MGMT 101: Introduction to Management Science  
Fall (October – December) 2012

Class Schedule:
Section A: Mon, Wed 8AM-9:20AM (Course Code 38050)
Section B: Mon, Wed 9:30AM-10:50AM (Course Code 38052)
Location (both sections): SSL 140 (Social Science Lab); see http://www.uci.edu/campusmaps.php

Instructor:
Dr. John Turner
Office: Paul Merage School of Business, Room SB 338
Phone: 949-824-7941  E-mail: john.turner@uci.edu
Office Hours: Mon, Wed 1PM-2PM; other times by appointment

Teaching Assistants:
S. Ali Hojjat  hojjats@uci.edu  Office Hours: Tuesdays 2PM-3:30PM, Room SB 410
Sean Salleh  imohdsal@uci.edu  Office Hours: Tuesdays 5:30PM-7PM, Room SB 410

Course Website:
https://eee.uci.edu/12f/38050/
The course website is where all course-related content will be posted: the syllabus, lecture notes (PowerPoint slides), readings, and assignments. Your performance will be recorded periodically in the Gradebook section of the website. Both sections of the course share the same website.

Message Board:
https://eee.uci.edu/boards/f12/mgmt101/
Please use the message board to post comprehension and clarification questions to the instructor and TA’s. Other students are pondering the same questions you are! Of course, questions that are not appropriate for the message board (i.e. that relate to you or your work personally and should remain confidential) should be addressed by email instead. Both sections of the course share the same message board.

Course Description:
This course introduces you to quantitative methods and their application to management problems. Its main topics include problem formulation and mathematical programming, sensitivity analysis, simulation, and decision-making under uncertainty. We will apply these models and ways of thinking to several functional areas of business, including operations, marketing, and finance.

Management science should be viewed as a toolkit that will empower you to enact meaningful improvements in the organizations that you will be part of. Effective use of the right tools frequently saves businesses millions of dollars, and this course will teach you how to properly use some of the most effective tools in the box. Moreover, you will learn the vocabulary of management science and learn to think like a management scientist, so that you may direct strategic implementations of management science tools in the companies you work for in the future.

The practice of management science relies heavily on computers, which use sophisticated algorithms to find optimal or near-optimal solutions to management problems. Our focus will not be on understanding
the inner workings of these algorithms, but rather on formulating problems so the computer knows how to solve them. Microsoft Excel is the software we will use for formulating and solving optimization problems.

**Course Materials:**

- **Required Textbook:** Introduction to Management Science (4th Edition) by Frederick S. Hillier and Mark S. Hillier, 2011 (ISBN: 978-0-07-809660-0). Available at the UCI Bookstore. One copy is on reserve in the library (Langson). We won’t be using the Crystal Ball software, so you can opt for the version that doesn’t include the CD if you wish.
- **Lecture Notes (PowerPoint slides):** Posted on course website before each class.
- **Computer and Software:** Microsoft Excel will be used throughout the course (any version 2000/2003/2007/2010 will do). Please make sure you have access to a computer which has Microsoft Excel.
- **Extra Handouts:** From time-to-time, I may post extra readings on the course website.

**Grading Scheme:**

Class Participation (5%)  
Assignments (4x8% = 32%)  
Take-Home Quiz (3%)  
Midterm (30%)  
Final (30%)

**Class Participation:**
Class attendance is very important to learn the concepts presented in this course. All materials and topics covered in class may be tested on the midterm or the exam. Students are expected to keep up with their textbook readings, and may be asked to explain concepts or to provide feedback when a problem is being solved as a class. Attendance may also be randomly taken, and will affect this component of your grade.

**Assignments:**
There will be 4 assignments, each worth 8% of your final course grade. All assignments are individual work which you should complete and write up yourself (Please refer to the Cheating Policy section in this syllabus for information on violations of academic integrity). A hard copy (stapled printout) must be submitted at the beginning of class on the due date. Electronic assignments will not be accepted. Late assignments will not be accepted, since solutions are posted shortly following the due date. In case of a verifiable emergency (i.e. substantiated by proper documentation such as a doctor’s note), students should contact the instructor as soon as possible to determine a reasonable course of action.

**Take-Home Quiz:**
There will be no lecture on Monday, October 15th. Instead, you will be given a reading assignment and asked to take a short online quiz. This will count for 3% of your final course grade.

**Exams:**
There will be one midterm exam and one final exam. Both exams are open book, open notes, no laptop.  
**Midterm:** Wed, Oct 31st, 2012. Location: in-class (SSL 140)  
**Final exam:**  
- **Section A:** Mon, Dec 10, 2012. 8am-10am. Location: TBA  
- **Section B:** Wed, Dec 12, 2012. 8am-10am. Location: TBA
Missed Exam Policy:
Students are required to take the two exams (midterm and final) on the dates/times indicated on this syllabus. Please take this into consideration when making plans or commitments to attend other events. If an important and verifiable emergency arises that prevents a student from attending the midterm, the student must notify the instructor by email at john.turner@uci.edu either prior to the midterm or within 24 hours of the midterm. The student will be required to show proof of the emergency when he/she returns to class, at which point the instructor will decide how to handle the missed midterm. In the case of an important and verifiable emergency that prevents a student from taking the final exam, the student should immediately contact the instructor, and will be required to take a make-up exam.

No Extra-Credit Assignments:
Your course grade will be solely determined by your in-class participation, the four assignments, the midterm, and the final exam. In fairness to the other students, there will be no extra-credit assignments in this course. Requests for extra-credit assignments to make up for poor performance will not be granted.

Cheating Policy:
• Cheating refers to the use of unauthorized materials (such as teaching notes from previous quarters), communication with fellow students during the exam, attempting to benefit from the work of another student, and similar behavior that defeats the intent of exams or other assignments.
• Any cheating on any part of an exam or an assignment will result in a grade of 0 for that exam or assignment.
• The policies of UCI regarding academic honesty will be applied to any suspected cheating. Please refer to http://www.editor.uci.edu/catalogue/appx/appx.2.htm.

Course Outline:
The following table provides a tentative schedule for the course. Actual pace of the course may vary; therefore, make sure to check the date specified when an assignment is issued for the actual due date.

<table>
<thead>
<tr>
<th>Week</th>
<th>Lecture Dates</th>
<th>Lecture Topics</th>
<th>Textbook Chapters</th>
<th>Assignments (approx. due dates)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Oct-01, Oct-03</td>
<td>Introduction / Formulating Problems</td>
<td>1, 2</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>Oct-08, Oct-10</td>
<td>Excel Solver / Math Programming Theory</td>
<td>3, 4</td>
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<tr>
<td>3</td>
<td>Oct-17</td>
<td>Decision Analysis / Linear Programming</td>
<td>6, 9</td>
<td>HW#1 Due Wed, Oct 17</td>
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<tr>
<td>4</td>
<td>Oct-22, Oct-24</td>
<td>Linear Programming / What-If Analysis</td>
<td>5</td>
<td>HW#2 Due Wed, Oct 24</td>
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<td>5</td>
<td>Oct-29</td>
<td>Midterm Review</td>
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Midterm Exam: Wed, Oct 31 in-class

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<tr>
<th>Week</th>
<th>Lecture Dates</th>
<th>Lecture Topics</th>
<th>Textbook Chapters</th>
<th>Assignments (approx. due dates)</th>
</tr>
</thead>
<tbody>
<tr>
<td>6</td>
<td>Nov-05, Nov-07</td>
<td>Integer Programming</td>
<td>7</td>
<td></td>
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<td>7</td>
<td>Nov-14</td>
<td>Quadratic Programming</td>
<td>8</td>
<td>HW#3 Due Wed, Nov 14</td>
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<td>8</td>
<td>Nov-19, Nov-21</td>
<td>Goal Programming / Simulation</td>
<td>17 (CD)</td>
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<tr>
<td>9</td>
<td>Nov-26, Nov-28</td>
<td>Simulation</td>
<td>12</td>
<td>HW#4 Due Wed, Nov 28</td>
</tr>
<tr>
<td>10</td>
<td>Dec-03, Dec-05</td>
<td>Other Topics / Final Exam Review</td>
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Final Exam: Section A on Mon, Dec 10, 8am-10am; Section B on Wed, Dec 12, 8am-10am

Note: No lecture on Mon, Oct 15 (reading assignment + quiz instead) or Mon, Nov 12 (Veteran’s Day).
Optional Discussion Sessions:
On some weeks, a one-hour discussion session will be run by Sean Salleh (TA). The purpose of the discussion session is to provide additional practice with class material (practice problems). Attendance is optional, but highly recommended. Discussion sessions will be held:
Section A: Monday 6PM-6:50PM in SSL 270 (Social Science Lab)
Section B: Monday 7PM-7:50PM in SSL 270 (Social Science Lab)
You may attend the section that is most convenient for you (the same content will be repeated twice!).

Approximately one week before a discussion session is held, a set of practice problems will be posted on the Discussion Session part of the class website, at https://eee.uci.edu/12f/38050/discussionsessions. You should try solving these problems beforehand, so that you are prepared to ask specific questions. During the session, Sean Salleh (TA) will work through the practice problems in detail. Do not hand in the practice problems (they are for your own practice only!).

There will be five discussion sessions in total:

1. Mon, Oct 15
2. Mon, Oct 22
3. Mon, Nov 5
4. Mon, Nov 26
5. Mon, Dec 3

Course Drop Deadline:
Friday, October 12th at 5PM (See: http://www.reg.uci.edu/)