

Department of Computer Science

CSC 420: Software Maintenance and Reengineering

(3 contact hours – 0 lab hours - 3 credits)

Syllabus⁷

- **General Information**

Instructor	
Office	
Phone	
Class Time	
Class Location	
Office Hours	
Teaching Assistant	

- **Required Textbook**

“**Software Evolution and Maintenance**”, Priyadarshi Tripathy and Kshirasagar Naik, Wiley, 2014, ISBN: 978-0-470-60341-3.

- **Supplementary Textbooks**

“**Software Maintenance: Concepts and Practice**”, 2nd Edition, Penny Grubb, World Scientific Publishing Company, 2003, ISBN-10: 981238426X

- **Course Description**

Taxonomy of software maintenance and evolution, evolution and maintenance models, reengineering, legacy information systems, impact analysis, refactoring, program comprehension, principles of reuse and reverse engineering, approaches and tools used to extract information from existing software systems.

⁷ This syllabus may change as needed. In such a case, students will be informed accordingly

- **Course Prerequisites**

CSC 350

- **Course Category**

Elective

- **Course Outcomes:**

At the completion of this course, students will be able to:

7. Perform reengineering, refactoring and reverse engineering. [ABET c]
8. Perform impact analysis of maintenance and evolution tasks. [ABET c,i]
9. Apply reuse and reversibility approaches to improve maintenance efforts. [ABET c]
10. Use configuration management as the driver behind the evolution of their software. [ABET c]
11. Utilize maintenance measures to evaluate the effectiveness of their maintenance efforts. [ABET c]

- **Tentative Schedule**

Topic	Week
Introduction, Basic Concepts and Preliminaries	1
Taxonomy of Software Maintenance and Evolution	2-3
Evolution and Maintenance Models	4-5
Reengineering	6-7
Legacy Information Systems	8
Impact Analysis	9
Refactoring	10-11
Program Comprehension	12
Reuse and Domain Engineering	13-14
Review	15

- **Grading Scheme**

Quizzes	10%
Assignments	10%
Project	15%
Midterm Exam	30%
Final Exam	35%