

Software Engineering (SE)

Courses

SE 110. Discovering Computing. 3 Credits.

This course will provide an overview of topics ranging from history of computing, problem solving, algorithmic thinking, and concepts behind software development. Students will use graphical programming tools to compute, investigate and implement solutions. This should be suitable for students who want to learn about computing concepts.

Typically Offered: Fall.

SE 199. Special Topics. 1-4 Credits.

Courses not offered in the regular catalog that provide an opportunity to extend student learning.

Typically Offered: On sufficient demand.

Repeatable: Up to 12 Credits.

SE 201. Introduction to Software Engineering. 3 Credits.

An introduction to principles of software engineering concepts including lifecycle models, requirements, design, implementation, testing, documentation and the related tools and techniques.

Typically Offered: Fall.

SE 211. Software Construction. 3 Credits.

An introduction to low-level design issues, including formal approaches, basics of formal languages, overview of principles of programming languages, criteria for selecting languages and platforms, tools for automating design and construction, and concurrency.

Typically Offered: Spring.

Prerequisite: SE 201.

SE 212. Software Engineering Approach to Human Computer Interaction. 3 Credits.

Overview of a wide variety of topics relating to designing and evaluating user interfaces, as well as psychological principles of human-computer interaction.

Typically Offered: Spring.

SE 242. Data Structures. 3 Credits.

The study of abstract data types (ADTs) and alternatives for implementation of lists, arrays, sets, trees, and graphs. The course explores dynamic and static data structures; time and space analysis of algorithms for initializing; and accessing, searching, sorting and traveling. Cross referenced with CSCI 242.

Typically Offered: Fall, even years.

Prerequisite: CSCI 161.

Same As: CSCI 242/SE 242.

SE 299. Special Topics. 1-4 Credits.

Courses not offered in the regular catalog that provide an opportunity to extend student learning.

Typically Offered: On sufficient demand.

Repeatable: Up to 12 Credits.

SE 311. Software Design and Architecture. 3 Credits.

An in-depth coverage of advanced software design, particularly aspects relating to distributed systems and software architecture.

Typically Offered: Spring.

Prerequisite: SE 211.

SE 321. Software Quality Assurance and Testing. 3 Credits.

A broad coverage of software quality and testing to include quality assurance, inspections and reviews, software validation, and testing techniques.

Typically Offered: Spring, odd years.

Prerequisite: SE 201.

SE 370. Computer Organization & Systems. 3 Credits.

An examination of the fundamentals of computer organization and operating system concepts. Cross referenced with CSCI 370.

Typically Offered: Fall, odd years.

Prerequisite: CSCI 160.

Same As: CSCI 370/SE 370.

SE 376. Embedded Systems. 3 Credits.

A study of micro-controller hardware and software, with an emphasis on interfacing the micro-controller with external electronic devices such as transceivers, sensors, and actuators for communications and control within an embedded system.

Typically Offered: Spring.

Same As: PHYS 376/SE 376.

SE 379. Social Implications of Computers. 3 Credits.

An examination of social, legal, philosophical, and ethical implications of computing in society and obligations as professionals in software engineering related fields.

Typically Offered: Spring, even years.

SE 380. Systems Analysis and Design. 3 Credits.

A practical approach to systems analysis and design using a blend of traditional development methods and current technologies with a focus on gathering requirements. Cross referenced with CIS 380.

Typically Offered: Fall.

SE 381. Project Management. 3 Credits.

An investigation of the project management techniques and appropriate software used to effectively manage projects. This course covers the knowledge areas and other topics as defined by the Project Management Body of Knowledge (PMBOK). Cross-referenced with CIS 381 and MGMT 381.

Typically Offered: Spring.

SE 385. Database Theory/Design. 3 Credits.

An introduction to relational database concepts, theory, design and management.

Typically Offered: Fall.

SE 399. Special Topics. 1-4 Credits.

Courses not offered in the regular catalog that provide an opportunity to extend student learning.

Typically Offered: On sufficient demand.

Repeatable: Up to 12 Credits.

SE 480. Capstone. 3 Credits.

A capstone course that provides students, working in groups, with a significant project experience in which they can integrate much of the material they have learned in their program, including matters relating to requirements, design, human factors, professionalism, and project management.

Typically Offered: Spring.

Prerequisite: Senior Standing.



SE 494. Undergraduate Research. 3-12 Credits.

The course is designed to integrate subject matter from major coursework and other disciplines into a project that leads to the creation of an original body of knowledge.

Typically Offered: Not Specified.

Repeatable: Up to 12 Credits.

SE 497. Internship. 3-12 Credits.

An opportunity for students to apply classroom learning to an on-the-job work experience. Internship must be related to the student's major or minor course of study and may be in any geographic location. Credit is granted in the range of three to twelve hours per semester and may be repeated up to a maximum of 12 credit hours. Application and approval through Career Services.

Typically Offered: Fall, Spring, Summer.

Prerequisites: Junior Standing or Senior Standing and cum GPA of 2.50 or higher.

Grading: S/U only.

Repeatable: Up to 12 Credits.