

**CS 410 Software Maintenance and Evolution**

**Credit Hours:** 3

**Scheduled hours per week**

Lecture: 3

Lab: 0

Other: 0

**Catalog Course Description:** This course teaches tools, techniques, concepts, and current practices for software maintenance and evolution.

**Pre-requisites:** CS 302 completed with a grade of C or higher

**Co-requisites:** None

**Course Learning Outcomes:**

Students will learn the concepts of and practices used to maintain and evolve software with current industry tools and techniques.

**Topics to be studied:**

- Overview of Software Maintenance and Evolution
- Maintainability as a primary goal when developing software
- Architecture and Evolution
- Ad hoc development vs Disciplined development
- Reengineering and reverse engineering
- Monitoring and logging

**Relationship of Course to Program or Discipline Learning Outcomes:**

|   |  |
|---|--|
|   | Ability to understand, plan, and execute good Project Management   |
|   | Ability to recognize and apply industry recognized code of ethics to various situations                    |
| X | Ability to understand and apply Information Security concepts and best practices                           |
| X | Ability to understand, plan, and implement good Systems Analysis and Software Engineering                  |
|   | Ability to understand, plan, implement, and troubleshoot Mobile Applications                               |
| X | Ability to understand, plan, implement, and troubleshoot Advanced Web Design and Web Services technologies |

**Relationship of Course to General Education Learning Outcomes:**

|   |  |
|---|--|
|   | <b>Composition and Rhetoric</b> Students illustrate a fundamental understanding of the best practices of communicating in English and meet the writing standards of their college or program-based communication requirements.             |
| X | <b>Science &amp; Technology</b> Students successfully apply systematic methods of analysis to the natural and physical world, understand scientific knowledge as empirical, and refer to data as a basis for conclusions.                  |
|   | <b>Mathematics &amp; Quantitative Skills</b> Students effectively use quantitative techniques and the practical application of numerical, symbolic, or spatial concepts.   |
|   | <b>Society, Diversity, &amp; Connections</b> Students demonstrate understanding of and a logical ability to successfully analyze human behavior, societal and political organization, or communication.                                    |
|   | <b>Human Inquiry &amp; the Past</b> Students interpret historical events or philosophical perspectives by identifying patterns, applying analytical reasoning, employing methods of critical inquiry, or expanding problem-solving skills. |
|   | <b>The Arts &amp; Creativity</b> Students successfully articulate and apply methods and principles of critical and creative inquiry to the production or analysis of works of art.   |

**Special requirements of the course:**

Students will complete an evolution and maintenance comprehensive project as part of this course

**Additional information:**

**Prepared by:** Charles Almond

**Date:** February 6, 2019