

Instructor: Herb Newhouse (hnewhouse@ucsd.edu) Course webpage: <https://canvas.ucsd.edu/>
Office Hours: Tue from 10:00 am – 12:00 pm on Zoom and Wed from 10:10 – 11:10 am in Econ 108
Lectures: MWF 9:00 – 9:50 am in CENTR 113 Discussions: F 12:00 – 12:50 pm in Centr 212 or Zoom

TA: Songyu He (soh038@ucsd.edu)

Office Hours: TBD

Economics 172A is the first course in the two-quarter Operations Research sequence. It covers linear and integer programming. Linear and integer programs are types of mathematical optimization problems. The class will introduce you to the problem, teach you how to formulate economic problems as linear programming problems, teach you how to solve these problems, and teach you how to interpret the solutions to these problems.

Prerequisites:

ECON 100A; and ECON 120A or ECE 109 or Math 180A or Math 183 or Math 186; and Math 18 or Math 20F or Math 31AH. Note that credit is not allowed for both ECON 172A and MATH 171A.

Lectures, Discussion Sections and Review Sessions:

You are responsible for all the material covered in lecture and in the problem sets. Partial notes will be available on the class webpage before each lecture. I recommend that you print these out beforehand and fill in the missing information. I will try to avoid typos but you are responsible for the correct material. I want you to understand the material instead of simply memorizing it. If you miss a lecture, watch the appropriate podcast or borrow someone's notes. We will schedule a review session for each exam. Discussion sections are optional but recommended.

Lectures will be held in person and podcasted. Review sessions and discussion sections will be recorded.

Grading:

My prediction of how I will assess you in this course is:

Your grade will be determined based on two Midterm Exams (25% each) and a Final Exam (50%). Alternatively, your lower midterm will count for 15%; your higher midterm will count for 25% and your final will count for 60%. If you miss an exam for a documented, university approved reason (ie., illness, official university trip), the weight for that exam will be shifted to your final exam. If you miss an exam for another reason (ie., oversleep, forget the time), you will receive a zero on the exam.

Midterm 1 will be held in class on Monday, April 24th. Midterm 2 will be held in class on Wednesday, May 17th. The final exam will be held on Wednesday, June 14th from **8:00 – 10:30 am**. If you know in advance that you cannot make an exam, please let me know as soon as possible.

You are only permitted to use pens and pencils, a straight edge and a **single** note sheet during each exam. The note sheet can be double-sided. It can be any physical size up to 8.5" by 5.5" for the midterms and up to 8.5" by 11" for the final. It may **only** have handwritten notes. Electronically produced (computer/iPad printed, photocopied, etc.) notes are **not** permitted. Do **not** attach anything to your note sheet.

If seats are assigned for exams, anyone not sitting in his or her assigned seat will lose points on that exam. If there is a problem with your assigned seat, please let us know so we can reassign you.

While I will do what I can to keep to the predicted assessments for this course, it may become necessary for me to make changes.

Academic dishonesty:

I take academic dishonesty seriously. Any student found guilty of academic dishonesty will most likely earn a failing grade for the course. In addition to this sanction, the Council of Deans of Student Affairs will also impose a disciplinary penalty. For a review of UCSD policy, please see <http://www-senate.ucsd.edu/manual/appendices/app2.htm>.

Regrade requests:

Regrade requests may only be submitted via Gradescope during the weeklong regrade period. A separate request needs to be made for each part that you would like regraded. The regrade period will probably begin a day or two after the exam results are made available to the class. Please do not contact the instructor or any of the TAs regarding the grading of an exam or the grading for the course before the regrade period begins. If your TA and I agree with your request, your score for that question will be corrected. If we disagree with your request, you will lose 1 point for each part of a midterm question and 2 points for each part of a final exam question.

Text:

Introduction to Operations Research, 10th Edition, Hillier and Lieberman, McGraw-Hill. I will give references for the 10th edition but other recent editions should also be fine. The material for this course is fairly standard; other Operations Research texts are also likely to be helpful.

Problem Sets:

Problem sets will be available online. We will go over these questions in office hours and in the discussion sections. Your best practice for the exams is to try these questions yourself first.

Preliminary Course Outline:

1. Introduction/Problem Formulation (Ch 1 – 3)
2. Duality Theory and Sensitivity Analysis (Ch 6)
3. Integer Programming (Ch 11)
4. The Transportation and Assignment Problems (Ch 8)
5. Network Optimization Models (Ch 9)

(A more detailed list of the readings will be given with each set of notes and posted on Canvas.)