CS 4770 : COMPUTER SCIENCE CAPSTONE EXPERIENCE

Semester Hours:	3.0	*Contact Hours:*	3
Coordinator:	Joseph T. Chao		
Text:	Head First Software Development		
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Year:	2007		

SPECIFIC COURSE INFORMATION

Catalog Description:

A synthesis of classroom knowledge and skills in computer science, culminating in a comprehensive team project experience. Covers two or more areas of Computer Science. Prerequisite: Grade of C or better in CS 3350, and completed at least 15 credit hours of CS courses at 3000-level or higher. Credit can be earned for only one of these courses: CS 4770, SE 4770, CS 4540.

Course type: **REQUIRED**

SPECIFIC COURSE GOALS

- Synthesis: develop the project scope and relationship to one or more CS or other domains(s), inputs and outputs.

- Design: integrate a range of course learning and extra-curricular experience to design potential solutions/algorithms by compiling trade-offs, exploring patterns, and modularizing the problem.

- Application: adapt computer science and/or other domain principles and practices to a meaningful problem - real or synthetic.

- Collaboration: adapt skills to collaborate effectively as an individual in a team.

- Communication: compose effective oral and written communication for a variety of audiences in different contexts.

- Reflection: assess past experiences and successes and/or failures in the project when shaping their "future selves".

COMPUTER SCIENCE STUDENT OUTCOMES ADDRESSED BY THIS COURSE

- CS 1 Analyze a complex computing problem and to apply principles of computing and other relevant disciplines to identify solutions
- CS 5 Function effectively as a member or leader of a team engaged in activities appropriate to the program's discipline

SOFTWARE ENGINEERING STUDENT OUTCOMES ADDRESSED BY THIS COURSE

- SE 1 An ability to identify, formulate, and solve complex engineering problems by applying principles of engineering, science, and mathematics
- SE 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, environmental, and economic factors
- SE 6 An ability to develop and conduct appropriate experimentation, analyze and interpret data, and use engineering judgment to draw conclusions
- SE 7 An ability to acquire and apply new knowledge, as needed, using appropriate learning strategies

LIST OF TOPICS COVERED

I. Background (15%) Students may propose a project themselves or choose from a list of available projects. Discuss with the sponsor and/or faculty mentor and complete assigned readings, if any.
II. Project Selection (10%). Project proposal presentations to the class/project sponsor; identify broad conceptual details and plan of action; project logistics - team members/leader and project milestone and schedule of deliverables.
III. Project development (50%) Team meetings; milestones; short project progress presentations and reports; discussion with project sponsor/course instructor; constraints and trade-offs/resolution
IV. Project Report and Presentation Resources (10%)
V. Presentation (15%)