
CSE 403 Software Engineering

Credits

4.0 (3 hrs lecture, 1 hr section)

Lead Instructor

Michael Ernst

Textbook

None

Course Description

Fundamentals of software engineering using a group project as the basic vehicle. Topics covered include the software crisis, managing complexity, requirements specification, architectural and detailed design, testing and analysis, software process, and tools and environments.

Prerequisites

CSE 331; CSE 332

CE Major Status

Selected Elective

Course Objectives

A central objective of the course is to have students develop a deep understanding of the distinctions between software engineering and programming. In addition, the students understand the software lifecycle, increase their knowledge of classic and modern software engineering techniques, and develop concrete experience in turning ill-formed concepts into products working with a team.

ABET Outcomes

- (1) an ability to identify, formulate, and solve complex engineering problems by applying principles of engineering, science, and mathematics
- (2) an ability to apply engineering design to produce solutions that meet specified needs with consideration of public health, safety, and welfare, as well as global, cultural, social, , and economic factors
- (3) an ability to communicate effectively with a range of audiences

(4) an ability to recognize ethical and professional responsibilities in engineering situations and make informed judgments, which must consider the impact of engineering solutions in global, economic, environmental, and societal contexts

(5) an ability to function effectively on a team whose members together provide leadership, create a collaborative and inclusive environment, establish goals, plan tasks, and meet objectives

(6) an ability to develop and conduct appropriate experimentation, analyze and interpret data, and use engineering judgment to draw conclusions

(7) an ability to acquire and apply new knowledge as needed, using appropriate learning strategies

Course Topics

Topics covered include the software crisis, managing complexity, requirements specification, architectural and detailed design, testing and analysis, software process, and tools and environments.