



Ewha International Summer College

Course Syllabus

Data Structures and Algorithms

Professor: **TBA**
E-mail: **TBA**
Home Univ.: **TBA**
Dept.: **TBA**

Description: This course is an introduction to computer data structures and the related algorithms. It starts with a presentation of some simple Abstract Data Types (linked lists, stacks, queues) and their operations, together with an analysis of the associated computational complexities. Multiple techniques for searching and sorting are then presented and compared in the second part of the course. The last part of the course describes some interesting tree (AVL, B+) and graph algorithms.

Objective: To learn about various kinds of computer data structures, related algorithms, and computational complexity in general.
Prerequisite: Lecture notes will be provided and no textbook is required. Knowledge of the C programming language is necessary. Basic mathematical knowledge about the exponential and logarithm functions is also necessary.

Credits	3	Contact Hours	45
Week 1	6/29(Tue)	Introduction, review of pointers and recursion in the C language.	
	6/30(Wed)	Linked lists.	
	7/1(Thu)	Stacks.	
Week 2	7/5(Mon)	Queues.	
	7/6(Tue)	Algorithm analysis, upper and lower bounds.	
	7/7(Wed)	Insertion sort, merge sort.	
Week 3	7/8(Thu)	Quicksort.	
	7/12(Mon)	Heaps and heapsort.	
	7/13(Tue)	Binary search trees.	
Week 4	7/14(Wed)	AVL trees, part 1.	
	7/15(Thu)	AVL trees, part 2.	
	7/19(Mon)	B+ trees, part 1.	
Week 4	7/20(Tue)	B+ trees, part 2.	
	7/21(Wed)	Graphs.	

	7/22(Thu)	Examination.
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Evaluation(%)	Midterm	Final	Attendance	Assignments	Participation	Etc.
	0	40	0	60	0	0

※ Applicants with intent for more than one course are asked to make up a syllabus for each, repeatedly using the above template.