

CEN: Computer Software Engineering Courses

Courses

CEN 3031 Software Engineering I

College of Sci and Engineering, Department of Computer Science

3 sh (may not be repeated for credit)

Prerequisite: COP 3022 OR COP 4331

Preparation of software planning, specifications, design, coding, testing and maintenance. Familiarization with the team approach to large software system development with an emphasis on software process and methodology.

CEN 3032 Software Engineering II

College of Sci and Engineering, Department of Computer Science

3 sh (may not be repeated for credit)

Prerequisite: (COP 4331 OR COP 3022) AND (CEN 3031)

Focus on software design, implementation, and testing. Students will work in teams to develop software systems using the design principles discussed in class.

CEN 4053 Software Engineering Management

College of Sci and Engineering, Department of Computer Science

3 sh (may not be repeated for credit)

Prerequisite: CEN 3032

Reviews concepts and principles related to the management of software engineering projects and teams. Focus is on processes, collaboration, and human factors that influence success.

CEN 4054 Six Sigma Green Belt

College of Sci and Engineering, Department of Mechanical Engineering

3 sh (may not be repeated for credit)

Prerequisite: Completion of 90 hours of college course work is required prior to taking this course.

Systematic methodology aimed at process improvement and waste elimination to achieve customer satisfaction and increase profits. Define-measure-analyze-improve-control (DMAIC) is used to understand and control project processes. Green Belt Six Sigma training and certification to facilitate supporting Black Belt Six Sigma project leads.

CEN 4078 Secure Software Development

College of Sci and Engineering, Department of Computer Science

3 sh (may not be repeated for credit)

Prerequisite: CEN 3031 AND COP 3022 AND COP 3530

Examines the importance of building security into the design, implementation and testing phases of software development. Covers coding techniques that avoid known vulnerabilities and test strategies that can uncover previously unknown weaknesses. Includes discussion of security policies and design principles.

CEN 4905 Directed Study

College of Sci and Engineering, Department of Computer Science

1-12 sh (may be repeated indefinitely for credit)

CEN 5079 Secure Software Development

College of Sci and Engineering, Department of Computer Science

3 sh (may not be repeated for credit)

Examines the importance of building security into the design, implementation and testing phases of software development. Covers coding techniques that avoid known vulnerabilities and test strategies that can uncover previously unknown weaknesses. Includes discussion of security policies and design principles. Prior to taking this course students should have knowledge and skill in software development.

CEN 5905 Directed Study

College of Sci and Engineering, Department of Computer Science

1-12 sh (may be repeated indefinitely for credit)

CEN 6017 Continuous Software Engineering

College of Sci and Engineering, Department of Computer Science

3 sh (may not be repeated for credit)

Prerequisite: CEN 6030*

This course focuses on aspects of modern software engineering as they pertain to continuous workflows. Topics of continuous testing, integration, delivery, and deployment will be discussed throughout the course. Significant programming experience is required for this course.

CEN 6030 Agile Software Engineering

College of Sci and Engineering, Department of Computer Science

3 sh (may not be repeated for credit)

Prerequisite: COP 6416

Analysis and overview of concepts in agile software development. Covers agile principles, methodologies, practices, and artifacts. This course may require completion of graduate foundations courses in computer programming or the equivalent undergraduate coursework if a student has insufficient academic or professional experience in computer science.

CEN 6074 Software Assurance and Security

College of Sci and Engineering, Department of Cybersecurity & Info Tech

3 sh (may not be repeated for credit)

Prerequisite: CEN 5079

Concepts and principles related to developing and maintaining secure software systems with no exploitable vulnerabilities with high levels of integrity and reliability.

CEN 6905 Directed Study

College of Sci and Engineering, Department of Computer Science

1-12 sh (may be repeated indefinitely for credit)

* This course may be taken prior to or during the same term.