Welcome to ECON 4005A: Operations Research II.

Objectives: This course is designed to provide students with the knowledge of dynamic programming, inventory models, queuing, simulation, and non-linear programming.

Overview

Operations Research II constitutes the second half of a basic one-year undergraduate sequence in Operations Research/Management Science. This course focuses on problem formulation and solution methods in the areas of Economics and Business. A fairly limited range of topics will be treated in some depth, including: Inventory Models, Markov Chain Models, Queuing Theory, simulation, and Deterministic and Stochastic Dynamic Programming.

Prerequisites: ECON 4004 or MATH 3801 or SYSC 3200; and ECON 2220 (or equivalent, or STAT 2605 or STAT 3502) with a grade of C- or higher. Students who believe they have taken a similar background course or courses from another university must provide appropriate documentation to the Department of Economics Undergraduate Administrator, Amanda Wright.

Required Textbook


Course Outline

- **Inventory Models**
  Chapters 16 and 17
- **Markov Chain Models**
  Chapter 19
- **Queuing Theory**
  Chapter 22
- **Dynamic Programming**
  Chapters 20 and 21
- **Simulation**
  Chapters 21 and 22
Grading Scheme

- The final grade will consist of the following elements weighted as shown:
  1. Two in-class midterm exams 20%, 30%, respectively
  2. Final exam 50%

- Both midterm and final exams are closed book examinations.
- The first midterm examination will be held after finishing topic I.
- The second midterm examination will be held after finishing Lecture II.
- There will be no deferred midterm exams. If you miss a midterm exam due to an emergency or illness and provide proper documentation (Please give me the original copy in person!), the assigned weight will be added to the final exam. Otherwise you will receive zero marks for it.
- A maximum of one missed midterm is permitted. As a result, a maximum weight of 80% will be given to the final examination.
- The final exam will be cumulative and cover the entirety of the course material.
- The final examination will be three hours in duration at a time and place scheduled by the University.

Practice Problems

Students are encouraged to work through as many textbook problems as possible, since these are the best way to learn the course and prepare for the exams as well. Moreover, I will provide three sets of practice problems.

Plagiarism: Please be aware that plagiarism is serious offence at Carleton and should be recognized and avoided. For further information on how to do so, please see “Pammett on Plagiarism and Paraphrasing” at http://www.carleton.ca/economics/courses/writing-preliminaries/.

Course Requirements: Students must fulfill all the course requirements in order to achieve a passing grade (D- or higher). No course grades are final until approved by the Faculty Dean. Note also that course grades may be scaled upwards or downwards in a rank-preserving manner to better fit the relevant departmental distributional norm. Application to write a deferred final examination must be made at the Registrar’s Office in writing no later than 3 working days from the original exam date.

Accommodation: Students with disabilities requiring academic accommodations in this course must contact a coordinator at the Paul Menton Centre for Students with Disabilities to complete the necessary Letters of Accommodation. After registering with the PMC, make an appointment to meet and discuss your needs with me in order to make the necessary arrangements as early in the term as possible.

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<th>For Religious Obligations</th>
<th>To be worked out on individual basis with instructor. Consult Equity Services Website or an Equity Advisor (ext. 5622) for policy and list of Holy Days (<a href="http://www.carleton.ca/equity">www.carleton.ca/equity</a>)</th>
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<tr>
<td>For Pregnancy</td>
<td>Contact Equity Services (ext. 5622) to obtain letters of accommodations</td>
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If you have any problems and questions, please do not hesitate to ask me for help.