COSC412 Software Engineering

Instructor: Dr. Yeong-Tae Song
Office: YR 472
Phone: 410-704-3557
E-mail: ysong@towson.edu
Office Hours: M 6:00 ~ 6:50 pm or by appointment
Zoom: **https://towson-edu.zoom.us/my/tu.ysong Password: profsong**

Textbook: Software Engineering, A Practitioner's Approach, 9th Edition
Pressman and Maxim, McGraw-Hill

Note: We are using **digital copy of the textbook**. You may opt out if you prefer paper copy of the textbook. However, you need to notify me before the second week of the semester. Your digital textbook will be available from the Blackboard link.

References:

1. Software Engineering, 10th edition, Ian Sommerville, Addison-Wesley
2. UML 2.0 In a Nutshell, Dan Pilone, O'Reilly

Prerequisite:

COSC 336: must be completed with C or higher grade

Course Description:

The course deals with fundamental concepts in software engineering such as software processes, requirement elicitation and analysis, system modeling, various aspects of software design, implementation issues, software testing, and evolution of large and complex software systems that can help practitioners make quality software within given time and budget. Classroom discussions will include how to apply those fundamental concepts into software development project so the resulting software products can be adaptable to continuously changing requirements and environment, in an economic, competitive and quality-assuring manner.

Main Topics include

1. Software engineering fundamentals
2. Software Processes
3. Agile software development
4. Requirements engineering
5. System modeling
6. SW architectural design
7. SW detailed design and implementation
8. Software Testing
9. Software metrics, Configuration Management
10. SW process improvement - when time permits.

Grading

Grading factors	Grading Scale

Midterm Exam: 25%	A 95 ~ 100	C+ 75 ~ 79.99
Term Project: 25%	A- 90 ~ 94.99	C 70 ~ 74.99
Homework: 15%	B+ 87 ~ 89.99	D+ 67 ~ 69.99
Final Exam: 30%	B 83 ~ 86.99	D 60 ~ 66.99
Attendance 5%	B- 80 ~ 82.99	F Below 60

Class Objectives

- Upon completion of the course, students will be able to:
  - analyze and convert user requirements into software specification
  - understand various lifecycle models and their effect on software development project
  - understand software processes and software products
  - write software requirements specification according to user's requirements
  - use various design methodologies according to software requirements specification
  - understand software testing and how to write test cases according to the specification
  - understand how to measure software and how to take control over the changes in software artifacts
  - understand how to improve the quality of software using capability maturity model

Group Project

- There will be one term project that requires entire software lifecycle. It will be utilized throughout the semester as the class progresses
- Project teams must be formed within the first week
- Term project topic can be either
  - prepared by each team and approved by the instructor
  - or instructor assigned project.
- The project selection must be completed by the end of second week

Homework

- There will be a number of individual homework assignments
  - reading assignments
  - exercise questions from for selected chapters as shown in the tentative schedule

Important dates

- Midterm Exam **10/18**
- Final Exam **12/20**
- Phase I presentation **10/11**
- Phase II presentation **11/15**
- Final presentation & testing **12/13**

E-Learning System: Blackboard

- Class materials will be available at http://blackboard.towson.edu.

- You can use your TowsonU ID and password to access the site.
- All assignments and projects **must be** submitted through the Blackboard. Email attachment may not be accepted as submission.

Class Policy

- Your attendance is required. If you ever miss a class, it is your responsibility to find out what was covered in that class.
- Individual grading is not allowed for the team project. You should consult your instructor well before the due date if your team ever has any conflict that cannot be resolved in a reasonable manner.
- Academic honesty is strongly observed. Any type of plagiarism will result in zero grades. You must do your own work.
- If you may need an accommodation due to disability, please contact the instructor privately to discuss your specific needs. A memo from Disability Support Services (DSS) authorizing your accommodations will be needed.

Tentative Lecture Schedule

Sequence	Topics	Reading Assignments & Remarks
1	Introduction	Chapter one
2	SW Process and process models	Chapter two
3	Agile SW development	Chapters three, four
4	Requirements engineering 1	Chapter seven
5	Requirements engineering 2	Chapter eight
6	Design Concepts	Chapter nine
7	**Phase I presentation**	**10/11 SRS**
8	**Midterm Exam**	**10/18**
9	Architectural Design	Chapter ten
10	Detailed design	Chapters eleven, twelve
11	**Phase II presentation**	**11/15 Design**
12	Software Testing 1	Chapters nineteen, twenty
13	Software Testing 2 SW Configuration Management	Chapters twenty one, twenty two

14	SW process improvement	Chapter twenty eight (When time permits..)
15	**Final presentation and testing**	**12/13 Term project testing**
	Final Exam	**12/20 7:30pm ~ 9:30pm**

Academic Calendar http://www.towson.edu/registrar/calendars/
Final Exam Schedule https://www.towson.edu/registrar/calendars/exams.html