

Instructor: Dr. Chris Lee Trexler 270D clee@roanoke.edu

Office Hours: Office hours are available Mon – Thu via Zoom, check our Inquire page for scheduling.

Intended Learning Outcomes: This course introduces Operations Research: a mathematical approach to decision making based on optimization. Topics include the simplex method, sensitivity analysis, duality, transportation problems, and network models. By the end of the course, successful students will be able to understand and use the main models and methods of mathematical programming, formulate practical problems into mathematical programming models, recognize applied problems that can be studied using mathematical programming, use software tools to solve mathematical programming models, and interpret the solutions to mathematical programming models to make good decisions.

Required Text: Textbook: *Operations Research: Applications and Algorithms*. Winston, 4th Ed.

Attendance: Attendance is critical to the understanding of the material in the course; it is both required and expected. Any absence that is not discussed with the instructor prior to the missed class is considered unexcused. If you accumulate 3 unexcused absences you will be dropped from the class with a grade of DF recorded. When absent, you are responsible for all material covered in class. Missing class has no effect on assignment due dates.

If you have a temperature of 100.4 or higher or other COVID symptoms, don't come to class. Call Health Services IMMEDIATELY. Do not come to class or go to any public area on campus. For your absence to be excused, you must give Health Services permission to notify me that you have consulted them about COVID symptoms. If Health Services informs you that you should isolate and not attend class for multiple days, inform me so that we can make a plan to keep you current in the course. All absences caused by consultation with Health Services about coronavirus symptoms or isolation ordered by Health Services will be excused but you will need to do the work and graded assignments even if we extend a deadline for you.

Late Work: Unless specific permission is given in advance, no late work will be accepted.

Reading and Participation: The key to learning a topic in mathematics is participation. We will strive to have an active, rather than passive, classroom environment. On Inquire is a day-by-day outline of the chapters that will be discussed in class. You are fully expected to have read the upcoming chapter before the class meeting! This does not mean you need to understand everything, but rather you should be familiar with the definitions and concepts from the sections; having read the section will allow you to ask better questions and follow along better in class.

Missed Work: I will not give make-up work unless arrangements have been made in advance.

Expected Hours of Work: This course expects at least 12 hours of work inside and outside of class from you each week.

Academic Integrity: Students are expected to follow the integrity policy detailed in the handbook *Academic Integrity at Roanoke College*. Additionally, if you are ever uncertain as to how the College's policy pertains to any assignment or exam in this course, please ask me for clarification. The bottom line is that all work that a student submits for a grade must be **solely** the work of that student unless the instructor has given explicit permission for students to work together. You will have the opportunity on occasion to collaborate with another as you work in pairs. It is critical that you understand that collaboration means both parties are contributing equally and meaningfully to the assignment. Adding your name to the work of another, as well as using a divide-and-conquer approach, are both examples of seeking credit for work that is not your own.

Time Commitment: This course expects you to spend at least 12 hours of work each week inside and outside of class.

Grading: Components of a student's grade will be weighted as follows:

(30%) Video Reflections – On most Tuesdays throughout the semester you will be submitting short (3-5 minute) video reflections of the happening of the course the prior week. You will be showing your HW problems, demonstrating understanding of concepts vs. simple memorization, or addressing a different specific prompt for that week. These MUST be done using the (free) software Loom with links shared through the assignment on our Inquire page.

(30%) Tests – Three tests will be spaced out throughout the term.

(15%) Final Exam – A cumulative final exam of a yet to be determined format will be given.

(15%) Projects – one or two projects will be assigned during the term, they will focus on independent work and extension and application of content being learned.

(10%) Class Engagement is a crucial piece of having a successful course. It is a somewhat subjective measure balancing your engagement in class activities and responsibility shown in communicating with me when you cannot. You can seek my advice/feedback at any time on issues relating to engagement.

Grading Scale: A grade scale will be determined after final averages are computed but will be no lower than the scale given below.

60	63	67	70	73	77	80	83	87	90	93	96
F	D-	D	D+	C-	C	C+	B-	B	B+	A-	A

Daily Schedule: Please follow our Inquire page closely for information on day-to-day activities for the class.