CSC/CPE 307 Introduction to Software Engineering

1. CSC/CPE 307 Introduction to Software Engineering

2. credit units 4 contact hours 6

3. Course Coordinator: Gene Fisher

4. Textbook:(and/or other required material) Lecture Notes in Software Engineering and other online material provided by instructor

5. a. Course Description: Requirements, specification, design, implementation, testing and verification of large software systems. Study and use of the software process and software engineering methodologies; working in project teams. 3 lectures, 1 laboratory. Not open to students with credit in CSC/CPE 308. Crosslisted as CPE/CSC 307.

   b. Prerequisite: CSC/CPE 103 with a grade of C- or better, and CSC/CPE 357.

   c. Required/Elective/Selective Elective for CPE, CSC, EE, SE

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6. a. Course Goals/Outcomes

   • study the basic concepts of software engineering and the software development process
   • study methodological techniques for each of the following software process activities:
     o requirements analysis
     o model specification and design
     o user interface specification
     o program architectural design
     o implementation
     o testing -- inspection, functional, and acceptance
     o verification
     o documentation
     o configuration management and version control
   • use these techniques in an environment where students obtain ample feedback
   • develop a moderate-sized, realistic software project
   • improve technical communication skills, both oral and written
   • practice the art of working effectively in a technical project team
• use state-of-the-art tools for computer-aided software engineering

b. **How Student Outcomes addressed**
   (“B” = Basic level, “I” = Intermediate level, “A” = Advanced level)

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7. **Major Topics Covered: (number of lecture hours each)**
   • software processes (2)
   • general requirements analysis (2)
   • functional requirements analysis, via user-level scenarios (5)
   • non-functional requirements analysis (.5)
   • formal model specification and design (4)
   • user interface design and implementation (3)
   • program architectural design (5)
   • detailed design and implementation (3)
   • continual testing (5)
   • project management (1.5)