

**OFFICIAL SYLLABUS**  
**OR 587b – Mathematical Programming**  
**Adopted - Spring 2004** (Committee: Drs. M. Agustin, M. Cooper, E. Sewell)

**Course Description.** Theory, methods, and applications of integer, dynamic, and nonlinear programming. Prerequisite: OR 587a

**Textbook.** Network Flows by Ahuja, Magnanti, and Orlin.

**Supplementary Textbook.** Operations Research: Applications and Algorithms, Third Edition, by Wayne L. Winston.

**Course Outline and Topics**

**Chapter 2:** Shortest Paths: Label-Setting Algorithms (Optional)

**Chapter 6:** Maximum Flows: Basic Ideas (Optional)

**Chapter 7:** Maximum Flows: Polynomial Algorithms (Optional)

**Chapter 12:** Assignments and Matchings (Optional)

**Chapter 13:** Minimum Spanning Trees (Optional)

**Chapter 9 (Winston):** Integer Programming

**Chapter 16:** Lagrangian Relaxation and Network Optimization

or

**Chapter 12 (Winston):** Nonlinear Programming

**Chapter 20 (Winston):** Deterministic Dynamic Programming

**Any instructor should cover all of the material specified and several of the optional sections on graphs and networks.**