

Extended Syllabus

(2024 2nd Semester)

Course Title	Design and Analysis of Algorithms	Course Number	CSE 3081 AIE 3051
Credit	3	Enrollment Eligibility	2nd Year
Class Time	TR 1:30-2:45pm	Classroom	

Instructor's Photo	Name: Saejoon Kim	Homepage: eclass.sogang.ac.kr
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I. Course Overview

1. Description							
This course is a follow-up course to Data Structures (CSE3080), where we learn to design various algorithms in order to solve problems in an efficient way. The most important activities in solving a problem are designing an efficient algorithm, and deciding on the right data structure to implement the algorithm. In this course we explore some of the well-known algorithms that are applied to many different computer science problems, and practice designing and implementing our own algorithms.							
2. Prerequisites							
CSE3080 or its equivalent.							
- Students must be able to write programs in C.							
3. Course Format (%)							
Lecture	Discussion	Experiment/Practice	Field study	Presentations	Other		
100%	0%	0%	0%	0%	0%		
4. Evaluation (%)							
mid-term Exam	Final exam	Quizzes	Presentations	Projects	Assignments	Participation	Other
30%	40%	5%	0%	0%	20%	5%	0%

II. Course Objectives

This course builds on C programming skills previously learned. Using these skills, students learn to design and implement algorithms, and evaluate their performance. At the end of this course, the students will:							
- be able to analyze computer science problems and design algorithms to solve them							
- be able to evaluate cost of running the algorithms							
- be able to implement algorithms using C.							

III. Course Format

(* In detail)

Course will consist of lectures only and there will be quizzes during the lectures throughout the semester.

IV. Course Requirements and Grading Criteria

See I.4.

V. Course Policies

Absence/Late, Homework submission, Exams are managed according to the school regulations.

VI. Materials and References

Main textbook:

Introduction to Algorithms, 3rd Ed., Cormen, Leiserson, Rivest and Stein, MIT Press.

Chapter numbers in "VII. Course Schedule" refer to those in the main textbook.

VII. Course Schedule

(* Subject to change)

Week 1	Learning Objectives	
	Topics	Chap 1, 2
	Class Work (Methods)	Lecture
	Materials (Required Readings)	
	Assignments	
Week 2	Learning Objectives	
	Topics	Chap 3, 4
	Class Work (Methods)	Lecture
	Materials (Required Readings)	
	Assignments	
Week 3	Learning Objectives	
	Topics	Chap 4, 5
	Class Work (Methods)	Lecture
	Materials (Required Readings)	
	Assignments	
Week 4	Learning Objectives	
	Topics	Chap 6, 7
	Class Work (Methods)	Lecture
	Materials (Required Readings)	
	Assignments	
Week 5	Learning Objectives	
	Topics	Chap 7, 8

	Class Work (Methods)	Lecture
	Materials (Required Readings)	
	Assignments	
Week 6	Learning Objectives	
	Topics	Chap 9, 10
	Class Work (Methods)	Lecture
	Materials (Required Readings)	
	Assignments	
Week 7	Learning Objectives	
	Topics	Chap 11, 12
	Class Work (Methods)	Lecture
	Materials (Required Readings)	
	Assignments	
Week 8	Learning Objectives	
	Topics	
	Class Work (Methods)	Midterm Exam
	Materials (Required Readings)	
	Assignments	
Week 9	Learning Objectives	
	Topics	Chap 15
	Class Work (Methods)	Lecture
	Materials (Required Readings)	

	Assignments	
Week 10	Learning Objectives	
	Topics	Chap 16
	Class Work (Methods)	Lecture
	Materials (Required Readings)	
	Assignments	
Week 11	Learning Objectives	
	Topics	Chaps 18
	Class Work (Methods)	Lecture
	Materials (Required Readings)	
	Assignments	
Week 12	Learning Objectives	
	Topics	Chap 22
	Class Work (Methods)	Lecture
	Materials (Required Readings)	
	Assignments	
Week 13	Learning Objectives	
	Topics	Chap 23
	Class Work (Methods)	Lecture
	Materials (Required Readings)	
	Assignments	
Week	Learning Objectives	

14		
	Topics	Chap 24, 25
	Class Work (Methods)	Lecture
	Materials (Required Readings)	
	Assignments	
Week 15	Learning Objectives	
	Topics	Chap 26
	Class Work (Methods)	Lecture
	Materials (Required Readings)	
	Assignments	
Week 16	Learning Objectives	
	Topics	
	Class Work (Methods)	Final Exam
	Materials (Required Readings)	
	Assignments	

VIII. Special Accommodations

IX. Aid for the Challenged Students

Priority in seat assignment, support lecture notes, TA tutoring, extended dues, etc.