COSC 412-002 Software Engineering

Spring 2025

Time and Place	Monday and Wednesday 11 AM – 12:15 PM, 7800 York Road, Room 407
Instructor	Akshita Maradapu Vera Venkata Sai
Office hours	Monday 1 PM to 1:45 PM, 7800 York Rd, 438 or Webex by appointment
Email	amaradapuveravenkatasai@towson.edu All emails must have COSC412 in the subject line, and only emails coming from @students.towson.edu will be answered.
TA information	Fatima Malik Email: fmalik5@students.towson.edu Office hours: Friday 10 AM – 11 AM
Course Website	All the course contents will be published on Blackboard
Textbook	Software Engineering – A Practioner's Approach, 9th Edition, Pressman & Maxim, ISBN 978-1-260-54800-6
Prerequisites	COSC 336- Data Structures and Algorithm Analysis (grade of C or higher)
Credit hours	3
Course Description	This course introduces the methodology of designing and programming for a wide area of applications with a high degree of modifiability, efficiency, reliability, and understanding. Formal software engineering principles and practices and their application to the development of computer-based systems will be discussed through lectures. Specifically, the course will introduce requirements analysis, different software development lifecycles, software modeling and architecture, software quality management, and software project management.
Objectives	Students who complete the course will be able to: • understand goals, motivation, and terminology of software engineering. • understand software development lifecycles. • understand software processes and software product. • analyze and convert user requirements into formal software requirements specification use various design methodologies. • design and implement software applications according to requirements specification. • understand software testing and be able to write test cases according to the specification. • develop skills to work and communicate effectively in teams. Note that these topics and chapters are subject to change based on student interest, time and discretion of the instructor. An updated schedule will be maintained and posted on Blackboard.

Policies

EXAMS: There will be two exams in this course. The midterm and the final exam dates will be announced later in the class and on blackboard. If a student fails to attend the exam, they will obtain a **zero grade**, unless: (a) the student notifies the instructor of the absence prior to the exam; (b) the student is ill and supplies a written doctor's excuse explaining the absence; or (c) there is an extraordinary situation which the instructor allows as an acceptable excuse. **Only under one of these circumstances, arrangements for a makeup exam will be made.**

GROUP PROJECT: This course requires students to form software development teams and closely collaborate with each other to analysis, design, implement, and test software systems, using software engineering principles, techniques, and tools introduced in lectures. In every submission of group assignments, each group must only submit one solution and each person in the group will get the same grade. The submission must outline what each person contributed. It is NOT ALLOWED to include any "guest names." Every person listed as a collaborator must contribute. If someone is listed as a collaborator but did not contribute, he/she cannot get the grade of the submission. At any phase of the semester, if a group member does not participate in any group meetings or activities, nor contribute anything to their group deliverables, the group can vote whether to fire this member. If other members vote to fire this non-contributing member unanimously, he will have to leave the group and find another group to join by himself.

HOMEWORK: Homework assignments requiring individual and collaborative work will be assigned throughout the semester. Homework may be assigned during the lecture at the instructor's discretion and as the need arises. These assignments will be explained in greater detail as the course progresses. ***All work MUST be turned in by the assigned deadline or the late policy (see below) will be enforced.***

LATE WORK: All assigned work is expected to be completed and submitted by the stated deadline. All assignments and projects submitted after the stated deadline will be marked down 10% for each 24-hour period late.

GRADES: University policy prohibits posting of grades in any form. The instructor will NOT disclose any information regarding grades through emails, messages or phone calls. All grades in this course throughout the semester can be accessed online.

ATTENDANCE: Students are expected to attend all the lectures and keep up with the coursework. It is the student's responsibility to cover the handouts, assignments and notes if a class is missed.

CLASSROOM and LAB: All cell phones, mobile devices, and laptops must be put on silent mode to avoid disruptions and distractions.

ACADEMIC HONESTY: Academic honesty is strongly observed. This course will consist of both individual and team assignments. The team project is an assignment in which collaboration is allowed and highly encouraged. However, the work of the team must be of the team's creation and not plagiarized from other sources. Individual assignments must reflect the work of the individual student and of his/her creation. While studying together, discussion and collaboration is encouraged, individual assignments must be individually prepared – copying or sharing files, diagrams and/or code is considered cheating. The penalty for cheating will, at a minimum, consist of a grade of zero for the dishonest work and may lead to the possibility of course failure depending on the severity. Students are responsible for reading and knowing Towson University's policy regarding academic dishonesty, located in Appendix F in the Undergraduate Catalog and familiarizing themselves with the policies detailed at : https://www.towson.edu/cla/centers/writing/resources.html

STUDENT CODE OF CONDUCT:
https://www.towson.edu/studentaffairs/policies/documents/code_of_student_conduct.pdf

COURSE REPEAT: Students may not repeat a course more than once without prior permission of the Academic Standards Committee.

STUDENTS WITH DISABILITY: This course is in compliance with Towson University policies for students with disabilities. Students with disabilities are encouraged to register with Disability Support Services (DSS), 7720 York Road, Suite 232, 410-704-2638 (Voice) or 410-704-4423 (TDD). Students who suspect that they have a disability but do not have documentation are encouraged to contact DSS for advice on how to obtain appropriate evaluation. A memo from DSS authorizing your accommodation is needed before any accommodation can be made.

Important Dates

February 4, 2025 – Change of schedule period ends, last day to drop course without record
April 8, 2025 – Last day to drop course with "W" grade
May 13, 2025 – Last day of classes

Grading Breakdown

Project	As assigned on Blackboard	40%
Homework	As assigned on Blackboard	20%
Mid-term	March 10th during class	20%
Final Exam	May 14th (10:15 AM – 12:15 PM)	20%

Grading Scale

A	95-100	B-	80-82.9	D	60-66.9
A-	90-94.9	C+	75-79.9	F	Below 60
B+	87-89.9	C	70-74.9		
B	83-86.9	D+	67-69.9		

COURSE SCHEDULE

Note: This is a tentative schedule.

Week	Date	Topics	Assignments
1	Jan 27	Syllabus	
	Jan 29	Introduction to Software Engineering	Project Survey released
2	Feb 3	Software Engineering Process	
	Feb 5	Process Models	Project Survey due
3	Feb 10	Agile SDE	Sprint 1 and Assignment 1 released
	Feb 12	Agile SDE	
4	Feb 17	Software Requirements	
	Feb 19	Requirements Engineering	
5	Feb 24	UML – Use cases and Diagrams	Assignment 1 due
	Feb 26	UML Sequence Diagram	
6	Mar 3	UML Class Diagram	
	Mar 5	UML Class Diagram, Midterm Review	
7	Mar 10	Midterm	Sprint 1 due, Sprint 2 released
	Mar 12	Object oriented Software Design	Assignment 2 released
8	Mar 17	Spring break	
	Mar 19	Spring break	
9	Mar 24	Object oriented Software Design	
	Mar 26	Software Architecture Design	
10	Mar 31	Component level Design	Assignment 2 due
	Apr 2	UI design	
11	Apr 7	UI design	Assignment 3 release
	Apr 9	Software usability	Sprint 2 due, Sprint 3 released
12	Apr 14	Usable Security	
	Apr 16	Software Testing	
13	Apr 21	Software Testing	Assignment 3 due
	Apr 23	Software Testing	
14	Apr 28	Quality Assurance	
	Apr 30	Buffer Class	
15	May 5	Buffer Class	
	May 7	Project presentations	
16	May 12	Project presentations	Project Report due