

## QMM 4400/6400: Management Science Winter 2018

|               |                                      |
|---------------|--------------------------------------|
| Date and Time | M-W 3:00-4:15 pm                     |
| Classroom     | EH 223                               |
| Professor     | Yazan Roumani                        |
| Office        | 342 Elliot Hall                      |
| Office hours  | M-W 11:30-12:30<br>or by appointment |
| Phone         | (248) 370-4974                       |
| E-mail        | roumani@oakland.edu                  |

### Course Description:

This is a survey course of management science topics such as optimization, linear programming, network models, nonlinear optimization, decision trees and simulation. Course emphasis is on problem formulation or drawing the link between a business problem and a mathematical model that allows studying or optimizing the business process.

QMM 4400 Prerequisite: QMM 2410 or QMM 2500 with a minimum grade of 2.0

QMM 6400 Prerequisite: POM 5210 or have completed a course in statistics and operations management

**This is not an easy course. If you do not like math or have not used Excel much then you should not take this course.**

**Textbook:** Practical Management Science by Winston and Albright. 5<sup>th</sup> Edition.  
ISBN: 9781305250901

### Performance Evaluation:

|                                      |     |
|--------------------------------------|-----|
| In-class exercises and participation | 5%  |
| Homework Assignments                 | 30% |
| Quizzes                              | 15% |
| Midterm Exam                         | 25% |
| Final Exam                           | 25% |

- **No make-up homework assignments, quizzes or exams will be given**
- **No incomplete grades will be given**

**Grading:**

| Course Total | Semester Grade | Course Total | Semester Grade | Course Total | Semester Grade | Course Total | Semester Grade |
|--------------|----------------|--------------|----------------|--------------|----------------|--------------|----------------|
| 99-100       | 4.0            | 83-84        | 3.2            | 74           | 2.4            | 66           | 1.6            |
| 97-98        | 3.9            | 81-82        | 3.1            | 73           | 2.3            | 65           | 1.5            |
| 95-96        | 3.8            | 80           | 3.0            | 72           | 2.2            | 64           | 1.4            |
| 93-94        | 3.7            | 79           | 2.9            | 71           | 2.1            | 63           | 1.3            |
| 91-92        | 3.6            | 78           | 2.8            | 70           | 2.0            | 62           | 1.2            |
| 89-90        | 3.5            | 77           | 2.7            | 69           | 1.9            | 61           | 1.1            |
| 87-88        | 3.4            | 76           | 2.6            | 68           | 1.8            | 60           | 1.0            |
| 85-86        | 3.3            | 75           | 2.5            | 67           | 1.7            | 0-59         | 0.0            |

**Homework:**

Homework assignments must be done independently. Late assignments will not be accepted. Late or missed assignments will result in a grade of 0 for the assignment. In general, there will be no make-up homework assignments. In the event that extraordinary circumstances prevent you from doing the homework assignment, you must contact the instructor prior to the due date and present the proper documentation. No copying problem solutions from solution manuals. Cheating will result in a grade of 0 for the applicable homework assignment; further disciplinary actions might also be taken.

**Quizzes:**

All quizzes will be conducted online at: <https://moodle.oakland.edu/login/index.php>. Quizzes are open book and open notes but must be done independently. Quizzes should be completed within the specified time frame. Missed quizzes will result in a grade of 0 for the quiz. In general, there will be no make-up quizzes. In the event that extraordinary circumstances prevent you from taking the quiz, you must contact the instructor prior to the quiz deadline and present the proper documentation. Cheating will result in a grade of 0 for the applicable quiz; further disciplinary actions might also be taken.

**Exams:**

In general, there will be no make-up exams. In the event that extraordinary circumstances prevent you from taking the exam at the scheduled time, you must contact the instructor prior to the examination and present the proper documentation. Cheating will result in a grade of 0 for the applicable exam; further disciplinary actions might also be taken.

**Important deadlines:**

**Add/drop deadline: January 17<sup>th</sup>**

**Withdrawal deadline: March 14<sup>th</sup>**

**Classroom Conduct:**

You are expected to arrive on time and be prepared for every class. If you need to leave early, you should let the instructor know before class. No talking with other students during class. It is distracting to students around you and to the instructor. You will be asked to leave the classroom if you engage in conversation with other students. Make sure your phone is turned off. No texting, Internet browsing, napping or reading newspaper during class. Engaging in any of the above mentioned activities will negatively affect your participation grade.

**Attendance:**

Attendance is critical to success in the course. If you are unable to attend class, you are responsible for completing the material covered on the syllabus.

**Academic Integrity:**

Cheating on examinations, plagiarism, falsifying reports/records, and unauthorized collaboration, access, or modifying of computer programs are considered serious breaches of academic conduct. Please review Oakland University's Academic Conduct policy. Any indication of academic misconduct (cheating, plagiarism, etc.) will be reported to the Office of the Dean of Students to evaluate.

**Statement Regarding Students with Disabilities:**

The Office of Disability Support Services (DSS) is the campus office responsible for verifying that students have disability related needs for academic accommodation and for planning appropriate accommodations. Students with learning, psychological or physical disabilities who need academic accommodations can contact DSS in room 103A North Foundation Hall (Phone: 248-370-3266; TYY: 248-370-3268)

## Tentative Schedule

| <b>Week</b> | <b>Date</b>         | <b>Topic</b>   |
|-------------|---------------------|--|
| 1           | 1/3                 | Chapter 1 (Intro to Modeling) &<br>Chapter 2 (Intro to Spreadsheet Modeling)                 |
| 2           | Week of 1/8         | Chapter 2 (Intro to Spreadsheet Modeling) &<br>Chapter 3 (Intro to Optimization Modeling)    |
| 3           | <b>1/15</b>         | <b>No class – Martin Luther King, Jr. Day</b>  |
|             | 1/17                | Chapter 3 (Intro to Optimization Modeling)   |
| 4           | Week of 1/22        | Chapter 3 (Intro to Optimization Modeling) &<br>Chapter 4 (LP Models)                        |
| 5           | Week of 1/29        | Chapter 4 (LP Models) & Chapter 5 (Network Models)   |
| 6           | Week of 2/5         | Chapter 5 (Network Models) &<br>Chapter 6 (Optimization Models with Integer Variables)       |
| 7           | 2/12                | Midterm Exam Review  |
|             | <b>2/14</b>         | <b>Midterm Exam</b>  |
| 8           | <b>Week of 2/19</b> | <b>No class – Winter Recess</b>  |
| 9           | Week of 2/26        | Chapter 7 (NLP Models)   |
| 10          | Week of 3/5         | Chapter 7 (NLP Models) &<br>Chapter 8 (Evolutionary Solver)                                  |
| 11          | Week of 3/12        | Chapter 8 (Evolutionary Solver) &<br>Chapter 9 (Decision Making under Uncertainty)           |
| 12          | Week of 3/19        | Chapter 9 (Decision Making under Uncertainty)  |
| 13          | Week of 3/26        | Chapter 9 (Decision Making under Uncertainty) &<br>Chapter 10 (Intro to Simulation Modeling) |
| 14          | Week of 4/2         | Chapter 10 (Intro to Simulation Modeling) &<br>Chapter 11 (Simulation Models)                |
| 15          | Week of 4/9         | Chapter 11 (Simulation Models)   |
| 16          | 4/16                | Final Exam Review  |
|             |                     | <b>Final Exam</b><br><b>Wednesday (4/25)</b><br><b>3:30 – 6:30 PM</b>                        |