Linear Programming
MATH 3801 A, Fall 2020

School of Mathematics and Statistics, Carleton University

Instructor: Dr. Kevin Cheung E-mail: kevin.cheung@carleton.ca

Course description: Systems of linear inequalities, formulation of linear programming problems, geometric method, the simplex method, duality theory, complementary slackness, sensitivity analysis, branch-and-bound method and cutting plane method for integer linear programming, applications and extensions.

Precludes additional credit for ECON 4004, SYSC 3200.

Prerequisite: MATH 1102 or MATH 2107 or permission of the School

Textbook: Course notes and supplementary videos are available for free in cuLearn.

Lectures: Web-based and asynchronous Online tutorials: Fri 10:05—11:25

Instructor’s online office hours: TBA Teaching assistant: Kirsten Nelson

Evaluation scheme:

Graded quizzes (maximum 55 marks):
- Eleven in total. The $i$-th highest scoring quiz is worth $11-i$ marks. For example, the highest scoring quiz is worth 10 marks, the second highest 9 marks, and the lowest 0 mark. Except for the first quiz, all graded quizzes take place during the last 25 minutes of tutorial.

Problem sets (maximum 15 marks):
- Six in total. The $i$-th highest scoring problem set is worth $6-i$ marks. For example, the second highest scoring problem set is worth 4 marks and the lowest 0 mark.

Final exam (maximum 30 marks)
- The final exam will take place during the Fall 2020 final exam period. It is each student’s responsibility to find out the correct exam date, time, and location and be available at the time of the exam. No travel plans should be made until the exam schedule is published.

Important dates:
Week 3 - Week 12 graded quizzes: Sep 25, Oct 2, 9, 16, 23, Nov 6, 13, 20, 27, Dec 4
Problem set due dates: Sep 23, Oct 7, 21, Nov 11, 25, Dec 9

Policies for graded quizzes and problem sets
- Posting graded quiz or problem set questions to websites outside cuLearn such as chegg.com is strictly prohibited.
- Students need to make an Academic Integrity Pledge to unlock the first graded quiz and problem sets. Details on the Academic Integrity Pledge are provided in cuLearn.
- Students must obtain at least 75% on the first graded quiz to unlock future graded quizzes.
• Students are not permitted to consult anyone in any form or manner during graded quizzes.

• Solutions to each problem set **must be submitted in cuLearn by the posted deadline** following all submission requirements. Failure to follow these requirements and the instructions given in each problem set will result in a deduction or even a complete rejection of the submission. There will be **no credit given for late or missed problem sets.**

**System requirements:** Students must have reliable internet access and are fully responsible for resolving their own computer/connection issues and learning how to create proper files for problem set submissions. The course content has been tested on Firefox version 79 with Javascript enabled on Windows 10 and macOS 10.15. Students having **technical issues** with cuLearn should contact the **ITS service desk.**

**Communication:** Announcements on course-related issues are made in cuLearn. In case of cuLearn system malfunction, communication may be made through Carleton’s email system. It is each student’s responsibility to **check for messages on cuLearn and their Carleton email account every business day.** Communication between students and the instructor is through electronic means only except for PMC students with a letter requesting accommodation for other available means of communication. **All email to instructors and TAs must be made from students’ Carleton email accounts.**

**Additional policies:** If you miss online quizzes or problem sets due to illness or other conditions recognized by the University, you will need to provide appropriate supporting documentation for the missed work within three days of your return to study so that arrangements for make-up work can be made.

Students may request to have any evaluated term work regraded if it has been incorrectly graded. Such a request must be submitted to the instructor in writing no later than two business days after the work is first returned. All regrades are final.

**Students must conform to the University’s Academic Integrity Policy.** Failure to be informed of the expectations regarding academic integrity is not a valid excuse for violations of the policy.

**Pregnancy/Religious Accommodation:** Write to the instructor with any requests for academic accommodation during the first two weeks of class, or as soon as possible after the need for accommodation is known to exist. For more details, visit the **Equity services website.**

**Students with disabilities requiring academic accommodations** in this course must register with the Paul Menton Centre for Students with Disabilities (PMC) for a formal evaluation of disability-related needs. Documented disabilities could include but are not limited to mobility/physical impairments, specific Learning Disabilities (LD), psychiatric/psychological disabilities, sensory disabilities, Attention Deficit Hyperactivity Disorder (ADHD), and chronic medical conditions. Registered PMC students are required to contact the PMC, 613-520-6608, every term to ensure that I receive your Letter of Accommodation, no later than two weeks before the first assignment is due or the first in-class test/midterm requiring accommodations. If you only require accommodations for your formally scheduled exam(s) in this course, please submit your request for accommodations to PMC by the deadlines published on the **PMC website.**