

CSE442: SOFTWARE ENGINEERING (4 Credits, Required)

Catalog Description

Examines in detail the software development process. Topics include software life-cycle models; architectural and design approaches; various techniques for systematic software testing; coding and documentation strategies; project management; customer relations; the social, ethical, and legal aspects of computing; and the impact of economic, environmental, safety, manufacturability, and sustainability factors on design. Students in this course participate in a real-world project from conception to implementation.

Prerequisites

Prerequisites: Senior standing

Corequisites: None

Textbooks(s) and/or other required material

Steve McConnell. (2004).Code Complete, 2nd edition, Microsoft Press.

Benjamin Hoff . (1983). The Tao of Pooh, Penguin.

Software (provided to students):

Microsoft Project

Microsoft Visio (or other suitable drawing package)

Course Objectives

To provide practical lessons in the non-programming aspects of large-scale, team-oriented, software development efforts for business. Students who complete this course will feel comfortable in the role of a Software Designer, SW Architect, Project Manager, Customer, User, Technical Team Leader, Member of the Technical Staff, Advocate, and Critic for the use software to solve business and technical problems. Students become conversant in methodologies, architectural approaches, project management techniques, and team dynamics.

Topics Covered

Software Analysis

Software Design

Coding

Project Management

Software Testing

Societal, Ethical and Legal Considerations

Class / Lab Schedule

Three 50 minute lectures per week

One 50 minute recitation per week

Contribution of course to professional component/criterion 5

Engineering Topics: 4 credits

Engineering Design

Relationship of course to program outcomes

This course is required of all computer engineering students and has a significant relationship with the following program objectives for computer engineering:

- (d) an ability to function on multidisciplinary teams
- (f) an understanding of professional, legal, and ethical issues and responsibilities as it pertains to computer engineering
- (g) an ability to effectively communicate technical information in speech, presentation, and in writing.
- (h) the broad education necessary to understand the impact of engineering solutions in a global, economic, environmental, and societal context
- (j) a knowledge of contemporary issues

This course has a strong relationship with the following program objectives for computer engineering:

- (c) an ability to design and construct a complex hardware and software system, component, or process to meet desired needs using relevant software engineering principles, within realistic constraints such as economic, environmental, social, political, ethical, health & safety, manufacturability, and sustainability

Persons who prepared this description and date of preparation

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