Syllabus [2025Year 1 Term]

Course Information

Course Title	Industrial Cooperative Project1(capstone design-MS)	Credits	3
Course Code	527580-1	Required/Elective (For Undergraduate Courses)	Mandatory Major
Department or Major	Department of Mobile Systems Engineering	Language	English
Methods of Teaching		Lecture Room	수9,10,11,12,13,14(국제205)
Time Allotment	Lecture(0) Experiments(0) Trainging & Practice(0) Performance(0) Designing & Planning(3)	Cyber Lectures	
Course Type	offline		

Lecturer

Lecturer	Name	JaeYeon Park	Rank	Assistant Professor	Final Academic Degree	공학박사
	Department & college	Department of Mobile Systems Engineering		Office		
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	Field of Interest					

Course Summary

Course Description	This course aims to equip students with a comprehensive understanding of various technologies and theories related to computer software development and product creation. The primary goal is for students to design, implement, and demonstrate large-scale software projects. Individual and team-based projects will be assigned, allowing students to develop practical skills in software engineering thinking and project management. Students will either independently identify a software development topic or select a specific topic from those suggested by the instructor. The chosen software will be designed and implemented based on the principles and methodologies of Software Engineering. The outcomes will undergo performance analysis and be visually presented through reports and presentations. Students will define clear goals for the software they aim to develop and establish logical

	or mathematical reasoning to demonstrate the achievement of these goals. During this process, team discussions will be encouraged to analyze problems and explore solutions, while the implementation phase will foster collaboration and organizational management skills. Furthermore, the entire process, from software design and implementation to performance analysis and evaluation, will be systematically carried out in accordance with software design procedures. Through this experience, students will gain essential technical skills and practical knowledge necessary for real-world software development.
Description Related Courses	This course is closely linked to most subjects in the computer engineering major. In particular, it emphasizes connections with Mobile Programming and Artificial Intelligence courses, as they play a key role in designing software for intelligent mobile computing.
Course Goals	1. To integrate foundational theories and applied knowledge in computer engineering, leveraging mobile programming and artificial intelligence techniques to independently design and implement software tailored for intelligent mobile computing environments. 2. To define clear development goals, solve problems through logical and mathematical reasoning, and analyze and optimize the performance of the implemented software. 3. To experience systematic software development processes based on software engineering principles and methodologies, and apply these skills in real-world scenarios.
Projected Results	1. Gain the ability to comprehensively understand and apply theories and technologies in computer engineering, utilizing domain knowledge in the design and implementation of real-world software projects. 2. Develop teamwork and communication skills through collaborative projects, enhancing organizational management abilities for practical work environments. 3. Strengthen design and development competencies through hands-on experience with systematic and principle-driven software engineering processes. 4. Acquire adaptability to rapidly evolving IT trends by learning and applying state-of-the-art technologies such as mobile programming and artificial intelligence in project work.
Percentage of the original language classes(%)	

Syllabus

Times	Lecture Topic	Lecture Goals	Lecture Methods	Assignments
1	Introduction	Provide an overview of the course, explain reference materials, and organize students into teams for the project.	강의, 토의토론수업, 팀기반학습(TBL),	
2	Project Topic and Goal Setting	Understand the course content and set goals for project topics through related research and discussion.	강의, 토의토론수업, 팀기반학습(TBL),	
3	Project Topic and Goal Setting	Understand the course content and set goals for project topics through related research and discussion.	토의토론수업, 팀기반학습(TBL), 문제해결학습(BPL),	

Times	Lecture Topic	Lecture Goals	Lecture Methods	Assignments
4	Presentation of Project Ideas	Present project topics, goals, and plans for feedback and improvement.	토의토론수업,	
5	Detailed Design and Environment Setup	Prepare detailed software development plans based on design methodologies and set up the development environment.	토의토론수업, 팀기반학습(TBL), 문제해결학습(BPL),	
6	Software Component Development	Develop software components as per the specifications and collaborate effectively within the team.	토의토론수업, 팀기반학습(TBL), 문제해결학습(BPL),	
7	Software Component Development	Develop software components as per the specifications and collaborate effectively within the team.	토의토론수업, 팀기반학습(TBL), 문제해결학습(BPL),	
8	Midterm Presentations		토의토론수업,	
9	Software Component Development	Develop software components as per the specifications and collaborate effectively within the team.	토의토론수업, 팀기반학습(TBL), 문제해결학습(BPL),	
10	Software Testing	Conduct the first phase of testing for the developed software and share results within the team.	토의토론수업, 팀기반학습(TBL), 문제해결학습(BPL),	
11	Software Refinement	Make adjustments and refinements to the software based on test results, ensuring improvements.	토의토론수업, 팀기반학습(TBL), 문제해결학습(BPL),	
12	Performance Measurement and Analysis	Use tools to analyze the software's performance and document the results effectively.	토의토론수업, 팀기반학습(TBL), 문제해결학습(BPL),	
13	Performance Evaluation	Evaluate the software based on theoretical and numerical analysis of performance metrics, and continue in-dept	토의토론수업, 팀기반학습(TBL), 문제해결학습(BPL),	

Times	Lecture Topic	Lecture Goals	Lecture Methods	Assignments
		h evaluation and le ad discussions to v alidate results.		
14	Final presentation 1	Conclude project pr esentations and pro vide comprehensive reflections.	토의토론수업,	
15	Final presentation 2	Conclude project pr esentations and pro vide comprehensive reflections.	토의토론수업,	

Methods of Grading

sequence	Description	Percentage	Details
1	Mid-tem Exam	0%	
2	Final-exam	0%	
3	Pop Quizzes	0%	
4	Assignments	0%	
5	Reports	40%	
6	Presentations & Discussions	40%	Proposal Presentations / Midterm Presentations / Final Presentations
7	Attendance	20%	
8		0%	
9	Others	0%	
All		100%	

Core of Value

핵심가치	전공역량	역량정의	역량구분	값(%)
혁신 (Discovery)	창의적문제해결 (Creative problem-solving)	주어진 상황과 문제를 창의적으로 해결할 수 있는 능력		0%
혁신 (Discovery)	도전 (Challenging)	전공 지식을 새로운 분야와 융합하고 아우를 수 있는 능력		0%
혁신 (Discovery)	지식융합 (Knowledge convergence)	새로운 분야를 개척하거나 도전적으로 임할 수 있는 능력		0%
헌신 (Dedication)	세계시민 (Universal value)	세계 공동체 구성원으로 전공자로서 국제적 이슈에 대응할 수 있는 능력		0%

핵심가치	전공역량	역량정의	역량구분	값(%)
헌신 (Dedication)	상호협력 (Cooperation)	공동의 목적 달성을 위해 타인과 상호협력을 할 수 있는 능력		0%
헌신 (Dedication)	공동체 (Sense of community)	공동체의 구성원으로서 필요한 태도와 윤리의식을 가질 수 있는 능력		0%
능동 (self- Determination)	자기주도 (Self-Managing)	주어진 상황과 문제를 주도적이고 능동적으로 해결할 수 있는 능력	부역량	0%
능동 (self- Determination)	지식활용 (Knowledge application)	주어진 상황과 문제에 대해 논리적으로 파악하고 분석할 수 있는 능력	부역량	0%
능동 (self- Determination)	논리적사고 (Logical thinking)	전공관련 지식을 필요에 따라 다양하게 적용하고 활용할 수 있는 능력	주역량	0%
능동 (self- Determination)	의사소통 (Articulation)	대화를 통해 다양한 의견을 조율하고 합의를 이끌어 낼 수 있는 능력		0%

Textbook(s) & References

Description	Title	Author	Publisher
References	Clean Code: A Handbook of Agile Software Craftsmanship	Robert C. Martin	Pearson

Memo