

Learning Outcomes: Upon successful completion of the course, the student will be able to:

1. Calculate optimal solutions for single variable and multi-variable functions using mathematical techniques.

Methods for Assessing this Expected Learning Outcome: Exam 1 and 2, daily quizzes, homework assignments, “Muddiest Point” class exercise, concept mapping, and class polling.

2. Develop optimal solutions to a series of equations using linear programming techniques and interpret the results for various scenarios including product mix, distribution, and multi-period models.

Methods for Assessing this Expected Learning Outcome: Exam 2 and 3, homework assignments, individual project, think-pair-share exercises, and class polling.

Class Preparation: You are expected to come to class prepared by reading and completing assignments prior to class. You are expected to and encouraged to ask questions in class. You should be in class on time and prepared to discuss assigned topics.

Exams: Three exams and a comprehensive final will be given during the semester. Missed exams will be given a grade of zero unless adequate evidence is presented - preferably BEFORE the exam - that missing the exam cannot be avoided. Five points will be deducted from the exam grade if you are not present in class when the exam is returned.

The final exam will be 75% classroom portion and 25% take-home. The take-home portion will be a linear programming problem that you develop, solve, and interpret. The specific assignment will be made after the third exam.

Exam Schedule

Exam 1	Mathematical techniques	September 28
Exam 2	Linear programming theory	October 19
Exam 3	Linear programming applications	November 28
Final exam	Comprehensive	December 13, 7:30 – 10:00 pm

Grading:

Exam I	20%
Exam II	20%
Exam III	20%
Daily Quizzes	10%
Final Exam	<u>30%</u>
	100%

Tentative Course Outline

Date	Topic To Be Covered	Exam Dates and Other Important Dates
Week 1	Review math basics (Chapters 1-4, Dowling)	
Week 2	Differential Calculus (Chapters 9-10, Dowling)	
Week 3	Differential Calculus (Chapters 9-10, Dowling)	
Week 4	Calculus of Multivariable Functions (Chapter 13, Dowling)	
Week 5	Calculus of Multivariable Functions (Chapter 13, Dowling)	Exam 1, September 28
Week 6	Review of Matrix Algebra (Chapter 5, Dowling)	
Week 7	Linear Programming: Simplex Algorithm (Chapter 8, Dowling)	
Week 8	Linear Programming: Simplex Algorithm (Chapter 8, Dowling)	Exam 2, October 19
Week 9	Install and Use Lingo (Chapters 1-5, Schrage)	
Week 10	Product Mix Problems (Chapter 6, Schrage)	
Week 11	Staffing Models (Chapter 7, Schrage)	
Week 12	Network and Distribution Problems (Chapter 8, Schrage)	
Week 13	Multiperiod Planning Problem (Chapter 9, Schrage)	
Week 14	Blending Problems (Chapter 10, Schrage)	Exam 3, November 28
		Final Exam, December 13 7:30 – 10:00 pm

The instructor reserves the right to modify the course content as warranted by circumstances. The course outline of topics to be covered is a tentative plan that may be altered during the course of the semester. Dates indicated for the three exams scheduled during the semester are tentative and may be altered as needed.

Class Attendance: Attendance is expected at all lecture periods. If you miss a class, it is your responsibility to make-up any missed assignments

Student-Faculty Communications: I maintain an open-door policy. Your ideas, comments, suggestions, and questions are always welcomed. Please come by my office during scheduled office hours or schedule an appointment to ensure that I will be available. I encourage you to come by the office to discuss the course and your academic progress.

Student Responsibilities: All learning and development requires and investment of time and effort by the student. To get the most out of this class, treat it as a professional experience. Conduct yourself in a professional manner. Be on time to attend class. Study the text. Take notes. Participate in class. Understand not only what we are doing but also why.

Academic Integrity: Any form of academic dishonesty (e.g. cheating, plagiarism) will not be tolerated. I will enforce and abide by the policies included in Section IX (Code of Student Conduct) of the Texas Tech Student Affairs Handbook.

For Students with Disabilities: Any student who, because of disability, may require some special arrangements in order to meet course requirements should contact me as soon as possible to make necessary accommodations.

Classroom Rules: Do not bring food or drinks into the classroom. Do not use tobacco or tobacco products during class. Do not read newspaper or other material during lecture. Turn off cell phones and pagers during lecture.