Computer Science

College of Engineering

The Computer Science program includes courses dealing with the design, implementation, analysis, and software-engineering issues related to algorithms and computer programs. A foundation in continuous and discrete mathematics is used to study numerical problems and to analyze algorithms. Through required and elective courses students are exposed to the fundamentals of computing theory and algorithms, programming languages, language translation and compiling, graphics, scientific computing, artificial intelligence, networks, databases, and operating systems.

Pre-Computer Science Requirements

In order to graduate and take most of the 300 level and above computer science courses, a student must attain engineering standing. To attain engineering standing a student must complete the following courses with a grade-point average of at least 2.50:

	Hours
ENG 101 Writing I **and**	
ENG 102 Writing II	6
or	
ENG 105 Writing: An Accelerated Course	3
MA 113 Calculus I	4
MA 114 Calculus II	4
CS 100 The Computer Science Profession	1
CS 115 Introduction to Computer Programming	3
CS 215 Introduction to Program Design, Abstraction, and Problem Solving	4
CS 216 Introduction to Software Engineering	3
EE 280 Design of Logic Circuits	3
PHY 231 General University Physics	4
PHY 241 General University Physics Laboratory	1

Degree Requirements

In addition to satisfying University Studies requirements, each student completes the following:

Freshman Year

First Semester	**Hours**
CS 100 The Computer Science Profession	1
CS 115 Introduction to Computer Programming	3
ENG 101 Writing I	3
MA 113 Calculus I	4
University Studies*	3
Second Semester	
CS 215 Introduction to Program Design, Abstraction, and Problem Solving	4
ENG 102 Writing II	3
MA 114 Calculus II	4
University Studies*	6

Sophomore Year

First Semester	
CS 216 Introduction to Software Engineering	3
CS 275 Discrete Mathematics	4
MA 213 Calculus III	4
or	
MA 322 Matrix Algebra and Its Applications	3
PHY 231 General University Physics	4
PHY 241 General University Physics Laboratory	1
Second Semester	
EE 280 Design of Logic Circuits	3
CS/EE 380 Microcomputer Organization	3
PHY 232 General University Physics	4
PHY 242 General University Physics Laboratory	1
STA 281 Probability and Statistics Using Interactive Computer Techniques	3
University Studies*	3

Junior Year

First Semester	
CS 315 Algorithm Design and Analysis	3
CS/MA 321 Introduction to Numerical Methods	3
University Studies*	3
Natural Science Elective**	3
Supportive Elective	3
Second Semester	
CS 375 Logic and Theory of Computing	3
Computer Science Elective†	3
Technical Elective††	3
University Studies*	3
Natural Science Elective**	3
Supportive Elective	3

Senior Year

First Semester	
CS 470G Introduction to Operating Systems	3
Computer Science Elective†	3
Technical Elective††	3
University Studies*	3
Supportive Electives	6
Second Semester	
CS 499 Senior Design Project	3
Computer Science Elective†	3
Technical Electives††	6
Supportive Elective	3

*To be selected from University Studies areas in Social Sciences, Humanities, Cross-Cultural, Electives, and Communications in conjunction with the academic advisor.

**Any natural science course excluding more elementary versions of completed required courses.

†Computer Science electives include 300 level and above computer science courses with two to be selected from: CS 335, CS 405G, CS 441G, CS 450G, and CS 463G.

††Technical electives include any 300 level and above courses in computer science, electrical engineering, mathematics, and business and economics. MA 214 is also an acceptable technical elective.