**Math 461 – Linear Programming**

**Instructor:** Dr. Brian Heck  
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**Office Hours:** 12:00-2:00 M; 11:00-3:00 W; 9:00-12:00 T, TH

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**Prerequisites:** Math 360  
**Required Text:** *Elementary Linear Programming with Applications* (2nd ed.) by Kolman and Beck (Academic Press)

**Course Description (catalog):** Geometry of linear programming; matrix notations; extreme point theorem; basic solutions; the simplex method; slack, excess, and artificial variables; duality; sensitivity analysis; integer programming with applications.

**Course Description (instructor):** We will begin the semester with an introduction to linear programming problems (LP problems), the elementary methods for solving them, and the geometry of them. This is a very important chapter, since everything we cover after this requires that you have a firm understanding of LP problems. Chapter 2 introduces the simplex method, an extremely useful method for solving LP problems. Chapter 3 describes variations of the simplex method for more complicated LP problems. Chapter 4 restricts our focus to LP problems involving only integers (Integer programming). We will finish the semester with selected topics from Chapter 5 (applications of LP problems) as time allows.

**Course Objectives:** To learn how to model and solve real world problems with mathematics.

**Grading Policy:** We will have 4 equally weighted exams.

**Attendance:** I will not include attendance as part of your course grade. I am not your mother or your parole officer, and this is not high school. I do, however, expect you to attend class everyday. You are responsible for any and all material covered in class.

**Tentative Class Schedule:** Below is a list of the sections we will cover this semester. We will supplement with additional topics as necessary.

- **Chapter 1:** Sections 1-5  
  **Test 1**  
- **Chapter 2:** Sections 1-3  
  **Test 2**  
- **Chapter 3:** Sections 1-7  
  **Test 3**  
- **Chapter 4:** Sections 1-4  
- **Chapter 5:** Selected sections as time allows  
  **Final Exam**

**Important Dates:**  
Final Date to Add Courses or Drop Without a “W” - Wednesday, August 29  
Final Date to Drop Courses With a "W" - Monday, October 29