

**Department of Electrical Engineering and Computer Science
Computer Science Catalog 2020**

Fall 15 hours	CS 102 (4) FA, SP, SU* Coreq- Math 132 or 141 or 147 Recommended background CS 101	Math 141 or 147 (4) FA, SP, SU Prereq- Math ACT 28 or Math SAT 660	EF 151 or 157 (4) FA, SP Coreq- Math 132/141/147 or higher and EF 105 or CS 101 or CS 102	English 101/118 or 198 or 131 (3) FA, SP, SU 101 Regular; 118 Honors; 198 Chancellor Honors Only; 131 English as Second Language	
Spring 15 hours	CS 130 (4) FA, SP, SU Prereq- CS 102 with C or better	Math 142 or 148 (4) FA, SP, SU Prereq- Math 132 or 141 or 147 with grade of C or better	EF 152 or 158 (4) FA, SP, SU Prereq- EF 151/157 with C or higher Coreq- Math 142 or 148	English 102 or 290 or 298 or 132 (3) FA, SP, SU 102 Prereq 101 or 118; 290 Prereq AP 101 credit 298 Prereq Chancellor Honors only & 198; 132 Prereq 131 ESL	
Fall 13-14 hours	CS 140 (4) FA, SP Prereq- CS 130 with grade of C or better	Gen. Ed. (3) FA, SP, SU Cultures and Civilizations	Math 251 or 257 (3) FA, SP, SU Prereq- Math 142 or 148 with grade of C or better	Biology 101 or 150/158 (3-4) FA, SP Chemistry 100 or 120 or 128 (4) FA, SP, SU or Physics 231 (3) FA, SP, SU	
Spring 16 hours	CS 302 or 307 (4) FA, SP Prereq- CS 140 with grade of C or better	CS 311 or 317 (3) FA, SP Prereq- CS 140 and Math 142 or 148 C or better	ECE 313 or 317 (3) FA, SP Prereq- Math 142 or 148 with grade of C or better	Gen. Ed. (3) FA, SP, SU Arts and Humanities	Gen. Ed. (3) FA, SP, SU Social Science
Fall 16 hours	CS 360 or 367 (4) FA, SP Prereq- CS 130 and 302 or 307 with grades of C or better	CS 312 (3) FA, SP Prereq- CS 311 or 317 with grade of C or better	CS 340 (3) FA, SP Prereq- CS 302 or 307 with grade of C or better	CS Upper Division Elective** (3) FA, SP, SU	General Elective (3) FA, SP, SU Any course on the transcript not already used in the DARS audit.
Spring 16 hours	CS 361 (3) FA, SP Prereq- CS 360 or 367 with C or better	CS 365 (3) FA, SP Prereq- CS 302 or 307 with grade of C or better	CS 366 (3) FA, SP Prereq- CS 360 or 367 with grade of C or better	CS 395 (1) FA, SP Prereq- CS 302 or 307 with grade of C or better	CS Upper Division Elective** (3) FA, SP, SU Gen. Ed. (3) FA, SP, SU Cultures and Civilizations
Fall 14 hours	CS 401 (2) FA Prereq- CS 360 or 367 with grade of C or better	CS Upper Division Elective ** (3) FA, SP, SU	CS Upper Division Elective ** (3) FA, SP, SU	English 355 or 360 (WC) (3) FA, SP, SU Prereq- ENGL 102 or 118 For ENGL 360- Minimum student level junior	Gen. Ed. (3) FA, SP, SU Arts and Humanities
Spring 15 hours	CS 402 (3) (OC & WC) SP Prereq- CS 401; English 102, 132, 290 or 298 with grades of C or better	CS Upper Division Elective ** (3) FA, SP, SU	CS Upper Division Elective ** (3) FA, SP, SU	Gen. Ed. (3) FA, SP, SU Social Science	General Elective (3) FA, SP, SU Any course on the transcript not already used in the DARS audit.

*Beginning students who have had high school computer science and/or who have had significant programming experience (e.g. summer institute study, special research projects, home laboratory) are invited to apply during the summer to the head of the EECS department for permission to take a proficiency exam for COSC 102. The EECS department also gives credit in COSC 102 to students who receive a score of 5 on the computer science AP Exam.

The following list shows an acceptable set of electives that may be taken to satisfy the upper division electives for the CS major. The electives have been grouped into 7 suggested tracks. The tracks group related electives that a student may wish to take in order to achieve a level of expertise in the indicated area. However, it is not mandatory to take any track and students are free to mix and match courses from different tracks to fit their specific interests:

Theory: CS 440, 482; **Systems:** CS 452, 462, ECE 453, 462, 463; **Software:** CS 453, 461, 465; **Hardware:** ECE 256, 356, 455; **Scientific Computing:** CS 370/ 377, 471, 472, Math 231/237 or 241/247; **Artificial Intelligence:** CS 420 or 427, 421, 425, ECE 471 **Cybersecurity:** CS 425, 434/534, 445/545, 522, 466/566, 469/569, 483/583, ECE 459/559, 462, 469/569, 471/571

Computer Science 493 and 494 may be taken to satisfy the upper division electives. Up to two (2) Computer Science 5xx or Electrical Computer Engineering 5xx courses may count as upper division electives.

Progression

The department requires at least a C in every computer engineering, computer science, electrical engineering, and mathematics course used for the undergraduate degrees.

Progression of departmental undergraduate students to the upper-division programs of the department is competitive and is based on the space available in the department. Factors considered in the decision include overall grade point average, grades earned in courses required in the lower division curricula of the department and College of Engineering, and seriousness of purpose and interest in departmental programs as exemplified by regular and orderly progress through the prescribed curriculum without abuse of withdrawal and course repeat privileges.

Students also have opportunities for an Honors Concentration and/or a five year BS/MS program. See the Undergraduate Catalog for details and requirements.