

Math 4483W - 5483 Graph Theory Spring 2006

Instructor: Dr. David Leach
Location: 303 Boyd
Time: MW 5:30-6:45
Office: 317 Boyd
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Textbook: *Introduction to Graph Theory*, 2nd Edition, by Doug West.

Learning Outcomes: Upon successful completion of the course, you will have an understanding of

1. the terminology of graph theory and the representations of graphs
2. directed graphs
3. trees
4. matchings and factors
5. connectivity
6. coloring
7. planarity and Euler's formula

Grading and Evaluation: There will be three in-class tests, a comprehensive final exam, and several writing assignments (WAC). Your grade will be averaged according to

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|--------------|------|
| Test Average | 60% |
| Final Exam | 25 % |
| WAC Grade | 15% |

A letter grade will be assigned according to the following:

90-100: A 80-89: B 70-79: C 60-69: D 0-59: F

Final Exam: The final exam is on Monday May 8, 5:30-7:30 PM. It will be comprehensive.

Make-ups: In order to take a make-up test or quiz, you must have a valid reason for missing it, contact me as soon as possible, and (except in extreme situations) take the make-up on or before the day of the next class.

Homework: Homework will be assigned from each section. It will not be taken up or graded, but it is very important that you attempt all problems.

Academic Dishonesty: Any student caught cheating will receive a failing grade and may be reported to the Office of Student Affairs. Cheating includes using unauthorized materials during a test, giving or receiving information during a test (including copying), giving information about a test to a student who will take it at a later time, and receiving information about a test before you take it.

Important Dates:

Last Day to Drop: January 11
MLK Day: January 16
Last Day to Withdraw: March 2
Final Exam: Monday May 8, 5:30-7:30 PM

WAC Requirements:

A W designation after a section number of a 3000- or 4000-level course signifies that the course is a Writing Across the Curriculum (WAC) course. WAC accepts as a guiding principle the idea that writing is a valuable tool for learning and communication. Therefore, the writing components of a course so designated are designed to help you learn the material and communicate what you have learned. Students are required to take two W courses for an undergraduate degree in the College of Arts and Sciences.

Note: Writing assignments will be given letter grades.

Writing to Learn: (40% of your WAC Grade)

1. **Recording Journals.** You will be required to keep a journal detailing the materials that are presented in the lectures. Your journal should include definitions and the statements of all theorems that are presented in class. You should also include proofs to theorems that are presented in the lectures.
2. **Group Brainstorming.** The language of graph theory is very useful for describing relationships between discrete entities, and thus has many applications in the real world. You will be divided into groups and given a particular situation. You will then brainstorm to find ways that the situation can be modeled using graph theory. You will turn in a sheet that outlines your ideas and possibly points out their strengths and weaknesses.
3. **Literature/Media Reviews.** You will need to select four works (books, movies, or documentaries) about mathematicians and write a review not to exceed one page. You should pick two fictional and two non-fictional works.

For the fictional works, your review should mention the area of mathematics involved and tell how it is presented to the reader/viewer. You should also tell how the mathematician is portrayed, including information on such things as personality traits, social skills, etc. You should also tell whether you think that the character and plot are believable.

For the nonfictional works, your review should give a brief bio of the mathematician involved, tell his or her area of study, and give a brief description of his or her personality.

Writing to Communicate: (60% of your WAC Grade)

Many recent movies and television shows have had plots that featured mathematics. Portrayals of math and mathematicians vary from realistic to cartoonish. Your assignment is to research how math and mathematicians have been portrayed in the popular media and to write a paper critiquing the accuracy of several works. Your paper should be about five pages long and should reference at least seven sources.

An outline of your paper is due on _____

The finished paper will be due on _____

Late WAC Assignments: Late assignments will be penalized one letter grade per class day; no assignment will be accepted more than three class days after the due date. Exceptions might be made in extreme situations.