1- Course Information

Course instructor: Mohamed Hussein, Assistant Professor of Civil Engineering, JHE 228 (husseinmo@mcmaster.ca)
Term: Fall 2018 (September 4th – December 5th, 2018)
Class Schedule: Monday & Wednesday 4:30 PM - 5:20 PM - Lecture, MDCL 1102
Tuesday 3:30 PM - 5:20 PM - Tutorial (Group A), BSB 120
Thursday 3:30 PM - 5:20 PM - Tutorial (Group B), BSB 137
Office Hours: Wednesday 2:00 PM – 4:00 PM (JHE 228)
Teaching Assistants: TBD

2- Course Description:

This course is intended to provide an appreciation of system analysis and planning within the context of civil engineering practice. The following topics are covered in this course:

- Introduction to system approaches
- Linear programming
- Integer programming
- Dynamic programming
- Modelling and simulations
- Decision analysis
- Economic aspects of system engineering

3- Intended Learning Outcomes (ILOs):

Upon successful completion of this course, you will be able to:

1. Use and evaluate various numerical tools for different types of optimization problems
2. Understand the role of modeling and simulation in addressing the uncertainty associated with certain components of civil engineering systems
3. Make decisions by applying economic principles for problems with limited time/resources with proper objectives/scopes

4- Course Outline (tentative):

Week of  Topic
Sept 4   Introduction
Sept 10  Linear Programming
Sept 17  Linear Programming
Sept 24  Linear Programming (Special Types)
Oct 1   Linear Programming (Special Types)
Oct 8   Mid-Term recess
Oct 15  Dynamic Programming
Oct 22  Modeling and Simulation
Oct 29  Modeling and Simulation
Nov 5   Economic aspects of system engineering
Nov 12  Economic aspects of system engineering
Nov 19  Decision Analysis
Nov 26  Decision Analysis
Dec 3   Final Exam Revision

5-Course Evaluation:

The final mark for this course will be determined as follows:

- Assignments (4 assignments)  20%
- Mid-term Exam 30%
- Final Exam 50%

To pass this course, one must:
- Score a passing grade in the final exam (at least 50% of the final exam grade)
- Score a passing grade in the mid-term exam (at least 50% of the mid-term exam grade)
- Hand in at least 3 of the 4 assignments

6- Class Conduct

- Please arrive to classes and tutorial on time, and minimize disruption if you are late
- If you urgently need to leave the class, please do it quietly to minimize disruption
- All questions related to the content of the lecture/tutorial are encouraged
- Please make sure that your cell phones are on silent mode during the lectures/tutorials
- Do not use electronics for leisure.
- Address any concerns you may have regarding the course as soon as possible

7- Academic Integrity

You are expected to exhibit honesty and use ethical behavior in all aspects of the learning process. Academic dishonesty consists of misrepresentation by deception or by other fraudulent means and can result in serious consequences, e.g., the grade of zero on an assignment, loss of credit with a notation on the transcript (notation reads: “Grade of F assigned for academic dishonesty”), and/or suspension or expulsion from the university.
It is your responsibility to understand what constitutes academic dishonesty. For information on the various kinds of academic dishonesty please refer to the Academic Integrity Policy, available at: http://www.mcmaster.ca/academicintegrity

The following illustrates only some forms of academic dishonesty:
1. Plagiarism, e.g., copying another’s material verbatim as well as paraphrasing another’s ideas without providing one’s source(s) for the materials.
2. Helping or attempting to help another to commit an act of academic dishonesty, such as cheating or plagiarism.
3. Copying or using unauthorized aids in tests and examinations.

8- Deadlines and Late Penalties

In the event of an absence for medical or other reasons, students should review and follow the Academic Regulation in the Undergraduate Calendar “Requests for Relief for Missed Academic Term Work” (MSAF). If a student submitted a request for relief form, please contact the course instructor (husseinmo@mcmaster.ca) as soon as possible in order to make necessary arrangements. Generally, the accommodation will be to grant an extension which matches the length of the absence. Please review the University’s policy on missed term work that is available at: http://academiccalendars.romcmaster.ca/content.php?catoid=7&navoid=559

Late submissions that are not subject to the aforementioned criteria are not permitted

9- Communication, Discussion, and Feedback

• All formal communications regarding this course will be through McMaster email accounts and/or Avenue to Learn. Please, make sure that you check your McMaster account regularly.
• Students’ email to the instructor or the TAs should include the course number and a relevant description in the subject line of the email (e.g. CE3C03: Assignment 3 question). Emails that do not follow this format may not receive a response
• The course instructor and the TAs will respond to emails within three days
• If you believe that you have received incorrect grades (for any assignment or the midterm), you must contact the teaching team within one week of the day that the assignment/exam was returned to you.

10- University statement on changes of the course:

The instructor and McMaster University reserves the right to change or revise information contained in course outlines in extreme circumstances. If a modification becomes necessary, reasonable notice and communication with the students will be given with an explanation and the
opportunity to comment on changes. It is the responsibility of students to check regularly their primary email account via their@mcmaster.ca alias and course website.

11- Academic Accommodation of Students with Disabilities:

Students who require academic accommodation must contact Student Accessibility Services (SAS) to make arrangements with a Program Coordinator. Academic accommodations must be arranged for each term of study. Student Accessibility Services can be contacted by phone 905-525-9140 ext. 28652 or e-mail sas@mcmaster.ca. For further information, consult McMaster University's Policy for Academic Accommodation of Students with Disabilities.