

ĐỀ CƯƠNG (SYLLABUS)

CSC13002 – Nhập môn Công nghệ phần mềm (CSC13002 – Introduction to Software Engineering)

1. GENERAL COURSE INFORMATION

Course Title (tiếng Việt):	Nhập môn Công nghệ phần mềm
Course Title (tiếng Anh):	Introduction to Software Engineering
Course ID:	CTT502
Type:	Software Engineering Major
Number of Credit:	4
Teaching hours:	45
Lab hours:	30
Self-study hours:	90
Prerequisite	Basic application programming skills
Hours taught in English	45
Lectures taught in English	All

2. COURSE DESCRIPTION

This course is one of the first courses in software engineering. This course introduces basic concepts, principles, practices, methods, and tools in software engineering. It covers core elements of the software development lifecycle, including software requirements, analysis & design, implementation, testing, integration, maintenance, and management.

3. COURSE LEARNING OUTCOMES

Mục tiêu	Mô tả (mức tổng quát)	Level (I/T/U)	CDIO Learning Outcomes
G1	Understand basic concepts, principles, methods, and techniques in software engineering	I	2.4.5, 6.2, 6.3
G2	Be able to apply requirements engineering concepts to define a system requirements	I, T, U	5.1
G3	Be able to analyze and design a software system	I, T, U	5.2, 5.3
G4	Be able to design and write a test plan and test cases for a software system	I, T, U	6.1
G5	Be able to apply software testing techniques to test a software system	I, T, U	6.1
G6	Be able to determine a suitable process for a software project based on its characteristics	I, T, U	2.1.9, 2.5.5
G7	Apply the best practices in planning, monitoring, and controlling a software project	I, T, U	2.1.9, 2.5.5
G8	Ability to practice teamwork	U	2.2
G9	Ability to practice presentation skills	U	

4. COURSE SCHEDULE

(This schedule is subject to change)

No	Lecture Topic	LO	Teaching method	Evaluation (Homework/Task)
1	Class introduction. Introduction to software engineering	G1	Lecture Reading: Ch 1 (9 th Ed), IEEE code of ethics	<i>Quizzes are given random in any class</i>
2	Software processes	G6	Lecture and discussion Reading: Ch 2, 3	Team formation, Project selection and proposal.
3	Project management	G7, G8	Lecture and discussion Reading: Ch 22, 23 Optional Ch 2	Project Assignment 1 (PA1): Project Plan, Vision Document, Weekly report
4	Software requirements	G2	Lecture and discussion Reading: Ch 4	

5	Requirements engineering		Lecture and discussion Reading: Ch 4	PA1 due. PA2: Revised Project Plan, Use Case Model, Weekly report
6	Software analysis and design 1	G3	Lecture and discussion Reading: Ch 5	
7	Software analysis and design 2	G3	Lecture and discussion Reading: Ch 6, 7	PA2 due. PA3: Use Case document, Architecture, Class design, DB, Weekly report
8	User interface design	G3	Lecture and discussion	
9	Software reuse	G3	Lecture and discussion Reading: Ch 16	PA3 due. PA4: Test Plan and UI design, Weekly report
10	Verification and Validation	G5	Lecture and discussion	
11	Software testing	G5	Lecture and discussion Reading: Ch 8	PA4 due. PA5: Prototyping and Testing
12	Software configuration management Software maintenance and evolution	G1	Lecture and discussion Reading: Ch 25, Ch 9	
13	Design patterns	G3	Lecture and discussion Reading: Ch 7	
14	Project presentation	G9	Student oral presentation	PA6: Final Project Submission
15	Project presentation	G9	Student oral presentation	PA6: Final Project Submission

5. EVALUATION

Code	Name	Description	LO	Distribution Percentage (%)
IA	Individual assignment	One assignment for individual.		15%
PA	Project Assignments	Students are allocated to teams of 3 to 5 members each. Each team is required to work on a software project and submit results weekly in form of assignments. At the end of the class, each team will give an oral presentation discussing their completed work and demonstrating the software.	G2-G9	40%
PA1	Project Assignment 1	Project Plan, Vision Document, Weekly report	G2, G6, G7	5%
PA2	Project Assignment 2	Revised Project Plan, Use Case Model, Weekly report	G2, G7	7%
PA3	Project Assignment 3	Use Case document, Architecture, Class design, DB, Weekly report	G2, G3, G7	7%
PA4	Project Assignment 4	Test Plan and UI design, Weekly report	G4, G5, G8, G9	6%
PA5	Project Assignment 5	Prototyping and Testing	G5, G8	5%
PA6	Project Assignment 5	Final Project Submission	G5, G8	10%
Quiz	Quizzes in class	Short and simple five quizzes are given randomly in class. Each quiz consists of short questions (multiple choice, matching, and open questions) that are required to be completed up to 10 minutes. Missed quizzes cannot be made up, i.e., students need to attend class regularly to avoid missing many quizzes.	G1	10%

FE	Final exam	Multiple choice and free-form questions	G1-G7	35%
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6. COURSE MATERIALS

Required Text:

Software Engineering, 9th Edition (8th Edition is also OK)

Ian Sommerville

Addison-Wesley, 2010

ISBN-13: 978-0137035151

Optional Text:

The Mythical Man-Month

F. Brooks

Addison-Wesley, 1995.

ISBN 0-2-1083595-9.

Additional Reading:

To be provided for each lecture, if any.

7. ACADEMIC INTEGRITY

Students are prohibited from plagiarism and cheating of any kind in this class. Some examples of plagiarism and cheating are copying someone else's work, giving your work to others, presenting someone else's ideas, discussing with others during an exam, copying text from sources without proper attribution, and using unauthorized materials. Such violations will result in serious consequences. Those who violates will receive zero for violating assignment/quiz/exam, and may be reported to the Faculty for further action.

8. POLICIES

Late Submission Policy

The students are encouraged to submit the assignments on time. But if the deadline is not met, 15% deduction on the assignment total grade is applied for each day late. The students will receive zero if submitting after the third day following the deadline. In exceptional and difficult cases such as illness, the students must obtain the permission for possible extensions from the instructor. In doing so, the students must present reasonable evidence along with the request.

Class Attendance and Material Preparation

- Students are strongly encouraged to attend all classes. My experience in the class last year is that those attended classes regularly received higher grades than those who skipped the class often.
- Students are strongly encouraged to ask questions during lecture.

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- Students are required to read all reading materials listed in the class schedule, desirably before each classroom lecture.