Wilfrid Laurier University
Waterloo, Ontario

Business/Economics 275: Business Decision Models
Course Outline: Winter 2010

INSTRUCTORS:

Name	Office	Ext	E-mail
Dr. Ruth Harris	P2026	2637	rharris@wlu.ca
Dr. Paul Iyogun	P2014	2543	piyogun@wlu.ca
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CLASS SCHEDULE:

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BU/EC275  A    Tue-Thu   4:00 -  5:20 pm         P2007      Rabi
BU/EC275  B    Tue-Thu   4:00 -  5:20 pm         P3067
BU/EC275  C    Mon-Wed   1:00 -  2:20 pm         P2007
BU/EC275  D    Mon-Wed   4:00 -  5:20 pm         P2007
BU/EC275  E    Mon-Wed   4:00 -  5:20 pm         P3067
BU/EC275  F    Mon-Wed   2:30 -  3:50 pm         P2007
BU/EC275  G    Tue-Thu   1:00 -  2:20 pm         P1021      Harris
BU/EC275  H    Mon-Wed   1:00 -  2:20 pm         P3067
BU/EC275  J    Tue-Thu   2:30 -  3:50 pm         P2007      Harris
BU/EC275  K    Mon-Wed   2:30 -  3:50 pm         P3067
BU/EC275  L    Tue-Thu   2:30 -  3:50 pm         P3067
BU/EC275  M    Tue-Thu   1:00 -  2:20 pm         SBE1210
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GRADING:

Assignments	20%
Midterm Test	40%
Final Exam	40% (non-cumulative)

COURSE OBJECTIVES:
1. Understand how mathematical modeling and quantitative methods can be used to improve business decision making;
2. Improve personal skills in developing mathematical models for business decisions and applying a variety of decision analysis (management science) techniques;
3. Be capable of using decision support software, including Excel and add-ins (Crystal Ball, Tree Plan, Solver), and Arena;
4. Prepare students for further application of these techniques in 3rd and 4th year courses and in their careers.

COURSE MATERIAL:

Textbook:	Stevenson, Ozgur and Nsakanda, ***Introduction to Management Science***, McGraw-Hill Irwin, 2007. Canadian edition. (Kelton, Sadowski, Sturrack) supplement on WebCT.
Textbook Companion Site:	http://www.mcgrawhill.ca/olc/stevensonmgmtsci/ The website offers the same resources as available on the CD-ROM that comes with the textbook.
Textbook Solution Manual:	See our WebCT website for e-version.
Course Website:	Log on at http://webct.wlu.ca; you should check WebCT regularly. All course material will be posted here.
Course Work:	It is strongly recommended that students do a significant number of the odd-numbered questions at the end of each chapter (solutions given at the end of the textbook) for the material covered in class. Our recommended list of questions (posted on the website) is the minimum anyone should do. You will know if you need more.

ASSIGNMENTS:

To be done in groups of three students (form your own groups) from the *same class*. The *only exception* is if the class size is not divisible by three. In that case there will be one or two groups of 2. Assignments will be announced in class and placed on the class website. Each assignment is due by 1:00 p.m. on the stated due date, in the correct labeled drop box outside room SBE 2201. Late assignments will not be accepted.

(1) Linear Programming
(2) Simulation

Each assignment must be submitted typed/printed (by computer) and stapled, with the names, WLU student numbers, and BU275 section of the authors on the cover page. If this information is missing on the cover page, or the assignment is hand-written, 5% marks will be deducted. If there is only a soft copy of the assignment, the maximum marks the group will get will be 50%. An overview of the marking guide (scoring rubric) for each assignment will be posted on the class website.

You are *strongly* encouraged to work together as a team (versus assigning one question to each group member).

EXAMS:

The midterm examination will cover everything up to the midterm review. The final examination will cover everything after the midterm. Examinations will be given on a closed book, closed notes basis. However, every student can bring one *single-sided* 8.5" x 11" 'formula sheet' of her/his own for the midterm and one *single-sided* 8.5" x 11" 'formula sheet' of her/his own for the final exam. The content of this sheet is not restricted, and may include formulas, definitions, solved problems, and anything else desired.

*There will be no deferred midterm under any circumstances. Students unable to write the midterm must provide the instructor with documented evidence of illness, family emergency or other sufficient reason. If such evidence is provided, for these students the final exam weight will be **cumulative** and include all the material covered during the term. Students qualifying for a cumulative final exam may bring one **double-sided** formula sheet to the final exam. If no such evidence is provided, a grade of zero will be given for the midterm.*
Anyone who misses the scheduled final exam and takes a deferred final will write a comprehensive exam covering the full course.

TENTATIVE COURSE SCHEDULE

#	Date	Topic	Reference Mtl
1.	Jan 4,5	Course Introduction	Chapter 1
2.	Jan 6,7	Linear Programming Intro and Graphical Solution	Chapter 2
3.	Jan 11,12	LP: Computer Solution & Sensitivity Analysis	Chapter 3,4
4.	Jan 13,14	LP: Sensitivity Analysis (cont.)	Chapter 3
5.	Jan 18,19	LP (cont.); Spreadsheet Engineering	Notes
6.	Jan 20,21	LP: Common Business Applications *(Assignment 1 posted)*	Chapter 4
7.	Jan 25,26	Common Business Applications (cont.)	Chapter 4, Notes
8.	Jan 27,28	LP Applications to Networks	Chapter 5
9.	Feb 1,2	Integer Programming I	Chapter 6
10.	Feb 3,4	Integer Programming II, Non-linear Programming *(Assignment 1 due)*	Chapter 6, 7, Notes
11.	Feb 8,9	Goal Programming	Chapter 9
12.	Feb 10,11	Midterm Review (classes 1-11)	
		MIDTERM – Fri., Feb. 12th, 5:30-7:00pm (Locations TBA)	
	Feb 15-19	READING WEEK	
13.	Feb 22,23	Waiting Line Models; Exponential & Poisson prob. dist.	Chapter 12
14.	Feb 24,25	Waiting Line Models: Economic Analysis	Chapter 12, Notes
15.	Mar 1,2	Simulation Intro, Excel	Chapter 13
16.	Mar 3,4	Monte Carlo Simulation, Crystal Ball	Chapter 13, Notes
17.	Mar 8,9	Simulation: Stat. Considerations, Curve Fitting, Model verification & validation	Chapter 13, Notes
18.	Mar 10,11	Dynamic Simulation (Excel & Arena)	pdf files on WebCT
19.	Mar 15,16	Dynamic Simulation: Applications with Arena *Assignment Two posted*	Notes
20.	Mar 17,18	Decision Analysis: Payoff Tables, Trees	Chapter 10
21.	Mar 22,23	Decision analysis: Bayesian Updating; TreePlan	Chapter 10
22.	Mar 24,25	Decision Analysis (cont.)	Chap. 10, Notes
23.	Mar 29,30	Utility and Decision Making ; Scoring Models *Assignment Two due Mar 30 – all sections*	Chap. 10, Notes
24.	Mar 31, Apr 5	Course Wrap up; Review (classes 12 – 23)	Notes
		FINAL EXAM – TBA	

IMPORTANT DATES:

Assignment 1:   Posted on website by Jan. 20th; due by 1 pm on Thurs., Feb. 4th
Midterm exam: February 12th, 5:30-7:00; locations TBA
Assignment 2:   Posted on website by Mar. 22nd; due by 1 pm on Tue., Mar. 30th
Final exam: Scheduled by Registrar's office for April; TBA

Excel Ability: Students **must** have a reasonable level of ability with Excel (at least equivalent to PRISM's Intermediate Skills Excel workshop). PRISM also offers 'crash courses' on selected s/w for 275 students. ITS offers Excel workshops, and Microsoft has online tutorials. See the BU275 website for additional information. Without this spreadsheet skill level, certain parts of BU275 will be difficult. This level of Excel ability will serve you **extremely well** in the business world, providing personal competitive advantage. Our exams will test your ability/knowledge.

Special Needs: Students with disabilities or special needs are advised to contact Laurier's Accessible Learning Centre for information regarding its services and resources. Students are encouraged to review the Calendar for information regarding all services available on campus.

Academic Misconduct: **Academic misconduct** is an act by a student, or by students working on a team project, which may result in a false evaluation of the student(s), or which represents an attempt to unfairly gain an academic advantage, where the student either knew or ought reasonably to have

known that it was misconduct. Whether or not a student intended to commit academic misconduct is not relevant for a finding of academic misconduct. Hurried or careless submission of assignments does not excuse students from responsibility for verifying the academic integrity of their work before submitting it.

Academic misconduct includes, but is not limited to, the following acts which are presented as examples or a guide since not every possible circumstance can be anticipated:

1. plagiarism, which is the unacknowledged presentation, in whole or in part, of the work of others as one's own, whether in written, oral or other form, in an examination, report, assignment, thesis or dissertation;

2. cheating, which involves the using, giving, receiving, or the attempt to use, give or receive unauthorized information during an examination in oral, written or other form; or, copying an essay, examination or report, or allowing someone else to copy one's essay, examination or report;

3. submitting the same piece of work, or a significant part thereof, for the same course or for more than one course without the permission of the instructors involved in each course; or, submitting an essay or other work which has been submitted elsewhere, previously or at the same time, without the written permission of all academic units or institutions involved in the submissions;

4. impersonating another person in an examination or test;

5. buying or otherwise obtaining term papers or assignments for submission of another person's work as one's own for evaluation;

6. falsifying, misrepresenting or forging an academic record or supporting document.

(University Policies, Student Code of Conduct and Discipline)

A word of caution about 'collaboration'

Be careful about collaborating on assignments. A good rule of thumb is, 'You can orally share approaches and help each other learn, but don't look at someone else's written work, and don't write anything down from someone else's work.' Presenting someone else's work – even part of it – as your own, is plagiarism. This applies to Excel spreadsheets and other models, as well as written work. 'When in doubt, **ask** for clarification.'

Privacy: One important goal of this course is to offer a positive educational experience for the student through lectures, in class discussion, group work, and assignments. During the course, it may be necessary to divulge students' names, ID numbers, clicker information, marks or other personal information to other members of the class. Every reasonable effort will be made to keep the personal information of the student private and secure (see course website for details). If you have personal concerns, please see your professor.

All BU275 students are to complete a short WebCT 'quiz' acknowledging they are aware of these matters (privacy, academic misconduct, and other course matters).