

King Fahd University of Petroleum and Minerals
 Department of Mathematical Sciences
SYLLABUS
 Semester I, 2007-2008 (071)
Dr. Mohammad Z. Abu-Sbeih

Course #: Math 425
Title: Graph Theory
Textbook: Graphs & Digraphs by G. Chartrand and L. Lesniak, 4th edition, 2004.
Lecturer: **Dr. Mohammad Z. Abu-Sbeih**
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Office hours: 12:15 – 1:00 PM SMW (Other times by appointment)

Week	Date	Sec. #	Topics
1	Sep. 8-12	1.1	Graphs
2	Sep. 15-19	1.2 1.3	Degree Sequences Connected graphs and distance
3	Sep. 22-26	1.4 2.1	Digraphs and multigraphs Cut-Vertices, bridges and blocks
4	Sep. 29- Oct. 3	2.2 3.1	The automorphism group of a graph Elementary Properties of trees
Eid Al-Fitr Break: Oct. 4- Oct. 19, 2007			
5	Oct. 20-25*	--- 3.1	Review and/or catching up Continued
Wednesday, Oct. 24, 2007: Exam I: 1.1-3.1			
6	Oct. 27-31	3.3	Connectivity and edge-connectivity
7	Nov. 3-7	3.4 Hand in	Menger's theorem and applications Networks
8	Nov. 10-14	Hand in ---	The Max-Flow Min-Cut theorem Review and/or catching up
9	Nov. 17-21	4.1 4.1	Eulerian graphs Continued
10	Nov. 24-28	4.2	Hamiltonian graphs
11	Dec.1-5	5.1 5.2	Strong digraphs Tournaments
Wednesday, Dec. 5, 2007: Exam II: 3.3-5.1			
12	Dec. 8-12	5.2	Continued
Eid Al-Adha Break: Dec. 13-Dec. 28, 2007			
13	Dec. 29- Jan. 2	6.1 6.2	Planar and Non-Planar Graphs Euler's Formula
14	Jan 5-9, 2008	8.1 8.1	Vertex Colorings Continued
15	Jan 12-16	9.1 ---	Factorizations and Decompositions Review and/or catching up

*: Thursday, October 25, 2007 is a Normal Class.

Evaluation:

(1) Exam I	20%
(2) Exam II	20%
(3) Homework	20%
(4) Final Exam	40%
Total	100

There will be no “make-ups” for exams. *Unless a valid excuse is presented in advance, a missed exam or homework will receive the score 0. Of course, family vacations, commercial travel schedules, etc. are NOT acceptable excuses for missing scheduled classes.* Students must look at this syllabus carefully and ***plan well ahead.***

Homework: A number of problems will be assign regularly. It is recommended that you try to work out these problems after the lecture. The problems in the exams will be similar to the homework problems. You are encouraged to come to my office hours or make an appointment to discuss any difficulties related to the course, including the homework problems. Remember that “**The best way to learn Mathematics is to do Mathematics.**” **Working as a group is recommended. However, each student needs to write his own solution.**

Attendance: KFUPM policy with regard to attendance will be enforced. Students are expected to attend all class meetings and are responsible for all of the material covered. Any changes in this syllabus or in the scheduling of exams, homeworks, etc. will be announced during class meetings. Students who miss a class meeting should copy a classmate’s notes for that meeting.

Help: Individuals’ questions regarding the course work should be directed to the lecturer, either immediately after class or during scheduled office hours.

Math 425: Hand Ins and Homework Problems Chartrand- 4th ed.**Sem: 071**

Section	Hand Ins	Homework	Bonus
1.1	5, 7, 9	2, 8, 10, 11	
1.2	12 (a, b, e), 13		
1.3	18, 21, 23, 28	22,	
1.4	36, 39, 42	37, 41	
2.1	1, 8	3, 7	
2.2	9,	14 for math students	
3.1	4, 7	8, 6, 10	
3.3	18, 19	16, 25	
3.4	30		
Network		Two external problems	
4.1	2, 6		8
4.2	12, 17, 21, 22, 23	13	
5.1	3,		
5.2	6, 8, 11, 12, 13, 14	9 (c)	
6.1	4, 5, 7		
6.2	8, 9, 11 (c)		
8.1	7		
9.1	1, 2		