

## Graph Theory and Applications

Math 454-001

and

## Discrete Applied Mathematics I

Math 553-001

Fall 2008

Hours & Location: MW 3:15pm-4:30pm in E1 102

optional group study session TBA

Instructor: Michael Pelsmajer (pelsmajer@iit.edu)

Office Address: E1 206

Office Telephone: 567-5344

Office Hours: By appointment

Text for the course: West, Douglas B., *Introduction To Graph Theory*, Second Edition, Chapters 1–7. (Minor corrections, typos, and updates are available on the book's website.)

Course Website: <http://www.math.iit.edu/~pelsmaje/Math454Math553-Fall2008.html>

This is a serious introductory course about properties and applications of graphs. We will study many of the most important and widely-used topics in graph theory, such as paths and trees (with an application to building roads at minimum cost), matchings (with an application to assigning tasks to workers), connectivity and network flow, coloring and intersection graphs (with an application to scheduling), and planarity (which relates to facilities and VLSI layout).

Grading Policy: Two hour exams are worth 20% each. A final exam on Thursday, December 11, 2:00-4:00pm, is worth 20%. Weekly homework is worth 40%.

Class Attendance: Although West's book is excellent, it is not intended to be used for self-study at the undergraduate level. This makes it very important to attend class. At the same time, reading the book before each class will make it much much easier to follow the lecture.

The Homework: One goal of the course is to improve students' clarity of thought and language when writing and discussing mathematics. The primary vehicle for this is the homework. Each assignment will consist of several problems. Solutions should be presented carefully. The textbook is one good example of a clear and concise mathematical writing style.

The Difference between MATH 454 and MATH 553: Typically, five homework problems are assigned each week; MATH 454 students choose four, while MATH 553 students are expected to do them all. The grading scale may differ as well.

**More information available on the course website.**