Computer Science and Engineering

Undergraduate Program

Bachelor of Science in Computer Science

Minimum credit hours required—130

In addition to the General Education Core Curriculum (page 89), the following courses are required:

- CSE 101 (2), 113 (4), 122 (3), 213 (3), 221 (3), 222 (3), 241(3), 324 (3), 325 (4), 326 (3), 331 (3), 342 (3), 344 (3), 353 (3), 382 (3), 423 (4)
- MATH ~~221 (3),~~ 352(3), 382 (3), 382L (1)
- Breadth Requirement: 3 hours of electives to broaden background from Education, Fine Arts, Humanities, Management, Philosophy, Social Science, or Technical Communication.
- Technical Electives: A sequence of 12 hours of ~~Computer Science and Engineering~~ CSE courses numbered 300 or higher, pre-approved by the student's advisor and the CSE Department ~~Undergraduate Advisor~~. Students are encouraged to select a coherent set of courses as technical electives that will prepare them for a specific focus in their career.
- Each of the above courses must be completed with a grade of C or better.
- Electives to complete 130 credit hours.

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Minor in Computer Science

Minimum credit hours required: 19

The following courses are required:

- CSE 113 (4) and CSE 122(3)
- Any four out of CSE 324 (3), CSE 325(4), CSE 326(3), CSE 331(3), CSE 342(3), CSE 344(3), and CSE 353(3).
- Each of the above courses must be completed with a grade of C or better.

Computer Science Courses:

CSE 101, Introduction to Computer Science and Information Technology, 2 cr, 2 cl hrs

Brief overview of the discipline of computer science and information technology topics including computer architecture, operating systems and networks, automata and models of computation, programming languages and compilers, algorithms, databases, security and information assurance, artificial intelligence, graphics, and social/ethical issues of computing. (Same as IT 101)

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CSE 107, Introduction to Computer Programming using Python, 4 cr, 3 cl hrs, 2 lab hrs

Co-requisite: Math 103

Usually offered in the Fall semester.

The course is designed to introduce programming and its applications to scientists and engineers. The first part of the class focuses on problem solving, algorithm development, top-down design, modular programming, debugging, testing, data types, flow-control, looping, iteration and recursion, fundamental data structures, and an introduction to object oriented programming. The second part of the class explores data analysis with Python. (Same as IT 107)

CSE 113, Introduction to Programming, 4 cr, 3 cl hrs, 3 lab hrs

Prerequisite: MATH 103 or equivalent

The course is designed to introduce problem solving and programming in C to Computer Science majors. Topics include algorithm development, top-down design; modular programming; debugging; testing; control structures including selection, iteration and recursion; number systems; data representation; data types including arrays, strings, pointers, and dynamic structures involving memory managment . Concepts implemented through extensive programming using good programming style. (Same as IT 113).

CSE 241, Foundations of Computer Science, 3 cr, 3 cl hrs

Prerequisite: Math 132

Usually offered in the Fall semester

Propositional and predicate logic. Analytic reasoning and mathematical proofs. Abstraction, iteration, recursion, and induction. Fundamental discrete structures. Basic concepts of algorithms, formal languages, and computation.

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