Description: A study of classical and object-oriented software engineering principles and methods. Topics include software processes, requirements analysis, design, testing and maintenance, project management and software metrics, process improvement. Agile software development and open-source software development are also covered. There will be a group project. Three hours lecture per week.

Prerequisite: Advanced Data Structures & Algorithm Analysis (COSC 320).


**Weeks**

*Introduction to Software Engineering*

Overview. Historical perspective. Agile and Traditional Software development processes.

4.0

*Project Management and Planning*

Project management principles. Project planning and software cost estimation.

4.0

*Classical Analysis and Design*


4.0

*Object-oriented Analysis and Design*

Object-oriented concepts, analysis and design methods and principles. UML.

8.0

*Software Inspections*

Test planning, processes, and strategies. Software walkthrough and inspections.

2.0

*Maintenance & Evolution*

Maintenance process, costs, documentation. Configuration management.

2.0

*Optional Topics*

Open-source software development.

4.0

**Tests**

2.0

**EVALUATION**

Projects/Homework 60%
Midterm Exam 20%
Final Exam 20%

28.0