CS 4540: SOFTWARE ENGINEERING PROJECT

Semester Hours: 3.0
Contact Hours: 3
Coordinator: Robert Green
Text: Head First Software Development
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Year: 2007

SPECIFIC COURSE INFORMATION

Catalog Description:
Issues underlying the successful development of large scale software projects using software engineering methodologies. Team based software design and architectures, testing and deployment. Principles of reusability, portability, interoperability, software metrics and management. Prerequisite: Grade of C or better in CS 3540. Approved for distance education.

Course type: ELECTIVE

SPECIFIC COURSE GOALS

- I am able to use practical software tools such as version control and tracking system in a professional setting.
- I am able to describe the role that tools can play in the validation of software.
- I am able to describe several techniques for validating and measuring the quality of software.
- I am able to define processes involved in software evolution including re-engineering and its types.
- I am able to evaluate a software design at the component level and from the perspective of software reuse.
- I am able to use practical tools to manage task scheduling, project management, contingency planning and software testing plans.
- I am able to produce near professional software and associated technical write up.
- I am able to analyze the current research literature and give a professional presentation summarizing my findings (CS 5450 Students Only).
LIST OF TOPICS COVERED

• Software Processes and Models
• Planning and Requirements Analysis
  o User and/or system requirements
  o Effort estimation
• Design and Development Methodologies
  o Team design
  o Coding methods and guidelines
• Testing and Evaluation
  o Testing methods
  o Assurance and acceptance criteria
  o Reliability and performance
• Project Management
  o Resource and configuration control
  o Product Integration
  o Best practices
  o Release management and source control
  o Teamwork and leadership