University of Miami
School of Arts and Sciences – Computer Science Department

CSC-431 Introduction to Software Engineering

Spring 2025 – Tuesday and Thursday from 2:00 PM – 3:15 PM at Whitten LC 180

Instructor: Dr. Hien Nguyen | Office: Ungar 310E | E-mail: hmn35@miami.edu

OFFICE HOURS:

Monday from 7am – 8:00am,

Tuesday from 10am – 12:00pm,

Thursday from 10am – 12:00pm, or by appointment.

Acknowledgement:

Thank you both Professors Vanessa Aguiar - Pulido and Lokesh Ramamoorthi who teach this course and share their course syllabi to me. So this course syllabus is adopted from them.

COURSE DESCRIPTION:

This is an introduction to Software Engineering course. The goal is to guide students to develop an understanding of software engineering, the evolution of software, various software architecture, design pattern. The focus is on software processes, requirements and specifications, design, validation, evolution of software including but not limited to:

- Project management, tools and environments.
- Foundations of human-computer interaction.
- Risks and liabilities of computer-based systems.
- Intellectual property.

PREREQUISITE: CSC317 or CSC322 or 517

CSC317: Data Structures and Algorithm Analysis

CSC322: System Programming

LEARNING OBJECTIVES:

Completing this course, students will be able to achieve these learning outcome objectives:

- Understand basic components and become familiarized with the phases involved in software development.
- Understand the relationship between software architecture and engineering.
- Understand the differences between the software development methodologies such as waterfall and agile methodologies.
- Understand the development of software projects, addressing the functional and non-functional requirements of a software system.
- Become familiarized with object-oriented analysis and design.
- Become familiarized with Unified Modeling Language (UML).
- Evaluate the workings, strengths, weaknesses, and applicability of existing systems.
- Exposure to latest technology trends and design thinking.
- Be able to work in a team.
- Demonstrate oral and written competencies and innovative critical thinking.

LECTURE SCHEDULE: This is a 3-credit hour lecture course. Course delivery is an in-person format. Therefore, your attendance is required. Lecture is on Tuesday and Thursday from 2:00 PM – 3:15 PM at the Whitten Learning Center, room 180

TEXT BOOK: There is no official course textbook.

RECOMMENDED REFERENCES:

- Software Engineering by I. Sommerville, Pearson.
- Essentials of Software Engineering by F. Tsui, O. Karam and B. Bernal, Jones & Bartlett Learning.
- Software Engineering: A Practitioner's Approach by R. S. Pressman and B. R. Maxin, McGraw-Hill Education.
- The Unified Software Development Process by I. Jacobson, G. Booch and J. Rumbaugh, Addison-Wesley.

TOPICS:

- Software Development Life Cycle (SDLC) fundamentals and methodologies.
- Requirements engineering, system design and modeling, system architecture.
- Planning and management techniques, agile and configuration techniques.
- Quality assurance and testing.

GRADING POLICY AND SCALE:

- Lecture Attendance 10%
- Quizzes 20%
- Assignments & In Class Discussions 20%
- Presentation (Midterm & Final) 25%
- Final Project Package (SRS 10%, SAS 10%, GitHub & Mockup/Prototype 5%) 25%

The grading scale for this course is: A = 100-90, B = 89-80, C = 79-70, D = 69-60, F = 59 or below

ATTENDANCE POLICY:

Attendance is important and it is required. If you must miss a class, please provide me a brief note stating the reason for your absence within 1 week to received an excused absence. Students cannot be absent 4 consecutive times. If your attendance average is 80% or more, then you will receive a full 100% attendance.

Missed in class exercises will be recorded as a zero in class.

Religious Holidays requests will be accommodated as per UM's Religious Holy Policy Guidelines .

NOTE:

- No make-up for the quizzes, assignments or any deadline will be given unless the student can provide proof(s) within 1 week of the absence.
- The University of Miami Honor Code was established to preserve the academic integrity of the student body, to encourage consistent ethical behavior among Undergraduates/Graduates, and to foster a climate of fair competition.
- Students are expressly prohibited from recording any part of this course. Meetings of this course might be recorded by the University. Any recordings will be available to students registered for this class as they are intended to supplement the classroom experience.
- Students are expected to follow appropriate University policies and maintain the security of passwords used to access recorded lectures. Recordings may not be reproduced, shared with those not in the class, or uploaded to other online environments. If the instructor or a University of Miami office plans any other uses for the recordings, beyond this class, students identifiable in the recordings will be notified to request consent prior to such use.

COURSE WITHDRAWAL:

- Last day to drop without a "W" is Wednesday, January 29th 2025.
- Last day to drop from the course is Friday, April 11th 2025.

INSTRUCTOR CONTACT: My office is located at the Ungar Building, Room 310E. Please check the course update from Blackboard Learn System for up-to-date lecture and homework assignments. If you need to contact me by email hmn35@miami.edu, please have this format in the Subject Line:

First Name Last Name CSC431 Your Subject Title

Example: *John Smith CSC431 Question About ABC…*

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Lecture on Tuesday and Thursday from 2:00 PM – 3:15 PM

This tentative schedule is subject to change.
Students must attend the class to get the updates.

- Thursday, January 30, 2025: Team Finalization
- Tuesday, February 4, 2025: Quiz 1
- Thursday, February 6, 2025: Project Proposal Due
- Tuesday, February 18, 2025: Quiz 2
- Tuesday, February 25, 2025: SRS Document Due

- Tuesday, February 25, 2025 - Thursday, March 6, 2025: Midterm Group Presentation
  Note: the ppt slides is due no later than 2pm of 2/25/2025

- Tuesday, March 25, 2025: Quiz 3
- Sunday, March 30, 2025: Assignment Due
- Tuesday, April 15, 2025: Quiz 4
- Tuesday, April 22, 2025: SAS Document Due

- Tuesday, April 22, 2025 - Thursday, May 1, 2025: Final Group Presentation
  Note: the ppt slides is due no later than 2pm of 4/22/2025

- Sunday, May 4, 2025: Final Project Package Due &
  Individual Student Course Reflection Due.