

MATH 216: Discrete Mathematics and Problem Solving

Textbook: Introductory Discrete Mathematics, Balakrishnan

Instructor: George Voutsadakis

Office: CAS 206J

Phone: 635-2667

Email: gvoutsad@lssu.edu

URL: <http://pigozzi.lssu.edu/WWW/TEACH/LSSU/S06/LSSU216S06/LSSU216S06.html>

Office hours: M 2:00-2:50, TR 1:00-1:50, W 8:00-8:50 & 2:00-2:50

From the Catalog: Selected topics from discrete mathematics including fundamental counting principles, recurrence relations and an introduction to graph theory. A strong emphasis is placed on fundamental problem solving techniques.

Prerequisites: Math 215 with a grade of C or better.

Course Objectives: The main objective of this course is to equip students with the most useful basic techniques of counting including permutations, combinations, recurrence relations, generating functions and the inclusion-exclusion principle. In addition students will be introduced to graphs and acquaint themselves with some well-known graph algorithms.

Skills to be developed: Counting and enumeration techniques together with a plethora of examples and homework exercises will increase the students arsenal for effective problem solving. In counting how many objects exist of a particular kind, students will be invites to make their own conjectures and argue whether they are in fact true or develop counterexamples to refute them, if they are false.

Especially for prospective elementary and secondary education teachers, the course offers the chance to apply the concept of number in enumeration of objects, the concepts of a graph and of a tree in several modeling environments, such as network flows, and accompanying graph algorithms for solving some of these problems. Search algorithms and optimization algorithms are among them prevalent examples. They will also put matrices in use to represent graphs and solve graph problems and use recurrence relations and difference equations in enumeration.

SYLLABUS FOR SPRING 2006: MWF 1:00 - 1:50

Week	Date	Monday	Wednesday	Friday
1	1/9	1.1	1.2	1.3
2	1/16	1.4	1.5	1.6
3	1/23	Review	Review	EXAM 1
4	1/30	2.1	2.2	2.3
5	2/6	Review	3.1	3.2
6	2/13	3.3	3.4	3.5
7	2/20	Review	Review	EXAM 2
8	2/27	BREAK	BREAK	BREAK
9	3/6	4.1	4.2	4.3
10	3/13	4.4 & 4.5	5.1	5.2
11	3/20	5.3	5.4	5.5
12	3/27	6.1	Review	EXAM 3
13	4/3	6.2	6.3	7.1
14	4/10	7.2	7.3	8.2
15	4/17	8.3	Review	EXAM 4

Final Exam: Week of April 24-28. Please Check!