

King Fahd University of Petroleum and Minerals  
 Department of Mathematical Sciences  
**SYLLABUS**  
 Semester II, 2013-2014 (132)  
 Dr. Monther R. Alfuraidan

**Course #:** Math 425  
**Title:** Graph Theory  
**Textbook:** Graphs & Digraphs by G. Chartrand and L. Lesniak, 5<sup>th</sup> edition, 2010.  
**Lecturer:** **Name: Monther Alfuraidan Office: 5-313 Phone: 1977**  
**E-mail: monther@kfupm.edu.sa** (The best way to reach me)  
**Web Site: <http://faculty.kfupm.edu.sa/math/monther>**  
**Office hours: 12:00 – 1:00PM (UTR)** (Other times by appointment)

Week	Date	Sec. #	Topics
1	January 26-30	1.1	Graphs and Subgraphs
2	February 02-06	1.2	Degree Sequences
		1.3	Connected Graphs and Distance
3	February 09-13	1.4	Multigraphs and Digraphs
		2.1	Nonseparable Graphs
4	February 16-20	2.2	Trees
		2.3	Spanning Trees
5	February 23-27	---	Review and/or catching up
		<b>Exam I</b>	<b>Tuesday, February 25, 2012 Material (1.1-2.3)</b>
		2.4	Connectivity and Edge-Connectivity
6	March 02-06	2.5	Menger's Theorem
		3.1	
7	March 09-13	3.2	Hamiltonian Graphs
8	March 16-20	4.1	Strong Digraphs
		4.2	Tournaments
<b>March 21-29: Midterm Vacation</b>			
9	Mar 30-Apr 03	<b>Exam II</b>	<b>Sunday, Mar 30, 2014, Material (2.4-4.2)</b>
		4.3	Flows in Networks
10	Apr 06-10	4.3	Continued
		5.2	The Automorphism Group of a Graph
11	Apr 13-17	5.3	Cayley Color Graphs
		6.1	The Euler Identity
12	Apr 20-24	<b>Exam III</b>	<b>Sunday, Apr 20, 2014, Material (4.3-6.1)</b>
		6.2	Planarity versus Nonplanarity
13	Apr-27-May 01	6.2	Continued
		6.3	The Crossing Number of a Graph
14	May 04-08	12.1	Turán's Theorem
		12.2	Cages
15	May 11-15	---	Review and/or catching up
<b>Final Exam: Wednesday, May 21, 2014 [12:30-3:00 PM] Material: Comprehensive</b>			

**Evaluation:**

(1) Exam I	15%
(2) Exam II	15%
(3) Exam III	15%
(4) Homework	20%
(5) Final Exam	35%
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.