CSCI Course Descriptions

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CSCI 430 Software Engineering

3.0 FA WP
Prerequisites: CSCI 311 with a grade of C or higher.
An overview of software engineering principles, practices, and tools. Topics include: agile software engineering methodologies, requirements engineering, test-driven development, software design patterns, MVC architecture, version control, software metrics, and static analysis. Students work in groups to design and implement a semester-long open source software project.
2 hours discussion, 2 hours activity.

CSCI 430H Software Engineering - Honors

3.0 FA WP
Prerequisites: CSCI 311 with a grade of C or higher; acceptance into Honors in the Major Program.
An overview of software engineering principles, practices, and tools. Topics include: agile software engineering methodologies, requirements engineering, test-driven development, software design patterns, MVC architecture, version control, software metrics, and static analysis. Students work in groups to design and implement a semester-long open source software project. Honors students enrolled in this course will be required to implement a significant additional instrumentation, testing, and analysis for their team project as well as develop an approved proposal in the area of software engineering/testing/quality assurance for their Honors Research Project/Thesis.
2 hours discussion, 2 hours activity.

CSCI 431 Usability Engineering

3.0 FS
Prerequisites: Junior Standing.
A study of designing and evaluating how people interact with computers and digital interfaces by introducing topics in user experience (UX) and human-computer interaction (HCI). Students learn user-centered design and evaluation methods with hands-on, interdisciplinary projects. Skills and techniques taught include: usability testing, survey design, card sorting, contextual inquiry, wireframing, rapid prototyping, and digital interface design.
2 hours discussion, 2 hours activity. Laptop required.

CSCI 533 Software Testing and Quality Assurance

3.0 SP
Prerequisites: CSCI 430 or CSCI 630.
In-depth study of software verification and validation with a concentration on software testing methods, tools, and metrics. Topics include Test-Driven Development, unit testing, integration testing, acceptance testing, as well as software and testing metrics. Students will work individually as well as in teams to verify and validate large open source projects.
3 hours discussion.

CSCI 630 Software Engineering

3.0 SP
Prerequisites: CSCI 430 and classified graduate standing.
An advanced study of software engineering concepts and practices with an emphasis on software design patterns, static and dynamic analysis, and maintenance of large projects. Teams of students will collaborate on large open source software projects using leading software engineering tools.
3 hours discussion.