics I **3 Credits** \*

- PHYS 2211L - Principles of Physics Laboratory I **1 Credits**
- PHYS 2212 - Principles of Physics II **3 Credits \***
- PHYS 2212L - Principles of Physics Laboratory II **1 Credits**
- COMM 2400 - Public Speaking **2 Credits**
- STS 2400 - Science, Technology, and Society **2 Credits**
- TCOM 2010 - Technical Writing **3 Credits**
- Area C Group 1 Take One Course from the Literature Group **3 Credits**
- Area C Group 2 Take One Course from the Art and Culture Group **3 Credits**
- Area E Group 1 American Context **3 Credits**
- Area E Group 2 World History **3 Credits**
- Area E Group 3 Behavioral Science **3 Credits**
- Area E Group 4 Cultures and Societies **3 Credits**
- ECET 1001 - Orientation **1 Credits**
- SPSU 1001 - Hitch-hiker's Introduction to SPSU **1 Credits**
- ECET 1012 - Design Fundamentals **2 Credits**
- ECET 1101 - Circuits I **4 Credits**
- ECET 1200 - Digital I **4 Credits**
- ECET 2111 - Circuits II **4 Credits**
- ECET 2300 - Electronics I **4 Credits**
- ECET 2210 - Digital II **4 Credits**
- ECET 2310 - Electronics II **4 Credits**
- ECET 3220 - Digital III **4 Credits**
- ECET 3400 - Data Communications **4 Credits**
- ECET 3600 - Test Engineering **4 Credits**
- ECET 3410 - High Frequency Systems **4 Credits**
- ECET 3500 - Survey of Electric Machines **4 Credits**
- ECET 3620 - Signals and Systems Analysis **4 Credits**
- ECET 4610 - Control Systems **4 Credits**
- EDG 1210 - Survey of Engineering Graphics **2 Credits**
- EET Electives **13 Credits**

**Degree Program Total: 128**

### **Note:**

*\* PHYS 1111/PHYS 1111L and PHYS 1112/PHYS 1112L may be substituted for PHYS 2211/PHYS 2211L and PHYS 2212/PHYS 2212L*

*EET majors are required to earn a "C" or better in their ECET courses, except one "D" in a 3000 or 4000 level non-prerequisite course may be used for graduation purposes. A grade of "C" or better is required in the project-based capstone course.*

### **EET Electives**

Students may wish to focus their EET electives in a particular area of Electrical Engineering Technology. Suggested choices in the areas of biomedical, communications, digital, power, and telecommunications are listed below:

## Biomedical

- ECET 3020 - Biomedical Instrumentation **4 Credits**
- ECET 3030 - Biomechanics **4 Credits**
- ECET 4010 - Virtual Biomedical Instrumentation **4 Credits**
- ECET 4020 - Biomedical Imaging **4 Credits**
- ECET 4030 - Bioinformatics and Telemedicine **4 Credits**
- ECET 4040 - Biometrics **4 Credits**
- ECET 4050 - BMET Capstone (Project) **4 Credits**
- ECET 4050 - BMET Capstone (Internship) **4 Credits**

## Communications

- ECET 4320 - Active Filters **4 Credits**
- ECET 4330 - Audio Technology **4 Credits**
- ECET 4420 - Communications Circuit Applications **4 Credits**
- ECET 4431 - Wireless Communications Systems **4 Credits**
- ECET 4432 - Fiber-optic Communications Systems **4 Credits**
- ECET 4450 - RF Electronics **4 Credits**
- ECET 4820 - Communications Networks and the Internet **4 Credits**

## Digital

- ECET 3640 - Introduction to Systems Engineering and Robotics **4 Credits**
- ECET 3701 - Embedded PCs **4 Credits**
- ECET 4630 - Digital Signal Processing **4 Credits**
- ECET 4710 - Network Programming and Interfacing **4 Credits**
- ECET 4720 - Distributed Microcontrollers and PCs **4 Credits**
- ECET 4730 - VHDL and Field Programmable Gate Arrays **4 Credits**
- ECET 4820 - Communications Networks and the Internet **4 Credits**

## Power

- ECET 4510 - Power System Analysis **4 Credits**
- ECET 4520 - Industrial Distribution Systems, Illumination, and the NEC **4 Credits**



- ECET 4530 - Industrial Motor Control **4 Credits**
- ECET 4540 - Introduction to Power Electronics **4 Credits**
- ECET 4560 - Electric Drives **4 Credits**

## Telecommunications

- ECET 3810 - Applications of C++, JAVA and HTML **3 Credits**
- ECET 4820 - Communications Networks and the Internet **4 Credits**
- ECET 4840 - Advanced Telecommunications **4 Credits**
- ECET 4850 - Telecommunications Project **4 Credits**
- ECET 4860 - Network Security **4 Credits**

## Electrical Engineering Technology - Biomedical Engineering Technology Option, BS

The ECET department offers a Biomedical Engineering Technology Option under the Electrical Engineering Technology (EET) degree. Students wishing to take this option must declare so in DegreeWorks. Upon completion of the EET-BMET Degree Option, students will receive the BS-EET degree with the Option inscribed on their transcripts. For this Option, the following required courses will need to be completed instead of those required for the regular EET degree program:

<b>EET-BMET Option Course</b>	<b>EET Course</b>
BIOL 2107/BIOL 2107L - Biological Principles (4)	CHEM 1211/CHEM 1211L - Chemistry I (4)
MATH 2260 - Probability and Statistics (3)	MATH 2306 - Differential Equations (3)
*ECET 2000 - Intro. to Biomedical Engineering Technology (3)	ECET 3500 - Survey of Electric Machines (4)
*ECET 3010 - Health Care Safety (3)	ECET 3620 - Signals and Systems (4)
ECET 3020 - Biomedical Instrumentation (4)	ECET 4610 - Control Systems (4)
ECET 3701 - Embedded PCs (4)	ECET 3220 - Digital III (4)
ECET 3810 - C++, JAVA, HTML (3)	ECET Technical Elective (3)
*Differences made up in Technical Elective hours	

In addition to the above required courses, Students are required to take ECET 4050 - Biomedical Capstone (Project or Internship) as well as at least one Technical Elective in the Biomedical Engineering Technology area.

## Electrical Engineering, BS

## Requirements

- ENGL 1101 - English Composition I **3 Credits**
- ENGL 1102 - English Composition II **3 Credits**
- COMM 2400 - Public Speaking **2 Credits**
- STS 2400 - Science, Technology, and Society **2 Credits**
- Area C1 - Course in Literature **3 Credits**
- Area C2 - Course in Art and Culture **3 Credits**
- Area E1 - American Perspective **3 Credits**
- Area E2 - World History **3 Credits**
- Area E4 - Course in Cultures and Societies **3 Credits**
- ECON 2107 - Introduction to Economic Analysis **3 Credits**
- CHEM 1211 - Principles of Chemistry I **3 Credits**
- CHEM 1211L - Principles of Chemistry I Lab **1 Credits**
- MATH 2253 - Calculus I **4 Credits**
- MATH 2254 - Calculus II **4 Credits**
- MATH 2255 - Calculus III **4 Credits**
- MATH 2306 - Ordinary Differential Equations **3 Credits**
- PHYS 2211 - Principles of Physics I **3 Credits**
- PHYS 2211L - Principles of Physics Laboratory I **1 Credits**
- PHYS 2212 - Principles of Physics II **3 Credits**
- PHYS 2212L - Principles of Physics Laboratory II **1 Credits**
- EE 1000 - Orientation and Foundations of Electrical Engineering **2 Credits**
- CSE 1301E - C++ Programming for Engineers **4 Credits**
- ENGR 2214 - Engineering Mechanics – Statics **3 Credits**
- EE 2301 - Circuit Analysis I **4 Credits**
- EE 2302 - Circuit Analysis II **3 Credits**
- EE 2401 - Semiconductor Devices **3 Credits**
- EE 2501 - Digital Logic Design **4 Credits**
- MATH 2260 - Introduction to Probability and Statistics **3 Credits**
- EE 3501 - Microprocessors & Embedded Systems **4 Credits**
- EE 3605 - Electromagnetics **3 Credits**
- EE 3701 - Signals and Systems **3 Credits**
- ENGR 4402 - Engineering Ethics **1 Credits**
- EE 3401 - Engineering Electronics **4 Credits**
- EE 3702 - Communication Systems **3 Credits**
- EE 3601 - Electric Machines **4 Credits**
- EE 4201 - Control Systems **4 Credits**
- EE 4701 - Professional Practice **3 Credits**
- EE 3/4XXX - Technical Electives **9 Credits**
- EE 3/4XXX - Engineering Science Elective **3 Credits**
- EE 4800 - Senior Project **4 Credits**
- Math Elective - Math above 2335 **3 Credits**

## Degree Program Total: 129

The Electrical Engineering degree requires a grade of "C" or better in all EE and ENGR courses applied to degree requirements.

## Entrepreneurship Minor

### Entrepreneurship Minor

- ACCT 2101 - Principles of Financial Accounting **3 Credits**
- MGNT 3105 - Management and Organizational Behavior **3 Credits**
- MGNT 3120 - Entrepreneurial Finance **3 Credits**
- MGNT 3135 - Principles of Marketing **3 Credits**
- MGNT 3170 - Leadership **3 Credits**
- MGNT 4190 - Entrepreneurship **3 Credits**

## Environmental Engineering Technology, BS

### Requirements

#### Area A:

- ENGL 1101 - English Composition I **3 Credits**
- ENGL 1102 - English Composition II **3 Credits**
- MATH 1113 - Pre-calculus **4 Credits**

#### Area B:

- COMM 2400 - Public Speaking **2 Credits**
- STS 2400 - Science, Technology, and Society **2 Credits**

#### Area C:

- ENGL Literature **3 Credits**
- ARTS 2001, 2002, 2003, 2004 or FRENCH, GERMAN, SPANISH 1002 **3 Credits**

## Area D

- CHEM 1211 - Principles of Chemistry I **3 Credits**
- CHEM 1211L - Principles of Chemistry I Lab **1 Credits**
- CHEM 1212 - Principles of Chemistry II **3 Credits**
- CHEM 1212L - Principles of Chemistry II Lab **1 Credits**
- MATH 2253 - Calculus I **4 Credits** (extra hour added to core Area F)

## Area E:

- Take one course from each Social Science Social Science group ( E1, E2, E3, E4) **12 Credits**

## Area F:

Core related to major.

- EDG 2160 - Civil Graphics and Computer Aided Drafting **3 Credits**
- PHYS 2211 - Principles of Physics I **3 Credits**
- PHYS 2211L - Principles of Physics Laboratory I **1 Credits**
- MATH 2254 - Calculus II **4 Credits**
- CET 2110 - Problem Solving Methods in CET **3 Credits**
- SURV 2110 - Introduction to Mapping **4 Credits**

## Additional Requirements

- CE 1000 - Orientation to Engineering and Surveying Professions **1 Credits**
- SPSU 1001 - Hitch-hiker's Introduction to SPSU **1 Credits**
- CET 2110 - Problem Solving Methods in CET **3 Credits**
- CET 2200 - Introduction to Structures **4 Credits**
- CET 3110 - Construction Materials and Sustainability **3 Credits**
- CET 3110L - Construction Materials Lab **1 Credits**
- CET 3120 - Cost Estimating and Scheduling in CET **3 Credits**
- CET 3120L - Plan Reading and Take Offs Lab **1 Credits**
- CET 3130 - Applied Fluid Mechanics and Hydraulics **2 Credits**
- CET 3130L - Fluids and Hydraulics Lab **1 Credits**
- CET 3310 - Water Treatment and Distribution **2 Credits**
- CET 3310L - Water Treatment and Distribution Lab **1 Credits**
- CET 3320 - Wastewater Collection and Treatment **2 Credits**
- CET 3320L - Wastewater Collection and Treatment Lab **1 Credits**

- CET 3410 - Soil Properties and Site Exploration **3 Credits**
- CET 3410L - Soil Properties Lab **1 Credits**
- CET 4310 - Stormwater Management and Erosion Control **2 Credits**
- CET 4310L - Erosion Control Lab **1 Credits**
- CET 4320 - Unit Operations in Environmental Engineering **4 Credits**
- CET 4330 - Solid Waste Management **3 Credits**
- CET 4110 - Ethics of Engineering **1 Credits**
- CET 4120 - Senior Design and Engineering Documentation **3 Credits**
- POLS 3401 - Environmental Law and Policy **3 Credits**
- MATH MAJOR COURSES: Excess from AREA A **1 Credits**
- CM 4710 - Construction Safety **4 Credits**
- ENVS 3100K - Soil & Water Science **4 Credits**
- ENVS 2202K - Introduction to Environmental Science **4 Credits**

## Major Electives:

Take minimum of 6 hours from major electives listed below:

- MGNT 3105 - Management and Organizational Behavior **3 Credits**
- MET 3400 - Thermodynamics and Heat Transfer **3 Credits**
- SET 3240 - Hydraulic Structures **3 Credits**
- BIOL 3300K - Ecology **4 Credits**
- CHEM 3150K - Environmental Chemistry **4 Credits**
- CET 4340 - Air Pollution Control **3 Credits**

## Degree Program Total: 123

EvET students are required to earn a grade of "C" or better in all courses required in the major and all courses used as electives.

## Environmental Science, B.S.

### Core Requirements

#### Area A

- ENGL 1101 - English Composition I **3 Credits**
- ENGL 1102 - English Composition II **3 Credits**
- MATH 1113 - Pre-calculus **4 Credits**

## Area B

- STS 2400 - Science, Technology, and Society **2 Credits**
- COMM 2400 - Public Speaking **2 Credits**

## Area C

- Group 1 - Literature of the World **3 Credits**
- Group 2 - Art and Culture of the World **3 Credits**

## Area D

Environmental Science majors **MUST** take the courses listed below to satisfy Area D

- MATH 2253 - Calculus I **4 Credits**
- BIOL 2107 - Principles of Biology I **3 Credits**
- BIOL 2107L - Principles of Biology I Laboratory **1 Credits**
- BIOL 2108 - Principles of Biology II **3 Credits**
- BIOL 2108L - Principles of Biology II Laboratory **1 Credits**

## Area E

- Group 1 - American Context **3 Credits**
- Group 2 - World History **3 Credits**
- Group 3 - Behavioral Science **3 Credits**
- Group 4 - Cultures and Societies **3 Credits**

## Area F

- CHEM 1211 - Principles of Chemistry I **3 Credits**
- CHEM 1211L - Principles of Chemistry I Lab **1 Credits**
- CHEM 1212 - Principles of Chemistry II **3 Credits**
- CHEM 1212L - Principles of Chemistry II Lab **1 Credits**
- PHYS 1111 - Introductory Physics I **3 Credits**
- PHYS 1111L - Introductory Physics Laboratory I **1 Credits**
- GEOL 1101K - Introductory Geosciences **4 Credits**

## Environmental Science Major Requirements

- MATH 2260 - Introduction to Probability and Statistics **3 Credits**
- ENVS 2202K - Introduction to Environmental Science **4 Credits**
- BIOL 3000K - Genetics **4 Credits**
- BIOL 3300K - Ecology **4 Credits**
- BIOL 4200K - Zoology OR BIOL 4440K - Botany **4 Credits**
- CHEM 2511K - Organic Chemistry I **4 Credits**
- CHEM 2512K - Organic Chemistry II **4 Credits**
- CHEM 3150K - Environmental Chemistry **4 Credits**
- POLS 3401 - Environmental Law and Policy **3 Credits**
- STS 4300 - Environmental Ethics **3 Credits**
- SURV 3421 - Geographic Information Systems I **4 Credits**
- ENVS 3100K - Soil & Water Science **4 Credits**
- ENVS 4500 - Environmental Science Internship **3 Credits**

### Environmental Science Electives (12 semester hours from the list below)

- BIOL 3100K - Microbiology **4 Credits**
- BIOL 3250K - Ecosystem Ecology **4 Credits**
- BIOL 3500 - Biostatistics **3 Credits**
- BIOL 3600 - Freshwater Biology **3 Credits**
- BIOL 3700K - Ichthyology **4 Credits**
- CET 3130 - Applied Fluid Mechanics and Hydraulics **2 Credits**
- CET 3310 - Water Treatment and Distribution **2 Credits**
- CET 3320 - Wastewater Collection and Treatment **2 Credits**
- CET 4310 - Stormwater Management and Erosion Control **2 Credits**
- CET 4330 - Solid Waste Management **3 Credits**
- CHEM 3100K - Analytical Chemistry **5 Credits**
- CHEM 3200K - Atmospheric Chemistry **3 Credits**
- CHEM 3300K - Instrumental Analysis **4 Credits**
- SURV 2110 - Introduction to Mapping **4 Credits**
- ENVS 3150K - Environmental Toxicology **4 Credits**
- ENVS 3250 - Natural Resource Management **3 Credits**
- ENVS 3450 - Conservation Biology **3 Credits**
- TCOM 2010 - Technical Writing **3 Credits**

Degree Program Total: 120

## **Industrial Engineering Technology, BS**

## Area A

- ENGL 1101 - English Composition I **3 Credits**
- ENGL 1102 - English Composition II **3 Credits**
- MATH 1113 - Pre-calculus **4 Credits**

## Area B

- COMM 2400 - Public Speaking **2 Credits**
- STS 2400 - Science, Technology, and Society **2 Credits**

## Area C

- Group 1 - Literature of the World **3 Credits**
- Group 2 - Art and Culture of the World **3 Credits**

## Area D

- Sciences - Lab Science\* Note 1 **8 Credits**
- MATH 2253 - Calculus I **4 Credits**

## Area E

- Group 1 - American Context **3 Credits**
- Group 2 - World History **3 Credits**
- Group 3 - Behavioral Science **3 Credits**
- Group 4 - Cultures and Societies **3 Credits**

## Area F

- CHEM 1211 - Principles of Chemistry I **3 Credits** \* Note 2
- CHEM 1211L - Principles of Chemistry I Lab **1 Credits**
- TCOM 2010 - Technical Writing **3 Credits**
- IT 1113 - Programming Principles **3 Credits**
- EDG 1210 - Survey of Engineering Graphics **2 Credits**
- IET 2305 - The Role of Industrial Engineering Technology in Industrial Systems **4 Credits**



## Major Courses

- ACCT 2101 - Principles of Financial Accounting **3 Credits**
- IET 1000 - Orientation **1 Credits**
- IET 2227 - Introduction to Statistics **3 Credits**
- IET 2449 - Logistics and Supply Chain Management **3 Credits**
- IET 3322 - Work Measurement and Ergonomics **4 Credits**
- IET 3339 - Statistical Quality Control **3 Credits**
- IET 3356 - Quality Concepts and Systems Design **3 Credits**
- IET 3403 - Advanced Statistics with Application **3 Credits**
- IET 3424 - Engineering Economy **3 Credits**
- IET 3433 - Product and Process Costing **3 Credits**
- IET 4405 - Operations Research - Concepts, Models and Methods **3 Credits**
- IET 4422 - Facilities Design, Plant Layout, and Materials Handling **4 Credits**
- IET 4451 - Systems Simulation **3 Credits**
- IET 4475 - Senior Project **3 Credits**
- IET 4810 - Ethics and Safety **1 Credits**
- MGNT 4115 - Human Resource Management **3 Credits**
- MGNT 4135 - Project Management **3 Credits**
- MGNT 4151 - Operations Management **3 Credits**
- SPSU 1001 - Hitch-hiker's Introduction to SPSU **1 Credits**
- Free Electives **6 Credits**

## IET Electives (9 semester hours from the list below)

- IET 3320 - Advanced Logistics **3 Credits**
- IET 3407 - Six Sigma and Lean Manufacturing **3 Credits**
- IET 3410 - Principles of Team Dynamics **3 Credits**
- IET 3511 - Sustainability Engineering **3 Credits**
- IET 3620 - Warehousing Systems **3 Credits**
- IET 4111 - Design of Experiments **3 Credits**
- IET 4121 - Advanced Topics in Quality Assurance **3 Credits**
- IET 4478 - Senior Internship **3 Credits**

## Degree Program Total: 128

*Note 1 - Physics I and Physics II are preferred Area D Sciences, however, any Lab Sciences from the approved list is permissible.*

*Note 2 – Chemistry I is the preferred Area F Science, however, any Lab Science from the approved list is permissible.*

**A grade of "C" or better is required in all courses used in the major prescribed for the bachelor degree program.**

## Concentration in Logistics

The primary objective of the Concentration in Logistics is to provide training and education to students interested in entering the Supply Chain industry.

### Required Courses

- IET 2227 - Introduction to Statistics **3 Credits**
- IET 2449 - Logistics and Supply Chain Management **3 Credits**
- IET 3320 - Advanced Logistics **3 Credits**
  
- IET 3511 - Sustainability Engineering **3 Credits** or
- IET 3620 - Warehousing Systems **3 Credits**
  
- IET 4405 - Operations Research - Concepts, Models and Methods **3 Credits**
- MGNT 4115 - Human Resource Management **3 Credits**
- MGNT 4151 - Operations Management **3 Credits**

**Total: 21**

Students who successfully complete the Concentration with a grade of "C" or better in each course will be awarded a Green Belt Certificate.

## Concentration in Quality Principles

The primary objective of the Concentration in Quality Principles is to provide training and education to students interested in quality system principles, methodology, elements and standards.

### Required Courses:

- IET 3339 - Statistical Quality Control **3 Credits**
- IET 3356 - Quality Concepts and Systems Design **3 Credits**
- IET 3403 - Advanced Statistics with Application **3 Credits**
- IET 3407 - Six Sigma and Lean Manufacturing **3 Credits**
- IET 3410 - Principles of Team Dynamics **3 Credits**
- MGNT 4135 - Project Management **3 Credits**
- MGNT 4151 - Operations Management **3 Credits**

**Total: 21**

Students who successfully complete the Concentration with a grade of "C" or better in each course will be awarded a Green Belt Certificate.

## Information Technology, BS

### Requirements

- ENGL 1101 - English Composition I **3 Credits**
- ENGL 1102 - English Composition II **3 Credits**
- MATH 1113 - Pre-calculus **4 Credits** (extra hour is applied to area F)
  
- MATH 2253 - Calculus I **4 Credits** (extra hour is applied to area F) or
- MATH 2240 - Survey of Calculus **3 Credits**
  
- COMM 2400 - Public Speaking **2 Credits**
- STS 2400 - Science, Technology, and Society **2 Credits**
- Area C Group 1 - Take One Course from the Literature Group **3 Credits**
- Area C Group 2 - Take One Course from the Art and Culture Group **3 Credits**
- Area D - Any two lab-based science courses **8 Credits**
- Area E Group 1 - American Context **3 Credits**
- Area E Group 2 - World History **3 Credits**
- Area E Group 3 - Behavioral Science **3 Credits**
- Area E Group 4 - Cultures and Societies **3 Credits**
- TCOM 2010 - Technical Writing **3 Credits**
- MATH 2345 - Discrete Mathematics **3 Credits**
  
- MATH 2260 - Introduction to Probability and Statistics **3 Credits** or
- IET 2227 - Introduction to Statistics **3 Credits**
  
- CSE 1301 - Program and Problem Solving I **4 Credits**
- IT 1324 - Advanced Programming Principles **4 Credits** or CSE 1302
- CSE 1002 - Introduction to the Computing Disciplines **2 Credits**
- CSE 3642 - Professional Practices and Ethics **2 Credits**
- CSE 3153 - Database Systems **3 Credits**
- IT 3123 - Hardware/Software Concepts **3 Credits**
- IT 3203 - Introduction to Web Development **3 Credits**
- IT 3223 - Software Acquisition and Project Management **3 Credits**
- IT 3423 - Operating Systems Concepts & Administration **3 Credits**
- IT 3883 - Advanced Applications Development **3 Credits**
- IT 4123 - Electronic Commerce **3 Credits**
- IT 4323 - Data Communications & Networks **3 Credits**
- IT 4423 - Unix/Linux **3 Credits**
- IT 4683 - Management of Information Technology and Human Computer Interaction **3 Credits**
- IT 4723 - IT Policy and Law **3 Credits**

- IT 4823 - Information Security Administration & Privacy **3 Credits**
- IT 4983 - IT Capstone **3 Credits**
- Free Electives **7 Credits**
- Concentration or Technical Electives (see listing below) **12 Credits**

**Degree Program Total: 122**

## Tracks

Choose one of the tracks below and complete 3 of their courses. The 4th elective can be from the same or different track.

### Enterprise Systems Track

- IT 4203 - Advanced Web Development **3 Credits**
- IT 4153 - Advanced Database **3 Credits**
- IT 4333 - Network Configuration & Administration **3 Credits**
- IT 4903 - Special Topics in Information Technology **3 Credits**
- IT 4673 - Virtual IT Systems **3 Credits**
- IT 4713 - Business Intelligence Systems **3 Credits**

### Information Assurance & Security Track

- IT 4833 - Wireless Security **3 Credits**
- IT 4843 - Ethical Hacking for Effective Defense **3 Credits**
- IT 4853 - Computer Forensics **3 Credits**
- IT 4903 - Special Topics in Information Technology **3 Credits**

### Health Information Technology Track

- IT 3503 - Foundations of Health Information Technology **3 Credits**
- IT 4513 - Electronic Health Record Systems **3 Credits**
- IT 4523 - Clinical Processes and Workflows: Analysis and Redesign **3 Credits**
- IT 4533 - Health Information Security and Privacy **3 Credits**
- IT 4903 - Special Topics in Information Technology **3 Credits**

## Mobile and Web Track

- IT 3203 - Introduction to Web Development **3 Credits**
- IT 4203 - Advanced Web Development **3 Credits**
- IT 4903 - Special Topics in Information Technology **3 Credits**
- CGDD 4203 - Mobile and Casual Game Development **3 Credits**
- IT 4213 - Mobile Web Development **3 Credits**
- CSE 3203 - Overview of Mobile Systems **3 Credits**

## Information Technology, BS (Online) WebBSIT

### WebBSIT Curriculum

- ENGL 1101 - English Composition I **3 Credits**
- ENGL 1102 - English Composition II **3 Credits**
- MATH 1111 - College Algebra **3 Credits**
- MATH 1113 - Pre-calculus **4 Credits**
- COMM 2400 - Public Speaking **2 Credits**
- STS 2400 - Science, Technology, and Society **2 Credits**
- Area C Group 1 - Take one course from the Literature Group **3 Credits**
- Area C Group 2 - Take one course from the Art and Culture Group **3 Credits**
- Area D - Any two lab-based science courses **8 Credits**
- Area E Group 1 - American Context **3 Credits**
- Area E Group 2 - World History **3 Credits**
- Area E Group 3 - Behavioral Science **3 Credits**
- Area E Group 4 - Cultures and Societies **3 Credits**

### Area F (18 Credits)

- WBIT 1100 - Introduction to Information Technology **3 Credits**
- WBIT 1310 - Programming and Problem Solving **3 Credits**
- MATH 1401 - Intro to Statistics **3 Credits** (Available from WebBSIT participating institutions or through eCore®)
- WBIT 2000 - The Enterprise and IT **3 Credits**
- WBIT 2300 - Discrete Mathematics for IT **3 Credits**
- WBIT 2311 - Programming and Problem Solving II **3 Credits**

## Required Core Courses (42 Credits)

- WBIT 3010 - Technical Communication **3 Credits**
- WBIT 3110 - Systems Analysis and Design **3 Credits**
- WBIT 3111 - Information Technology Project Management **3 Credits**
- WBIT 3200 - Database Design, Development and Deployment **3 Credits**
- WBIT 3400 - Introduction to Multimedia **3 Credits**
- WBIT 3410 - Web Applications Development **3 Credits**
- WBIT 3500 - Architecture and Operating Systems **3 Credits**
- WBIT 3510 - Data Communications and Networking **3 Credits**
- WBIT 3600 - Introduction to E-Commerce **Credits**
- WBIT 4020 - Professional Practices and Ethics **Credits**
- WBIT 4030 - Senior Project **3 Credits**
- WBIT 4112 - Systems Acquisition, Integration and Implementation **Credits**
- WBIT 4120 - Human-Computer Interaction **3 Credits**
- WBIT 4520 - Information Security **Credits**

## Concentration/Electives (18 Credits)

- WBIT 4601 - Customer Relationship Management **3 Credits**
- WBIT 4602 - IT Strategy Seminar **3 Credits**
- WBIT 4610 - IT Policy and Law **3 Credits**
- Free Electives (not within the WebBSIT) - **9 Credits**

## International Business Minor

### International Business Minor

- ACCT 2101 - Principles of Financial Accounting **3 Credits**
- MGNT 3105 - Management and Organizational Behavior **3 Credits**
- MGNT 3125 - Business Finance **3 Credits**
- MGNT 3135 - Principles of Marketing **3 Credits**
- MGNT 4145 - International Management **3 Credits**
- POLS 4301 - International Political Economy **3 Credits**
- SPAN 2002 - Intermediate Spanish II **3 Credits**  
or equivalent language course

# International Studies, BS

By offering an International Studies degree with a required minor, SPSU seeks to produce graduates who not only understand the political and economic processes of globalization, but also possess field-specific skills and knowledge that will allow them to deal with the new demands of the global economy. Companies that will employ our graduates will be global ones, so it is necessary for their employees to understand the political, economic, cultural, as well as technical contexts in which their companies function. The International Studies degree will prepare graduates for graduate study in a number of possible fields and for employment in:

- Government
- Intelligence
- International business
- Pre-law
- Public policy
- The military
- The non-profit sector
- The transportation industry
- The travel industry

## Requirements

### Core Areas A through E

#### Area A: Essential Skills (9 credits)

Grade of C or better required in the courses used to satisfy this requirement. Freshmen must complete Area A by the time they have attempted 30 semester hours of course work.

- ENGL 1101 - English Composition I **3 Credits**
- ENGL 1102 - English Composition II **3 Credits**
- MATH 1111 - College Algebra **3 Credits**  
(or other math as specified in the SPSU core)

#### Area B: Institutional Options (4 credits)

- COMM 2400 - Public Speaking **2 Credits**
- STS 2400 - Science, Technology, and Society **2 Credits**

#### Area C: Humanities / Fine Arts (6 credits)

### C-1: Literature (3 credits)

Choose ONE of the following:

- ENGL 2111 - Early World Literature **3 Credits**
- ENGL 2112 - World Literature Mid-1600s to Present **3 Credits**
- ENGL 2120 - British Literature Early to Present **3 Credits**
- ENGL 2121 - Early British Literature **3 Credits**
- ENGL 2122 - British Literature Late 1700s to Present **3 Credits**
- ENGL 2130 - American Literature Early to Present **3 Credits**
- ENGL 2131 - Early American Literature **3 Credits**
- ENGL 2132 - American Literature Mid 1800s to Present **3 Credits**
- ENGL 2141 - Early Western Literature **3 Credits**
- ENGL 2142 - Western Literature 1600s to Present **3 Credits**
- ENGL 2300 - African-American Literature and Culture **3 Credits**

### C-2: Humanities (3 credits)

Choose ONE of the following (language course recommended):

- ARTS 2001 - Art Appreciation **3 Credits**
- ARTS 2002 - Drama Appreciation **3 Credits**
- ARTS 2003 - Music Appreciation **3 Credits**
- ARTS 2004 - History of Contemporary American Music **3 Credits**
- FREN 1002 - Elementary French II **3 Credits**
- GRMN 1002 - Elementary German II **3 Credits**
- SPAN 1002 - Elementary Spanish II **3 Credits**

### Area D: Science and Math (11-12 credits)

#### D-1: Lab Science (8 credits)

You must take two semesters of lab science *and lab* (lecture = 3 credits; lab = 1 credit; K-course=4 credits, including lab).

Choose TWO science courses with lab:

- ASTR 1000K - Introduction to the Universe **4 Credits**
- ASTR 1010K - Introduction to the Universe II **4 Credits**
- BIOL 2107 - Principles of Biology I **3 Credits**
- BIOL 2107L - Principles of Biology I Laboratory **1 Credits**
- BIOL 2108 - Principles of Biology II **3 Credits**



- BIOL 2108L - Principles of Biology II Laboratory **1 Credits**
- CHEM 1211 - Principles of Chemistry I **3 Credits**
- CHEM 1211L - Principles of Chemistry I Lab **1 Credits**
- CHEM 1212 - Principles of Chemistry II **3 Credits**
- CHEM 1212L - Principles of Chemistry II Lab **1 Credits**
- ENVS 2200K - Geology **4 Credits**
- ENVS 2202K - Introduction to Environmental Science **4 Credits**
- GEOL 1101K - Introductory Geosciences **4 Credits**
- PHYS 1111 - Introductory Physics I **3 Credits**
- PHYS 1111L - Introductory Physics Laboratory I **1 Credits**
- PHYS 1112 - Introductory Physics II **3 Credits**
- PHYS 1112L - Introductory Physics Laboratory II **1 Credits**
- PHYS 1211K - Principles of Physics I (ECORE) **4 Credits**
- PHYS 2211 - Principles of Physics I **3 Credits**
- PHYS 2211L - Principles of Physics Laboratory I **1 Credits**
- PHYS 2212 - Principles of Physics II **3 Credits**
- PHYS 2212L - Principles of Physics Laboratory II **1 Credits**

#### D-2: Math (minimum of 3 credits)

- MATH 1113 - Pre-calculus **4 Credits**  
(or other math as specified in the SPSU core)

#### Area E: Social Sciences (12 credits)

##### E-1: American Perspectives (3 credits)

Satisfies the American Perspectives overlay. Any one of these courses, taken within the University System of Georgia, also satisfies the Legislative Requirement for US and Georgia History and Constitution. Students who fulfill this requirement with transfer credit from outside the USG will need to take HIST 2911 U.S. and Georgia Constitution and History to satisfy the Legislative Requirement for graduation.

Choose ONE of the following:

- HIST 2111 - United States History to 1877 **3 Credits**
- HIST 2112 - United States History since 1877 **3 Credits**
- POLS 1101 - American Government **3 Credits**

##### E-2: Historical Perspectives (3 credits)

Choose ONE of the following:

- HIST 1111 - Survey of World Civilization pre 1500 **3 Credits**

- HIST 1112 - Survey of World Civilization post 1500 **3 Credits**

### E-3: Behavioral Science Perspectives (3 credits)

Choose ONE of the following (ECON 1101 Introduction to Economics is required in Area F and may not be used here):

- PSYC 1101 - Introduction to General Psychology **3 Credits**
- SOCI 1101 - Introduction to Sociology **3 Credits**

### E-4: Global Perspectives (3 credits)

Satisfies the Global Perspectives overlay. Choose ONE of the following (POLS 2401 is required in Area F and may not be used here):

- ANTH 1102 - Introduction to Anthropology **3 Credits**
- ES 1100 - Ethnic Studies **3 Credits**
- GEOG 1101 - Introduction to Human Geography **3 Credits**
- RELG 1200 - World Religion **3 Credits**

### Core Area F (18 credits):

Take ALL of the following:

- SPAN 2001 - Intermediate Spanish I **3 Credits**
- SPAN 2002 - Intermediate Spanish II **3 Credits**  
Or 6 credit hours of any non-English language at an equivalent level.
- COMM 2030 - Research for the Humanities & Social Sciences **3 Credits**
- ECON 1101 - Introduction to Economics **3 Credits**
- POLS 2100 - Introduction to Research Methods **3 Credits**
- POLS 2401 - Global Issues **3 Credits**

### Required Courses in Major (29 credits):

Grade of C or better required. Take ALL of the following:

- IS 1000 - International Studies Orientation **1 Credits**
- SPSU 1001 - Hitch-hiker's Introduction to SPSU **1 Credits**
- HIST 3801 - Contemporary World History since 1945 **3 Credits**
- POLS 3001 - Comparative Politics **3 Credits**
- POLS 3009 - Foundations of Public Policy **3 Credits**
- POLS 4009 - Comparative Public Policy Analysis **3 Credits**
- POLS 4301 - International Political Economy **3 Credits**
- PSYC 3101 - International Social Psychology **3 Credits**
- STS 4000 - International Issues in Science and Technology **3 Credits**

Choose ONE Regional Studies Course:

- IS 4000 - Regional Studies - General **3 Credits**
  - IS 4001 - Regional Studies/Latin America **3 Credits**
  - IS 4002 - Regional Studies/Asia:China **3 Credits**
  - IS 4003 - Regional Studies/Asia:Japan **3 Credits**
  - IS 4004 - Regional Studies/Middle East **3 Credits**
  - IS 4005 - Regional Studies/Russia/Eastern Europe **3 Credits**
  - IS 4006 - Regional Studies/Western Europe **3 Credits**
  - IS 4007 - Regional Studies/Africa **3 Credits**
- To be taken in one of the last two terms before graduation (taught Spring only):
- IS 4800 - International Studies Capstone **3 Credits**

## Directed International Electives (9 credits):

Grade of C or better required. Choose THREE of the following:

Take THREE of the following:

- ECON 2106 - Principles of Microeconomics **3 Credits**
- GEOG 3101 - World Regional Geography **3 Credits**
- HIST 3200 - History of Science Survey **3 Credits**
- HIST 3301 - Diplomatic and Military History since 1815 **3 Credits**
- HIST 3401 - Modern Social and Cultural History Twentieth Century **3 Credits**
- HIST 3501 - Colonization and Rebellion in the Trans-Atlantic World **3 Credits**
- HIST 3601 - History of the Pacific Rim **3 Credits**
- IS 3600 - Comparative Culture **3 Credits**
- IS 4600 - International Studies Internship **3 Credits**
- IS 4000 - Regional Studies - General **3 Credits**  
or any Regional Studies (IS 400X) not used to satisfy Required Courses in the Major
- POLS 3301 - Modern Political Theory **3 Credits**
- POLS 3601 - Contemporary World Politics **3 Credits**
- POLS 4063 - Political Issues in Electronic Government **3 Credits**
- POLS 4101 - Political Economy of Post-Communist Transformation **3 Credits**
- POLS 4201 - International Relations in the Americas **3 Credits**
- PSYC 4000 - International Psychology **3 Credits**
- PSYC 4600 - Conflict Resolution **3 Credits**
- RELG 1200 - World Religion **3 Credits**
- SPAN 3001 - Advanced Conversation **3 Credits**  
or any 3000- or 4000- level SPAN
- STS 4400 - Topical Studies in Science and Technology **3 Credits**  
OR any IS special topics course. Special topics courses in HIST, POLS, PSYC may be used with topic-specific departmental approval.

## Minor 15-18 Hours

International Studies majors must complete at least one of the minors offered at SPSU (in any department or program). Department policy requires that at least 9 hours in a minor not be used to meet any other requirement *except free electives*. University policy requires that no hours used in Core Areas A-E may be used toward any other requirement.

## Free Electives

Additional credit hours to bring the minimum total credits to bring the total hours up to the 120 required for graduation.  
*Free elective hours may be used toward an additional minor and are exempt from the 9 hours rule.*

**Degree Program Total: 120**

## Marketing Minor

### Marketing Minor

- **MGNT 3135 - Principles of Marketing 3 Credits**  
Plus four of the following courses:
- **MGNT 3210 - Professional Selling and Customer Relationship Management 3 Credits**
- **MGNT 3224 - Business Marketing 3 Credits**
- **MGNT 3228 - Market Research 3 Credits**
- **MGNT 4103 - Marketing Management 3 Credits**
- **MGNT 394x Special Topics in Marketing 3 Credits**

## Mathematics, BS

### Requirements

- **ENGL 1101 - English Composition I 3 Credits**
- **ENGL 1102 - English Composition II 3 Credits**
- **PHYS 2211 - Principles of Physics I 3 Credits**
- **PHYS 2211L - Principles of Physics Laboratory I 1 Credits**
- **PHYS 2212 - Principles of Physics II 3 Credits**
- **PHYS 2212L - Principles of Physics Laboratory II 1 Credits**
- **COMM 2400 - Public Speaking 2 Credits**
- **STS 2400 - Science, Technology, and Society 2 Credits**
- **Area C Group 1 - Take One Course From the Literature Group 3 Credits**
- **Area C Group 2 - Take One Course From the Art and Culture Group 3 Credits**
- **Area E Group 1 - American Context 3 Credits**
- **Area E Group 2 - World History 3 Credits**
- **Area E Group 3 - Behavioral Science 3 Credits**
- **Area E Group 4 - Cultures and Societies 3 Credits**

- CSE 1301 - Computer Science I **4 Credits**
- CSE 1302 - Computer Science II **4 Credits**
- SPSU 1001 - Hitch-hiker's Introduction to SPSU **1 Credits**
- MATH 1113 - Pre-calculus **4 Credits**
- MATH 2253 - Calculus I **4 Credits**
- MATH 2254 - Calculus II **4 Credits**
- MATH 2255 - Calculus III **4 Credits**
- MATH 2306 - Ordinary Differential Equations **3 Credits**
- MATH 2345 - Discrete Mathematics **3 Credits**
- MATH 3310 - Introduction to Advanced Mathematics **3 Credits**
- MATH 3312 - Linear Algebra **4 Credits**
- MATH 3320 - Introductory Real Analysis I **4 Credits**
- MATH 3321 - Introductory Real Analysis II **4 Credits**
- MATH 4407 - Vector Analysis **3 Credits**
- MATH 4440 - Abstract Algebra **4 Credits**
- MATH 4451 - Capstone Mathematics Project **3 Credits**

## Mathematics Electives (9 Credits)

Any mathematics course numbered 2300 or above, excluding those for which dual credit is not allowed.

## Guided Electives (20 Credits)

May include additional mathematics courses or other courses chosen in consultation with an advisor. May not include mathematics courses numbered less than 2000, or courses for which dual credit is not allowed.

## Degree Program Total: 121

## Mathematics Second Major

A student completing the B.S. degree in a field other than Mathematics may receive a second major in Mathematics at the same time to accompany that degree by completing the following courses. Note that additional courses, which are the prerequisites to these courses, are required by implication.

## Mathematics Second Major Requirements

- MATH 2255 - Calculus III **4 Credits**
- MATH 2306 - Ordinary Differential Equations **3 Credits**
- MATH 2345 - Discrete Mathematics **3 Credits**
- MATH 3310 - Introduction to Advanced Mathematics **3 Credits**
- MATH 3312 - Linear Algebra **4 Credits**
- MATH 3320 - Introductory Real Analysis I **4 Credits**

- MATH 3321 - Introductory Real Analysis II **4 Credits**
- MATH 4407 - Vector Analysis **3 Credits**
- MATH 4440 - Abstract Algebra **4 Credits**
- MATH 4451 - Capstone Mathematics Project **3 Credits**

## Second Degree in Mathematics

Students who receive a degree from SPSU in a field other than Mathematics may receive a B.S. with a major in Mathematics by completing all the requirements for the Mathematics degree. The same courses may be used to fulfill requirements for both degrees, but there must be at least 30 semester hours used to fulfill the requirements for the Mathematics degree which are not used to fulfill the requirements for any other degree.

## Mechanical Engineering Technology, BS

### Requirements

- CHEM 1211 - Principles of Chemistry I **3 Credits**
- CHEM 1211L - Principles of Chemistry I Lab **1 Credits**
- ECON 2107 - Introduction to Economic Analysis **3 Credits** (Recommended for Area E-3)
- ENGL 1101 - English Composition I **3 Credits**
- ENGL 1102 - English Composition II **3 Credits**
- TCOM 2010 - Technical Writing **3 Credits**
- MATH 1113 - Pre-calculus **4 Credits** (the extra hour is applied to area F)
- MATH 2254 - Calculus II **4 Credits**
- MATH 2306 - Ordinary Differential Equations **3 Credits**
- MATH 2253 - Calculus I **4 Credits** (the extra hour is applied to Major Req.)
- PHYS 2211 - Principles of Physics I **3 Credits**
- PHYS 2211L - Principles of Physics Laboratory I **1 Credits**
- PHYS 2212 - Principles of Physics II **3 Credits**
- PHYS 2212L - Principles of Physics Laboratory II **1 Credits**
- COMM 2400 - Public Speaking **2 Credits**
- STS 2400 - Science, Technology, and Society **2 Credits**
- Area C Group 1 - Take One Course From the Literature Group **3 Credits**
- Area C Group 2 - Take One Course From the Art and Culture Group **3 Credits**
- Area E Group 1 - American Context **3 Credits**
- Area E Group 2 - World History **3 Credits**
- Area E Group 4 - Cultures and Societies **3 Credits**
- MET 4501 - Engineering Computation using Matlab **3 Credits**
- ECET 3000 - Electrical Principles **4 Credits**
- EDG 1211 - Engineering Graphics I **3 Credits**
- EDG 1212 - Engineering Graphics II **4 Credits**
- ENGR 2214 - Engineering Mechanics – Statics **3 Credits**
- ENGR 3122 - Dynamics **3 Credits**

- ENGR 3131 - Strength of Materials **3 Credits**
- ENGR 3132 - Strength of Materials Lab **1 Credits**
- MET 3101 - Fluid Mechanics Principles & Applications **4 Credits**
- MET 1000 - Mechanical Engineering Technology Orientation **1 Credits**
- SPSU 1001 - Hitch-hiker's Introduction to SPSU **1 Credits**
- MET 1311 - Manufacturing Processes **3 Credits**
- MET 1321 - Machining and Welding **2 Credits**
- MET 2322 - Metrology and CNC Machining **3 Credits**
- MET 3132 - Engineering Materials **4 Credits**
- MET 3401 - Thermodynamics I **3 Credits**
- MET 4141 - Machine Design I **4 Credits**
- MET 4421 - Instruments and Controls **4 Credits**

Select one of the following four courses (3 Credits)

- MET 3123 - Dynamics of Machines **3 Credits**
- MET 3331 - Tool Design **3 Credits**
- MET 3402 - Thermodynamics II **3 Credits**
- MET 4112 - Computer Aided Engineering & Analysis **3 Credits**
- MET XXXX - Major Electives (For Concentration) **12 Credits**
- Free Elective **3 Credits**

**Degree Program Total: 129**

### Note:

Note 1. MET majors are required to earn an overall 2.0 average in all courses designated as MET and ENGR.

Note 2. PHYS 1111, PHYS 1111L and PHYS 1112, PHYS 1112L may be substituted for PHYS 2211, PHYS 2211L and PHYS 2212, PHYS 2212L .

Note 3. The Free Elective may not be MATH 1111 .

## **Mechanical Engineering, BS**

### Requirements

- CHEM 1211 - Principles of Chemistry I **3 Credits**
- CHEM 1211L - Principles of Chemistry I Lab **1 Credits**

- ENGL 1101 - English Composition I **3 Credits**
- ENGL 1102 - English Composition II **3 Credits**
- ENGL 21XX - Core C1-Literature **3 Credits**
- MATH 2253 - Calculus I **4 Credits**
- MATH 2254 - Calculus II **4 Credits**
- MATH 2255 - Calculus III **4 Credits**
- MATH 2260 - Introduction to Probability and Statistics **3 Credits**
- MATH 2306 - Ordinary Differential Equations **3 Credits**
- MATH 2335 - Numerical Methods I **3 Credits** \* May substitute MATH 3312 Linear Algebra (4 credits) or equivalent as approved by SME Chair department chair.
- PHYS 2211 - Principles of Physics I **3 Credits**
- PHYS 2211L - Principles of Physics Laboratory I **1 Credits**
- PHYS 2212 - Principles of Physics II **3 Credits**
- PHYS 2212L - Principles of Physics Laboratory II **1 Credits**
- COMM 2400 - Public Speaking **2 Credits**
- STS 2400 - Science, Technology, and Society **2 Credits**
- TCOM 2010 - Technical Writing **3 Credits**
- Core C2 - Art & Culture **3 Credits**
- Core E1 - American Context **3 Credits**
- Core E2 - World History **3 Credits**
- Core E3 - Behavioral Science Or ECON 2107 - Introduction to Economic Analysis **3 Credits**
- Core E4 - Culture & Societies **3 Credits**
- SPSU 1001 - Hitch-hiker's Introduction to SPSU **1 Credits**
- EDG 1211 - Engineering Graphics I **3 Credits**
- CSE 1301E - C++ Programming for Engineers **4 Credits**
- ENGR 2214 - Engineering Mechanics – Statics **3 Credits**
- ENGR 3122 - Dynamics **3 Credits**
- ENGR 3125 - Machine Dynamics & Vibrations **3 Credits**
- ENGR 3131 - Strength of Materials **3 Credits**
- ENGR 3132 - Strength of Materials Lab **1 Credits**
- ENGR 3343 - Fluid Mechanics **3 Credits**
- ENGR 3345 - Fluid Mechanics Laboratory **1 Credits**
- ENGR 4402 - Engineering Ethics **1 Credits**
- EE 2301 - Circuit Analysis I **4 Credits**
- ME 1001 - Introduction to Mechanical Engineering **2 Credits**
- ME 3101 - Materials Science and Engineering **3 Credits**
- ME 3201 - Product Realization **2 Credits**
- ME 3410 - Thermodynamics **3 Credits**
- ME 3440 - Heat Transfer **3 Credits**
- ME 3501 - Dynamic Systems & Control Theory **3 Credits**
- ME 4141 - Machine Design I **3 Credits**
- ME 4250 - Computer Aided Engineering **3 Credits**
- ME 4403 - Heat Transfer and Thermodynamics Lab **1 Credits**
- ME 4501 - Vibrations & Controls Lab **1 Credits**
- ME 4201 - Senior Design I **1 Credits**
- ME 4202 - Senior Design II **3 Credits**
- Approved technical electives **8 Credits**



## Degree Program Total: 129

The Mechanical Engineering degree requires a grade of "C" or better in all ME and ENGR courses applied to degree requirements.

## Technical Electives

Technical Electives can be any non-required 3000 and/or 4000 level courses from ME, including Special Topics (ME 3903 or ME 4903) and Undergraduate Research (ME 4801, ME 4802, and ME 4803). Some ENGR, EE, MTRE or SYE may be approved for technical electives by the program coordinator or the department chair. Students may focus their technical electives in Aerospace Engineering (SYE 3801, SYE 3802, SYE 3803, SYE 4801, SYE 4802, SYE 4803) or Nuclear Engineering (SYE 3501, SYE 3502, SYE 4501, SYE 4502, or SYE 4503).

\*\*If student doesn't take ECON 2107 for Core E-3, the student must take SYE 3320 - Engineering Economics and Decision Analysis as a Technical Elective.

## Mechatronics Engineering, BS

### Requirements

- ENGL 1101 - English Composition I **3 Credits**
- ENGL 1102 - English Composition II **3 Credits**
- COMM 2400 - Public Speaking **2 Credits**
- STS 2400 - Science, Technology, and Society **2 Credits**
- Area C Group 1 - Take One Course, Literature Group **3 Credits**
- Area C Group 2 - Take One Course, Art and Culture Group **3 Credits**
- Area E Group 1 - American Context **3 Credits**
- Area E Group 2 - World History **3 Credits**
- Area E Group 4 - Cultures and Societies **3 Credits**
- ECON 2107 - Introduction to Economic Analysis **3 Credits** (Recommended Area E-3)
- CHEM 1211 - Principles of Chemistry I **3 Credits**
- CHEM 1211L - Principles of Chemistry I Lab **1 Credits**
- MATH 2253 - Calculus I **4 Credits** (the extra hour is applied to Major Req.)
- MATH 2254 - Calculus II **4 Credits**
- MATH 2255 - Calculus III **4 Credits**
- MATH 2306 - Ordinary Differential Equations **3 Credits**
- PHYS 2211 - Principles of Physics I **3 Credits**
- PHYS 2211L - Principles of Physics Laboratory I **1 Credits**
- PHYS 2212 - Principles of Physics II **3 Credits**
- PHYS 2212L - Principles of Physics Laboratory II **1 Credits**
- EDG 1211 - Engineering Graphics I **3 Credits**
- EE 2301 - Circuit Analysis I **4 Credits**

- ENGR 2214 - Engineering Mechanics – Statics **3 Credits**
- MATH 3312 - Linear Algebra **4 Credits**
- EE 3401 - Engineering Electronics **4 Credits**
- ENGR 2501 - Engineering Materials **3 Credits**
- ENGR 3122 - Dynamics **3 Credits**
- ENGR 3343 - Fluid Mechanics **3 Credits**
- ENGR 3345 - Fluid Mechanics Laboratory **1 Credits**
- EE 3601 - Electric Machines **4 Credits**
- ENGR 4421 - Instruments and Controls **4 Credits**
- EE 4201 - Control Systems **4 Credits**
- MTRE 1000 - Introduction to Mechatronics Engineering **1 Credits**
- SPSU 1001 - Hitch-hiker's Introduction to SPSU **1 Credits**
- MTRE 3710 - Mechatronics Engineering Fundamentals **4 Credits**
- EE 2501 - Digital Logic Design **4 Credits**
- ENGR 3131 - Strength of Materials **3 Credits**
- ENGR 3132 - Strength of Materials Lab **1 Credits**
- ENGR 3125 - Machine Dynamics & Vibrations **3 Credits**
- MTRE 4000 - Advanced Controls **3 Credits**
- MTRE 4200 - Robotics Analysis and Synthesis **3 Credits**
- MTRE 4400 - Mechatronics System Design **4 Credits**
- CSE 1301E - C++ Programming for Engineers **4 Credits**
- Math Elective **3 Credits**

## Degree Program Total Hours: 130

The Mechatronics Engineering degree requires a grade of "C" or better in all MTRE, EE, ME and ENGR courses applied to degree requirements.

## Physics, BS

### Requirements

- ENGL 1101 - English Composition I **3 Credits**
- ENGL 1102 - English Composition II **3 Credits**
- TCOM 2010 - Technical Writing **3 Credits**
- COMM 2400 - Public Speaking **2 Credits**
- STS 2400 - Science, Technology, and Society **2 Credits**
- Area C Group 1 - Take One Course from the Literature Group **3 Credits**
- Area C Group 2 - Take One Course from the Art and Culture Group **3 Credits**
- Area D - Any Two Lab Sciences **8 Credits**
- Area E Group 1 - American Context **3 Credits**
- Area E Group 2 - World History **3 Credits**
- Area E Group 3 - Behavioral Science **3 Credits**

- Area E Group 4 - Cultures and Societies **3 Credits**
- SPSU 1001 - Hitch-hiker's Introduction to SPSU **1 Credits**
- MATH 1113 - Pre-calculus **4 Credits** (extra hour is applied to area F)
- MATH 2253 - Calculus I **4 Credits** (extra hour is applied to area F)
- MATH 2254 - Calculus II **4 Credits**
- MATH 2255 - Calculus III **4 Credits**
- MATH 2306 - Ordinary Differential Equations **3 Credits**
- PHYS 2211 - Principles of Physics I **3 Credits**
- PHYS 2211L - Principles of Physics Laboratory I **1 Credits**
- PHYS 2212 - Principles of Physics II **3 Credits**
- PHYS 2212L - Principles of Physics Laboratory II **1 Credits**
- PHYS 2213 - Introduction to Thermal and Modern Physics **2 Credits**
- PHYS 3210 - Mechanics I **4 Credits**
- PHYS 3410K - Electronics Laboratory **2 Credits**
- PHYS 3220 - Electromagnetism I **3 Credits**
- PHYS 3500K - Introduction to Computational Physics **3 Credits**
- PHYS 3710 - Modern Physics **4 Credits**
- PHYS 3720L - Modern Physics Laboratory **1 Credits**
- PHYS 4210 - Quantum Physics **4 Credits**
- PHYS 4230 - Thermal Physics **4 Credits**
- PHYS 4410K - Advanced Measurements Laboratory **2 Credits**
- PHYS 4430 - Capstone Physics Project **1 Credits**
- PHYS 4250 - Quantum Theory of Two-State Systems **2 Credits**
- Directed Electives approved by the program **9 - 15 Credits**
- Upper Division Physics Electives/Concentrations **4 - 10 Credits**

**Degree Program Total: 121**

## A Second Degree in Physics

Students who are earning B.S. degrees in other fields at Southern Polytechnic State University may also earn a second major in Physics.

SPSU students who wish to earn a second major in physics will be required to take the following 22 hours of course work:

## Second Degree Requirements

- PHYS 3210 - Mechanics I **4 Credits**
- PHYS 3220 - Electromagnetism I **3 Credits**
- PHYS 3410K - **2 Credits**
- PHYS 3500K - Introduction to Computational Physics **3 Credits**
- PHYS 3710 - Modern Physics **4 Credits**

- PHYS 3720L - Modern Physics Laboratory **1 Credits**
- PHYS 4230 - Thermal Physics **4 Credits**
- PHYS 4410K - Advanced Measurements Laboratory **2 Credits**

## **Physics, Electrical Engineering Concentration, BS**

### **Requirements**

- ENGL 1101 - English Composition I **3 Credits**
- ENGL 1102 - English Composition II **3 Credits**
- TCOM 2010 - Technical Writing **3 Credits**
- COMM 2400 - Public Speaking **2 Credits**
- STS 2400 - Science, Technology, and Society **2 Credits**
- Area C Group 1 - Take One Course from the Literature Group **3 Credits**
- Area C Group 2 - Take One Course from the Art and Culture Group **3 Credits**
- Area D - Any Two Lab Sciences **8 Credits**
- Area E Group 1 - American Context **3 Credits**
- Area E Group 2 - World History **3 Credits**
- Area E Group 3 - Behavioral Science **3 Credits**
- Area E Group 4 - Cultures and Societies **3 Credits**
- SPSU 1001 - Hitch-hiker's Introduction to SPSU **1 Credits**
- MATH 1113 - Pre-calculus **4 Credits** (extra hour is applied to area F)
- MATH 2253 - Calculus I **4 Credits** (extra hour is applied to area F)
- MATH 2254 - Calculus II **4 Credits**
- MATH 2306 - Ordinary Differential Equations **3 Credits**
- PHYS 2211 - Principles of Physics I **3 Credits**
- PHYS 2211L - Principles of Physics Laboratory I **1 Credits**
- PHYS 2212 - Principles of Physics II **3 Credits**
- PHYS 2212L - Principles of Physics Laboratory II **1 Credits**
- PHYS 3220 - Electromagnetism I **3 Credits**
- PHYS 3500K - Introduction to Computational Physics **3 Credits**
- PHYS 3710 - Modern Physics **4 Credits**
- PHYS 3720L - Modern Physics Laboratory **1 Credits**
- PHYS 4210 - Quantum Physics **4 Credits**
- PHYS 4230 - Thermal Physics **4 Credits**
- PHYS 4240 - Solid State Physics **3 Credits**
- EE 3301 - Circuits Analysis I **4 Credits**
- EE 2501 - Digital Logic Design **4 Credits**
- EE 2401 - Semiconductor Devices **3 Credits**
- EE 3705 - Signals and Systems **3 Credits**
- EE 3401 - Engineering Electronics **4 Credits**
- EE 4201 - Control Systems **4 Credits**
- ENGR 2214 - Engineering Mechanics – Statics **3 Credits**

- Free Electives **4 Credits**

Degree Program Total: 121

## **Physics, Mechanical Engineering Concentration, BS**

### Requirements

- ENGL 1101 - English Composition I **3 Credits**
- ENGL 1102 - English Composition II **3 Credits**
- TCOM 2010 - Technical Writing **3 Credits**
- COMM 2400 - Public Speaking **2 Credits**
- STS 2400 - Science, Technology, and Society **2 Credits**
- Area C Group 1 - Take One Course from the Literature Group **3 Credits**
- Area C Group 2 - Take One Course from the Art and Culture Group **3 Credits**
- Area D - Any Two Lab Sciences **8 Credits**
- Area E Group 1 - American Context **3 Credits**
- Area E Group 2 - World History **3 Credits**
- Area E Group 3 - Behavioral Science **3 Credits**
- Area E Group 4 - Cultures and Societies **3 Credits**
- SPSU 1001 - Hitch-hiker's Introduction to SPSU **1 Credits**
- MATH 1113 - Pre-calculus **4 Credits** (extra hour is applied to area F)
- MATH 2253 - Calculus I **4 Credits** (extra hour is applied to area F)
- MATH 2254 - Calculus II **4 Credits**
- MATH 2255 - Calculus III **4 Credits**
- MATH 2306 - Ordinary Differential Equations **3 Credits**
- PHYS 2211 - Principles of Physics I **3 Credits**
- PHYS 2211L - Principles of Physics Laboratory I **1 Credits**
- PHYS 2212 - Principles of Physics II **3 Credits**
- PHYS 2212L - Principles of Physics Laboratory II **1 Credits**
- PHYS 2213 - Introduction to Thermal and Modern Physics **2 Credits**
- PHYS 3410K - Electronics Laboratory **2 Credits**
- PHYS 3220 - Electromagnetism I **3 Credits**
- PHYS 3500K - Introduction to Computational Physics **3 Credits**
- PHYS 3710 - Modern Physics **4 Credits**
- PHYS 3720L - Modern Physics Laboratory **1 Credits**
- PHYS 4210 - Quantum Physics **4 Credits**
- PHYS 4230 - Thermal Physics **4 Credits**
- PHYS 4240 - Solid State Physics **3 Credits**
- EDG 2160 - Civil Graphics and Computer Aided Drafting **3 Credits**
- ENGR 2214 - Engineering Mechanics – Statics **3 Credits**

- ENGR 3122 - Dynamics **3 Credits**
- ENGR 3131 - Strength of Materials **3 Credits**
- ENGR 3132 - Strength of Materials Lab **1 Credits**
- ENGR 3343 - Fluid Mechanics **3 Credits**
- ENGR 3345 - Fluid Mechanics Laboratory **1 Credits**
- ENGR 2501 - Material Science **3 Credits**
- ME 3201 - Product Realization **2 Credits**
- ENGR 3125 - Machine Dynamics & Vibrations **3 Credits**
- Free Electives **2 Credits**
- ME 3501 - Dynamic Systems & Control Theory **3 Credits**
- ME 4501 - Vibrations & Controls Lab **1 Credits**

**Degree Program Total: 121**

## **Concentration in Mechanical Engineering**

- EDG 2160 - Civil Graphics and Computer Aided Drafting **3 Credits**
- ENGR 2214 - Engineering Mechanics – Statics **3 Credits**
- ENGR 3122 - Dynamics **3 Credits**
- ENGR 3131 - Strength of Materials **3 Credits**
- ENGR 3132 - Strength of Materials Lab **1 Credits**
- ENGR 3343 - Fluid Mechanics **3 Credits**
- ENGR 3345 - Fluid Mechanics Laboratory **1 Credits**
- ENGR 2501 - Material Science **3 Credits**
- ME 3201 - Product Realization **2 Credits**
- ENGR 3125 - Machine Dynamics & Vibrations **3 Credits**
- ME 3501 - Dynamic Systems & Control Theory **3 Credits**
- ME 4501 - Vibrations & Controls Lab **1 Credits**

## **Physics, Teacher Education Concentration, BS**

The bachelor's degrees in mathematics or science with the Teacher Education track provides students with a strong foundation in the discipline, giving them maximum flexibility with their degrees. Adding the Teacher Education track can give students immediate job possibilities.

The Teacher Education Program at SPSU provides students with strong, mentored experiences in the schools, a thorough knowledge of the teaching strategies and research on learning science and mathematics, and a nationally renowned teacher preparation program. This program allows students to build confidence in working with a variety of students in multiple school settings, and prepares them for a successful career in teaching mathematics or science in the middle school or high school.

## Requirements

- ENGL 1101 - English Composition I **3 Credits**
- ENGL 1102 - English Composition II **3 Credits**
- TCOM 2010 - Technical Writing **3 Credits**
- COMM 2400 - Public Speaking **2 Credits**
- STS 2400 - Science, Technology, and Society **2 Credits**
- Area C Group 1 - Take One Course from the Literature Group **3 Credits**
- Area C Group 2 - Take One Course from the Art and Culture Group **3 Credits**
- Area D - Any Two Lab Sciences (Physics or Chemistry Recommended) **8 Credits**
- Area E Group 1 - American Context **3 Credits**
- Area E Group 2 - World History **3 Credits**
- Area E Group 3 - Behavioral Science **3 Credits**
- Area E Group 4 - Cultures and Societies **3 Credits**
- SPSU 1001 - Hitch-hiker's Introduction to SPSU **1 Credits**
- MATH 1113 - Pre-calculus **4 Credits** (extra hour is applied to area F)
- MATH 2253 - Calculus I **4 Credits** (extra hour is applied to area F)
- MATH 2254 - Calculus II **4 Credits**
- MATH 2255 - Calculus III **4 Credits**
- MATH 2306 - Ordinary Differential Equations **3 Credits**
- PHYS 2211 - Principles of Physics I **3 Credits**
- PHYS 2211L - Principles of Physics Laboratory I **1 Credits**
- PHYS 2212 - Principles of Physics II **3 Credits**
- PHYS 2212L - Principles of Physics Laboratory II **1 Credits**
- PHYS 2213 - Introduction to Thermal and Modern Physics **2 Credits**
- PHYS 3210 - Mechanics I **4 Credits**
- PHYS 3220 - Electromagnetism I **3 Credits**
- PHYS 3410K Electronics Laboratory **2 Credits**
- PHYS 3500K - Introduction to Computational Physics **3 Credits**
- PHYS 3710 - Modern Physics **4 Credits**
- PHYS 3720L - Modern Physics Laboratory **1 Credits**
- PHYS 4210 - Quantum Physics **4 Credits**
- PHYS 4230 - Thermal Physics **4 Credits**
- PHYS 4410K - Advanced Measurements Laboratory **2 Credits**

## Physics Education

- EDUC 1101 - UTeach Step 1 **1 Credits**
- EDUC 1102 - UTeach Step 2 **1 Credits**
- EDUC 2010 - UTeach Knowing and Learning **3 Credits**
- EDUC 2020 - Classroom Interactions **3 Credits**
- EDUC 4030 - Project Based Instruction **3 Credits**
- RSCH 3610 - Research Methods **3 Credits**

- STS 3347 - Perspectives on Science and Math **3 Credits**
- EDUC 4401 - Apprentice Teaching Seminar **1 Credits**
- EDUC 4406 - Apprentice Teaching **6 Credits**

**Degree Program Total: 120**

## **Political Science, BS**

There is a growing need for graduates in political science. The acquisition of methodological skills, coupled with an understanding of the political process at local, state, national and international levels, allows for employment in a variety of public and private venues where research techniques are highly prized. As well, the communication, analysis, and critical reasoning skills that our graduates obtain place them well in a competitive job market, where continual learning is essential and interpersonal and cross-cultural competencies are greatly needed.

While there are other political science programs offered in Georgia, SPSU's program will be unique in several respects:

- The SPSU program is highly quantitative in focus, offering students three additional quantitative courses in political science research methods and analysis beyond the norm required in other political science programs.
- The SPSU program offers students various inter-disciplinary course options through its Directed International Electives module.
- The SPSU program further establishes a strong international focus by encouraging students to become proficient in a second language.

Students who complete the program have the knowledge, skills, and real-world context to be productive and flexible in a rapidly changing workplace. Graduates with a bachelor's degree in political science find positions as committee staffers, budget analysts, communications consultants, research/policy analysts, corporate public affairs advisors, foreign service officers, writers/authors/political commentators, journalists, foundation staffers, lobbyists, marketing analysts, or public opinion analysts. Additionally, SPSU's program's training in the development of research, critical thinking, and communication skills will open opportunities in for-profit/non-profit business settings, international and U.S.-based non-governmental organizations and foundations. Graduates of SPSU's BS in Political Science will be more than qualified to take advantage of the local, regional, national, and international employment opportunities offered by metro Atlanta and the State of Georgia, as well as to pursue post-baccalaureate educational opportunities in either political science or the field of law.

## **Requirements**

**All students must take:**

- SPSU 1001 - Hitch-hiker's Introduction to SPSU **1 Credits**

## **Core Areas A-E**



## Area A: Essential Skills (9 credits)

Grade of C or better required in courses used to satisfy this requirement. Freshmen must complete Area A by the time they have attempted 30 semester hours of course work.

- ENGL 1101 - English Composition I **3 Credits**
- ENGL 1102 - English Composition II **3 Credits**
- MATH 1111 - College Algebra **3 Credits**  
(or other math as specified in the SPSU core)

## Area B: Institutional Options (4 credits)

- COMM 2400 - Public Speaking **2 Credits**
- STS 2400 - Science, Technology, and Society **2 Credits**

## Area C: Humanities / Fine Arts (6 credits)

### C-1: Literature (3 credits)

Choose ONE of the following:

- ENGL 2111 - Early World Literature **3 Credits**
- ENGL 2112 - World Literature Mid-1600s to Present **3 Credits**
- ENGL 2120 - British Literature Early to Present **3 Credits**
- ENGL 2121 - Early British Literature **3 Credits**
- ENGL 2122 - British Literature Late 1700s to Present **3 Credits**
- ENGL 2130 - American Literature Early to Present **3 Credits**
- ENGL 2131 - Early American Literature **3 Credits**
- ENGL 2132 - American Literature Mid 1800s to Present **3 Credits**
- ENGL 2141 - Early Western Literature **3 Credits**
- ENGL 2142 - Western Literature 1600s to Present **3 Credits**
- ENGL 2300 - African-American Literature and Culture **3 Credits**

### C-2: Humanities (3 credits)

Choose ONE of the following (language recommended):

- ARTS 2001 - Art Appreciation **3 Credits**
- ARTS 2002 - Drama Appreciation **3 Credits**
- ARTS 2003 - Music Appreciation **3 Credits**

- ARTS 2004 - History of Contemporary American Music **3 Credits**
- FREN 1002 - Elementary French II **3 Credits**
- GRMN 1002 - Elementary German II **3 Credits**
- SPAN 1002 - Elementary Spanish II **3 Credits**

## Area D: Science and Math (12 credits)

### D-1: Lab Science (8 credits)

You must take two semesters of lab science *and lab* (lecture=3 credits; lab=1 credit; K-courses=4 credits, lab is included)

- ASTR 1000K - Introduction to the Universe **4 Credits**
- ASTR 1010K - Introduction to the Universe II **4 Credits**
- BIOL 2107 - Principles of Biology I **3 Credits**
- BIOL 2107L - Principles of Biology I Laboratory **1 Credits**
- BIOL 2108 - Principles of Biology II **3 Credits**
- BIOL 2108L - Principles of Biology II Laboratory **1 Credits**
- CHEM 1211 - Principles of Chemistry I **3 Credits**
- CHEM 1211L - Principles of Chemistry I Lab **1 Credits**
- CHEM 1211K - Principles of Chemistry (ECORE) **4 Credits**
- CHEM 1212 - Principles of Chemistry II **3 Credits**
- CHEM 1212L - Principles of Chemistry II Lab **1 Credits**
- CHEM 1212K - Principles of Chemistry II (ECORE) **4 Credits**
- ENVS 2200K - Geology **4 Credits**
- ENVS 2202K - Introduction to Environmental Science **4 Credits**
- GEOL 1101K - Introductory Geosciences **4 Credits**
- PHYS 1111 - Introductory Physics I **3 Credits**
- PHYS 1111L - Introductory Physics Laboratory I **1 Credits**
- PHYS 1112 - Introductory Physics II **3 Credits**
- PHYS 1112L - Introductory Physics Laboratory II **1 Credits**
- PHYS 1211K - Principles of Physics I (ECORE) **4 Credits**
- PHYS 2211 - Principles of Physics I **3 Credits**
- PHYS 2211L - Principles of Physics Laboratory I **1 Credits**
- PHYS 2212 - Principles of Physics II **3 Credits**
- PHYS 2212L - Principles of Physics Laboratory II **1 Credits**

### D-2: Math (Minimum of 3 credits)

- MATH 1113 - Pre-calculus **4 Credits**  
(or other math as specified in the SPSU core)

## Area E: Social Sciences (12 credits)

### E-1: American Perspectives (3 credits)

Satisfies the American Perspectives overlay. Any one of these courses, taken within the University System of Georgia, also satisfies the Legislative Requirement for US and Georgia Constitution and History. Students who fulfill this requirement with transfer credit from outside the USG *may* need to take HIST 2911: U.S. and Georgia Constitution and History to satisfy the Legislative Requirement for graduation. Please check with your advisor.

Choose ONE of the following (POLS 1101 American Government is required in Area F and may not be used here):

- HIST 2111 - United States History to 1877 **3 Credits**
- HIST 2112 - United States History since 1877 **3 Credits**

### E-2: Historical Perspectives (3 credits)

Choose ONE of the following:

- HIST 1111 - Survey of World Civilization pre 1500 **3 Credits**
- HIST 1112 - Survey of World Civilization post 1500 **3 Credits**

### E-3: Behavioral Science Perspectives (3 credits)

Choose ONE of the following (ECON 1101 Introduction to Economics is required in Area F and may not be used here):

- PSYC 1101 - Introduction to General Psychology **3 Credits**
- SOCI 1101 - Introduction to Sociology **3 Credits**

### E-4: Global Perspectives (3 credits)

Satisfies Global Perspectives overlay. Choose ONE of the following (POLS 2401 is required in Area F and may not be used here):

- ANTH 1102 - Introduction to Anthropology **3 Credits**
- ES 1100 - Ethnic Studies **3 Credits**
- GEOG 1101 - Introduction to Human Geography **3 Credits**
- RELG 1200 - World Religion **3 Credits**

## Core Area F (18 credits)

- SPAN 2001 - Intermediate Spanish I **3 Credits**
- SPAN 2002 - Intermediate Spanish II **3 Credits**  
or 6 credits of any non-English language at an equivalent level
- ECON 1101 - Introduction to Economics **3 Credits**
- POLS 1101 - American Government **3 Credits**
- POLS 2100 - Introduction to Research Methods **3 Credits**
- POLS 2401 - Global Issues **3 Credits**

## Required Courses in Major (36 credits):

Grade of C or better required.

- POLS 3001 - Comparative Politics **3 Credits**
- POLS 3100 - Research Design **3 Credits**
- POLS 3209 - U.S. Constitutional Law **3 Credits**
- POLS 3301 - Modern Political Theory **3 Credits**
- POLS 3601 - Contemporary World Politics **3 Credits**
- POLS 3701 - American Institutions **3 Credits**
- POLS 3801 - Political Behavior **3 Credits**
- POLS 4100 - Applied Methodology **3 Credits**
- POLS 4301 - International Political Economy **3 Credits**  
Choose ONE of the following:
- GEOG 4101 - Geographic Information Systems **3 Credits**
- POLS 4201 - International Relations in the Americas **3 Credits**  
Choose ONE Regional Studies Course:
- IS 4000 - Regional Studies - General **3 Credits**
- IS 4001 - Regional Studies/Latin America **3 Credits**
- IS 4002 - Regional Studies/Asia:China **3 Credits**
- IS 4003 - Regional Studies/Asia:Japan **3 Credits**
- IS 4004 - Regional Studies/Middle East **3 Credits**
- IS 4005 - Regional Studies/Russia/Eastern Europe **3 Credits**
- IS 4006 - Regional Studies/Western Europe **3 Credits**
- IS 4007 - Regional Studies/Africa **3 Credits**  
In one of final two semesters:
- POLS 4801 - Capstone: Political Science Practicum **3 Credits**

## Directed International Electives: (12 credits)

Grade of C or better required. Take any FOUR of the following courses:

- GEOG 3101 - World Regional Geography **3 Credits**
- HIST 3200 - History of Science Survey **3 Credits**
- HIST 3301 - Diplomatic and Military History since 1815 **3 Credits**
- HIST 3401 - Modern Social and Cultural History Twentieth Century **3 Credits**
- HIST 3501 - Colonization and Rebellion in the Trans-Atlantic World **3 Credits**
- HIST 3601 - History of the Pacific Rim **3 Credits**

- HIST 3801 - Contemporary World History since 1945 **3 Credits**
  - IS 3600 - Comparative Culture **3 Credits**
  - IS 4800 - International Studies Capstone **3 Credits**
  - POLS 2903 - Special Topics in Political Science **3 Credits**
  - POLS 3009 - Foundations of Public Policy **3 Credits**
  - POLS 3401 - Environmental Law and Policy **3 Credits**
  - POLS 3501 - Intellectual Property Issues **3 Credits**
  - POLS 4009 - Comparative Public Policy Analysis **3 Credits**
  - POLS 4063 - Political Issues in Electronic Government **3 Credits**
  - POLS 4101 - Political Economy of Post-Communist Transformation **3 Credits**
  - POLS 4201 - International Relations in the Americas **3 Credits**
  - POLS 4903 - Special Topics in Political Science **3 Credits**
  - PSYC 3101 - International Social Psychology **3 Credits**
  - PSYC 4000 - International Psychology **3 Credits**
  - PSYC 4600 - Conflict Resolution **3 Credits**
  - SPAN 3001 - Advanced Conversation **3 Credits**
  - SPAN 3002 - Grammar and Composition **3 Credits**
  - SPAN 3003 - Hispanic Cultures and Civilizations **3 Credits**
  - SPAN 3901 - Special Topics **1 to 5 Credits**
  - SPAN 3902 - Special Topics **1 to 5 Credits**
  - SPAN 3903 - Special Topics **1 to 5 Credits**
  - SPAN 3904 - Special Topics **1 to 5 Credits**
  - SPAN 3905 - Special Topics **1 to 5 Credits**
  - STS 4000 - International Issues in Science and Technology **3 Credits**
  - STS 4400 - Topical Studies in Science and Technology **3 Credits**
- Up to 6 additional credits in Regional Studies:
- IS 4000 - Regional Studies - General **3 Credits**
  - IS 4001 - Regional Studies/Latin America **3 Credits**
  - IS 4002 - Regional Studies/Asia:China **3 Credits**
  - IS 4003 - Regional Studies/Asia:Japan **3 Credits**
  - IS 4004 - Regional Studies/Middle East **3 Credits**
  - IS 4005 - Regional Studies/Russia/Eastern Europe **3 Credits**
  - IS 4006 - Regional Studies/Western Europe **3 Credits**
  - IS 4007 - Regional Studies/Africa **3 Credits**

## Free Electives (12 credits):

Any college-level credit not used above may be applied here. *Free electives may be used toward a minor and are exempt from the 9 hour rule.*

**Degree Program Total: 121**

## **Psychology, BS**

Southern Polytechnic State University's Bachelor of Science degree in Psychology provides students a program of study in modern psychology. Specifically, the program embraces a strong international component with a multi-disciplinary curriculum that provides a balanced, career-based education in psychology with a wide range of skills and practical knowledge. The concentrations offered cover the subject matter from seventeen major subfields coupling science and practice. This broad spectrum provides a rich context so that students who complete the program have the knowledge, skills, and real-world context to be productive and flexible in a rapidly changing workplace.

Career opportunities for graduates with a B.S. in Psychology include: employment counselors, corporate counselor trainees, interviewers, personnel analysts, systems analysts, rehabilitation assistants, mental health assistants, probation officers and writers. Additionally, training in the development of research and writing skills will open opportunities in profit/non-profit business settings, public affairs, public health, sales and administrative support.

The concentrations offered are:

- Engineering Psychology (involves the science of applying an understanding of human behavior interacting with the design of systems and products that improve human performance)
- Industrial/Organizational Psychology (involves the science of applying an understanding of human behavior with improving productivity and the workplace quality)
- Clinical and Counseling Psychology (involves the science of applying an understanding of human behavior with an emphasis on mental disorders and their treatment)

## Requirements

### Core Areas A-E

#### Area A: Essential Skills (9 credits)

Grade of C or better required in the courses used to satisfy this requirement. Freshmen must complete Area A by the time they have attempted 30 semester hours of course work.

- ENGL 1101 - English Composition I **3 Credits**
- ENGL 1102 - English Composition II **3 Credits**
- MATH 1111 - College Algebra **3 Credits**  
(or other math as specified in the SPSU core)

#### Area B: Institutional Options (4 credits)

- COMM 2400 - Public Speaking **2 Credits**
- STS 2400 - Science, Technology, and Society **2 Credits**

#### Area C: Humanities / Fine Arts (6 credits)

### C-1: Literature (3 credits)

Choose ONE of the following:

- ENGL 2111 - Early World Literature **3 Credits**
- ENGL 2112 - World Literature Mid-1600s to Present **3 Credits**
- ENGL 2120 - British Literature Early to Present **3 Credits**
- ENGL 2121 - Early British Literature **3 Credits**
- ENGL 2122 - British Literature Late 1700s to Present **3 Credits**
- ENGL 2130 - American Literature Early to Present **3 Credits**
- ENGL 2131 - Early American Literature **3 Credits**
- ENGL 2132 - American Literature Mid 1800s to Present **3 Credits**
- ENGL 2141 - Early Western Literature **3 Credits**
- ENGL 2142 - Western Literature 1600s to Present **3 Credits**
- ENGL 2300 - African-American Literature and Culture **3 Credits**

### C-2: Humanities (3 credits)

Choose ONE of the following:

- ARTS 2001 - Art Appreciation **3 Credits**
- ARTS 2002 - Drama Appreciation **3 Credits**
- ARTS 2003 - Music Appreciation **3 Credits**
- ARTS 2004 - History of Contemporary American Music **3 Credits**
- FREN 1002 - Elementary French II **3 Credits**
- FREN 2001 - Intermediate French I **3 Credits**
- FREN 2002 - Intermediate French II **3 Credits**
- GRMN 1002 - Elementary German II **3 Credits**
- GRMN 2001 - Intermediate German I **3 Credits**
- GRMN 2002 - Intermediate German II **3 Credits**
- SPAN 1002 - Elementary Spanish II **3 Credits**
- SPAN 2001 - Intermediate Spanish I **3 Credits**
- SPAN 2002 - Intermediate Spanish II **3 Credits**

### Area D: Science and Math (11-12 credits)

#### D-1: Lab Science (8 credits)

You must take two semesters of lab science *and lab* (lecture=3 credits; lab=1 credit; K courses=4 credits, including lab). Biology recommended.

- ASTR 1000K - Introduction to the Universe **4 Credits**
- ASTR 1010K - Introduction to the Universe II **4 Credits**

- BIOL 2107 - Principles of Biology I **3 Credits**
- BIOL 2107L - Principles of Biology I Laboratory **1 Credits**
- BIOL 2108 - Principles of Biology II **3 Credits**
- BIOL 2108L - Principles of Biology II Laboratory **1 Credits**
- CHEM 1211 - Principles of Chemistry I **3 Credits**
- CHEM 1211L - Principles of Chemistry I Lab **1 Credits**
- CHEM 1211K - Principles of Chemistry (ECORE) **4 Credits**
- CHEM 1212 - Principles of Chemistry II **3 Credits**
- CHEM 1212L - Principles of Chemistry II Lab **1 Credits**
- CHEM 1212K - Principles of Chemistry II (ECORE) **4 Credits**
- ENVS 2200K - Geology **4 Credits**
- ENVS 2202K - Introduction to Environmental Science **4 Credits**
- GEOL 1101K - Introductory Geosciences **4 Credits**
- PHYS 1111 - Introductory Physics I **3 Credits**
- PHYS 1111L - Introductory Physics Laboratory I **1 Credits**
- PHYS 1112 - Introductory Physics II **3 Credits**
- PHYS 1112L - Introductory Physics Laboratory II **1 Credits**
- PHYS 1211K - Principles of Physics I (ECORE) **4 Credits**
- PHYS 2211 - Principles of Physics I **3 Credits**
- PHYS 2211L - Principles of Physics Laboratory I **1 Credits**
- PHYS 2212 - Principles of Physics II **3 Credits**
- PHYS 2212L - Principles of Physics Laboratory II **1 Credits**

#### D-2: Math (Minimum of 3 credits)

- MATH 1113 - Pre-calculus **4 Credits**  
(or other math as specified in the SPSU core)

#### Area E: Social Sciences (12 credits)

##### E-1: American Perspectives (3 credits)

Satisfies the American Perspectives overlay. Any one of these courses, taken within the University System of Georgia, also satisfies the Legislative Requirement for US and Georgia History and Constitution. Students who fulfill this requirement with transfer credit from outside the USG will need to take U.S. and Georgia Constitution and History to satisfy the Legislative Requirement for graduation.

- HIST 2111 - United States History to 1877 **3 Credits**
- HIST 2112 - United States History since 1877 **3 Credits**
- POLS 1101 - American Government **3 Credits**

##### E-2: Historical Perspectives (3 credits)



Choose ONE of the following:

- HIST 1111 - Survey of World Civilization pre 1500 **3 Credits**
- HIST 1112 - Survey of World Civilization post 1500 **3 Credits**

### E-3: Behavioral Science Perspectives (3 credits)

Choose ONE course (sociology recommended):

- ECON 1101 - Introduction to Economics **3 Credits**
- PSYC 1101 - Introduction to General Psychology **3 Credits**
- SOCI 1101 - Introduction to Sociology **3 Credits**

### E-4: Global Perspectives (3 credits)

Satisfies the Global Perspectives overlay. Choose ONE of the following:

- ANTH 1102 - Introduction to Anthropology **3 Credits**
- ES 1100 - Ethnic Studies **3 Credits**
- GEOG 1101 - Introduction to Human Geography **3 Credits**
- POLS 2401 - Global Issues **3 Credits**
- RELG 1200 - World Religion **3 Credits**

### Core Area F (18 credits)

- COMM 2030 - Research for the Humanities & Social Sciences **3 Credits**
- IET 2227 - Introduction to Statistics **3 Credits**
- PSYC 1101 - Introduction to General Psychology **3 Credits**  
(or 3 hours of PSYC 1XXX or 2XXX elective credit if PSYC 1101 has been used in Area E-3)
- PSYC 2011 - Cognitive Psychology **3 Credits**
- PSYC 2270 - Engineering Psychology **3 Credits**
- PSYC 2271 - Clinical and Counseling Psychology **3 Credits**

### Required Courses in Major (32 credits):

Grade of C or better required; take all of the following:

- SPSU 1001 - Hitch-hiker's Introduction to SPSU **1 Credits**
- MGNT 3105 - Management and Organizational Behavior **3 Credits**
- PSYC 1000 - Orientation to Psychology **2 Credits**
- PSYC 2100 - Basic Quantitative Research Methods for Psychology **3 Credits**
- PSYC 2401 - Psychology of Diversity **3 Credits**
- PSYC 3000 - Junior Seminar **3 Credits**
- PSYC 3020 - Physiological Psychology **3 Credits**

- PSYC 3031 - Experimental Psychology **4 Credits**
- PSYC 3101 - International Social Psychology **3 Credits**
- PSYC 4050 - History and Systems of Psychology **3 Credits**
- PSYC 4800 - Psychology Capstone Seminar **3 Credits**

## Concentrations

Choose and complete one of the concentrations below:

### Engineering Psychology (28 credits)

#### Required Courses (22 credits):

Grade of C or better required; take all of the following:

- IET 2305 - The Role of Industrial Engineering Technology in Industrial Systems **4 Credits**
- IET 3322 - Work Measurement and Ergonomics **4 Credits**  
*The following must be taken in the order listed:*
- CSE 1301J - Programming & Problem Solving I **4 Credits**  
(be sure it's 1301**J**)
- IT 1324 - Advanced Programming Principles **4 Credits**
- SWE 4324 - User-Centered Design **4 Credits**
- SWE 4783 - User Interaction Engineering **3 Credits**

#### Free Electives (6 credits)

Credit from any college-level course may be applied here. *Free elective hours may be used toward an additional minor and are exempt from the 9 hours rule.*

### Industrial / Organizational Psychology (28 credits)

#### Required Courses (12 credits):

Grade of C or better required; take all of the following:

- MGNT 4115 - Human Resource Management **3 Credits**
- PSYC 3301 - Psychological Testing **3 Credits**
- PSYC 4000 - International Psychology **3 Credits**
- PSYC 4600 - Conflict Resolution **3 Credits**

#### Concentration Electives (9 credits):

Grade of C or better required; choose THREE of the following:

- PSYC 3010 - Educational Psychology **3 Credits**
- PSYC 3015 - Theories of Personality **3 Credits**
- PSYC 3040 - Motivation and Emotion **Credits**
- PSYC 4130 - Psychology of Aging **3 Credits**
- PSYC 4220 - Psychoactive Drugs, Behavior, and Society **3 Credits**

### Free Electives (7 credits)

Credit from any college-level course may be applied here. *Free elective hours may be used toward an additional minor and are exempt from the 9 hours rule.*

### Clinical and Counseling Psychology (28 credits)

#### Required Courses:

Grade of C or better required; take all of the following:

- PSYC 3015 - Theories of Personality **3 Credits**
- PSYC 3230 - Abnormal Psychology **3 Credits**
- PSYC 3301 - Psychological Testing **3 Credits**

#### Concentration Electives (9 credits):

Grade of C or better required; choose THREE from the following:

- PSYC 2273 - Forensic Psychology **3 Credits**
- PSYC 3010 - Educational Psychology **3 Credits**
- PSYC 3040 - Motivation and Emotion **Credits**
- PSYC 3305 - Developmental Psychology **3 Credits**
- PSYC 4000 - International Psychology **3 Credits**
- PSYC 4130 - Psychology of Aging **3 Credits**
- PSYC 4220 - Psychoactive Drugs, Behavior, and Society **3 Credits**
- PSYC 4600 - Conflict Resolution **3 Credits**

### Free Electives (10 credits)

Credit from any college-level course may be applied here. *Free elective hours may be used toward an additional minor and are exempt from the 9 hours rule.*

**Degree Program Total: 120**

# Software Engineering, BS

## Requirements

- ENGL 1101 - English Composition I **3 Credits**
- ENGL 1102 - English Composition II **3 Credits**
- TCOM 2010 - Technical Writing **3 Credits**
- ECON 2107 - Introduction to Economic Analysis **3 Credits**
- MATH 2253 - Calculus I **4 Credits** (extra hour is applied to area F)
- MATH 2254 - Calculus II **4 Credits**
- MATH 2345 - Discrete Mathematics **3 Credits**
- MATH 2260 - Introduction to Probability and Statistics **3 Credits**
- Math/Science Electives - (Math at the level of MATH 2253 or higher; Science at the level of Area D or higher) **6 Credits**
- COMM 2400 - Public Speaking **2 Credits**
- STS 2400 - Science, Technology, and Society **2 Credits**
- Area C Group 1 - Take One Course From the Literature Group **3 Credits**
- Area C Group 2 - Take One Course From the Art and Culture Group **3 Credits**
- Area D - Take Two Courses From the Laboratory Sciences Group excluding PHYS 1111, 1111L & PHYS 1112, 1112L) **8 Credits**
- PHYS 2211 - Principles of Physics I **3 Credits** (see note below)
- Area E Group 1 - American Context **3 Credits**
- Area E Group 2 - World History **3 Credits**
- Area E Group 3 - Behavioral Sciences **3 Credits**
- Area E Group 4 - Cultures and Societies **3 Credits**
- PHYS 2211L - Principles of Physics Laboratory I **1 Credits**
- SPSU 1001 - Hitch-hiker's Introduction to SPSU **1 Credits**
- CSE 1002 - Introduction to the Computing Disciplines **2 Credits**
- CSE 1301C or CSE 1301J - Programming & Problem Solving I **4 Credits**
- CSE 1302C or CSE 1302J - Programming & Problem Solving II **4 Credits**
- CSE 3642 - Professional Practices and Ethics **2 Credits**
- CSE 3153 - Database Systems **3 Credits**
- CS 3224 - Computer Organization & Architecture **4 Credits**
- CS 3424 - Data Structures **4 Credits**
- CS 3243 - Operating Systems **3 Credits**
- SWE 2313 - Introduction to Software Engineering **3 Credits**
- SWE 3623 - Software Systems Requirements **3 Credits**
- SWE 3633 - Software Architecture & Design **3 Credits**
- SWE 3643 - Software Testing and Quality Assurance **3 Credits**
- SWE 4324 - User-Centered Design **4 Credits**
- SWE 4663 - Software Project Management **3 Credits**
- SWE 4713 - SWE Application Domain **3 Credits**
- SWE 4724 - Software Engineering Project **4 Credits**

- SWE Upper Level Electives - Choose 2 courses from the approved list, at least one must be an SWE course **6 Credits**
- Free Electives - (Excludes MATH 1111, PHYS 1111, 1111L and PHYS 1112, 1112L) **5 Credits**

**Degree Program Total: 128+**

## Note:

In lieu of PHYS 2211, 2211L, an additional lab science course may be taken to form a sequence with one of the science courses in area D.

A grade of "C" or better must be earned in all CSE, CS, SWE, CGDD, and IT courses applied to degree requirement.

## Structural Engineering Technology, BS

(pending BOR approval)

### Requirements

- ENGL 1101 - English Composition I **3 Credits**
- ENGL 1102 - English Composition II **3 Credits**
- COMM 2400 - Public Speaking **2 Credits**
- STS 2400 - Science, Technology, and Society **2 Credits**
- Area C Group 1 - Take One Course from the Literature Group **3 Credits**
- Area C Group 2 - Take One Course from the Art and Culture Group **3 Credits**
- Area D - CHEM 1211, 1211L and PHYS 2211, 2211L **8 Credits**
- Area E Group 1 - American Context **3 Credits**
- Area E Group 2 - World History **3 Credits**
- Area E Group 3 - Behavioral Science **3 Credits**
- Area E Group 4 - Cultures and Societies **3 Credits**
- MATH 1113 - Pre-calculus **4 Credits** (extra hour is applied to core related to major)
- MATH 2253 - Calculus I **4 Credits** (extra hour is applied to core related to major)
- MATH 2254 - Calculus II **4 Credits**
- MATH 3312 - Linear Algebra **4 Credits**
- EDG 2160 - Civil Graphics and Computer Aided Drafting **3 Credits**
- ENGR 2214 - Engineering Mechanics – Statics **3 Credits**
- CE 1000 - Orientation to Engineering and Surveying Professions **1 Credits**
- SPSU 1001 - Hitch-hiker's Introduction to SPSU **1 Credits**
- CET 2110 - Problem Solving Methods in CET **3 Credits**
- ENGR 3131 - Strength of Materials **3 Credits**
- ENGR 3132 - Strength of Materials Lab **1 Credits**
- CET 3110 - Construction Materials and Sustainability **3 Credits**

- CET 3210 - Structural Mechanics **3 Credits**
- CET 3120 - Cost Estimating and Scheduling in CET **3 Credits**
- CET 3130 - Applied Fluid Mechanics and Hydraulics **2 Credits**
- CET 3220 - Applied Structural Steel Design **3 Credits**
- CET 3230 - Concrete Infrastructure Design **3 Credits**
- CET 3410 - Soil Properties and Site Exploration **3 Credits**
- CET 4410 - Foundation and Retaining Wall Design **3 Credits**
- SET 3260 - Masonry and Timber Design **4 Credits**
- SET 3250 - Structural Loads and Connections **3 Credits**
- SET 4240 - Structural Rehabilitation **3 Credits**
- CET 4210 - Computer Methods in Structures **4 Credits**
- CET 4230 - Advanced Concrete Design **4 Credits**
- SET 4250 - Bridge Design **3 Credits**
- CET 4110 - Ethics of Engineering **1 Credits**
- CET 4120 - Senior Design and Engineering Documentation **3 Credits**
- MGNT 3105 - Management and Organizational Behavior **3 Credits**

## CET Electives

Take a minimum 8 hours from the courses listed below:

- CET 4220 - LFRD Steel Design **4 Credits**
- CET 4310 - Stormwater Management and Erosion Control **2 Credits**
- SET 3240 - Hydraulic Structures **3 Credits**
- CET 4420 - Earth Dam and Levee Design **3 Credits**

## Degree Program Total 130

CET students are required to earn a grade of "C" or better in all courses required in the major and all courses used as electives.

## Surveying and Mapping, BS

### Requirements:

- ENGL 1101 - English Composition I **3 Credits**
- ENGL 1102 - English Composition II **3 Credits**
- TCOM 2010 - Technical Writing **3 Credits**
- STS 2400 - Science, Technology, and Society **2 Credits**
- Area C Group 1 - Take One Course From the Literature Group **3 Credits**
- Area C Group 2 - Take One Course From the Art and Culture Group **3 Credits**
- COMM 2400 - Public Speaking **2 Credits**

- MATH 1113 - Pre-calculus **4 Credits** (extra hour is applied to area F)
- MATH 2253 - Calculus I **4 Credits** (extra hour is applied to area F)
- MATH 2254 - Calculus II **4 Credits**
- MATH 2260 - Introduction to Probability and Statistics **3 Credits**
- Math Elective - **3 Credits**
- Area D - Any Two Lab Sciences **8 Credits**
- PHYS 1111 - Introductory Physics I **3 Credits**
- PHYS 1111L - Introductory Physics Laboratory I **1 Credits**
- PHYS 1112 - Introductory Physics II **3 Credits**
- Area E Group 1 - American Context **3 Credits**
- Area E Group 2 - World History **3 Credits**
- Area E Group 3 - Behavioral Science **3 Credits**
- Area E Group 4 - Cultures and Societies **3 Credits**
- PHYS 1112L - Introductory Physics Laboratory II **1 Credits**
  
- IT 1113 - Programming Principles **3 Credits** or
- CS 2123 - C Programming **3 Credits**
  
- CET 3130 - Applied Fluid Mechanics and Hydraulics **2 Credits**
- CE 1000 - Orientation to Engineering and Surveying Professions **1 Credits**
- SPSU 1001 - Hitch-hiker's Introduction to SPSU **1 Credits**
- MGNT 3105 - Management and Organizational Behavior **3 Credits**
- EDG 2160 - Civil Graphics and Computer Aided Drafting **3 Credits**
- CET 2200 - Introduction to Structures **4 Credits**
- CET 3510 - Traffic Analysis and Road Design **2 Credits**
- CET 4310 - Stormwater Management and Erosion Control **2 Credits**
- CET 3120 - Cost Estimating and Scheduling in CET **3 Credits**
- SURV 2221 - Surveying I **4 Credits**
- SURV 3222 - Surveying II **4 Credits**
- SURV 4410 - Surveying Computations and Adjustments **4 Credits**
- SURV 3421 - Geographic Information Systems I **4 Credits**
- SURV 4465 - Legal Aspects of Land Surveying **4 Credits**
- SURV 4470 - Land Development Design **4 Credits**
- SURV 4415 - Geodetic Surveying Methods **4 Credits**
- SURV 4475 - Land Surveying Practice **2 Credits**
- SURV Electives **4 Credits**
- Free Elective **3 Credits**

**Degree Program Total: 129 hours**

**Note:**

*Surveying students are required to earn a grade of "C" or better in all courses required in the major and all courses used as electives.*

*PHYS 1111 and PHYS 1112 are required.*

*If you use PHYS 1111/PHYS 1112 in Area D then you may use 4 hours of either CET or SURV 1-2000 level courses or any Lab Science to fulfill the Area F requirement.*

*If you use PHYS 1111/PHYS 1112 in Area D then you may use 4 hours of either CET or SURV 3-4000 level courses or any Lab Science to fulfill the major requirement.*

## **Systems Engineering, BS**

### **Requirements**

- ENGL 1101 - English Composition I **3 Credits**
- ENGL 1102 - English Composition II **3 Credits**
- COMM 2400 - Public Speaking **2 Credits**
- TCOM 2010 - Technical Writing **3 Credits**
- STS 2400 - Science, Technology, and Society **2 Credits**
- Area C Group 1 - Take One Course From the Literature Group **3 Credits**
- Area C Group 2 - Take One Course From the Art and Culture Group **3 Credits**
- Area E Group 1 - American Context **3 Credits**
- Area E Group 2 - World History **3 Credits**
- Area E Group 3 - Behavioral Science **3 Credits**
- Area E Group 4 - Cultures and Societies **3 Credits**
- CHEM 1211 - Principles of Chemistry I **3 Credits**
- CHEM 1211L - Principles of Chemistry I Lab **1 Credits**
  
- CSE 1301E - C++ Programming for Engineers **4 Credits** or
- CSE 1301J - Programming & Problem Solving I **4 Credits**
  
- CSE 1302E - Object Oriented C++ Programming for Engineers **4 Credits** or
- CSE 1302J - Programming & Problem Solving II **4 Credits**
  
- SPSU 1001 - Hitch-hiker's Introduction to SPSU **1 Credits**
- EE 2301 - Circuit Analysis I **4 Credits**
- ENGR 2214 - Engineering Mechanics – Statics **3 Credits**
- ENGR 3122 - Dynamics **3 Credits**
- MATH 2253 - Calculus I **4 Credits**
- MATH 2254 - Calculus II **4 Credits**
- MATH 2255 - Calculus III **4 Credits**
- MATH 3312 - Linear Algebra **4 Credits**
- PHYS 2211 - Principles of Physics I **3 Credits**
- PHYS 2211L - Principles of Physics Laboratory I **1 Credits**
- PHYS 2212 - Principles of Physics II **3 Credits**
- PHYS 2212L - Principles of Physics Laboratory II **1 Credits**
- SYE 2100 - Systems Analysis and Design **3 Credits**



- SYE 3320 - Engineering Economics and Decision Analysis **3 Credits**
- SYE 2600 - Applications of Probability **3 Credits**
- SYE 3100 - Systems Reliability and Maintainability **3 Credits**
- SYE 3120 - Contemporary Technological Systems: Design, Analysis, and Architecture **3 Credits**
- SYE 3200 - Human Machine Systems **3 Credits**
- SYE 3300 - Program Management **3 Credits**
- SYE 3400 - Engineering Optimization I: Deterministic Decision Models **3 Credits**
- SYE 3600 - Statistics with Applications **3 Credits**
  
- SYE 3700 - Manufacturing and Production Systems **3 Credits** or
- SYE 3710 - Logistics and Supply Chain Systems **3 Credits**
  
- SYE 4400 - Engineering Optimization II: Stochastic Decision Models **3 Credits**
- SYE 4500 - System Modeling and Simulation **3 Credits**
- SYE 4900 - System Design Project **3 Credits**
- Approved technical electives **12 Credits**

## Degree Program Total: 129

The Systems Engineering degree requires a grade of 'C' or better for any course with an ENGR or SYE prefix and ENGL 1101. A 'D' or better is required for any other course.

## Technical Electives

Technical Electives can be 3000 and/or 4000 level courses from SYE, SWE, MTRE, ME, CE, EE or MATH. Other courses may be approved by the department chair. Students may focus their technical electives in Aerospace Engineering or Nuclear Engineering.

## Technical Communication, BS

With our TCOM degree, you will learn much more than just how to use words effectively—you will have opportunities to learn document design, graphics, multimedia, web design, and video production as well as science and environmental writing, proposal writing, and medical communication.

Students in other majors can minor in technical communication through a range of campus-based and online course offerings.

Many TCOM courses are taught using a combination of on-site and online sessions that students with jobs especially appreciate. We make sure we offer enough late-afternoon and evening courses so that working students can make steady progress toward their degree.

## Requirements

- ENGL 1101 - English Composition I **3 Credits**
- ENGL 1102 - English Composition II **3 Credits**
- MATH 1111 - College Algebra **3 Credits**

- MATH 1113 - Pre-calculus **4 Credits**
- COMM 2400 - Public Speaking **2 Credits**
- STS 2400 - Science, Technology, and Society **2 Credits**
- Area C Group 1 - Take One Course from the Literature Group **3 Credits**
- Area C Group 2 - Take One Course from the Art and Culture Group **3 Credits**
- Area D - Any Two Lab Sciences **8 Credits**
- Area E Group 1 - American Context **3 Credits**
- Area E Group 2 - World History **3 Credits**
- Area E Group 3 - Behavioral Science **3 Credits**
- Area E Group 4 - Cultures and Societies **3 Credits**

## Required Area F Foundations Courses (9 Credits)

- COMM 2000 - Business Communication **3 Credits**
- TCOM 2010 - Technical Writing **3 Credits**
- TCOM 2020 - Intro to Professional & Technical Communication **3 Credits**

## Area F Required Research Methods Course (3 Credits; Choose One)

- TCOM 2030 - Research in Technical Communication **3 Credits** or
- ENGL 2030 - Research in Professional and Critical Writing **3 Credits**

## Area F Electives (6 Credits; Choose Two)

- ARTS 2020 - History and Principles of Design **3 Credits**
- ENGL 2xxx - Any 2000-level literature survey **3-6 Credits**
- COMM 2065 - Cross-Cultural Communication **3 Credits**
- COMM 2170 - Introduction to Media Studies **3 Credits**
- COMM 2150 - Ethics and Communication **3 Credits**
- Other coursework appropriate to major, as approved by the department (3 credits max) **3 Credits**
- Any foreign language, 2001 or higher **3 Credits**

## Basic Required Courses in the Major (18 Credits)

- SPSU 1001 - Hitch-hiker's Introduction to SPSU **1 Credits**
- ENGL 3030 - English Grammar for Professional Writing **3 Credits**

- TCOM 3430 - Foundations of Graphics **3 Credits**
- TCOM 3400 - Foundations of Design for the Web **3 Credits**
- COMM 4100 - Small Group Communication **3 Credits**
- ENGL 3100 - Rhetoric: History, Theory, and Practice **3 Credits**
- TCOM 4800 - Project Portfolio **3 Credits**
- Technical Communication Electives **12 Credits**
- Take any 3000-level or higher ARTS, COMM, ENGL, or TCOM Course, or other courses (not to exceed 6 credits) as approved by the department.
- Free Electives **15 Credits**
- Courses in Major Concentrations (Information Design or Digital Media and Graphics) **15 Credits**

## Major Concentrations

Choose one concentration from the following: (Information Design or Digital Media and Graphics)

### Information Design (15 Credits)

- TCOM 3020 - Proposal Writing **3 Credits**
- TCOM 3030 - Instructional Design **3 Credits**
- TCOM 3045 - Fundamentals of Information Design **3 Credits**
- TCOM 3145 - Social Media Integration **3 Credits**
- TCOM 4000 - Professional Editing **3 Credits**
- TCOM 4045 - Foundations of Multimedia **3 Credits**
- TCOM 4070 - User Documentation **3 Credits**
- TCOM 4120 - Usability Testing **3 Credits**
- TCOM 4130 - Online Documentation **3 Credits**

### Digital Media and Graphics (15 Credits)

- ARTS 2010 - Introduction to Drawing **3 Credits**
- ARTS 3000 - Visual Thinking **3 Credits**
- ARTS 3170 - Digital Photography **3 Credits**
- TCOM 3145 - Social Media Integration **3 Credits**
- TCOM 4045 - Foundations of Multimedia **3 Credits**
- TCOM 4040 - Applied Graphics for Technical Communicators **3 Credits**
- TCOM 4170 - Film and Video Production **3 Credits**
- TCOM 4175 - Animation Design, 2D **3 Credits**
- TCOM 4400 - Advanced Design for the Web **3 Credits**

**Degree Program Total: 121**

For additional information about the B.S. program, contact the English, Technical Communication, and Media Arts Department at 678-915-7202, or email to TCOM@spsu.edu. You can also visit our website at etcma.spsu.edu.

## **Telecommunications Engineering Technology, BS**

### **Requirements**

- ENGL 1101 - English Composition I **3 Credits**
- ENGL 1102 - English Composition II **3 Credits**
- MATH 1113 - Pre-calculus **4 Credits** (extra hour is applied to area F)
- MATH 2253 - Calculus I **4 Credits** (extra hour is applied to area F)
- MATH 2254 - Calculus II **4 Credits**
- MATH 2260 - Introduction to Probability and Statistics **3 Credits**
- MATH 2306 - Ordinary Differential Equations **3 Credits**
- PHYS 2211 - Principles of Physics I **3 Credits** \*
- PHYS 2211L - Principles of Physics Laboratory I **1 Credits**
- PHYS 2212 - Principles of Physics II **3 Credits** \*
- PHYS 2212L - Principles of Physics Laboratory II **1 Credits**
- COMM 2400 - Public Speaking **2 Credits**
- STS 2400 - Science, Technology, and Society **2 Credits**
- TCOM 2010 - Technical Writing **3 Credits**
- Area C Group 1 - Take One Course From the Literature Group **3 Credits**
- Area C Group 2 - Take One Course From the Art and Culture Group **3 Credits**
- Area E Group 1 - American Context **3 Credits**
- Area E Group 2 - World History **3 Credits**
- Area E Group 3 - Behavioral Science **3 Credits**
- Area E Group 4 - Cultures and Societies **3 Credits**
- ECET 1001 - Orientation **1 Credits**
- SPSU 1001 - Hitch-hiker's Introduction to SPSU **1 Credits**
- ECET 1012 - Design Fundamentals **2 Credits**
- ECET 1101 - Circuits I **4 Credits**
- ECET 1200 - Digital I **4 Credits**
- ECET 2111 - Circuits II **4 Credits**
- ECET 2300 - Electronics I **4 Credits**
- ECET 2210 - Digital II **4 Credits**
- ECET 2310 - Electronics II **4 Credits**
- ECET 3400 - Data Communications **4 Credits**
- ECET 3410 - High Frequency Systems **4 Credits**
- ECET 3810 - Applications of C++, JAVA and HTML **3 Credits**
- ECET 4820 - Communications Networks and the Internet **4 Credits**
- ECET 4830 - Telecommunications Management **3 Credits**
- ECET 4840 - Advanced Telecommunications **4 Credits**
- ECET 4850 - Telecommunications Project **4 Credits**
- ECET 4860 - Network Security **4 Credits**

- EDG 1210 - Survey of Engineering Graphics **2 Credits**
- MGNT 3105 - Management and Organizational Behavior **3 Credits**
- MGNT 4135 - Project Management **3 Credits**
- TCET Electives **6 Credits**

**Degree Program Total: 128**

## Note:

*\* PHYS 1111/PHYS 1111L and PHYS 1112/PHYS 1112L may be substituted for PHYS 2211/PHYS 2211L and PHYS 2212/PHYS 2212L .*

*TCET majors are required to earn a "C" or better in their ECET courses, except one "D" in a 3000 or 4000 level non-prerequisite course may be used for graduation purposes. A grade of "C" or better is required in the project-based capstone course.*

## TCET Electives

Students may take any *non-required* 3000 or 4000 level ECET or MGNT course to satisfy the TCET elective requirement of 6 credit hours.

## Associate of Science Transfer Degree

### General Studies, A.S.

The Associate of Science General Studies Transfer Program is designed for students who wish to complete the core at SPSU and then transfer to another institution.

### All students must take:

- SPSU 1001 - Hitch-hiker's Introduction to SPSU **1 Credits**

### Area A: Essential Skills (9 credits)

Grade of C or better required in the courses used to satisfy this requirement. Freshmen must complete Area A by the time they have attempted 30 semester hours of course work.

- ENGL 1101 - English Composition I **3 Credits**

- ENGL 1102 - English Composition II **3 Credits**
- MATH 1111 - College Algebra **3 Credits**  
(or other math as specified in the University core)

## Area B: Institutional Options (4 credits)

- COMM 2400 - Public Speaking **2 Credits**
- STS 2400 - Science, Technology, and Society **2 Credits**

## Area C: Humanities / Fine Arts (6 credits)

### Choose ONE Literature Course:

- ENGL 2111 - Early World Literature **3 Credits**
- ENGL 2112 - World Literature Mid-1600s to Present **3 Credits**
- ENGL 2120 - British Literature Early to Present **3 Credits**
- ENGL 2121 - Early British Literature **3 Credits**
- ENGL 2122 - British Literature Late 1700s to Present **3 Credits**
- ENGL 2130 - American Literature Early to Present **3 Credits**
- ENGL 2131 - Early American Literature **3 Credits**
- ENGL 2132 - American Literature Mid 1800s to Present **3 Credits**
- ENGL 2141 - Early Western Literature **3 Credits**
- ENGL 2142 - Western Literature 1600s to Present **3 Credits**
- ENGL 2300 - African-American Literature and Culture **3 Credits**

### Choose ONE Arts or Language Course:

- ARTS 2001 - Art Appreciation **3 Credits**
- ARTS 2002 - Drama Appreciation **3 Credits**
- ARTS 2003 - Music Appreciation **3 Credits**
- ARTS 2004 - History of Contemporary American Music **3 Credits**
- FREN 1002 - Elementary French II **3 Credits**
- FREN 2001 - Intermediate French I **3 Credits**
- FREN 2002 - Intermediate French II **3 Credits**
- GRMN 1002 - Elementary German II **3 Credits**
- GRMN 2001 - Intermediate German I **3 Credits**
- GRMN 2002 - Intermediate German II **3 Credits**

- SPAN 1002 - Elementary Spanish II **3 Credits**
- SPAN 2001 - Intermediate Spanish I **3 Credits**
- SPAN 2002 - Intermediate Spanish II **3 Credits**

## Area D: Science and Math (11-12 credits)

### 8 hours science (two courses with labs):

You must take two semesters of lab science *and lab* (lecture=3 credits; lab=1 credit; K-courses=4 credits, lab is included)

- ASTR 1000K - Introduction to the Universe **4 Credits**
- ASTR 1010K - Introduction to the Universe II **4 Credits**
- BIOL 2107 - Principles of Biology I **3 Credits**
- BIOL 2107L - Principles of Biology I Laboratory **1 Credits**
- BIOL 2108 - Principles of Biology II **3 Credits**
- BIOL 2108L - Principles of Biology II Laboratory **1 Credits**
- CHEM 1211 - Principles of Chemistry I **3 Credits**
- CHEM 1211L - Principles of Chemistry I Lab **1 Credits**
- CHEM 1211K - Principles of Chemistry (ECORE) **4 Credits**
- CHEM 1212 - Principles of Chemistry II **3 Credits**
- CHEM 1212L - Principles of Chemistry II Lab **1 Credits**
- CHEM 1212K - Principles of Chemistry II (ECORE) **4 Credits**
- ENVS 2200K - Geology **4 Credits**
- ENVS 2202K - Introduction to Environmental Science **4 Credits**
- GEOL 1101K - Introductory Geosciences **4 Credits**
- PHYS 1111 - Introductory Physics I **3 Credits**
- PHYS 1111L - Introductory Physics Laboratory I **1 Credits**
- PHYS 1112 - Introductory Physics II **3 Credits**
- PHYS 1112L - Introductory Physics Laboratory II **1 Credits**
- PHYS 1211K - Principles of Physics I (ECORE) **4 Credits**
- PHYS 2211 - Principles of Physics I **3 Credits**
- PHYS 2211L - Principles of Physics Laboratory I **1 Credits**
- PHYS 2212 - Principles of Physics II **3 Credits**
- PHYS 2212L - Principles of Physics Laboratory II **1 Credits**

### Math:

- MATH 1113 - Pre-calculus **4 Credits**  
(or other math as specified in the University core)

## Area E: Social Sciences (12 credits)

### Group 1 American Perspectives- (3 credits):

Satisfies the American Perspectives overlay. Any one of these courses, taken within the University System of Georgia, also satisfies the Legislative Requirement for US and Georgia Constitution and History. Students who fulfill this requirement with transfer credit from outside the USG will need to take HIST 2911 U.S. and Georgia Constitution and History to satisfy the Legislative Requirement for graduation.

Choose ONE of the following:

- HIST 2111 - United States History to 1877 **3 Credits**
- HIST 2112 - United States History since 1877 **3 Credits**
- POLS 1101 - American Government **3 Credits**

### Group 2 Historical Perspectives (3 credits):

Choose ONE of the following:

- HIST 1111 - Survey of World Civilization pre 1500 **3 Credits**
- HIST 1112 - Survey of World Civilization post 1500 **3 Credits**

### Group 3 Behavioral Science Perspectives (3 credits):

Choose ONE of the following:

- ECON 1101 - Introduction to Economics **3 Credits**
- PSYC 1101 - Introduction to General Psychology **3 Credits**
- SOCI 1101 - Introduction to Sociology **3 Credits**

### Group 4 Global Perspectives (3 credits):

Satisfies the Global Perspectives overlay.

Choose ONE of the following:

- ANTH 1102 - Introduction to Anthropology **3 Credits**
- ES 1100 - Ethnic Studies **3 Credits**
- GEOG 1101 - Introduction to Human Geography **3 Credits**
- POLS 2401 - Global Issues **3 Credits**
- RELG 1200 - World Religion **3 Credits**



## Elective Courses:

- At least one additional course in humanities (Area C ) **3 Credits**
- At least one additional course in social sciences (Area E) **3 Credits**
- Any humanities, social science, math, lab science or any area F course from any program. **11-12 Credits**

Total Program Hours: 60

## Non-Degree

### Accounting Minor

Students who wish to receive a concentration or minor in Accounting must take:

#### Accounting Minor Courses

- ACCT 3230 - Intermediate Accounting I **3 Credits**
- ACCT 3231 - Intermediate Accounting II **3 Credits**
- ACCT 3530 - Cost Accounting **3 Credits**
- ACCT 4535 - Accounting Information Systems **3 Credits**  
Select one of the following:
- ACCT 4530 - Advanced Accounting **3 Credits** or
- ACCT 4560 - Intro to Federal Income Taxes **3 Credits**

Minor Program Total: 15

### Aerospace Engineering Minor

#### Requirements

- SYE 3801 - Aerodynamics (Aeronautic Elective) **3 Credits**

- SYE 4803 - Aeronautics Project **3 Credits**

Choose 3 courses from the following:

- SYE 3802 - Aircraft Design and Performance (Aeronautic Elective) **3 Credits**
- SYE 3803 - Fundamentals of Avionics **3 Credits**
- SYE 4801 - Aircraft Propulsion **3 Credits**
- SYE 4802 - Helicopter Theory **3 Credits**
- SYE 4804 - Special Topics **Credits** related to aerospace engineering **3 Credits**

**Minor Program Total: 15**

## **Apparel and Textiles Minor**

To be eligible for a minor in Apparel and Textile Technology, the student must complete 15 credit hours from the following courses with at least 9 hours of upper division course work.

### **Requirements**

- ATT 1200 - Apparel Design Graphics **2 Credits**
- ATT 1300 - International Sourcing **3 Credits**
- ATT 1400 - Principles of Merchandising **3 Credits**
- ATT 2301 - Apparel Computer-Aided Technical Design I **4 Credits**
- ATT 3100 - Fashion Merchandising **3 Credits**
- ATT 3505 - Fabric Formation and Design **3 Credits**
- ATT 3600 - Apparel Analysis and Product Development **3 Credits**
- ATT 3602 - Apparel Computer-Aided Technical Design II **4 Credits**
- ATT 3800 - Fashion Forecasting, Data Analysis & Consumer Trends **3 Credits**
- ATT 4444 - Quality Assurance for Textiles and Apparel **4 Credits**
- ATT 4670 - Apparel/Textile Business Practices **3 Credits**
- ATT 4750 - Advanced Design and Product Development **3 Credits**

**Minor Program Total: 15**

## **Architecture Minor**

Minor in Architecture for non-architecture majors, provides a focused exposure to the varied dimensions of design, critical thinking and application while exercising restraint on time to complete. Students who change their major from Architecture to another major or discipline of their choice can get a Minor in Architecture after fulfilling it's course requirements. Students complete a major in a Program to be awarded with a Minor in Architecture. Minor in

Architecture will not be substituted with Certificate in Architectural Studies. All studio and lecture courses must be passed with a minimum grade of "C". All studios should be taken in sequence.

## Architecture Minor

- DFN 1001 - Design Foundation I **4 Credits**
- DFN 1002 - Design Foundation II **4 Credits**
- DFN 2003 - Design Foundation III **4 Credits**
- DFN 2004 - Design Foundation IV **4 Credits**
- DFN 1241 - Design Communication I **2 Credits**
- DFN 2242 - Design Communication II **2 Credits**
- DFN 2311 - Environmental Tech I -Systems Selection and Materials **3 Credits**
- DFN 2112 - Architecture Culture II - The Renaissance through 1850 **3 Credits**
- DFN 2211 - Architecture Structures I - Introduction to Structures **3 Credits**

Minor Program Total: 29

## Biology Minor

To be eligible for a minor in Biology, the student must complete:

- A minimum of 18 semester hours of BIOL or BIOC coursework
- 9 of the 18 hours in BIOL/BIOC must be above the 2199 level
- Students who use BIOL 2107/BIOL 2107L and/or BIOL 2108/BIOL 2108L to satisfy Core D requirements cannot use these courses to satisfy requirements of the minor

## Business Minor

Students wishing to receive a minor in Business Administration must take:

ACCT 2101 - Principles of Financial Accounting

MGNT 3105 - Management and Organizational Behavior

Plus three additional business courses (9 hours), two of which must be upper division.

- You may not use MGNT 1000 to satisfy a requirement in the minor.
- Additionally, accounting courses beyond ACCT 2101 may not be used for the business minor.
- Students majoring in Accounting are not eligible for the minor in Business Administration.

## Chemistry Minor

## Requirements

- CHEM 1211 - Principles of Chemistry I **3 Credits**
- CHEM 1211L - Principles of Chemistry I Lab **1 Credits**
- CHEM 1212 - Principles of Chemistry II **3 Credits**
- CHEM 1212L - Principles of Chemistry II Lab **1 Credits**
- CHEM 2511K - Organic Chemistry I **4 Credits**
- CHEM 2512K - Organic Chemistry II **4 Credits**
- 10 additional hours of upper division (3000 level or higher) Chemistry or Biochemistry courses.

## Computer Game Design and Development Minor

To be eligible for a minor in Computer Game Design and Development, the student must complete the following courses with a grade of "C" or better. Any upper level (3000+) courses that are required in the major may not be used as credit for the minor. Other upper level CGDD courses may be used as substituted. Students must have at least 9 upper level CGDD hours not required for their major (CGDD courses taken as electives for your major bachelor degree can be used to complete the minor).

Minor in Game Design and Development Program Objectives:

- Provide students with game design and development knowledge that can be applied in their major area of study
- Provide students with fundamental game design and development skills

Minor in Game Design and Development Learning Outcomes

- Demonstrate skills fundamental to game design and development
- Demonstrate knowledge in at least two subfields of game design and development

## Required Courses

- CSE 1301 - Programming and Problem Solving I **4 Credits**
- CGDD 2002 - Fundamentals of Game Design **2 Credits**
- CGDD 4003 - Digital Media and Interaction **3 Credits**
- Three additional upper-level CGDD courses **9+ Credits**

Minor Program Total: 18+ Credits

## Computer Science Minor

To be eligible for a minor in Computer Science, the student must complete the following courses with a grade of "C" or better. Students must have at least 9 upper level CS hours.

## Minor in CS Program Objectives

- Provide students with computing knowledge that can be applied in their major area of study.
- To provide students with fundamental programming skills.

## Minor in CS Learning Outcomes

- Demonstrate programming skills in 2 different programming languages.
- Demonstrate knowledge of at least one additional area of computing.

## Requirements:

- CSE 1301 - Programming & Problem Solving I 4
- CSE 1302 - Programming & Problem Solving II 4
- CS 3424 - Data Structures **4 Credits**
- Two additional upper-level CS courses 6+

## Note:

*CS 3424 requires MATH 2345 - Discrete Mathematics as a pre-requisite.*

## Construction Minor

## Requirements

To be eligible for a minor in Construction Management, the student must complete the following courses:

- CM 2000 - Construction Graphics **3 Credits \***
- CM 3000 - Computer Applications in Construction **3 Credits \***
- CM 3110 - Residential and Light Construction Methods **3 Credits**
- CM 3410 - Construction Quantity Surveying **3 Credits**
- CM 4510 - Construction Scheduling **3 Credits**

## Note:

Students who have the prerequisite knowledge in these courses may substitute courses of greater or equal credit from the following list with the consent of the CM Department Chair:

- CM 3411 - Construction Estimating Software **2 Credits**
- CM 3420 - Construction Estimating and Bid Preparation **4 Credits**
- CM 4511 - Construction Scheduling Software **2 Credits**
- CM 4560 - Construction Project Management **3 Credits**
- CM 4760 - Construction and Real Property Law **3 Credits**

## **Engineering Design Graphics Minor**

Students who wish to receive a minor in Engineering Design Graphics must take:

- EDG 1212 - Engineering Graphics II **4 credits**

Select four additional courses from the following:

- EDG 3112 - Advanced Engineering Graphics **3 credits**
- EDG 4111 - Surface Modeling **3 credits**
- EDG 4222 - CAD Customization and Standards **3 credits**
- EDG 4224 - Engineering Graphics for Manufacturing **3 credits**
- MET 3332 - Rapid Design and Manufacture **3 credits**
- MET 4112 - Computer Aided Engineering & Analysis **3 credits**
- OR
- ME 4250 - Computer Aided Engineering **3 credits**

Minor Program Total: 16

Not available to MET students with a concentration in Engineering Design Graphics.

## **Environmental Science Minor**

### **Requirements**

- ENVS 2202K - Introduction to Environmental Science **4 Credits**
- BIOL 3300K - Ecology **4 Credits**

**Electives - Choose 7+ credits from the list below**

- BIOL 3600 - Freshwater Biology **3 Credits**
- BIOL 3650 - Marine Biology **3 Credits**
- BIOL 4400K - Human Physiology **4 Credits**
- CHEM 3150K - Environmental Chemistry **4 Credits**
- ENGL 3015 - Environmental Writing **3 Credits**
- ENVS 3100K - Soil & Water Science **4 Credits**
- ENVS 3350 - Oceanography **3 Credits**

- ENVS 3000 - Environmental Science Seminar **1 Credits**
- GEOG 4101 - Geographic Information Systems **3 Credits**
- POLS 3401 - Environmental Law and Policy **3 Credits**
- STS 4300 - Environmental Ethics **3 Credits**

Minor Program Total: 15-18 Credits

## **Finance Minor**

### Finance Minor

- MGNT 3125 - Business Finance **3 Credits**  
plus 12 hours of Finance Electives such as:
- MGNT 3120 - Entrepreneurial Finance **3 Credits**
- MGNT 3231 - Management of Financial Institutions **3 Credits**
- MGNT 4232 - Financial Planning and Capital Budgeting **3 Credits**
- MGNT 4233 - Investment Analysis and Portfolio Management **3 Credits**
- MGNT 4234 - International Finance **3 Credits**

## **Global Communication Minor**

After taking COMM 2500—Advanced Public Speaking and COMM 2150—Ethics and Communication, you will take **only 9 more hours** of coursework. If you earn a grade of "C" or better in each course, your minor credential will be designated on your SPSU transcript.

### Required Foundational Courses (6 Credits)

- COMM 2500 - Advanced Public Speaking **3 Credits**
- COMM 2150 - Ethics and Communication **3 Credits**

### Additional Courses for Minor (9 Credits)

*This minor is not available to students majoring in either Technical Communication or English and Professional Communication.*

- COMM 2065 - Cross-Cultural Communication **3 Credits**
- COMM 3065 - International Communication **3 Credits**

- COMM 3060 - Media, Culture, and Society **3 Credits**
- COMM 4100 - Small Group Communication **3 Credits**  
Students may take 2000 level or higher in Foreign Language.  
Students may count Study Abroad credits.

## History Minor

All courses must be completed with grade of C or better. No more than 9 hours may also be used to satisfy requirements in a major or another minor except free electives. No courses used to satisfy Core Areas A-E may be used in a minor.

### World History (3 credits):

Choose ONE course not used to satisfy core Area E-2:

- HIST 1111 - Survey of World Civilization pre 1500 **3 Credits**
- HIST 1112 - Survey of World Civilization post 1500 **3 Credits**

### US History (6 credits):

- HIST 2111 - United States History to 1877 **3 Credits**
- HIST 2112 - United States History since 1877 **3 Credits**  
If HIST 2111 or HIST 2112 has been used to satisfy Core Area E-1, any 3-hour HIST course may be substituted.

### Upper-Division History courses (9 credits):

Any **9 credits** of 3000- or 4000-level HIST courses.

**Total Program Hours: 18**

## Industrial Engineering Technology Minor

To be eligible for a minor in Industrial Engineering Technology,

**Students must complete the following three courses:**

- IET 2227 - Introduction to Statistics **3 Credits**



- IET 2305 - The Role of Industrial Engineering Technology in Industrial Systems **4 Credits**
- IET 3356 - Quality Concepts and Systems Design **3 Credits**

And choose two courses from the following list:

- IET 2449 - Logistics and Supply Chain Management **3 Credits**
- IET 3320 - Advanced Logistics **3 Credits**
- IET 3322 - Work Measurement and Ergonomics **4 Credits**
- IET 3339 - Statistical Quality Control **3 Credits**
- IET 3403 - Advanced Statistics with Application **3 Credits**
- IET 3407 - Six Sigma and Lean Manufacturing **3 Credits**
- IET 3410 - Principles of Team Dynamics **3 Credits**
- IET 3424 - Engineering Economy **3 Credits**
- IET 3511 - Sustainability Engineering **3 Credits**
- IET 4405 - Operations Research - Concepts, Models and Methods **3 Credits**
- IET 4422 - Facilities Design, Plant Layout, and Materials Handling **4 Credits**

Minor Program Total: 16-18

**Note:**

*An overall 2.0 GPA is required in the courses for the IET Minor (excluding the international studies minor courses).*

## **Information Technology Minor**

To be eligible for a minor in Information Technology, the student must complete 18 credit hours of the following courses with a grade of "C" or better:

### **Information Technology Minor Requirements**

- CSE 1301 - Programming and Problem Solving I **4 Credits**
- IT 1324 - Advanced Programming Principles **4 Credits** or
- CSE 1302 - Programming & Problem Solving 2 **4 Credits**
- IT 3123 - Hardware/Software Concepts **3 Credits** or
- CS 3224 - Computer Organization & Architecture **4 Credits**
- IT 3203 - Introduction to Web Development **3 Credits** or

- CSE 3153 - Database Systems **3 Credits**

And one of the Following:

- IT 4123 - Electronic Commerce **3 Credits**
- IT 4323 - Data Communications & Networks **3 Credits**
- IT 4823 - Information Security Administration & Privacy **3 Credits**

## **International Studies Minor**

All courses must be completed with grade of C or better. No more than 9 hours may also be used to satisfy requirements in a major or another minor *except free electives*. No courses used to satisfy Core Areas A-E may be used in a minor.

### **Regional Studies (3 credits):**

Choose ONE of the following:

- IS 4000 - Regional Studies - General **3 Credits**
- IS 4001 - Regional Studies/Latin America **3 Credits**
- IS 4002 - Regional Studies/Asia:China **3 Credits**
- IS 4003 - Regional Studies/Asia:Japan **3 Credits**
- IS 4004 - Regional Studies/Middle East **3 Credits**
- IS 4005 - Regional Studies/Russia/Eastern Europe **3 Credits**
- IS 4006 - Regional Studies/Western Europe **3 Credits**
- IS 4007 - Regional Studies/Africa **3 Credits**

### **Language Requirement:**

Student must complete FREN 1002, GRMN 1002, or SPAN 1002 OR demonstrate proficiency in a non-English language at an equivalent level.

### **Electives (12 credits):**

Choose FOUR courses from the following list NOT used to satisfy core requirements in Areas A-E. No more than TWO may be numbered below 3000.

- ANTH 1102 - Introduction to Anthropology **3 Credits**
- ECON 1101 - Introduction to Economics **3 Credits**
- ECON 2106 - Principles of Microeconomics **3 Credits**
- ES 1100 - Ethnic Studies **3 Credits**
- GEOG 1101 - Introduction to Human Geography **3 Credits**
- GEOG 3101 - World Regional Geography **3 Credits**

- HIST 1111 - Survey of World Civilization pre 1500 **3 Credits**
  - HIST 1112 - Survey of World Civilization post 1500 **3 Credits**
  - HIST 3200 - History of Science Survey **3 Credits**
  - HIST 3301 - Diplomatic and Military History since 1815 **3 Credits**
  - HIST 3401 - Modern Social and Cultural History Twentieth Century **3 Credits**
  - HIST 3501 - Colonization and Rebellion in the Trans-Atlantic World **3 Credits**
  - HIST 3601 - History of the Pacific Rim **3 Credits**
  - HIST 3801 - Contemporary World History since 1945 **3 Credits**
  - IS 3600 - Comparative Culture **3 Credits**
  - IS 3901 - Special Topics in International Studies **1 Credits**
  - IS 3902 - Special Topics in International Studies **1 to 5 Credits**
- Any regional studies course NOT used to satisfy the Regional Studies requirement above.
- IS 4000 - Regional Studies - General **3 Credits**
  - IS 4001 - Regional Studies/Latin America **3 Credits**
  - IS 4002 - Regional Studies/Asia:China **3 Credits**
  - IS 4003 - Regional Studies/Asia:Japan **3 Credits**
  - IS 4004 - Regional Studies/Middle East **3 Credits**
  - IS 4005 - Regional Studies/Russia/Eastern Europe **3 Credits**
  - IS 4006 - Regional Studies/Western Europe **3 Credits**
  - IS 4007 - Regional Studies/Africa **3 Credits**
  - IS 4600 - International Studies Internship **3 Credits**
  - IS 4800 - International Studies Capstone **3 Credits**
  - MGNT 4145 - International Management **3 Credits**
  - POLS 2401 - Global Issues **3 Credits**
  - POLS 3001 - Comparative Politics **3 Credits**
  - POLS 3009 - Foundations of Public Policy **3 Credits**
  - POLS 3301 - Modern Political Theory **3 Credits**
  - POLS 3601 - Contemporary World Politics **3 Credits**
  - POLS 4009 - Comparative Public Policy Analysis **3 Credits**
  - POLS 4063 - Political Issues in Electronic Government **3 Credits**
  - POLS 4101 - Political Economy of Post-Communist Transformation **3 Credits**
  - POLS 4201 - International Relations in the Americas **3 Credits**
  - POLS 4301 - International Political Economy **3 Credits**
  - PSYC 3101 - International Social Psychology **3 Credits**
  - PSYC 4000 - International Psychology **3 Credits**
  - PSYC 4600 - Conflict Resolution **3 Credits**
  - RELG 1200 - World Religion **3 Credits**
  - SPAN 3001 - Advanced Conversation **3 Credits**
  - SPAN 3002 - Grammar and Composition **3 Credits**
  - SPAN 3003 - Hispanic Cultures and Civilizations **3 Credits**
  - SPAN 4001 - Professional Spanish **3 Credits**
  - SPAN 4002 - Techniques in Translation for Professional Spanish **3 Credits**
  - SPAN 4003 - Service Learning Project **3 Credits**
  - STS 4000 - International Issues in Science and Technology **3 Credits**
  - STS 4400 - Topical Studies in Science and Technology **3 Credits**
- Special topics courses in HIST, POLS, PSYC may be used as electives with topic-specific departmental approval.

Total Program Hours: 15

## Latin American Studies Minor

All courses must be completed with grade of C or better. No more than 9 hours may also be used to satisfy requirements in a major or another minor except free electives. No courses used to satisfy Core Areas A-E may be used in a minor.

### Required Courses:

- ES 1100 - Ethnic Studies **3 Credits**  
Latino / Hispanic Ethnic Studies ONLY; may not also be used to satisfy E-4 core
- HIST 3501 - Colonization and Rebellion in the Trans-Atlantic World **3 Credits**
- POLS 4201 - International Relations in the Americas **3 Credits**
- IS 4001 - Regional Studies/Latin America **3 Credits**
- SPAN 3003 - Hispanic Cultures and Civilizations **3 Credits**

Total Program Hours: 15

## Leadership and Organizational Communication Minor

After taking COMM 2500—Advanced Public Speaking and COMM 2150—Ethics and Communication, you will take **only 9 more hours** of coursework. If you earn a grade of "C" or better in each course, your minor credential will be designated on your SPSU transcript.

### Required Foundational Courses (6 Credits)

- COMM 2500 - Advanced Public Speaking **3 Credits**
- COMM 2150 - Ethics and Communication **3 Credits**

### Additional Courses for Minor (9 Credits)

*This minor is not available to students majoring in either Technical Communication or English and Professional Communication.*

- COMM 2000 - Business Communication **3 Credits**

- COMM 2065 - Cross-Cultural Communication 3 Credits
- COMM 3035 - Organizational Communication 3 Credits
- COMM 3040 - Health Communication 3 Credits
- COMM 4100 - Small Group Communication 3 Credits
- COMM 4200 - New Media Leadership Strategies 3 Credits

## **Logistics Minor**

Students must complete the following courses:

- IET 2227 - Introduction to Statistics 3 Credits
- IET 2449 - Logistics and Supply Chain Management 3 Credits
- IET 3320 - Advanced Logistics 3 Credits
- IET 3620 - Warehousing Systems 3 Credits

Students choose one from the following:

- IET 3403 - Advanced Statistics with Application 3 Credits
- IET 3410 - Principles of Team Dynamics 3 Credits
- IET 3511 - Sustainability Engineering 3 Credits
- IET 4405 - Operations Research - Concepts, Models and Methods 3 Credits
- MGNT 4115 - Human Resource Management 3 Credits
- MGNT 4135 - Project Management 3 Credits
- MGNT 4151 - Operations Management 3 Credits

Minor Program Total: 15

## **Management Information Systems minor**

Management Information Systems Minor

- MGNT 3205 - Management Information Systems 3 Credits
- MGNT 3500 - Database Management 3 Credits
- MGNT 4100 - Business Systems Analysis and Design 3 Credits

- MGNT 4140 - Management of Networks and Telecommunications **3 Credits**
- TCOM 3400 - Foundations of Design for the Web **3 Credits**

## **Management Minor**

### Management Minor

- MGNT 3105 - Management and Organizational Behavior **3 Credits**
- MGNT 3170 - Leadership **3 Credits**  
plus 3 of the following (9 hours):
- MGNT 4100 - Business Systems Analysis and Design **3 Credits**
- MGNT 4103 - Marketing Management **3 Credits**
- MGNT 4185 - Technology Management **3 Credits**
- MGNT 4190 - Entrepreneurship **3 Credits**
- MGNT 4195 - Current Readings in Management of Technology and Operations **3 Credits**

## **Management of Operations and Technology Minor**

### Management of Operations and Technology Minor

- MGNT 4125 - Technology and Public Issues **3 Credits**
- MGNT 4135 - Project Management **3 Credits**
- MGNT 4140 - Management of Networks and Telecommunications **3 Credits**
- MGNT 4151 - Operations Management **3 Credits**
- MGNT 4185 - Technology Management **3 Credits**
- MGNT 4195 - Current Readings in Management of Technology and Operations **3 Credits**

## **Manufacturing Engineering Technology Minor**

Students who wish to receive a minor in Manufacturing Engineering Technology must take the following two courses:

- MET 1311 - Manufacturing Processes **3 credits**
- MET 2322 - Metrology and CNC Machining **3 credits**

Select three additional courses from the following:

- EDG 4224 - Engineering Graphics for Manufacturing **3 credits**
- IET 3407 - Six Sigma and Lean Manufacturing **3 credits**
- MET 3331 - Tool Design **3 credits**

- MET 3332 - Rapid Design and Manufacture **3 credits**
- MET 4342 - Numerical Control of Machines **3 credits**
- MGNT 4135 - Project Management **3 credits**

Minor Program Total: 15

Note: Not available to MET students with a concentration in Manufacturing

## **Mathematics Minor**

To obtain a minor in Mathematics, the student must complete:

- MATH 2255
- An additional 14 semester hours of Mathematics courses at the 2300 level or higher

At least 9 of these additional 14 hours must be at the 3000 level or higher.

Courses used to fill other requirements at SPSU (excluding core areas A through E) may also be used to obtain a minor in Mathematics.

For example, if you take MATH 2306 to fulfill a requirement in the Management curriculum, you may also use it in a math minor. However, you may not use MATH 1113 to fulfill the math minor because it is in area A of the core curriculum.

## **Nuclear Engineering Minor**

### **Requirements**

- SYE 3501 - Fundamentals of Nuclear Engineering **3 Credits**
- SYE 3502 - Radiation Detection and Measurement **3 Credits**
- SYE 4501 - Nuclear Power Generation **3 Credits**
- SYE 4502 - Radiation Protection and Health Physics **3 Credits**
- SYE 4503 - Nuclear Fuel Cycle **3 Credits**

Minor Program Total: 15

## **Physics Minor**

To be eligible for a minor in Physics, the student must complete at least 15 hours of course work in physics with at least 10 hours in upper division physics courses.

## **Political Science Minor**

All courses must be completed with grade of C or better. No more than 9 hours may also be used to satisfy requirements in a major or another minor except free electives. No courses used to satisfy Core Areas A-E may be used in a minor.

## Required Courses:

- POLS 1101 - American Government **3 Credits**
- POLS 2401 - Global Issues **3 Credits**
- POLS 3001 - Comparative Politics **3 Credits**
- POLS 3301 - Modern Political Theory **3 Credits**  
Choose ONE of the following:
- POLS 3601 - Contemporary World Politics **3 Credits**  
OR
- POLS 4301 - International Political Economy **3 Credits**  
Choose ONE of the following:
- POLS 3701 - American Institutions **3 Credits**  
OR
- POLS 3801 - Political Behavior **3 Credits**

Total Program Hours: 18

## Pre-Law Minor

All courses must be completed with grade of C or better. No more than 9 hours may also be used to satisfy requirements in a major or another minor except free electives. No courses used to satisfy Core Areas A-E may be used in a minor.

## Required Courses (6 credits):

Take TWO of the following courses NOT used to satisfy Core Area E-1:

- HIST 2111 - United States History to 1877 **3 Credits**
- HIST 2112 - United States History since 1877 **3 Credits**
- POLS 1101 - American Government **3 Credits**

## Elective Courses (12 credits):

Pick any FOUR of the following:

- MGNT 3145 - Legal Environment of Business **3 Credits**
- POLS 3209 - U.S. Constitutional Law **3 Credits**
- POLS 3301 - Modern Political Theory **3 Credits**



- POLS 3401 - Environmental Law and Policy **3 Credits**
- POLS 3501 - Intellectual Property Issues **3 Credits**
- POLS 3701 - American Institutions **3 Credits**

Total Program Hours: 18

## Professional Writing Minor

### Professional Writing

After taking COMM 2000, Business Communication, **take only 12 more hours**, 9 of which must be at the 3000 or 4000 level, to receive a Minor in Professional Writing. Your minor credential will be designated on your SPSU transcript provided you earn a C or better in each course.

### Requirements

- COMM 2000 - Business Communication **3 Credits**

### Additional Courses for Minor (12 credits)

*Students majoring in Business Administration are required to take COMM 2000 as part of their existing program of study. TCOM 2010 will serve as a blanket substitution for COMM 2000 for Business Administration students interested in Professional Writing minor.*

*This minor is not available to students majoring in either Technical Communication or English and Professional Communication.*

- COMM 3035 - Organizational Communication **3 Credits**
- COMM 3040 - Health Communication **3 Credits**
- COMM 3050 - Journalism **3 Credits**
- ENGL 3010 - Science Writing **3 Credits**
- ENGL 3015 - Environmental Writing **3 Credits**
- ENGL 3020 - Proposal Writing **3 Credits**
- ENGL 3025 - Creative Writing Workshop **3 Credits**
- ENGL 3040 - Article and Essay Workshop **3 Credits**
- ENGL 4010 - Publishing for New Media **3 Credits**
- TCOM 4000 - Professional Editing **3 Credits**

## Psychology Minor

All courses must be completed with grade of C or better. No more than 9 hours may also be used to satisfy requirements in a major or another minor *except free electives*. No courses used to satisfy Core Areas A-E may be used in a minor.

### Required Courses:

- PSYC 1101 - Introduction to General Psychology **3 Credits**  
(If PSYC 1101 has been used for Core Area E-3, any 2000-Level PSYC course may be substituted in the minor)
- IET 2227 - Introduction to Statistics **3 Credits**
- PSYC 2100 - Basic Quantitative Research Methods for Psychology **3 Credits**  
(has IET 2227 prereq)
- PSYC 3101 - International Social Psychology **3 Credits**  
AND **6 Credits** in any PSYC 3000- or 4000- level courses

Total Program Hours: 18

## Public Policy Minor

All courses must be completed with grade of C or better. No more than 9 hours may also be used to satisfy requirements in a major or another minor except free electives. No courses used to satisfy Core Areas A-E may be used in a minor.

### Required Courses (6 credits):

- POLS 3009 - Foundations of Public Policy **3 Credits**
- POLS 4009 - Comparative Public Policy Analysis **3 Credits**

### Electives (9 credits):

Choose THREE of the following:

- POLS 3401 - Environmental Law and Policy **3 Credits**
- POLS 3701 - American Institutions **3 Credits**
- PSYC 4600 - Conflict Resolution **3 Credits**
- STS 4000 - International Issues in Science and Technology **3 Credits**

## Special Topics

Special Topics in POLS, STS, or IS may also be used as electives with topic-specific approval of the department.

**Total Program Hours: 15**

## Quality Principles Minor

Students must complete the following courses:

- IET 2227 - Introduction to Statistics **3 Credits**
- IET 3339 - Statistical Quality Control **3 Credits**
- IET 3356 - Quality Concepts and Systems Design **3 Credits**
- IET 3407 - Six Sigma and Lean Manufacturing **3 Credits**

Students choose one from the following:

- IET 3403 - Advanced Statistics with Application **3 Credits**
- IET 3410 - Principles of Team Dynamics **3 Credits**
- IET 4405 - Operations Research - Concepts, Models and Methods **3 Credits**
- MGNT 4135 - Project Management **3 Credits**
- MGNT 4151 - Operations Management **3 Credits**

**Minor Program Total: 15**

## Software Engineering Minor

To be eligible for a minor in Software Engineering, the student must complete the following courses with a grade of "C" or better. Students must have at least 9 upper level SWE hours.

## Minor in SWE Program Objectives

Students earning a minor in Software Engineering will:

- Possess broad foundations in software engineering concepts and methodologies so they may contribute to the effective design and implementation of large scale software.

## Minor in SWE Learning Outcomes

Students earning a Software Engineering minor will have demonstrated the ability to:

- Apply SWE practices and process to software design and development.
- Demonstrate the ability to gather, analyze, develop, verify and/or validate artifacts of software engineering systems.
- Use software tools effectively in some phases of software development.

## Minor in Software Engineering

- CSE 1302 - Programming & Problem Solving II **4 Credits**
- SWE 2313 - Introduction to Software Engineering **3 Credits**
- Three additional upper-level SWE courses **9 Credits**

### Note:

SWE 1302 has a pre-requisite of SWE 1301.

## Spanish Minor

All courses must be completed with grade of C or better. No more than 9 hours may also be used to satisfy requirements in a major or another minor except free electives. No courses used to satisfy Core Areas A-E may be used in a minor.

### 2000-Level (6 credits):

May not also be used to satisfy Core Area C-2:

- SPAN 2001 - Intermediate Spanish I **3 Credits**
- SPAN 2002 - Intermediate Spanish II **3 Credits**

### 3000-Level (9 credits):

Any 9 credits in 3000-level SPAN courses.

**Total Program Hours: 15**

Consider the Certificate in Professional Spanish as well:

Requirements for Professional Certificate

## Technical Communication Minor

### Technical Communication

After taking TCOM 2010 Technical Writing, you will take **only 12 more hours**, 9 of which must be at the 3000 or 4000 level. If you earn a grade of "C" or better in each course, your minor credential will be designated on your SPSU transcript.

### Requirements (6 credits)

- TCOM 2010 - Technical Writing **3 Credits**
- TCOM 2020 - Intro to Professional & Technical Communication **3 Credits**
- OR
- TCOM 2030 - Research in Technical Communication **3 Credits**

Students whose major already requires TCOM 2010 should take TCOM 2020 **and** TCOM 2030 (blanket substitution will apply).

### Additional Courses for Minor (9 credits)

Choose any class with the TCOM course prefix, 3000-level or higher.

*This minor is not available to students majoring in either Technical Communication or English and Professional Communication.*

## Certificate

### Apparel Product Development Certificate

The Fashion Design and Product Development program offers a Certificate in Apparel Product Development. The objective is to provide training and education to members of the apparel industry, graduates of fashion and design schools and other interested parties seeking to improve their skills. The courses may also be applied toward completing the Bachelor of Apparel and Textiles degree. All requirements for normal admissions are applicable. Certificate students must complete five courses from the following list:

## Requirements

Certificate students must complete five classes from the following list:

- ATT 1300 - International Sourcing **3 Credits**
- ATT 1400 - Principles of Merchandising **3 Credits**
- ATT 2301 - Apparel Computer-Aided Technical Design I **4 Credits**
- ATT 3100 - Fashion Merchandising **3 Credits**
- ATT 3505 - Fabric Formation and Design **3 Credits**
- ATT 3600 - Apparel Analysis and Product Development **3 Credits**
- ATT 3602 - Apparel Computer-Aided Technical Design II **4 Credits**
- ATT 3800 - Fashion Forecasting, Data Analysis & Consumer Trends **3 Credits**
- ATT 4444 - Quality Assurance for Textiles and Apparel **4 Credits**
- ATT 4670 - Apparel/Textile Business Practices **3 Credits**
- ATT 4750 - Advanced Design and Product Development **3 Credits**

Certificate Program Total: 15

## Geographical Information Systems Certificate

The Geographical Information Systems (GIS) Certificate program is designed to prepare students with a practical set of GIS marketable skills who have a background in GIS applications such as surveying, real estate, marketing, geography or business background. There are five courses required in the certificate program.

### Required Courses (19 Credits)

- SURV 2110 - Introduction to Mapping **4 Credits**
- SURV 3421 - Geographic Information Systems I **4 Credits**
- SURV 4420 - Remote Sensing **4 Credits**
- SURV 4422 - Geographic Information Systems II **4 Credits**
- SURV 4110 - Geographical Information Systems (GIS) Practice **3 Credits**

Certificate Program Total: 19

## Highway Project Management Certificate

The Certificate in Highway Construction Project Management provides training and education for working professionals who wish to pursue a career in highway and infrastructure construction. Prerequisites must be met prior to enrollment in certain certificate courses.

## Required Courses:

- CE 3701 - Geotechnical Engineering **3 Credits**
- CE 3501 - Materials for Civil & Construction Engineering **3 Credits**
- CM 2000 - Construction Graphics **3 Credits**
- CM 3410 - Construction Quantity Surveying **3 Credits**
- CM 4510 - Construction Scheduling **3 Credits**
- CM 4560 - Construction Project Management **3 Credits**
- CM 4760 - Construction and Real Property Law **3 Credits**

Subtotal: 21 Credits

## Elective Courses:

- CM 3420 - Construction Estimating and Bid Preparation **4 Credits**
- CM 3260 - Temporary Structures **3 Credits**
- CM 4710 - Construction Safety **4 Credits**

Subtotal: 3 Credits (minimum)

Certificate Program Total: 24 Credits (minimum)

## Land Development Certificate

The Certificate in Land Development provides training and education to members of the real estate and land development field in construction and land development principles and practices. Students can complete the requirements in 3-4 semesters. These courses may also be applied toward completing a B.S. degree in Construction Management upon acceptance to SPSU.

Prerequisites must be met prior to enrollment in certain certificate courses.

## Required Courses:

- CM 3310 - Introduction to Development **3 Credits**
- CM 3710 - Site Planning **4 Credits**
- CM 4570 - Development Process I **4 Credits**
- CM 3110 - Residential and Light Construction Methods **3 Credits**

**Subtotal: 14 Credits**

\*may substitute courses from electives list if competency can be demonstrated

### **Elective Courses:**

- CM 2000 - Construction Graphics **3 Credits**
- CM 3410 - Construction Quantity Surveying **3 Credits**
- CM 3430 - Construction Estimating for Development **3 Credits**
- CM 4510 - Construction Scheduling **3 Credits**
- CM 4620 - Development Process II **3 Credits**

**Subtotal: 7 Credits (minimum)**

**Certificate Program Total: 21 Credits (minimum)**

## **Land Surveying Certificate**

The Land Surveying Certificate program is designed to prepare surveyors with the basic education necessary to take the Fundamentals of Land Surveying Exam and exceeds the State of Georgia academic registration requirements to become a Registered Land Surveyor. There are six courses required in the certificate program.

### **Required Courses (22 Credits)**

- SURV 2221 - Surveying I **4 Credits**
- SURV 3222 - Surveying II **4 Credits**
- SURV 4465 - Legal Aspects of Land Surveying **4 Credits**
- SURV 4475 - Land Surveying Practice **2 Credits**
- SURV 4470 - Land Development Design **4 Credits**
- CET 4310 - Stormwater Management and Erosion Control **2 Credits**



Certificate Program Total: 21

## **Logistics Certificate**

The primary objective of the Certificate in Logistics is to provide training and education to members of the Supply Chain industry that need to improve skills and knowledge in the latest technology available in their field. Students can complete the requirements in 4-6 semesters. The courses may also be applied toward completing a B. S. degree in Industrial Engineering Technology. The program will be offered on campus, through distance learning, and over the Internet.

### **Admission Requirements:**

Applicants must have earned a High School degree or GED and been out of high school for at least five years or have earned 30 college credits from an accredited institution of higher learning with a minimum GPA of 2.0.

### **Required Courses:**

- IET 2227 - Introduction to Statistics **3 Credits**
- IET 2449 - Logistics and Supply Chain Management **3 Credits**
- IET 3320 - Advanced Logistics **3 Credits**
- IET 3620 - Warehousing Systems **3 Credits**
- IET 4405 - Operations Research - Concepts, Models and Methods **3 Credits**
- MGNT 4115 - Human Resource Management **3 Credits**
- MGNT 4151 - Operations Management **3 Credits**

Certificate Program Total: 21

## **Production Design Certificate**

The primary objective of the Certificate in Production Design is to provide training and education to members of the Industrial Engineering field in the measurement and analysis of work and in the design or improvement of facilities. Students can complete the requirements in 3-4 semesters. These courses may also be applied toward completing a B.S. degree in Industrial Engineering Technology upon acceptance to SPSU.

### **Admission Requirements:**

Applicants must meet all undergraduate admission requirements.

## Required Courses:

- IET 2227 - Introduction to Statistics **3 Credits**
- IET 3322 - Work Measurement and Ergonomics **4 Credits**
- ACCT 2101 - Principles of Financial Accounting **3 Credits**
- IET 4422 - Facilities Design, Plant Layout, and Materials Handling **4 Credits**
- IET 4405 - Operations Research - Concepts, Models and Methods **3 Credits**
- MGNT 4151 - Operations Management **3 Credits**

Certificate Program Total: 20

## Project Management Construction Certificate

The professional Certificate in Project management is designed for working professionals who wish to further their knowledge in Construction Project Management. The certificate will also be useful for those individuals who wish to make a career change to the construction industry, or to those people who find themselves in the construction industry without first gaining a background in construction.

Prerequisites must be met prior to enrollment in certain certificate courses.

## Required Courses:

- CM 2000 - Construction Graphics **3 Credits**
- CM 3000 - Computer Applications in Construction **3 Credits**
  
- CM 3110 - Residential and Light Construction Methods **3 Credits** OR
- CM 3160 - Commercial and Heavy Construction Methods **3 Credits**
  
- CM 4560 - Construction Project Management **3 Credits**
- CM 3620 - Construction Finance and Feasibility **4 Credits**

Subtotal: 11-12 Credits

## Elective Courses:

- CM 3410 - Construction Quantity Surveying **3 Credits**

- CM 3420 - Construction Estimating and Bid Preparation **4 Credits**
- CM 4510 - Construction Scheduling **3 Credits**
- CM 4760 - Construction and Real Property Law **3 Credits**

Subtotal: 9+ Credits

Certificate Program Total: 20+ Credits

## Quality Principles Certificate

The primary objective of the Certificate in Quality Principles is to provide training and education to members of the Industrial Engineering field in quality system principles, methodology, elements and standards. Students can complete the requirements in 3–4 semesters. These courses may also be applied toward completing a B.S. degree in Industrial Engineering technology upon acceptance to SPSU.

### Admission Requirements:

Applicants must meet all undergraduate admission requirements.

### Required Courses:

- IET 2227 - Introduction to Statistics **3 Credits**
- IET 3339 - Statistical Quality Control **3 Credits**
- IET 3356 - Quality Concepts and Systems Design **3 Credits**
- IET 3403 - Advanced Statistics with Application **3 Credits**
- IET 3410 - Principles of Team Dynamics **3 Credits**
- MGNT 4135 - Project Management **3 Credits**
- MGNT 4151 - Operations Management **3 Credits**

Certificate Program Total: 21

## Spanish Professional Certificate (Undergraduate)

All courses must be completed with grade of C or better. No more than 9 hours may also be used to satisfy requirements in a major or another minor except free electives. No courses used to satisfy Core Areas A-E may be used in a minor.

## All Courses Required for the Spanish Minor

Requirements for Spanish Minor

### 4000-Level Electives (6 credits):

Chose SIX credits from the following:

- SPAN 4001 - Professional Spanish **3 Credits**
- SPAN 4002 - Techniques in Translation for Professional Spanish **3 Credits**
- SPAN 4003 - Service Learning Project **3 Credits**
- SPAN 4901 - Special Topics for Professional Spanish **1 to 5 Credits**
- SPAN 4902 - Special Topics for Professional Spanish **1 to 5 Credits**
- SPAN 4903 - Special Topics for Professional Spanish **1 to 5 Credits**
- SPAN 4904 - Special Topics for Professional Spanish **1 to 5 Credits**
- SPAN 4905 - Special Topics for Professional Spanish **1 to 5 Credits**

### Learning Project (3 credits):

- SPAN 4003 - Service Learning Project **3 Credits**

### Oral Proficiency Interview (OPI):

After all coursework is completed, student must take the American Council on the Teaching of Foreign Language OPI.

**Total Program Hours: 9 credits beyond the minor**

## Dining Services

There are four food service facilities on campus. Stingers Restaurant is the home of the University's board plan operation. There are 3 retail operations on campus The Grill (located on the lower level of the student center), Mondo's Sub Shop (located on the first floor of the Atrium Building), and Spork (located near the Housing Office). Catering and Concession services are provided by Chartwells Food Service.

For more information go to [www.dineoncampus.com/spsu/](http://www.dineoncampus.com/spsu/)

## Emergency Locator Service

Emergency assistance in locating a student is provided by the Vice President of Student and Enrollement Services Office at 678/915-3720 from 8:00 a.m. until 5:00 p.m., Monday through Friday. The University Police Department provides emergency assistance in locating students on weekends and after 5:00 p.m. on weekdays at 678/915-5555.

If the University Police determine that a student (for whom a missing person report has been filed) has been missing for more than 24 hours, then within the next 24 hours they will:

- Notify the individual identified by the student to be contacted in this circumstance;
- If the student is under 18 years old, notify a parent or guardian; and
- In cases where the student is over 18 and has not identified a person to be contacted, notify appropriate law enforcement officials.

## **Extended University**

Extended University (EU) is an administrative unit reporting to the Vice President for Academic Affairs. The mission of EU is to provide services to SPSU, the business community and the community at large by extending, enhancing and expanding the traditional teaching, scholarship and service roles of the university to new clients, in new formats and through the infusion of new technologies. Extended University includes a variety of programs and service units that are described here below. For more information regarding these programs and services, contact the EU Dean's Office at 678/915.7338 or stop by J-377.

## **Continuing Education Center (CEC)**

The Continuing Education Center is responsible for providing all non-credit professional continuing education instruction sponsored by the university. CEC sponsors open enrollment programs in computing, engineering, business, quality, and communications. CEC also offers customized corporate training. CEC Certificate Programs feature a sequential set of courses designed to provide a body of knowledge in selected areas. Currently available certificates include:

- A+/Net+ Certificate
- AutoCAD User Certification
- CISCO Certified Network Associate (CCNA)
- E-Business Solutions in Java Certificate
- Oracle 11g Database Certificate
- Professional Project Management Certificate Program
- Lean Six Sigma Certification Training
- Accelerated Training in Healthcare Information Technology

Call 678/915-7240 for additional information or check the CEC web site at [www.spsu.edu/cec](http://www.spsu.edu/cec).

## **Southern Polytechnic Applied Research Corporation (SPARC)**

The Southern Polytechnic Applied Research Corporation (SPARC) provides support to Southern Polytechnic faculty in research, development and the application of technology within their areas of expertise. This support includes the identification of opportunities, development of proposals and the administration of grants and contracts upon award. The Applied Research Corporation is committed to providing growth opportunities for faculty and students and establishing Southern Polytechnic State University as a leading center of applied technology. For more information go to [www.spsu.edu/sparc](http://www.spsu.edu/sparc).

## **Office of Sponsored Programs (OSP)**

The Office of Sponsored Programs has overall responsibility for the administration of grants, contracts and sub-awards, as well as compliance with state and federal regulations. Pre-award services include identifying funding opportunities and working with faculty to prepare proposals for submission. Post-award activities include tracking expenses, supplying reports to faculty and interfacing with the business office. For more information call 678/915-3159, visit the web site at [www.spsu.edu/sponsoredprograms](http://www.spsu.edu/sponsoredprograms) or stop by J-354.

## eCore

eCore -- short for electronic core-curriculum -- allows University System of Georgia (USG) students the opportunity to complete their first two years of their collegiate careers in an online environment. eCore courses are taught entirely online, except for the occasional proctored exam. eCore courses are designed, developed, taught and supported by faculty and staff from the USG. Extended University coordinates eCore for SPSU and is available to answer all eCore questions. For more information go to [www.spsu.edu/ecore](http://www.spsu.edu/ecore).

## English Language Services (ELS)

ELS Language Centers provide a unique opportunity for foreign students to learn English as a second language or to improve their English proficiency. ELS distinguishes itself as the finest in English language instruction by providing excellent customer service. ELS Language Centers have become the world's largest network of campus-based, English language instruction centers with over 30 locations throughout the United States. ELS provides full-time daily classes year-round in four-week terms. In addition, ELS offers specialized programs that are customized to fit your needs. For more information go to [www.els.edu/atlanta](http://www.els.edu/atlanta).

## Honor Society

Superior scholastic achievement in engineering technology is recognized by membership in the Tau Alpha Pi National Honor Society. The original chapter of this society was founded on the Southern Polytechnic State University campus in 1953, and its members have not only demonstrated high academic achievements, but have also maintained various leadership positions in campus organizations.

For further information on SPSU's local Tau Alpha Pi chapter, please visit the web site at [tap.spsu.edu](http://tap.spsu.edu).

## HornetCard

HornetCard is your university identification card. Every student, faculty and staff member at SPSU can get a HornetCard in the Campus Services office located on the 2nd floor of the student center. Your HornetCard is used for access to University facilities, events, and services. All privileges granted by the use of this card are provided solely for the person described on the card.

For more information about HornetCard and its services go to [www.spsu.edu/hornetcard](http://www.spsu.edu/hornetcard)

## Library

**General Information** – The Lawrence V. Johnson Library collection consists of some 118,000 cataloged volumes and more than 1,300 periodical and serials titles. Other formats include: Microforms, U.S. Geological Survey Maps for the State of Georgia; Professor Reserves; and Text Reserves. An increasingly popular service is e-Reserves whereby journal articles, sample tests, plus syllabi are delivered electronically to the students.

**GALILEO** – Georgia Library Learning online, popularly known as GALILEO, is an initiative funded by the University System that allows access to online databases, including full-text and full-image files. Faculty and students have access to more than 100 indexing and abstracting services and to the Internet. Additionally, students who bring their laptops will be able to access GIL, GALILEO and the Internet for research purposes in any area of the Library which has wireless access.

**Hive Search** – Hive Search integrates multiple information sources, such as our catalog, databases, publications, videos, and images, with additional sources constantly being added. It provides access to interlibrary loan services, and connects to other services from the University System of Georgia Libraries, such as GALILEO and GIL Universal Catalog.

Additional information about services offered at the Johnson Library may be accessed at [www.spsu.edu/library/library.html](http://www.spsu.edu/library/library.html); or patrons may chat with a librarian through the library main page or place queries on email at [reference@spsu.edu](mailto:reference@spsu.edu).

## **Licensure of Professional Engineers**

To protect public safety, each state establishes laws to license engineers who are responsible for decisions that affect public health and safety. The licensing process involves formal education, two written examinations, appropriate work experience, and recommendations by professionals in the field. The two written examinations consist of the Fundamentals of Engineering (FE) and the Principles and Practices of Engineering (PE).

The requirements for a Professional Engineer vary by state, and not all states allow engineering technology graduates to seek licensure. However, it is possible for engineering technology graduates to become Professional Engineers in Georgia and many other states. In Georgia, students completing a bachelor's degree in engineering technology may take the Fundamentals of Engineering (FE) exam in the senior year of study. After accumulating the requisite number of years of appropriate work experience, an engineering technology graduate who has passed the FE exam is eligible to take the PE exam in Georgia or other states in which they are eligible for licensure.

Any student with a goal of becoming a Professional Engineer should contact their faculty advisor for additional information.

## **Post Office**

## **Post Office**

The Southern Polytechnic Post Office is located next to the Bookstore and is open 9:00 a.m. to 5:00 p.m. Monday through Friday. Post Office boxes are available for rental by the term.

## **Recreational Sports**

## **Mission**

The Recreational Sports Department shares in the educational mission of the university by offering opportunities to experience interpersonal growth, social development, improve physical and mental health, and to develop lifetime

leisure skills for a healthier lifestyle. The Department organizes, administers, and promotes a broad program of competitive, recreational, fitness, and wellness programs for students, faculty, and staff.

The Intramural Sports program provides students with the opportunity to compete on a competitive and recreational level. The program administers over 20 different leagues/tournaments throughout the academic year. Flag Football, Basketball, Soccer, Softball, Golf, and Bowling are just some of the intramural programs offered. Students also have an opportunity to learn new skills by officiating our leagues (and earn some extra money).

A wide range of fitness and wellness classes are also programmed by the Recreational Sports Department. Aerobics, Yoga, abs, cycling, and swimming are just a few of the class offerings. Classes are free to all students.

## **Recreational Facilities**

The Recreation and Wellness Center, offers many recreational opportunities to the student. A state of the art weight room that includes free weights, machine weights, plate loaded machines, and cardiovascular equipment highlights the facility. The facility also boasts a large multipurpose gym that accommodates 2 basketball courts, 2 volleyball courts, 4 badminton courts, and a perimeter jogging/walking area. The Recreation and Wellness Center also has 2 racquetball courts, locker rooms/showers, and a pool complete with an outdoor sunbathing area. The pool can be used for recreation, lap, and competitive swimming. The Department of Recreational Sports and Campus Health Services are housed in the Recreation and Wellness Center.

The Southern Polytechnic Outdoor Recreation Complex provides 3 softball fields. The intramural sports program makes use of these fields throughout the year with flag football, soccer, and softball leagues. Also included in the complex is a half-mile jogging trail.

## **Student Center**

The Joe Mack Wilson Student Center is located in the center of campus, just west of "the Globe". The Student Center houses many student services, including Student Government Association, the Game Room, Student Life, Campus Services, the bookstore, the Grill, and the Post Office. There are also many spaces within the student center that are available for student groups to reserve for events and meetings.

For more information about the Student Center go to [www.spsu.edu/studentcenter](http://www.spsu.edu/studentcenter)

## **Student Health Services**

The school nurse, who is on duty Monday through Friday in the clinic located in the Recreation and Wellness Center, provides limited outpatient services for minor illnesses and injuries. If further treatment is necessary, she will refer the student to an urgent care facility located near the campus. Due to the limits on the health services provided by Southern Polytechnic State University, each student is encouraged to have adequate health and accident insurance through either a personal or family insurance policy. The University offers an optional medical insurance policy. Information is available at [www.studentinsurance.com](http://www.studentinsurance.com).

International students are required to have private health insurance protection. Southern Polytechnic State University is not responsible for any medical expenses incurred by international students beyond those that are covered by the Student Health Fee.

## **Student Housing**



SPSU offers nearly 1800 on-campus student housing beds. In addition to providing a convenient and economical home for students, on-campus living also provides a great learning opportunity. Living on campus contributes to the educational development of each student through exposure to students of varied backgrounds, experiences, and personal philosophies. The Department of Housing and Residence Life is staffed by 9 full-time professionals along with 50 Resident Assistants. The primary function of the Housing and Residence Life staff is to create and maintain a desirable environment for all residents.

All students who have been accepted to Southern Polytechnic State University will need to visit the Housing and Residence Life website at [www.spsu.edu/housing](http://www.spsu.edu/housing) for application information. On-campus housing is required for all first-year students. However, this requirement may be waived if you will be living at home with a parent/guardian. Please contact our office for more information.

Howell Residence Hall and Hornet Village Suites are reserved for traditional first-year freshmen only. There is also a mandatory meal plan for all residence hall residents. Our on-campus apartments, University Courtyard and University Commons, are available to upperclassmen students. Consideration of a roommate request will be given providing the request is mutual and space is available.

For more information about student housing go to [www.spsu.edu/housing](http://www.spsu.edu/housing).

Housing payments are due in full each semester. If you have any additional questions you may contact the Department of Housing and Residence Life by calling 678/915-7335 or by sending an email to [housing@spsu.edu](mailto:housing@spsu.edu).

## **Application**

Every student interested in living on campus at Southern Poly must submit a housing application, which can be found online in Banner. Space is limited, so it is important to submit your housing application early. A mandatory, non-refundable \$200 application fee is required of everyone completing an application to live on-campus. The fee will be added to your student account and can be paid online or in person at the Business Office. Please understand that completing an application does not guarantee housing will be assigned. When the housing application and fee have been received, a notification of housing status will be sent by our office. In the case of space not being available, the reservation fee will be refunded. We will do our best to accommodate all preferences with regards to roommate requests and building placement. Roommate requests should be so marked on the housing application by all involved students.

## **Student Life**

### **Mission**

Student Life creates a sense of place as an academic support unit that empowers, prepares, and develops students at SPSU through high-quality social, leadership, educational, and service programs. Student Life aligns with the mission and vision of the university to help our students recognize and achieve their potential to transform their lives and impact their futures.

### **About Us**

The Student Life Office is the hub of co-curricular activity on campus that includes Journey New Student Orientation, student organizations, campus activities, fraternities & sororities, student government, cultural programming, leadership development, and volunteer opportunities, we have something for everyone.

The events offered by the Student Life Office are sponsored by the Student Activity Fee which is paid by every student matriculated at Southern Polytechnic. Since the Student Activity Fee pays for these events, activities and outings, everything is FREE!

Student organizations allow our students to meet a variety of people, develop communication and leadership skills, practice the theories they learn in the classroom and create a wide web of networking possibilities that could lead to friendships, an internship, or even ultimately a job!

Our number one goal is to get each student connected, involved, develop a sense of community, and HAVE FUN!

For more information visit us at [www.spsu.edu/studentlife](http://www.spsu.edu/studentlife)

## The University Honors Program

The University Honors Program of Southern Polytechnic builds upon the university's excellent reputation for providing both theoretical and applied approaches to learning. Honor students are given the opportunity to develop their talents and skills in an expanded and enriched curriculum featuring seminar-size classes and independent research opportunities.

### Admissions

All prospective Honors students must apply to the Honors Program. Incoming freshmen who have at least a 1200 SAT score or ACT equivalent and at least a 3.5 high school GPA will be guaranteed automatic admission to the Honors Program. Transfer students who have earned a 3.5 GPA for college-level coursework over 30 hours of credit also will be guaranteed automatic admission. Students who do not strictly meet these guidelines, but who have other achievements that show promise of academic excellence are encouraged to apply. Students may download an application from the web site [www.spsu.edu/honors/](http://www.spsu.edu/honors/). All prospective Honors students must apply to the Honors Program. Students who do not strictly meet these guidelines, but who have other achievements that show promise of academic excellence are encouraged to apply. Students may download an application from the web site [www.spsu.edu/honors/](http://www.spsu.edu/honors/).

### Advantages

While the main advantage of participation in the Honors Program is the intellectual rigor of the curriculum, there are other advantages as well:

- Eligibility for Honors scholarships or out-of state tuition waivers as appropriate
- Special Orientation Programs
- Priority Registration
- Honors course designation on student transcripts
- Honors advising
- Social and extracurricular opportunities
- Recognition upon graduation: in the commencement program, on the diploma, and with an honorary symbol as part of the graduation regalia.

### Program Guidelines

To earn the University Honors Scholar Diploma at Southern Polytechnic, students must complete 18 credit hours of Honors coursework and at least 6 of those hours must be upper division course-work. To earn the Departmental Honors Scholar Diploma, students must complete 6 hours of enriched upper division course-work or directed study.

The Honors Program offers several different types of honors courses so that students can meet the requirements.

- Honors Core Courses
- Honors Interdisciplinary Seminars
- Honors Research Assistant and Independent Study Opportunities.

Students must have a minimum graduation GPA of 3.4. All students must complete an Honors Paper to be bound and placed in the library. An Honors Presentation of this paper is also required.

## **Probation and Dismissal**

Students in the Honors program that fall below the required GPA are placed on probation for one semester. A student on probation whose GPA does not meet the requirements at the end of their next enrolled semester will be dismissed from the honors program. Students who commit acts of academic dishonesty may also be dismissed from the program.

## **Additional Information**

For additional information contact the University Honors Program at 678/915-3931 or email us at [honors@spsu.edu](mailto:honors@spsu.edu). You can also visit our website at [honors.spsu.edu](http://honors.spsu.edu).

## **University Police**

Southern Polytechnic is committed to a safe, healthy environment in which our students, faculty and staff can grow professionally and personally. The University promotes strong safety policies and prompt reporting and investigation of any actions or events that would harm the well being of any student, employee, or faculty member.

The University Police employs police officers who comply with certification, training, and all other requirements of the Peace Officers Standards and Training Council of Georgia. Our officers have arrest powers on Southern Polytechnic property and on any public or private property within five hundred yards of property under the control of the Board of Regents. Our officers conduct preventive patrols on campus including the residence halls, secure University-owned property, investigate reported crimes at the university, conduct educational programs and workshops to promote personal safety, and actively work to prevent and detect crime throughout the Southern Polytechnic community. Our disclosure report can be found at [police.spsu.edu](http://police.spsu.edu).

## **University Transportation**

University Transportation manages all of the parking and transportation services at SPSU. Parking on campus is available by permit only. All students pay a mandatory University Transportation Fee each semester. Your parking permit is included as a part of this fee. Visitors must park in one of the two visitor parking lots, located adjacent to the Student Center and on the first level of the parking deck. University Transportation also provides many other services including the Poly Trolley and ZipCar.

For more information about parking on campus or other University Transportation services go to [www.spsu.edu/studentcenter](http://www.spsu.edu/studentcenter).

# The ATTIC

The ATTIC (Advising, Tutoring, Testing, International Center) provides academic support services to students at SPSU. Located in the Student Center (A-160), the ATTIC houses Advising, Testing, Tutoring, International Student Services, Disability Services, and Multi-Cultural Affairs. For more information, call 678/915-7361.

## Joint Enrollment Advising

The Joint Enrollment Advisor/Move On When Ready Advisor guides Joint Enrollment and Move On When Ready students in selecting courses they need for their high school graduation and for their college careers. The Advisor also works with high school counselors.

## Tutoring

The ATTIC provides individualized assistance and small-group study options to Southern Polytechnic students. Tutors help students with core courses in English, chemistry, biology, mathematics, and physics. Tutoring occurs in the Student Center in rooms A-184 & A-185. The tutoring schedule can be viewed online at the ATTIC's website at [www.spsu.edu/attic/tutoring](http://www.spsu.edu/attic/tutoring).

\* Please Note: The schedule may vary from semester to semester.

## Testing

The ATTIC administers the following tests:

### Math Advisory Test (MAT)

SPSU students take the math test to determine the level of math placement. The test consists of college algebra and pre-calculus. MAT scores will determine the appropriate starting point in SPSU's math sequence. Students may obtain MAT scores from their academic advisor or a program representative during an advising session, from the Testing Coordinator, the Coordinator of Disability Services, or from Banner.

Placement is based on the following scale:

If your score is	On this test	Start in this Mathematics Course
23 or lower	MAT 1+2	MATH 1111 College Algebra
24 or higher	MAT 1+2	MATH 1113 Pre-calculus
26 or higher	MAT 1+2	MATH 2253 Calculus
AND		Or
8 or higher	MAT 3	MATH 2240 Elements of Calculus

28 or higher	MAT 1+2	MATH 1113 Pre-calculus OR
AND		MATH 2253 Calculus I OR
630 or higher	SAT	
OR		MATH 2240 Survey of Calculus
28 or higher	ACT (Math)	(MATH 1113 is recommended)

Students are eligible to take any mathematics course at SPSU for which they have met all prerequisites. The ATTIC and the Mathematics Program offer math tutoring.

## COMPASS

Non-traditional students-students should take COMPASS. The test consists of writing, reading, and math sections. A proctoring fee must be paid in advance of the test. Students may call 678/915 -7361 to make an appointment to take the COMPASS test. COMPASS testing can also be scheduled online via [www.spsu.edu/attic](http://www.spsu.edu/attic).

## Disability Services

SPSU does not discriminate on the basis of an individual's disability and is committed to providing students with full and equal enjoyment of services, facilities and goods on campus as required by law. If you are a student with a qualified disability and are in need of a reasonable accommodation, you must contact the Office of Disability Services. The Disability Services Advisor coordinates academic support services for students who have a permanent qualified disability.

## International Student Services

International Student Services advises the University's international student body, faculty, and staff on Immigration and Naturalization regulations. The coordinator provides student assistance with banking, social security, insurance, housing, employment, practical and curricular practical training, travel regulations, income tax, and the lottery.

International Student Services provides cultural, social, and educational programs. Baptist Collegiate Ministries, Friends of Internationals and AMIS (American Ministry of International Students) sponsor family and community activities.