TOWSON UNIVERSITY

Department of Computer and Information Sciences
COSC 412 102 – Software Engineering

Fall 2023 (*V1.00, 08.15.2023)*

Instructor: Jeff Tirschman, PMP **Email:** jtirschman@towson.edu
Office: YR Room 0128 (outside classroom) **Phone:** 410.599.2898

Office Hours: Monday - 7:20 p.m. – 7:30 p.m.
Anytime through email (please include COSC 412-102 in the subject)
Or by appointment

Course Hours: Monday - 7:30 p.m. – 10:10 p.m.
Course Location: York Road (YR), Room 0128
Course Website: Blackboard

Prerequisite: COSC 412 requires a grade of C (2.0) or higher in COSC 336.

Required Textbook: Software Engineering: A Practioner's Approach, 9th edition (eBook)
Pressman & Maxim
ISBN13: 9781259872976

Our eBook will be available through **McGraw Hill Connect – published as a SmartBook** set of reading assignments under the "Reading Assignments" link under Blackboard. I will notify the class once the links are available in Blackboard. At that time, you will need to test the links, and access the materials to complete your assignments. Begin by completing the orientation videos, and the defined week - by - week lecture chapter assignments. You can create an account, or sign in using your previous Connect account access. In case you have any issues, here is the Connect eBook Technical Support line phone number in case you have any issues: 1.800.331.5094

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.

Course 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.

Class Procedure / Format:
Class sessions will be a combination of lecture and discussion. Students are responsible for studying the assigned readings and participating in class discussions. Students must read the assigned material prior to class and complete the Learning Module questions associated with the eBook. The material covered in class is designed to clarify and supplement the text readings. The power point notes used for lecture will be posted in the Blackboard course website.

In addition, the following approach will be implemented:

- This course will be conducted using multiple methods for content delivery including face-to-face classroom lectures, synchronous online lectures and asynchronous lecture on-demand videos. Details are below for each method:
    - **Face-to-Face Classroom lectures** – Face-to-Face Classroom Lectures will delivered in our on-campus classroom and will be videotaped and the audio/video feed of the lecture will be available online for on-demand viewing after the class session. The link will be provided via Blackboard to access the materials.
    - **Synchronous** - Synchronous lectures will be conducted online via Blackboard Collaborate Ultra. Lectures will be videotaped and the audio/video feed of the lecture will be available online for on-demand viewing (asynchronous). The link will be provided via Blackboard to access the materials.
    - **Asynchronous** - Asynchronous materials will be provided for students to review independently, online and on-demand. The materials will be lecture videos recorded from previous semesters.

Grading Policy: Students will be evaluated on the following basis. The Final course grade will be calculated based on the percentages below:

Categories	Percentage	Details
Homework	15%	Homework, Readings, Misc. Assignments
Group Projects	25%	Semester-long project
Quizzes	20%	
Midterm Examination	20%	
Final Examination	20%	Cumulative, All course content

Final course grades will abide by the following scale:

Grade	% Range
A	93.00 - 100%
A-	90.00 - 92.99%
B+	87.00 - 89.99%
B	83.00 - 86.99%
B-	80.00 - 82.99%
C+	75.00 - 79.99%
C	70.00 - 74.99%
D+	65.00 - 69.99%
D	60.00 - 64.99%
F	Below 60.00%

Important Academic Calendar Dates (Dropping this Course)
08/28/2023 – First day of classes
09/06/2023 – Last day to drop a course without a grade posted to student record
11/06/2023 – Last day to drop a course with a grade of "W"
12/18/2023 – Last day of exams and end of academic semester

Readings: All students will be required to complete the readings prior to lecture. The online book materials and the Connect software will be required for completion before class starts on each lecture week with chapters defined on our schedule in the syllabus. The questions must be completed to assist with the learning and preparation prior to lecture. The points earned for the readings will be classified under the Homework category.

Assignments: 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.***

Quizzes: Every two (2) weeks, we will have an online or in-class quiz during the first 10 to 15 minutes of the class. The quizzes will include questions based on the knowledge discussed in the past two (2) weeks. Every student's lowest quiz grade will be dropped and not be calculated towards the final grade.

Examinations: There will be two (2) exams for this course. The Final Exam will be closed book and conducted in-class. Each student will be allowed one (1) 8.5x11 sheet of paper (front and back) for notes that can be referenced during the final examination. The Midterm Exam will be an online, open book exam delivered via Blackboard. The specific format of the midterm and final questions will be announced during the semester. Both exams cover materials from class discussions, email threads, lecture, readings and practical assignments. Make up tests can only be given in extenuating and documented circumstance (see Attendance Policy below).

Collaboration and Group Projects: 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.

The group project will require significant collaboration and coordination amongst team members. 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.

Throughout the semester, each group will be required to present and demo the group project, including, but not limited to, requirements, models, architectures, and programs. The schedule of the presentations will be announced during the semester.

See the "Group Project Assignment" handout for complete information and details.

Late Policy: 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.

Professionalism: All materials submitted for this course should look professional including the use of correct grammar and spelling.

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

Attendance Policy: Students are expected to attend all classes to remain current in the coursework. It is the student's responsibility to remain current on the handouts, assignments, and notes if a class is missed.

- **Exam Attendance:** If the student is absent from an exam during the scheduled time for that exam, the student will automatically receive a grade of zero (0) for the exam 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.

- **Attendance via Blackboard Collaborate for Synchronous Online Lectures:** Microphones and cameras are required to participate in this class unless there is an extenuating circumstance. Please inform me if you are unable to attend the class with a camera/mic. If you cannot access these technologies because of equipment needs, inform your instructor and send an email to equipmentrequests@towson.edu and copy your instructor.

Video Recordings for Lectures via Blackboard Collaborate, Panapto or other tools: Video recordings (zoom, Panopto, collaborate etc.): Faculty may record classes for the purposes of accommodating a disability, for students who cannot attend or so students who wish to review may have access to the full class content. All recordings are for the sole use of the class and may not be reproduced by students for any other purpose. Faculty will not reproduce students' voices or images from the class for any other purpose other than teaching without additional student consent. Students may mute their microphone or turn off their camera if they do not consent to be recorded, but this may mean they need to find additional ways to participate in the class discussion. Please inform me in advance if you cannot participate with your camera and microphone for multiple classes in the semester.

Blackboard Website: There will be a Blackboard website for this course. Students will be responsible for frequently checking the site for updates and announcements. All course related materials will be available for download from the Blackboard site.

Classroom and Lab Policy: Food and drink are not allowed in the labs and classrooms with the exception of water in the classroom only. All cell phones should be turned off or put on silent to avoid disruptions and distractions

Email Policy: All email correspondence with the instructor must be conducted using the student's Towson University email account (i.e., username@towson.edu). The instructor will not read/respond to any email messages from outside accounts. **Please include COSC 412-102 in the subject of all emails, to get a prompt response.**

Cheating and Plagiarism: Academic honesty is strongly observed. All students are required to honor Towson University's Academic Integrity Policy which includes Plagiarism, Fabrication and Falsification, Cheating, Complicity in Academic Dishonesty, Abuse of Academic Materials, & Multiple Submissions. Failure to do so will result in an official notification to the Office of Student Conduct & Civility Education and will result in at least a zero on the assignment with the possibility of course failure depending on the severity. Discussions among students foster learning. However, work must be individually prepared unless otherwise specified. All assignments must be turned in electronic format, so that papers can be assessed for academic integrity.

In this course, all quizzes, assignment, projects, and exams carry with them an implicit statement that it is the sole work of the author, unless joint work is explicitly authorized. Help may be obtained from the instructor or other students to understand the description of the problem and any technology, but the solution, particularly the design portion, must be the student's own work. A 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. If collaboration work is required, all contributing students must be listed on the submission. Any deviation from this is considered a violation of academic integrity, and as a minimum, will result in failure of the submission and as a maximum, failure of the class, 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 http://catalog.towson.edu/undergraduate/appendices/appendix-f-code-student-conduct/.

Course Repeat Policy: Students may not repeat a course more than once without prior permission of the Academic Standards Committee.

Students with Disabilities Policy: 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. **If you have a learning disability and/or need accommodation for any reasons, please advise the instructor as early as possible in the course.**

Life Events: Any students that anticipate not being able to meet the schedule due to life events needs to speak to the instructor at the start of the semester to coordinate other arrangements.

Masking: The University has set clear expectations about mask wearing for the safety of all in our community. All students must adhere to the current policy, as it is published and updated by Towson leadership.

Copyright: My lectures and course materials, including, but not limited to power point presentations, tests, outlines, and similar materials, are protected by copyright. I am the exclusive owner of copyright in those materials I create. You may take notes and make copies of course materials for your own use, however, you may not, nor may you allow others to, reproduce or distribute lecture notes and course materials publicly. This includes posting assignment questions on Chegg and other help sites – this would be a copyright violation and the appropriate consequences will be enforced.

Course Calendar - COSC 412 102 – Software Engineering – Fall Semester 2023

The course outline provided below is subject to revision based on the progress during each class period.

Week	Topic
08/28/2023	***Face-To-Face Classroom Lecture @ 7:30PM*** Introduction and Expectations
	***Review Group Project Assignment; Establish Teams of 3 - 4 students*
09/04/2023	**Labor Day – No Classes**
09/11/2023	***Synchronous Lecture – Blackboard Collaborate Ultra Session @ 7:30PM*** Introduction to Software Engineering *Chapter #1 – Software and Software Engineering*
	***Introduce and Review the Project Vision and Scope Assignment (#1)*
09/18/2023	***Synchronous Lecture – Blackboard Collaborate Ultra Session @ 7:30PM*** Software Engineering Processes *Chapter #2 – Process Models*
09/25/2023	***Face-To-Face Classroom Lecture @ 7:30PM | In-Class Quiz*** Software Project Management *Chapter #5 – Human Aspects of Software Engineering* *Chapter #24 – Project Management Concepts* *Chapter #25 – Creating a Viable Software Plan*
	****Assignment #1 – Project Vision & Scope Due**
	***Introduce and Review the Software Project Management Plan Assignment (#2)*
10/02/2023	***Face-To-Face Classroom Lecture @ 7:30PM*** ***10-minute Group Presentations of Scope/Vision for Final Project***
10/09/2023	***Asynchronous Lecture – On-demand, Lecture Video's Published to Blackboard*** Agile Development *Chapter #3 – Agility and Process* *Chapter #4 – Recommended Process Model*
10/16/2023	***Synchronous Lecture – Blackboard Collaborate Ultra Session @ 7:30PM*** **| Online Quiz** Software Requirements and Requirement Engineering *Chapter #6 – Principles that Guide Practices* *Chapter #7 – Understanding Requirements*
	****Assignment #2 – Software Project Management Plan Due**
	***Introduce and Review the Software Requirements Specification Assignment (#3)*
10/23/2023	***Midterm Exam – Online, Open-Note Examination (7:30PM-10:00PM)**
10/30/2023	***Face-To-Face Classroom Lecture @ 7:30PM*** ***10-minute Group Presentations of Requirements for Final Project***
	****Assignment #3 – Software Requirements Specification Due**
	***Introduce and Review the Application Design Prototype Assignment (#4)*
11/06/2023	***Asynchronous Lecture – On-demand, Lecture Video's Published to Blackboard*** Use Case Specification and Diagram, Sequence / Class Diagramming OO Architecture & Component Design *Chapter #8 – Requirements Modeling – Recommended Approach* *Chapter #9 – Design Concepts* *Chapter #10 – Architectural Design – Recommended Approach* *Chapter #11 – Component-Level Design*

11/13/2023	***Synchronous Lecture – Blackboard Collaborate Ultra Session @ 7:30PM* | Online Quiz** User Interface Design *Chapter #12 – User Experience Design* *Chapter #13 – Design for Mobility*
11/20/2023	***Asynchronous Lecture – On-demand, Lecture Video's Published to Blackboard*** Risk Management & Software Quality Assurance *Chapter #26 – Risk Management* *Chapter #15 – Quality Concepts* *Chapter #17 – Software Quality Assurance*
11/27/2023	***Face-To-Face Classroom Lecture @ 7:30PM* | In-Class Quiz** Introduction to Software Testing *Chapter #19 – Software Testing – Component Level* *Chapter #20 – Software Testing – Integration Level*
12/04/2023	***Synchronous Lecture – Blackboard Collaborate Ultra Session @ 7:30PM*** Quality Management, Review Techniques, Product Metrics *Chapter #23 – Software Metrics and Analytics*
	****Assignment #4 – Application Design Prototype Due**
	***Introduce and Review the Project Presentation Assignment (#5)*
12/11/2023	***Face-To-Face Classroom Lecture @ 7:30PM*** Course Presentations Final Exam Review & Last Class Check-in and Wrap Up
	****Assignment #5 – Project Presentations Due**
12/18/2023	***Final Exam – In-Class, Closed Book Examination (7:30PM-9:30PM)**

Key:

	Face to Face Classroom Lecture
	Synchronous Online Blackboard Collaborate Ultra Lecture/Session
	Asynchronous On-demand
	Exam