

Math 386: Graph Theory

Spring 2012

Course Procedures

Professor: Josh Laison

Ford 215, x6689, jlaison@willamette.edu

Office Hours:

Tuesday 2:30–4:00

Wednesday 9:30–11:30, at the Bistro

Friday 2:00–3:30

or anytime by appointment or by catching me in my office. You can see my schedule and available times at <http://www.willamette.edu/~jlaison>

Class Meetings: Ford 201, 9:40–11:10, Tuesday, Thursday

Textbook: Introduction to Graph Theory, 2nd edition, Douglas West

Course Web Page: <http://www.willamette.edu/~jlaison/graphtheory.html>

Grading:

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|-----------------------------------|-------------|
| Homework assignments (approx. 10) | 25% |
| Quizzes (approx. 10) | 20% |
| Take-home exams (2) | 30% |
| Final presentation (1) | 20% |
| Class participation | 5% |
| Total | 100% |

Goals of the Course:

- Gain knowledge of a wide variety of graph theoretic topics.
- Improve problem-solving, logical, and analytic skills.
- Gain mathematical sophistication in thinking about problems more abstractly, and within a larger theoretical framework.
- Have fun.

Topics Covered: We will start with sections 1.1–1.4, 2.1, 2.3, 3.1, 3.2, 4.1, 5.1, 5.2, 6.1–6.3, and 7.2 of West, and branch out into more topics as time permits. The final presentations will give us a chance to see a wider range of topics.

Homework assignments: These assignments will be due about once a week. You are encouraged to work together on these problems and form homework groups. However, please write your solutions to these problems in your own words.

Note: It does not represent a failure on your part to ask me about a problem you're stuck on. Many graph theory problems are quite tricky! I expect to see everyone in the math hearth and at my office hours frequently.

Quizzes: We will have an in-class vocabulary quiz about once a week. They should take about 10 minutes each. There are many definitions you will need to learn in graph theory, probably more than in other areas of mathematics. The quizzes are designed to help you learn these definitions. Each quiz will ask you to define a small number of words from our definitions list. Note that the quizzes are cumulative, and the list will grow throughout the semester.

Class presentations: Graph theory is a very diverse field of math, with a lot of different subfields. In the last few weeks of class, we'll get a chance to see some of this variety of topics by having each student present one in class. These presentations will be about 30 minutes. We'll talk about them more later in the semester, and I'll give you a list of suggested topics and resources to learn about each one.

Attendance at the Math Department Colloquium: According to math department policy, since you are enrolled in a 300-level mathematics course, you are required to attend at least 3 mathematics department colloquium talks. The goal of this requirement is to expose you to a wider range of mathematics, and to make you want to go to more than 3 talks! I hope you will decide by the end of the semester, as I have, that math talks are a lot of fun. If you miss this requirement, points will be deducted from your final grade.

Disabilities: If you have a documented disability for which accommodations may be required in this class, please contact me to discuss your needs. Additionally, you will need to register with Disability and Learning Services in the Bishop Wellness Center within the first two weeks of class. All such discussions will be confidential.

Academic Honesty: Cheating and plagiarism are serious offenses and will be treated severely, in accordance with college policy. In addition, I am personally insulted by such behavior. So please don't do it. These are the practices I expect you to follow in each of the components of the course:

- **on the homework problems:** You may, and are encouraged to, discuss the homework with anyone, get help from your textbook, notes, computer algebra systems, etc. However, your submitted written work should be your own.
- **on the quizzes:** You may not use any sources, written, living or electronic, other than your professor.
- **on the exams:** You may consult your text and notes. You may not discuss the exams with anyone other than me. Asking for assistance, or providing assistance to others, is cheating.