

# CS204 Discrete Mathematics

Spring 2012

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<b>Lectures</b>	TR: 10:30 ~ 11:45
<b>Classroom</b>	Classroom#1
<b>Course Web Page</b>	<a href="http://ecl.kaist.ac.kr">ecl.kaist.ac.kr</a>
<b>Instructor</b>	Prof. Soontae Kim
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Web	<a href="http://ecl.kaist.ac.kr">http://ecl.kaist.ac.kr</a>
Office	N5 2254
Telephone	350-3554
Office Hour	after class or via appointment
<b>TA</b>	<b>Yebin Lee, Jungwoo Park, ??</b>

## Objective of the Course

You will study discrete things that can be listed, such as finite processes and sets of elements, in contrast to calculus, which is concerned with infinite processes and real numbers. Discrete mathematics is applied to all levels of digital system design and information technology. This course will provide you with important backgrounds required to study follow-up courses such as Logic Design, Data Structures, Algorithms, Computer Architecture, security, programming, etc.

## Prerequisites

Basic math, some computer programming course such as CS101, CS109

## Textbook

Dossey Otto Spence Eynden, Discrete Mathematics, 5th ed., Pearson Education, 2006.

## Grading Policy

Homework assignments	30%
Midterm	30%
Final	30%.
Attendance	10% (-1 for a miss attendance)

## Cheating Policy

Cheating is **not allowed** in any of exams and homework assignments. You will be given **zero** points for cheating. Show your own efforts.

### Course Schedule (subject to change)

Week	Date	Topic	Reading (textbook)	Assignments
1	2/7	Introduction	Section 1.1, 1.2	
	2/9	An introduction to combinatorial problems	Section 1.3, 1.4	
2	2/14	Sets, relations, and functions	Section 2.1 , 2.2	
	2/16	Sets, relations, and functions	Section 2.3	
3	2/21	Sets, relations, and functions	Section 2.4, 2.5	
	2/23	Coding theory	Section 3.1, 3.2	
4	2/28	Coding theory	Section 3.3	
	3/1	No class		Holiday
5	3/6	Coding theory	Section 3.3	
	3/8	Coding theory	Section 3.4, 3.5	
6	3/13	Graphs	Section 4.1	
	3/15	Graphs	Section 4.2	
7	3/20	Graphs	Section 4.3	
	3/22	Graphs	Section 4.4, 4.5	
8	3/27	midterm		
	3/29	midterm		
9	4/3	Trees	Section 5.1, 5.2	
	4/5	Trees	Section 5.3, 5.4	
10	4/10	Trees	Section 5.5, 5.6	
	4/12	Trees	Section 5.6	
11	4/17	Matching	Section 6.1, 6.2	
	4/19	Network flows	Section 7.1, 7.2	
12	4/24	Counting techniques	Section 8.1, 8.2, 8.3	
	4/26	Counting techniques	Section 8.4, 8.5	
13	5/1	Recurrence relations and generating functions	Section 9.1	
	5/3	Recurrence relations and generating functions	Section 9.2, 9.3	
14	5/8	Recurrence relations and generating functions	Section 9.5, 9.6	
	5/10	Combinatorial circuits	Section 10.1, 10.2	
15	5/15	Combinatorial circuits	Section 10.4	
	5/17	Reserved for class cancellation or other activity		
16	5/22	Final exam		
	5/24	Final exam		