

Department of Electrical Engineering and Computer Science

Computer Science Catalog 2024

NOTE: COSC 101* (3) FA, SP see footnote below

14-15 hours	COSC 102 (4) FA, SP, SU Prereq: COSC 101 with C or better Coreq: Math 132 or 141 or 147 with C or better	Math 132 or 141 or 147 (3-4) (QR) FA,SP,SU Math 132 Prereq: Math 131 Math 141 Prereq: ACT Math 28 or SAT Math 660	EF 142 or 151 or 157 (4) (EI) FA, SP EF 142 Prereq: EF 141 with C- or better and Math 131 EF 142 Coreq: Math 132 EF 151 Coreq: 141/147 or higher and EF 105 or COSC 101 or COSC 102	English 101 or 131 (3) FA, SP, SU 101 Standard 131 English as Second Language	
15 hours	COSC 202 (4) FA, SP Prereq: COSC 102 with grade of C or better	Math 142 or 148 (4) (QR) FA, SP, SU Prereq: Math 132 or 141 or 147 with C or better	EF 152 or 158 (4) (EI and NS) FA, SP, SU Prereq: EF 142/151/157 with C or higher Coreq: Math 142 or 148	COSC 230 (3) FA, SP Prereq: COSC 102 with grade of C or better	
16-17 hours	English 102 or 112 or 298 or 132 (3) FA, SP, SU 102 Prereq: 101, 112 Prereq: is AP 101 and Test Scores: 268 Prereq: University Honors only: 132 Prereq: 131 ESL	COSC 302 or 307 (4) FA, SP Prereq: COSC 202 with grade of C or better	COSC 311 or 317 (3) FA, SP Prereq: COSC 202 and Math 142 or 148 C or better	Math 251 or 257 (3) FA, SP, SU Prereq: Math 142 or 148 with grade of C or better	Biology 101 or 104 or 150/156 (3-4) (NS)/FA,SP Chem:102 and 103 or 122& 123 or 129 (4)(NS) FA, SP or Physics 231 (3) (NS)FA, SP, SU
16 hours	Select one: COSC 368 or 367 (4) FA, SP 360/367 Prereq: COSC 302 or 307 with C or better and COSC 230 or ECE 256 with grade of C or better	COSC 312 (3) FA, SP Prereq: COSC 311 or 317 with grade of C or better	Select one: ECE 313 or 317 or Stats 251 or Math 323 (3) FA, SP ECE prereq - Math 142 or 148 with grade of C or better Stats Prereq: Math 142 or 148; Math 323 prereq: Math 241/247, Math 300	Vol Core (3) FA, SP, SU Global Citizenship United States (GCLUS)	Vol Core (3) FA, SP, SU Social Science (SS)
16 hours	Vol Core (3) FA, SP, SU Arts and Humanities (AH)	COSC 340 (3) FA, SP Prereq: COSC 302 or 307 with grade of C or better	Select 2 courses: COSC 325, 361, 362, 366 (3); FA, SP 325 prereq: ECE 313/317 or Math 323 with C or better; and Math 251/7 with C or better 361 Prereq-COSC 360/367 with C or better; 362 prereq: 360/367 with C or better 366 prereq: COSC 202 with C or better and either ECE 256 or COSC 230 with C or better	COSC 385 (1) (WC) FA, SP Prereq: COSC 302 or 307 with grade of C or better and English 102, 112, 132, or 298	COSC Upper Division Elective** (3) FA,SP,SU
15 hours	COSC 365 (3) FA, SP Prereq: COSC 320 or 307 with grade of C or better	COSC Upper Division Elective** (3) FA,SP,SU	COSC Upper Division Elective** (3) FA,SP,SU	Select One: English 355 or 360 (WC) (3) FA, SP, SU Prereq: ENGL 102 or 112 or 132 or 298 For ENGL 360- Minimum student level junior	Vol Core (3) FA, SP, SU Global Citizenship International (GCI)
14 hours	COSC 401 (2) (OC) FA Prereq: COSC 360 or 367 with grade of C or better	COSC Upper Division Elective** (3) FA, SP, SU	COSC Upper Division Elective** (3) FA, SP, SU	Vol Core (3) (EI)*** FA, SP, SU Engaged Inquiry - choose from approved list in catalog	Vol Core (3) FA, SP, SU Expanded Perspectives- choose from AH, AAH, GCLUS, GCI, or SS
15 hours	COSC 402 (3) (AOC) SP Prereq: COSC 401; English 102, 112, 132, or 298 with grades of C or better	COSC Upper Division Elective** (3) FA, SP, SU	COSC Upper Division Elective** (3) FA, SP, SU	COSC Upper Division Elective** (3) FA, SP, SU	Vol Core (3) FA, SP, SU Expanded Perspectives- choose from AH, AAH, GCLUS, GCI, or SS

*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) should apply during the summer to the head of the EECS department for permission to take a proficiency exam for COSC 101. If satisfactory grade is earned, credit will be allowed for COSC 101 allowing the student to begin in COSC 102 their first term. The EECS department also gives credit in COSC 101 to students who receive a score of 3 or better on the Computer Science A AP Exam.
For student who lack these experiences, they should take COSC 101 first term, pushing back courses indicated.

**The following list shows an acceptable set of electives that may be taken to satisfy the upper division electives for the CS major if the course is not already used to satisfy a degree requirement. 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 365, 453/557, 461, 465 ECE 472/478; **Hardware:** ECE 255, 256, 356/358, 455; **Scientific Computing:** CS 370/ 377, 471, 472, Math 231/237 or 241/247;

Artificial Intelligence and Machine Learning: CS 420/427/527, 421, 423/523, 424, 425/522, 426/526, 429, ECE 414; **Cybersecurity:** CS 425/522, 434/534, 445/545, 522, 466/566, 469/569, 483/583, ECE 459/559, 462, 469/569,

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. COSC 422 does not count as an acceptable elective.

Acceptable electives include 300 and 400 COSC or ECE courses not already used for completion of degree requirements.

***Students should try to select courses that satisfy approved Vol Core areas AND Engaged Inquiry category. Students must have a minimum of 9 credit hours in at least two subject areas for Engaged Inquiry.

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.

Volunteer Core courses highlighted in light orange.