

MA3210: Introduction to Combinatorics

(<http://www.math.mtu.edu/kreher/ABOUTME/syllabus/MA3210Syl.html>)

Course description

MA 3210 - Introduction to Combinatorics Topics include set theory, mathematical induction, integers, functions and relations, counting methods, recurrence relations, generating functions, permutations, combinations, principle of inclusion and exclusion, graphs (including planar graphs). Further possible topics are graph coloring, trees and cut-sets, combinatorial designs, Boolean algebra. Pre-Requisite(s): MA 2320 or MA 2321 or MA 2330

Text.

Richard A. Brualdi, Introductory Combinatorics, Fifth Edition, Prentice Hall, 2010.

Tentative schedule.

Date	Week	Sections Covered	Homework/Exam	Due
Sep 04	01	2.1, 2.2	HW01 pages 61- 67 Exercises 4, 6, 7, 9, 12	Sep 13
Sep 11	02	2.3, 2.4, 2.5	HW02 pages 61- 67 Exercises 26, 32, 45, 51, 55b	Sep 20
Sep 18	03	3.1, 3.1, 3.3	HW03 pages 82- 84 Exercises 1, 4, 5, 10, 14, 15, 16, 18	Sep 27
Sep 25	04	Review	Exam 1 (Take away)	Oct 04
Oct 02	05	5.1, 5.2, 5.4, 5.5	HW04 pages 154-160 Exercises 5, 7, 8, 16, 19	Oct 11
Oct 09	06	6.1, 6.2	HW05 pages 154-160 Exercises 37, 38, 39, 47	Oct 18
Oct 16	07	6.3, 6.4, 6.5	HW06 pages 198-199 Exercises 2, 5, 9, 13, 14	Oct 25
Oct 23	08	7.1, 7.2, 7.3	Exam 2 (Take away)	Nov 01
Oct 30	09	9.1, 9.2, 9.3	HW07 pages 337-340 Exercises 4, 10, 13, 14	Nov 08
Nov 06	10	11.1, 11.2, 11.5	HW08 pages 449-460 Exercises t.b.a.	Nov 15
Nov 13	11	12.1, 12.3	HW09 Exercises t.b.a.	Nov 27
Thanksgiving break				
Nov 27	12	10.1, 10.2, 10.3	Exam 3 (Take away)	Nov 29
Nov 4	13	t.b.a		
Nov 11	14	t.b.a		
Time/date of Final exam will be available at the end of week 06				

You are responsible for all of the material in these sections even if it is not presented in class.

Grading.

Your grade will be based home work assignments (20%) on 3 midterm examinations (60%) and a final examination (20%).

Homework.

Clearly mark the beginning and end of each problem. Put your name at the beginning of each page. I expect the problems to be well written in full English sentences with no gaps in detail or logic. Please be as elegant and as concise as possible. Cite all references.