

**Southern Illinois University Edwardsville**  
**BACHELOR OF SCIENCE - COMPUTER ENGINEERING**

This guide provides only a suggested course of study and should be used in consultation with an advisor and the SIUE Undergraduate Catalog, available online at [www.siu.edu/registrar](http://www.siu.edu/registrar).

**LOWER-DIVISION COURSES**

YEAR	FALL	SPRING
1	IME 106 Engineering Problem Solving <sup>^</sup> 3 CHEM 131 Engineering Chem (Intro NSM)+ 4 CHEM 135 Engineering Chemistry Lab+ 1 MATH 150 Calculus I (Intro NSM) 5 ENG 101 English Composition I 3 <hr style="width: 50%; margin-left: auto; margin-right: 0;"/> 16	CS 140 Introduction to Computing I 4 MATH 152 Calculus II (Dist NSM) 5 PHYS 151 University Physics I 4 PHYS 151L University Physics Lab I 1 ENG 102 English Composition II 3 <hr style="width: 50%; margin-left: auto; margin-right: 0;"/> 17
2	CS 150 Introduction to Computing II 3 ECE 210 Electrical Circuits++ 3 MATH 250 Calculus III 4 PHYS 152 University Physics II 4 PHYS 152L University Physics Lab II 1 Intro Fine Arts & Humanities* 3 <hr style="width: 50%; margin-left: auto; margin-right: 0;"/> 18	CS 240 Introduction to Computing III 3 ECE 211 Circuit Analysis II++ 4 ECE 282 Digital Systems Design++ 4 MATH 305 Differential Equations I 3 SPC 103 Interpersonal Communication (IGR)** 3 <hr style="width: 50%; margin-left: auto; margin-right: 0;"/> 17

ADMISSION TO UPPER-DIVISION COURSES REQUIRES SATISFACTORY COMPLETION OF LOWER-DIVISION CORE COURSES (see catalog for specific requirements). An "APPLICATION FOR ADMISSION TO UPPER-DIVISION ENGINEERING COURSES" FORM MUST BE COMPLETED AND APPROVED. This form is available at all engineering department offices. A special five-year BS/MS degree program is available for qualified students. Contact your department office for specific details.

**UPPER-DIVISION COURSES**

3	CS 312 Intro to Computer Org & Arch++ 3 ECE 326 Electronic Circuits I 4 ECE 351 Signals and Systems++ 3 ECE 352 Stochastic Processes++ 3 MATH 224 Discrete Mathematics 3 <hr style="width: 50%; margin-left: auto; margin-right: 0;"/> 16	CS 340 Algorithms and Data Structures 3 ECE 381 Microcontrollers 3 ECE 483 Advanced Digital Systems Engin 3 ECON 111 Principles of Macroecon (Intro SS) 3 Dist Social Sciences* 3 <hr style="width: 50%; margin-left: auto; margin-right: 0;"/> 15
4	CS 314 Operating Systems 3 ECE 404 ECE Design++ 3 ECE/CS ELECTIVE I 3 PHIL 323 Engr, Ethics, & Profess (Dist FAH) 3 Intro Fine Arts & Hum or Social Sciences* 3 <hr style="width: 50%; margin-left: auto; margin-right: 0;"/> 15	ECE 405 ECE Design Laboratory 3 ECE/CS ELECTIVE II 3 ECE/CS ELECTIVE III 3 IME 345 Engineering Economic Analysis 3 Interdisciplinary Studies (IS)* 3 <hr style="width: 50%; margin-left: auto; margin-right: 0;"/> 15

- <sup>^</sup> IME 106 is for incoming freshmen & transfer students with less than 16 hours. Other students should take PHIL, MATH, or FL 106.
- <sup>+</sup> CHEM 121a, 125a may be substituted with departmental approval.
- <sup>++</sup> A grade of C or better is required.
- <sup>\*</sup> It is recommended that students choose a course to meet a general education requirement, i.e. Intro Fine Arts & Humanities, and International Issues/International Cultures. If a course is not selected that meets two general education requirements, then a course from the list of II/IC in the current SIUE Undergraduate Catalog must be taken.
- <sup>\*\*</sup> If SPC 105 is taken instead of SPC 103, then a course from the list of Intergroup Relations in the current SIUE catalog must also be taken.

**Note:** Enrollment in any of the ECE courses is limited to students with a declared major in one of the engineering disciplines. Exceptions to this rule require the approval of the department chair. A prerequisite for an ECE course can only be fulfilled by a grade of C or better. A grade of D is sufficient to pass a course, but is not sufficient to qualify the student to enroll in a more advanced ECE course that lists the former as a prerequisite.

For additional information, contact the Electrical and Computer Engineering Department, EB 3054, 650-2524, or Engineering Student Services, EB 2012, 650-5300.

**NOTE:** The General Education courses listed in the Curriculum Guide meet Option A of the Skills requirement. A student who wishes to select Option B may replace IME 106 and SPC 103 with two semesters of a foreign language (101 and 102). An appropriate course is required to meet the Intergroup Relations requirement for students selecting Option B (see catalog).

### COMPUTER ENGINEERING ELECTIVES

Not all elective courses are offered every year. The courses to be offered are selected from the list below on the basis of student demand and faculty availability. All electives contain at least 1.5 design hours.

<u>FALL</u>	<u>SPRING</u>	<u>SUMMER</u>
ECE 365+ Control Systems	ECE 365 Control Systems	ECE 365+ Control Systems
ECE 375+ Intro to Communications	ECE 436* Digital Signal Processing	ECE 481 Microcontrollers
ECE 433 Fuzzy Logic & Applications	ECE 438* Digital Image Processing	ECE 484* VLSI/CAD Design
ECE 439 Computer Vision	ECE 482 Microprocessor Systems	
ECE 465* Control System Design	CS 447 Distributed Systems	
ECE 481* Microcontrollers	CS 456 Algorithms & Complexity	
CS 444 Parallel Computing		
CS 482 Computer Graphics		

\*Evening offerings  
+Offered in evenings in alternate years

### EVENING AND SECOND COURSE OFFERINGS

ECE and CS courses are offered during either the Fall or Spring Semester as shown on the reverse side of this page. Additional offerings of many ECE and CS courses are available as shown below. The department reserves the right to cancel these offerings because of lack of student demand or faculty availability.

#### Daytime

<u>FALL</u>	<u>SPRING</u>	<u>SUMMER</u>
ECE 327+ Electronic Circuits II	ECE 210 Electrical Circuits	CS 140 Intro to Computing I
ECE 352+ Stochastic Processes	ECE 326+ Electronic Circuits I	
ECE 405 EE Design Lab	ECE 351+ Signals & Systems	
CS 240 Intro to Computing III	ECE 382 Digital Systems Design	
	ECE 404+ EE Design	
	CS 140 Intro to Computing I	
	CS 150 Intro to Computing II	
	CS 340 Algorithms & Data Structures	

#### Evening

<u>FALL</u>	<u>SPRING</u>	<u>SUMMER</u>
ECE 210 Electrical Circuits	CS 140 Intro to Computing I	ECE 210 Electrical Circuits
ECE 211 Circuit Analysis II	CS 240 Intro to Computing III	ECE 211 Circuit Analysis II
CS 140 Intro to Computing I		ECE 282 Digital Systems Design
CS 150 Intro to Computing II		ECE 405 EE Design Lab
CS 340 Algorithms & Data Structures		CS 140 Intro to Computing I

Other evening engineering courses of interest to computer engineering students:

<u>FALL</u>	<u>SUMMER</u>
IME 345 Engr Economic Analysis	IME 345 Engr Economic Analysis

**Declaration of Major:** Students interested in any of the majors offered by the School of Engineering should seek advisement from the School of Engineering when they initially enroll in the University and should declare a major as soon as possible. Students admitted to programs offered by the School of Engineering shall have met University admission requirements, successfully completed any required academic development and high school deficiency courses, eligibility to enroll in MATH 125 – Pre-Calculus Math with Trigonometry, and have a cumulative GPA of 2.0 or better in any completed University course work.

Students with high school deficiencies, those with AD (academic development) requirements, and those starting in a mathematics course before MATH 150, Calculus I, will require more than the eight (8) academic semesters shown in this curriculum guide. This may require a summer session(s) or an extra semester(s).

**Enrollment in Upper-Division ECE Courses:** The requirements for enrollment in upper-division ECE courses are: satisfactory completion of all University and School of Engineering admission requirements; satisfactory completion (C or better) of CHEM 131, 135; CS 140, 150, 240; ECE 210, 211, 282; ENG 101, 102; IME 106; MATH 150, 152, 250, 305; PHYS 151, 151L, 152, 152L; and SPC 103, with a GPA of 2.0 for non-transfer students, transfer students from articulated programs, and Illinois resident transfer students (2.25 for other transfer students); a grade of C or better in ECE 210 and 211; and an approved application for enrollment in upper-division engineering courses.