이화여자대학교
EWHA WOMANS UNIVERSITY

Syllabus (2023-2)

Course Title	Cloud Computing	Course No.	37270
Department/ Major	Computer Science and Engineering	Credit/Hours	3.0/3.0
Class Time/ Classroom	Monday 2, Thursday 3 / ENGB161		
Instructor	Name Jaehyeong Sim	Department Computer Science and Engineering	
	E-mail jh.sim@ewha.ac.kr	Phone 02-3277-6547	
Office Hours/ Office Location	Wednesday 4 / Jinseonmi-Gwan #330		

Ⅰ. Course Overview

1. Course Description

This course covers topics that constitute various aspects of cloud computing. Especially, the course mainly focuses on fundamental technologies of cloud computing, coming with practical examples using Amazon Web Service. Topics include:

* Cloud infrastructure, platforms
* Storage, distributed file system
* Database
* Networking
* Virtualization
* Security, privacy
* RAS
* Supercomputer, edge computing

2. Prerequisites

Students are expected to have the following background:

* Basic knowledge on computer architecture
* Fluency in Python.

3. Course Format

Lecture	Discussion/Presentation	Experiment/Practicum	Field Study	Other
70%	%	30%		%

(Instructor can change to match the actual format of the class.)

Explanation of course format:

Basically, this course will be provided in person.
* Makeup lectures will be provided with pre-recorded videos uploaded on Ewha CyberCampus.
* Students are strongly encouraged to come to office hours. If that is not possible, questions should be raised through a QnA board/direct message on Ewha CyberCampus, email, or Discord chat.

4. Course Objectives

At the end of the course, students should be able to:
* explain various technologies that establish cloud infrastructure.
* explain the basic principles of distributed computing models.
* skillfully use Amazon Web Service.
* write a programming code for some cloud applications.

5. Evaluation System

■ Relative evaluation ☐ Absolute evaluation ☐ Others :

- Explanation of evaluation system:

Students will be evaluated based on the results of midterm exam, final exam, assignments, and participation.
Letter grades will be given based on the relative percentile.

Midterm Exam	Final Exam	Quizzes	Presentation	Projects	Assignments	Participation	Other
30%	30%	%	%	%	30%	10%	%

* Evaluation of group projects may include peer evaluations.

II. Course Materials and Additional Readings

1. Required Materials

Lecture notes will be provided on Ewha CyberCampus upon lectures.

2. Supplementary Materials

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3. Optional Additional Readings

Several research papers regarding cloud system will be introduced.

III. Course Policies

* For laboratory courses, all students are required to complete lab safety training.

* Coming class late corresponds to 0.5 attendance.
* Students will get no credit for watching makeup lecture videos after due date.
* Any assignment turned in late will be penalized 20p per late day. However, no assignment will be accepted more than four days after its due date.
* We will use Amazon AWS Free-Tier for hands-on experience. Professor is not responsible for the charges occurred by your carelessness in dealing with AWS instances.

IV. Course Schedule (15 credit hours must be completed.)

Week	Date	Topics & Class Materials, Assignments
Week 1	(9/4) Mon	Course Introduction
	(9/7) Thu	Cloud Infrastructure
Week 2	(9/11) Mon	Cloud Platforms, AWS Intro
	(9/14) Thu	AWS EC2 and Computer Architecture
Week 3	(9/18) Mon	Virtualization I
	(9/21) Thu	Virtualization II
Week 4	(9/25) Mon	Docker
	(9/28) Thu	No Lecture (Thanksgiving Holiday)
Week 5	(10/2) Mon	No Lecture (Alternative Holiday)
	(10/5) Thu	Distributed File System
Week 6	(10/9) Mon	No Lecture (Hangul Day)
	(10/12) Thu	NoSQL Database
Week 7	(10/16) Mon	Amazon DynamoDB
	(10/19) Thu	No Lecture (Midterm Period)
Week 8	(10/23) Mon	Midterm
	(10/26) Thu	Serverless Computing
Week 9	(10/30) Mon	Networking, VPC
	(11/2) Thu	API Gatway and Practice
Week	(11/6) Mon	Security, AWS IAM

Week	Date	Topics & Class Materials, Assignments
10	(11/9) Thu	Elastic Load Balancer, Auto Scaling
Week 11	(11/13) Mon	Other AWS Services
	(11/16) Thu	AWS Well-Architected Framework
Week 12	(11/20) Mon	Reliability, Availability, Serviceability
	(11/23) Thu	DevOps
Week 13	(11/27) Mon	Cloud-Based AI I
	(11/30) Thu	Cloud-Based AI II
Week 14	(12/4) Mon	MLOps
	(12/7) Thu	Supercomputer
Week 15	(12/11) Mon	Edge Computing
	(12/14) Thu	Final Exam
Makeup Class	(9/28)	Cloud Storage (Pre-recorded Video)
Makeup Class	(10/2)	AWS Cloud Storage Services (Pre-recorded Video)
Makeup Class	(10/3)	Database (Pre-recorded Video)

V. Special Accommodations

* According to the University regulation section #57-3, students with disabilities can request for special accommodations related to attendance, lectures, assignments, or tests by contacting the course professor at the beginning of semester. Based on the nature of the students' request, students can receive support for such accommodations from the course professor or from the Support Center for Students with Disabilities (SCSD). Please refer to the below examples of the types of support available in the lectures, assignments, and evaluations.

Lecture	Assignments	Evaluation
. Visual impairment : braille, enlarged reading materials . Hearing impairment : note-taking assistant . Physical impairment : access to classroom, note-taking assistant	Extra days for submission, alternative assignments	. Visual impairment : braille examination paper, examination with voice support, longer examination hours, note-taking assistant . Hearing impairment : written examination instead of oral . Physical impairment : longer examination hours, note-taking assistant

- Actual support may vary depending on the course.

* The contents of this syllabus are not final—they may be updated.