NORTH SOUTH UNIVERSITY
Department of Electrical and Computer Engineering

Course Outline
CSE 327: Software Engineering (Section 06)

SUMMER 2025

Course Information

Course:	**CSE 327 Software Engineering**
Credit Hours:	**3**
Prerequisite:	**CSE 311 Database Systems**

Faculty Information

Name:	**Dr. Mohammad Rezwanul Huq**
	Associate Professor (Part-time) (MRH1)
Office:	SAC 1182
Cell No.:	01729 648 344 (only in case of emergency)
E-mail:	mohammad.huq02@northsouth.edu
	mrhuq@ewubd.edu
Class Time:	Theory – MW 09:40 -11:10
Class Room:	Theory – LIB 606
Office Hours:	on an appointment basis

Course Summary

Follows the software life cycle – from the requirement, specification, and design phases through actual software construction. Topics include management of programming teams, programming methodologies, debugging aids, documentation, evaluation and measurement of software, verification, testing techniques, maintenance, modification, and portability problems.

Course Objectives

The objectives of this course are to

- Help the students appreciate the complexity involved in the inception, design, implementation, and delivery of modern software systems.
- Students should appreciate what makes quality software and how software engineering topics/methods can effectively deliver such quality products.
- The course will present theoretical material and create opportunities for students to apply what they learn in class and from other sources

Course Outcomes (COs)

Upon successful completion of this course, students will be able to:

CO1	**Identify** and **use** appropriate software development models for developing software projects.
CO2	**Understand** and **analyze** software requirements and apply tools for software modeling.

CO3	**Utilize** and **evaluate** various software testing techniques to estimate project costs for effective project evaluation.
CO4	**Select, use,** and **justify** different software tools; **demonstrate** skills and **write** reports to design, build, and test software for complex real-life applications.

Course Content & Tentative Teaching Schedule

Week	Lecture Topic(s)	Teaching Material and References
1	Introduction to Software Engineering, review of Software Development lifecycle (SDLC)	Will be uploaded to Canvas
2	Overview of Software Process Models, Prototyping	Will be uploaded to Canvas
3	Iterative process models, Incremental software development, Agile Software Development, Agile – UX and Lean – UX, Extreme programming, SCRUM	Will be uploaded to Canvas
4	Software requirements, Requirement analysis, Requirement elicitation techniques and Questionnaire Designing	Will be uploaded to Canvas
5	Software modeling, UML diagrams, Behavioral modeling: Use case diagram & class diagram;	Will be uploaded to Canvas
6	**MID-TERM EXAM** Interaction diagrams: Sequence and activity diagram	Will be uploaded to Canvas
7	Review of OOP and Introduction to Design Patterns, Software Design Principles	Will be uploaded to Canvas
8	Creational, Structural and Behavioral Design Patterns	Will be uploaded to Canvas
9	Introduction to Version Control System	Will be uploaded to Canvas
10	Code complexity analysis: Cyclomatic complexity, Halstead's complexity	Will be uploaded to Canvas
11	Project cost estimation techniques, Functional Point Analysis, FP counting method for determining software cost, Critical Path Analysis	Will be uploaded to Canvas
12	Software Testing Basics- white box & black box testing, UAT, Integration and System Testing **Revision and Project Presentation**	Will be uploaded to Canvas
	FINAL EXAM	

Teaching Materials/Equipment

Textbook
- Ian Sommerville. *Software Engineering*, 10th Edition, Publisher: Pearson, 2016.
- Alexander Shvets, *Dive Into Design Patterns*, 2021.

References
- Roger S. Pressman, Bruce R. Maxim. *Software Engineering: A Practitioner's Approach*, 8th Edition, Publisher: McGrawHill Education.
- E. Gamma, R. Helm, R. Johnson, J. Vlissides, *Design Patterns: Elements of Reusable Object-Oriented Software*, 1997.

Project Description:
A project description will be provided for each group.

Assessment Weightage (Evaluation and Grading Policy)

The relative contributions of exams, lab work, and reports are as follows:

Theory Part	
Attendance and Class Participation	5%
Class Tests (best two of four)	15%
Mid Term Assessment	25%
Final Assessment	30%
Term Project (Design and Development)	15%
Term Project (Documentation and Presentation)	10%

Grading System

Marks (%)	Letter Grade	Grade Point	Marks (%)	Letter Grade	Grade Point
93-100	A Excellent	4.00	73-76	C Average	2.00
90-92	A-	3.70	70-72	C-	1.70
87-89	B+	3.30	67-69	D+	1.30
83-86	B Good	3.00	60-66	D Poor	1.00
80-82	B-	2.70	Below 60	F	0.00
77-79	C+	2.30			

The exact cut-off points for assigning letter grades are at the discretion of the individual instructor. The same applies to the assignment of + or - after a letter grade. It is meant to give more flexibility so that shades of performance can be distinguished and rewarded. The + and - has a value of 0.3 grade point. (Source: http://www.northsouth.edu/academic/grading-policy.html)

Exam Dates

Exam	Section 07
Mid Term Exam	**To be announced later**
Final Exam	As per the schedule of the university

Academic Code of Conduct

Academic Integrity

Any form of cheating, plagiarism, personation, falsification of a document, or any other form of dishonest behavior related to obtaining academic gain or avoiding evaluative exercises committed by a student is an academic offense under the Academic Code of Conduct. **It may lead to severe penalties, including suspension and expulsion.**

Special Instructions

- Students **MUST WEAR dresses** in conformity with the **dress code of NSU** within the lecture/lab classes and the examination hall.
- Students are expected to attend all classes, labs, and examinations.
- Students will not be allowed to enter the classroom after 15 minutes after the starting time.
- For plagiarism, the grade for that exam or assignment will automatically be set to zero.
- There will be **NO make-up examinations**. In the event of an emergency, you must inform me within 48 hours of the exam time. Failure to do so will mean that you are trying to take UNFAIR advantage, and you will be automatically disqualified. A proper medical certificate (if applicable) must be presented in the next class you attend.
- All mobile phones MUST be turned to silent mode during class, lab, and exam periods.
- Please retain all your quizzes, assignments, and exam papers until the end of the semester as proof in case of any grading discrepancies.
- There is **zero tolerance for cheating**. Students caught with cheat sheets in their possession, whether used or not used, and/or copying from cheat sheets, writing on the palm, back of calculators, chairs, or nearby walls, etc., would be treated as cheating in the exam hall.