

Syllabus [2025Year 2 Term]

Course Information

Course Title	Advanced Mobile Lab 2	Credits	1
Course Code	521220-1	Required/Elective (For Undergraduate Courses)	Selective majors
Department or Major	Department of Mobile Systems Engineering	Language	English
Methods of Teaching		Lecture Room	목4,5,6,7(국제210)
Time Allotment	Lecture(0) Experiments(2) Trainging & Practice(0) Performance(0) Designing & Planning(0)	Cyber Lectures	
Course Type	offline		
Cyber Lectures Preview			

Lecturer

Lecturer	Name	Yoo, Seehwan	Rank	Associate Professor	Final Academic Degree	이학박사
	Department & college	Organization for SW-Centric University		Office	International Hall 615	
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	Field of Interest					

Course Summary

Course Description	Lab. work for getting friendly with Linux system programming. Students have hands-on experience time for conducting project work of operating systems.
Description Related Courses	Students are strongly recommended to take operating systems, along with this course. Please take the courses both, or drop them both. Otherwise, contact professor before making decision.
Course Goals	Make an OS simulator. Students are able to work with multiple processes, threads, SYSV IPCs, sockets. The simulator manages scheduling through several algorithms, works with pseudo-virtual memory, and mimicking some filesystem operations.

Projected Results	Students could make educational small applications using existing open-source software.
Percentage of the original language classes(%)	
Cyber Lectures Preview	

Syllabus

Times	Lecture Topic	Lecture Goals	Lecture Methods	Assignments
1	course introduction	Introduce GIT		GIT setup, team, member registration
2	GIT push/pull	work as a team		
3	Processes and fork	Input text processing work with system call		simple SHELL
4	signal handling	signal in Linux		
5	Threads programming	Making threads		Threads and synchronization
6	Synchronization of threads	mutex, condition variables		
7	Scheduling multiple processes	Time ticks with alarm signal		Scheduling
8	Scheduling multiple processes	Time accounting inside OS scheduling through algorithms		
9	Scheduling multiple processes	scheduling with random I/O		
10	Virtual Memory	random memory address access		Virtual Memory
11	Paging	Pagetable and demand paging		
12	Paging and TLB	Multi-level page table paging with multiple processes		
13	Files and storage	Filesystem structure		File system
14	Directory files and index node	Directory files, inode structure		
15	Cloud platform and servers	cloud and networking		

Methods of Grading

sequence	Description	Percentage	Details
1	Mid-tem Exam	20%	Written mid term exam
2	Final-exam	0%	
3	Pop Quizzes	0%	
4	Assignments	50%	3 projects 2+ programming assignments
5	Reports	0%	
6	Presentations & Discussions	0%	
7	Attendance	20%	attendance
8		0%	
9	Others	10%	in-class participation, survey homework
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%
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%

핵심가치	전공역량	역량정의	역량구분	값(%)
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
Required Textbook	Linux System programming	Robert Love	O'reilly

Memo

This course is tightly coupled with Operating Systems course.
Please take both courses; or drop them both.

Specific schedule is subject to change.

Evaluation is based upon your implementation.
There are several implementation options, based upon the difficulty levels.

Most class will be lab work for mobile processor, and taking questions.

It is english-language class, so please be familiarize with terms in OS books for yourself.