COURSE DETAIL

SOFTWARE ENGINEERING

Country
Korea, South

Host Institution
Yonsei University

Program(s)
Yonsei University

UCEAP Course Level
Upper Division

UCEAP Subject Area(s)
Computer Science

UCEAP Course Number
132

UCEAP Course Suffix

UCEAP Official Title
SOFTWARE ENGINEERING

UCEAP Transcript Title
SOFTWARE ENGINEER

UCEAP Quarter Units
4.50

UCEAP Semester Units
3.00

Course Description

This course provides a comprehensive introduction to both the practical and rigorous foundations of software engineering as well as both soft and hard skills. With them, students learn how to design, develop, test, verify, and maintain high-quality software systems.

Topics include software development life cycles, design patterns, testing and coverage, code quality practices such as code reviews and coding style guides, and formal verification techniques.

In this course, students engage in software engineering by applying coding, refactoring, and testing techniques to support continuous development and maintainability in real-world projects. Students also analyze given software designs or code using design patterns, testing strategies, and code quality standards. We also evaluate the strengths and limitations of various development methodologies and design alternatives to determine the most suitable approach for a given context. We design and implement tools or procedures that verify software correctness using logic-based reasoning and formal methods and build maintainable, high-quality software systems.

Prerequisites: CAS1102 (Object-Oriented Programming), CAS2103 (Data Structure); students should be familiar with object-oriented languages including C++, Python, etc. Students should be familiar with implementing data structures and be able to analyze pros and cons of several data structures. Students should have a Github account.

Language(s) of Instruction
English

Host Institution Course Number
CAS3106

Host Institution Course Title
SOFTWARE ENGINEERING

Host Institution Course Details

Host Institution Campus	
Host Institution Faculty	
Host Institution Degree	
Host Institution Department	
Course Last Reviewed 2025-2026	