

**UNIVERSITY of MASSACHUSETTS DARTMOUTH**  
**Charlton College of Business**  
**Decision and Information Science Department**

**COURSE:** **Quantitative Business Analysis, POM 333, Online**

Prerequisite: Business Statistics – POM 212  
Sophomore standing

**Professor:** Dr. Soheil Sibdari; email: via WebCT (myCourse)

**Office:** Charlton College of Business, Room 302; Phone: (508) 999-8019

**Office hours:** By email

**Math & Bus. Center:**

**Director:** Sokratis Koumas, [skoumas@umassd.edu](mailto:skoumas@umassd.edu) (Tutoring center: ext 8716)

**TA:** TBA

**COURSE DESCRIPTION:**

This course is meant to provide students with an appreciation of the power and limitations of common managerial techniques used in analysis of business problems requiring a quantitative decision-making approach. The emphasis is on a careful presentation of different methods of problem formulation, mathematical analysis, and solution procedures involving different business situations. Computer use is also emphasized in this course.

**COURSE OBJECTIVES:**

Upon completion of this course, you will learn basic concepts and techniques of quantitative decision making process; e.g. problem diagnosis and formulation and solution techniques such as decision making under risk, uncertainty and competition, linear programming, PERT and CPM algorithms in project management, and queuing theory methods in waiting lines. From this course you will:

- Learn to use a wide range of quantitative methods for decision making and develop an ability to identify and accomplish quantitative solutions to a variety of business problems.
- Learn to integrate quantitative methods for decision making with accepted qualitative approaches to administration.
- Be able to act as a member of a decision making team in the analysis and presentation of solutions in case problems; particularly through the use of computer.
- Be able to solve problems by applying the commercially available software.
- Be able to broaden your knowledge and appreciation of the worth of the subject matter through additional reading.

## COMPETENCIES and CONTACT HOURS

### Competencies

### Contact Hours

In this course, students will be introduced to statistical thinking, definitions, techniques of organizing and describing information, decision analysis, linear and nonlinear programming, project management, and simulation. The student will understand:

• Variables, types of data and introduction to modeling	3	3
• Probability theory and uncertainty	4	7
• Decision analysis and decision under risk	4	11
• Linear programming	4	16
• Nonlinear programming	5	21
• Transportation and applications	3	24
• Project management	4	28
• Queuing theory	4	32
• Simulation	4	36

### COURSE MATERIAL

**Text:** Quantitative Analysis for Management,  
B. Render, R. M. Stair, M. E. Hanna, Custom Edition, (based on the latest edition available in UMass bookstore). *Prentice-Hall*, 2012 ISBN-13: 9781269683050.

**Calculator**

**Software:** Microsoft Excel for Windows (with optimizer add-in)

### CLASSROOM POLICY:

**Academic Honesty:**

All university policies regarding academic honesty such as exam policies and plagiarism will be followed in this class. Students are encouraged to read the detail instructions provided by the registration office.

**Exams:**

There will be two exams; a midterm and a final. All corresponding chapters and presented case studies in each part of the course will be student's responsibility for the exam. The number of chapters is tentative and might change depending on the progress we have during the semester.

**Lectures:**

All lectures are online and we do not set up any specific time when you need to be present online. Each Sunday (following the schedule on Table 1), the powerpoint slides and other subsequent materials for the corresponding chapter will be uploaded on the course website. There will be one file including my lectures with my voice and discussion also available for you.

**Homework and assignment:**

Each chapter has a set of homework assignments that is listed at the end of this syllabus. You may type your homework or instead you may handwrite and scan them. In any case I expect a PDF file with chapter number and name (Ch1-your name.PDF) in the designated drop box. There is a designated drop box in myCourse for your homework submission including the due dates of the homework. The time

allowed to do each chapter's homework varies depending on the length of each chapter and student learning process. However, the due dates are all listed in the designated drop box.

**Quiz:**

There might be one quiz per chapter with the due date stated in the link provided for the quiz. All the quizzes are mandatory and the grades go toward your class participation and quiz. The quizzes are very helpful tools to enhance your understanding of the course and to prepare you for the final exam. If you face problems posting the quiz, it is most likely due to submission attempt after the deadline. If otherwise, please contact the help desk at the library.

**myCourses:**

This course is fully online and a web corner is designated in my Courses where all hand-outs, announcements, lecture notes, articles, etc. will be uploaded. A valid UMass Dartmouth username and password is required to access this website (the same as your email account).

**Online Attendance:**

Regular check and review of the course website is expected from students. Attendance in the online section is measured on the basis of quality (grades) and quantity (count) of student's response on the case studies, and punctuality in meeting deadlines on all assignments and report

**Emailing:**

Please use the myCourses email system and copy the course TA on all submissions related to term projects and case studies. The subject of your email should clearly reflect the contents or issue/urgency/etc. Emails will be responded twice a week; most probably Sundays and Tuesday will be the days when the emails will be routinely viewed and responded.

**Additional help:**

Do not fall behind in understanding the material. Get your questions answered immediately. Utilize the tutoring services offered at the Math and Business Centre, or seek clarification from the TA in computer lab classes. Practice tests for each chapter of the assigned textbook are available at the course website. Go to Interactive Study Centre, and select each of the two practice tests offered for each chapter. The website responds instantaneously with test scores and customized feedback, and this is an excellent tool for preparing for in-class exams.

**EVALUATION POLICY:**

There will be two non-comprehensive tests throughout the semester. In addition, we will have homework assignments and class participation (including quizzes) that will determine your final grade for the course according to the following distribution.

Exams and Quiz	80%
Homework	15%
Class Participation	5%
Total	100%

- ✓ Note that the associated schedule is tentative, and is subject to change at the instructor's discretion.

### **Class Schedule and Assignments** *(subject to change)*

<i>Week</i>	<i>Ch.</i>	<i>Subject</i>	<i>Homework Due Dates</i>
1 (May 23-29)	1, 3	Introduction and Decision Analysis	HW due on 05/29
2 (May 30-June 5)	6, 11	Linear programming and Project Mgt	HW due on 06/05
3 (June 5-10)	12, 13	Queuing Theory and Simulation	HW due on 06/10

### **List of Homework Assignment:**

<i>Chapter Number</i>	<i>Exercise Number</i>
Chapter 1	1-7 (total of 7 problems)
Chapter 3	16-25 (total of 10 problems)
Chapter 6	2-5 and 8-17 (total of 13 problems)
Chapter 11	2, 3, 5, 13, 15, 16, 23 (total of 7 problems)
Chapter 12	1, 5, 10, 16, 18, 23 (total of 6 problems)
Chapter 13	2, 3, 5, 13, 15, 16, 23 (total of 7 problems)

### **Grading criteria**

F	<60
D-	60
D	63
D+	67
C-	70
C	73
C+	77
B-	80
B	83
B+	87
A-	90
A	93
A+	97