Course Outline Form: Fall 2015

General Information

Course Title:

MATH*3240 Operations Research F (3-0) [0.50]

Course Description:
This is a course in mathematical modelling which has applications to engineering, economics, business and logistics. Topics covered include linear programming and the simplex method, network models and the shortest path, maximum flow and minimal spanning tree problems as well as a selection of the following: non-linear programming, constrained optimization, deterministic and probabilistic dynamic programming, game theory and simulation.

Credit Weight:

0.5

Academic Department (or campus):

Mathematics & Statistics

Campus:

Main campus

Semester Offering:

Fall 2015

Class Schedule and Location:

LEC Mon, Wed, Fri

08:30AM - 09:20AM

MCKN, Room 229

Instructor Information

Instructor Name: Monica Gabriela Cojocaru
Instructor Email: mcojocar@uoguelph.ca
Office location: MACN 549
Office hours: TUESDAYS: 10 am – 1pm

GTA Information

GTA Name: Erin Wild
GTA Email: ewild@uoguelph.ca
GTA office location and office hours: MACN 556; N/A

Course Content

Specific Learning Outcomes:

Mastering formulation and solution techniques of classic linear optimization, simplex algorithm, classic network models and matrix games problems at end of the class.

Increase reading comprehension and modelling skills via completion of homework assignments. Use of Maple or Matlab for completion of some homework assignment problems.

Lecture Content:

The following topics will be taught:

1. Linear optimization problems (LP): graphical method and simplex algorithm
2. Sensitivity analysis of linear optimization problems
3. Network problems as LP
4. Transportation problems as LP
5. Matrix (linear) games solved with linear optimization methods
6. Nonlinear Optimization Problems (NLP)

Labs & Seminars:
N/A

Course Assignments and Tests:

For clarity, the below table refers to:
Week 1 of classes = Week of Sept. 14 - Sept. 18, 2015
Week 12 of classes = Week of Nov. 30 – Dec. 4, 2015

Assigned work	Date	Location	Contribution to final mark
Homework assignment #1 (covers weeks 1-2)	Posted: Wed, Sept. 23, online Hand in: Sept. 30, in class		12%

Homework assignment #2 (covers weeks 3-4)	Posted: Wed Oct. 7, online Hand in: Wed Oct 14, in class		12%
Term test 1 – tests weeks 5– 6 inclusive	Wednesday, Oct. 28	In Class, duration 50 min	12%
Homework assignment #3 (covers weeks 7-8)	Posted: Wed, Nov 4, online Hand in: Wed Nov. 11, in class		12%
Term test 2 – tests weeks 9– 10 inclusive	Wednesday Nov. 25	In Class, duration 50 min	12%

Final examination date and time:

Thursday
11:30AM - 01:30PM (2015/12/17) - Please check Webadvisor for Room details
Room TBA Room TBA

Final exam weighting: 40%

12% of the Final Exam mark will be assigned to material from Weeks 11 and 12.

Course Resources

Required Texts:

N/A

Recommended Texts:

Taha, H., Operations Research, an introduction, Edition 9

Lab Manual:

N/A

Other Resources:

Instructor's Notes will be provided via the Courselink site of the course.

Students can also use older editions of the above text, however, some of the content between editions 7,8 and the 9-th has been cut, and thus numbering of chapters and sections has changed.

Field Trips:

N/A

Additional Costs:

N/A

Course Policies

Grading Policies

All marked term tests and assignments will be returned to students within 7 calendar days in the OUTBOX assigned to the course.

OUTBOX INFO: BOX # 114, in the library, 3rd floor, behind the Math Stats Learning Center (it is an orange drawer, on a wall of orange drawers).

Any grading concerns should be submitted in writing on a clean page, stapled on the front page of assignment or test, to the Instructor at end of a class or in at Instructor's office, no later than 1 business day from tests being returned to students**.**

Solution and marking scheme for all assignments and tests will be uploaded the same day that the marked assignments or tests are returned to students.

For further grading procedures please refer to:

http://www.uoguelph.ca/registrar/calendars/undergraduate/current/c08/c08-grds.shtml

Please note that these policies are binding unless academic consideration is given to an individual student.

Course Policy on Group Work:

N/A

Course Policy regarding use of electronic devices and recording of lectures

Electronic recording of classes is expressly forbidden without consent of the instructor. When recordings are permitted they are solely for the use of the authorized student and may not be reproduced, or transmitted to others, without the express written consent of the instructor.

University Policies

Academic Consideration

When you find yourself unable to meet an in-course requirement because of illness or compassionate reasons, please advise the course instructor in writing, with your name, id#, and e-mail contact. See the academic calendar for information on regulations and procedures for

Academic Consideration:
http://www.uoguelph.ca/registrar/calendars/undergraduate/current/c08/c08-ac.shtml

Academic Misconduct

The University of Guelph is committed to upholding the highest standards of academic integrity and it is the responsibility of all members of the University community, faculty, staff, and students to be aware of what constitutes academic misconduct and to do as much as possible to prevent academic offences from occurring.

University of Guelph students have the responsibility of abiding by the University's policy on academic misconduct regardless of their location of study; faculty, staff and students have the responsibility of supporting an environment that discourages misconduct. Students need to remain aware that instructors have access to and the right to use electronic and other means of detection. Please note: Whether or not a student intended to commit academic misconduct is not relevant for a finding of guilt. Hurried or careless submission of assignments does not excuse students from responsibility for verifying the academic integrity of their work before submitting it. Students who are in any doubt as to whether an action on their part could be construed as an academic offence should consult with a faculty member or faculty advisor.

The Academic Misconduct Policy is detailed in the Undergraduate Calendar:
http://www.uoguelph.ca/registrar/calendars/undergraduate/current/c08/c08-amisconduct.shtml

Accessibility

The University of Guelph is committed to creating a barrier-free environment. Providing services for students is a shared responsibility among students, faculty and administrators. This relationship is based on respect of individual rights, the dignity of the individual and the University community's shared commitment to an open and supportive learning environment. Students requiring service or accommodation, whether due to an identified, ongoing disability or

a short-term disability should contact the Centre for Students with Disabilities as soon as possible.

For more information, contact CSD at 519-824-4120 ext. 56208 or email csd@uoguelph.ca or see the website: http://www.uoguelph.ca/csd/

Course Evaluation Information

Please see http://www.mathstat.uoguelph.ca/files/TeachevaluationformF10.pdf

Drop date

The last date to drop one-semester courses, without academic penalty, is ***Friday*, Nov. 6, 2015**. For regulations and procedures for Dropping Courses, see the Academic Calendar: http://www.uoguelph.ca/registrar/calendars/undergraduate/current/c08/c08-drop.shtml