Math 38: Graph Theory

Spring 2004

Dartmouth College

Instructor: David Little
Lecture: MWF 12:30-1:35, Bradley 013
X-period: Tu 1:00-1:50, Bradley 013
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Textbook:
West, Douglas B., *Introduction To Graph Theory*, 2nd Edition, 2001, Prentice-Hall Inc.

Course Description:
The theory of graphs has roots in both practical and recreational mathematics. Today there are major applications of graph theory in management science (operations research) and computer science. We will cover the following fundamental concepts of Graph Theory: graphs, digraphs, eulerian and hamiltonian graphs, trees, matchings, paths and cycles, graph colorings and planar graphs. These concepts will be applied to the following classical problems of Graph Theory: Minimum Spanning Tree, Maximum Bipartite Matchings, Assignment Problems, Network Flow Problems, Four Color Problem and the Traveling Salesman Problem.

Grading Policy:
The overall grade will be based on written homework (20%), 2 midterms (25% each) and a final exam (30%).

Homework Policy:
Homework will be assigned on a daily basis and is to be submitted in class, each friday. Many assigned problems will ask you to prove something. A major emphasis of this class is on improving your proof writing skills. Therefore, homework should be written up neatly. That is to say, it should be legible and grammatically correct so that anyone familiar with the basic terminology will be able to follow your explanation. Further details and suggestions on proof writing techniques will be posted on the course website.

Academic Integrity:
Dartmouth students are expected to adhere to the honor principle. For this course, while collaboration on homework is encouraged, each person must hand in their own work. Students may not copy solutions from *any* source. The honor principle concerning midterm and final examinations will be discussed prior to each exam.

Students with Disabilities:
Students with disabilities who will be taking this course and may need disability-related classroom accommodations are encouraged to make an appointment to see their instructor as soon as possible. Also, they should stop by the Academic Skills Center in Collis Center to register for support services.

Important Dates:

Mon. Mar. 29	First Day of Class
Mon. May 31	Memorial Day, no class
Wed. June 2	Last Day of Class
Sun. June 6	Final Exam Period, 3:00pm