Rutgers University  
School of Business - Camden  
MANAGEMENT SCIENCE  
52:620:321:01:09105  
Spring 2016

Professor: Dr. Michael T. Dominik  
Telephone: 856.495.1273 (texting welcomed, please identify yourself)  
Email: michael.dominik@rutgers.edu  
Office Hours: By appointment  
Classroom: Armitage 121 (Wednesdays)  
Meeting time: Wednesdays 2:50-5:30pm

Course Content:
The focus of the course will be to study the methodologies of management science, operations research and quantitative methods to aid decision-making. Various problems encountered in the real world will be formulated and their solution techniques will be discussed. Instructor reserves the right to adapt and change the syllabus schedule as appropriate to suit the pace of learning by the students. Only by attending class meetings will students be able to be fully informed and aware of concepts to be emphasized during learning assessments.

Required Text:

Learning Assessments:
For the assignment of final grades, the course requirements will be weighted approximately as follows:  
4. Team project 10%. Rubric: See team project guidance and rubric in this syllabus.  
5. Homework Problems 10%. Four problem sets will be assigned, each to be completed as homework (each worth 2.5% of total grade). Submit via Sakai only. Rubric: correct answers.

Instructional Strategies
We will use a variety of instructional approaches, including lecture, discussions, computing time/practice, case studies, and an applied project. For problem solving, we will use both manual and computer methods, including the use of Excel; therefore, familiarity with basic use of Excel is essential, with instructor-led guidance in the use of Excel Solver. It will be essential for you to work diligently at the recommended practice problems (see schedule) in order to be optimally prepared for examinations.
Technology Tools
We will make extensive use of Microsoft Excel with Solver enabled. To complete the homework and exams, you will need to have a computing device that can run a full copy of Microsoft Excel (Apple iPad usually does not work for this) during the exams. Please be sure you have a device tested and ready for each exam.

Key University-wide semester dates

<table>
<thead>
<tr>
<th>Event</th>
<th>Date</th>
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<tbody>
<tr>
<td>Last day to DROP ALL CLASSES and receive 100% refund</td>
<td>Friday, January 15</td>
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<tr>
<td>Martin Luther King, Jr. Day—All University Offices Closed—No Classes</td>
<td>Monday, January 18</td>
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<tr>
<td>Spring Semester Begins</td>
<td>Tuesday, January 19</td>
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<td>Last Day to ADD or DROP a class(es) WITHOUT a W grade</td>
<td>Wednesday, January 27</td>
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<tr>
<td>Undergraduates—Deadline for completing Incomplete grades from Fall or Winter before being converted to &quot;F&quot; grade</td>
<td>Monday, February 1</td>
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<tr>
<td>Last day to withdraw from ALL classes in order to receive tuition refund. For all Refund Policy Information, please see:</td>
<td>Tuesday, March 1</td>
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<td><a href="http://www.studentabc.rutgers.edu/withdrawals">http://www.studentabc.rutgers.edu/withdrawals</a>.</td>
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<tr>
<td>Academic Warning Grades Submitted</td>
<td>Monday, February 29 - Friday, March 11</td>
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<tr>
<td>Spring Recess—University Offices Open—No Classes</td>
<td>Saturday, March 12 - Sunday, March 20</td>
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<tr>
<td>Last day to WITHDRAW from a class, or all classes, with a W grade.</td>
<td>Monday, April 4</td>
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<td>Deadline 5:00 p.m</td>
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Course Grading Scale:
93-100 = A (4.0)
88-92 = B+ (3.5)
80-87 = B (3.0)
74-79 = C+ (2.5)
70-73 = C (2.0)
60-79 = D (1.0)
59 or below = F (0.0)

Sequence of Topics and Assignment List:
Due date(s) for homework problems is firm; lateness may be penalized 10% per day.

<table>
<thead>
<tr>
<th>Meeting</th>
<th>Date (2016)</th>
<th>Text Chapter</th>
<th>Topics, Student Assignments and Work Due</th>
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<tbody>
<tr>
<td>Session 1</td>
<td>January 27</td>
<td>Chapter 1</td>
<td>Introduction to Management Science</td>
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<tr>
<td>Wednesday</td>
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<tr>
<td>Session 2</td>
<td>February 3</td>
<td>Chapter 2</td>
<td>Introduction to Linear Programming</td>
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<tr>
<td>Wednesday</td>
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<td>Recommended practice problems to be provided in class</td>
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<tr>
<td>Session 3</td>
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<td>Chapter 3</td>
<td>Linear Programming – Sensitivity Analysis</td>
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**Team Project Guidance (10% of total course grade)**

Throughout this course, we explore a variety of quantitative decision and management tools. Each has an appropriate application to aid management of an organization. During this course, working in teams of two (2) persons (either your request or assigned by the professor), you are asked to consider some of the techniques we study this semester and determine how they could be used to manage some aspect of an organization.
You can choose from one of the four identified course techniques:
- Linear Programming – from Ch. 2, 3
- Distribution / Network Models – from Ch. 6
- Scoring Model – from Ch. 14
- Project Scheduling: PERT / CPM – from Ch. 9
- Waiting Line Models – from Ch. 11

In simple terms, think of this assignment as if you were creating a problem for the textbook, and solve that problem. You will then present the problem, and show how you developed the answer by providing either graphical or Excel data. You can define a problem or situation (the “application”) of your choosing. It can be real or hypothetical.

(a) **PROBLEM DEFINITION (20%, or 3 of 15 points):** You will be graded on: (1) is your problem creative? (2) is it realistic? (3) is your problem useful? (4) most important, is your problem complex? (if it is overly simple or merely mimics a class example, you will lose points)

(b) **PROBLEM SOLUTION (60%, or 9 of 15 points):** create a model, populate it with data of your choosing*, and calculate results using manual or computer solutions. You will be graded on: (1) is your problem solved completely and without mistakes? (2) is your solution complex? (do not merely mimic an exact class template, take it to another level, e.g. 3x3 matrix to 4x4 matrix), (3) did you provide a manual or Excel solution for your problem?

*Data calculations and/or model development are required for the presentation using real or dummy data of your choosing. You should completely and specifically describe how you would mathematically and/or graphically apply each technique to your problem.

(c) **PRESENTATION SKILLS (20%, or 3 of 15 points):** prepare a presentation (e.g. PowerPoint or Prezi) that explains the problem and its solution. Each team member should speak at a good pace, speak loudly enough to be heard, maintain eye contact with your audience, and ask if the audience has any questions. You will lose points if you: (1) primarily read/reiterate the words from your slides, (2) don’t face the audience when you speak, (3) have spelling or grammar mistakes in your presentation, or (4) don’t speak loudly enough to be heard.

Each presentation should be a minimum of 5 and a maximum of 10 minutes. The presentation slides and any ancillary materials (e.g. Excel files) should be delivered to the instructor either before or immediately following the presentation. Each person must present so that presentation skills can be evaluated.

Project and Presentation Grading Rubric:
**Grade (A)** – (a) Problem definition: Shows strong evidence of understanding by applying and/or referencing course and textbook material; (b) Problem solution: demonstrates outstanding problem solving skills by fully developing and accurately solving a complex model on a par with examples in the textbook; (c) Presentation skills: demonstrates outstanding presentation skills.

**Grade (B to B+)** – (a) Problem definition: Shows moderate evidence of understanding by applying and/or referencing course and textbook material; (b) Problem solution: demonstrates problem solving skills by partially developing and solving a limited complexity model on a par with examples in the textbook; (c) demonstrates excellent presentation skills.
Grade (C to C+) – (a) Problem definition: Limited or unchallenging application of course material; (b) Problem solution: limited complexity or unchallenging model, (c) demonstrates satisfactory presentation skills.

Grade (D) – (a) Problem definition: Poor application of course material; (b) Problem solution: poorly developed problem solving skills; (c) demonstrates poor presentation skills

Grade (F) – One or more topics missing (application, problem solving, presentation).

ACADEMIC INTEGRITY

Policy found at http://studentconduct.rutgers.edu/academic-integrity

Students are responsible for understanding the principles of academic integrity and abiding by them in all aspects of their work at the University. Students are also encouraged to help educate fellow students about academic integrity and to bring all alleged violations of academic integrity they encounter to the attention of the appropriate authorities.

Principles of academic integrity require that every Rutgers University student:

• properly acknowledge and cite all use of the ideas, results, or words of others
• properly acknowledge all contributors to a given piece of work
• make sure that all work submitted as his or her own in a course or other academic activity is produced without the aid of unsanctioned materials or unsanctioned collaboration
• obtain all data or results by ethical means and report them accurately without suppressing any results inconsistent with his or her interpretation or conclusions
• treat all other students in an ethical manner, respecting their integrity and right to pursue their educational goals without interference. This requires that a student neither facilitate academic dishonesty by others nor obstruct their academic progress
• uphold the canons of the ethical or professional code of the profession for which he or she is preparing.

Adherence to these principles is necessary in order to insure that:

• everyone is given proper credit for his or her ideas, words, results, and other scholarly accomplishments
• all student work is fairly evaluated and no student has an inappropriate advantage over others
• the academic and ethical development of all students is fostered
• the reputation of the University for integrity in its teaching, research, and scholarship is maintained and enhanced.

Failure to uphold these principles of academic integrity threatens both the reputation of the University and the value of the degrees awarded to its students. Every member of the University community therefore bears a responsibility for ensuring that the highest standards of academic integrity are upheld.

If there are questions on how to comply, please contact me immediately.

STUDENT CODE OF CONDUCT

Violations of the Student Code of Conduct are considered serious infractions of student behavior and subject to penalties relative to the level of the matter. Students may not disturb normal
classroom procedures by distracting or disruptive behavior. Examples of disruptive behavior include, but are not limited to, the following:

- Repeatedly leaving and entering the classroom without authorization
- Answering cellular phone or allowing pager to beep
- Making loud or distracting noises
- Repeatedly speaking without being recognized, interrupting the instructor or other students, or otherwise acting in disregard of the instructor’s requests
- Resorting to physical threats or violence directed toward the instructor or other students.*

*Physical threats or violence are a violation of the University’s Code of Student Conduct and incidents should be referred to the Dean of Students immediately. Please consult “Standards of Classroom Behavior,” in The University Code of Student Conduct

http://studentconduct.rutgers.edu/university-code-of-student-conduct

**CELL PHONES:**
Students are required to turn off their cell phones while they are in class, unless there is an emergency.

**EXAM MAKE-UP POLICY**
If, for a university approved reason, you cannot take an exam at the scheduled time you must give the professor written notice at least one week in advance so that other arrangements can be made. If the situation does not allow for advance notification (for example, emergency hospitalization), contact the professor as soon as possible after a missed exam. Make-up exams for non-university approved reasons are not guaranteed. The professor reserves the right to request written documentation to support your absence (such as a doctor’s note, an obituary, or military orders).

**DISABILITY SERVICES**

Rutgers University welcomes students with disabilities into all of the University's educational programs. In order to receive consideration for reasonable accommodations, a student with a disability must contact the appropriate disability services office at the campus where you are officially enrolled, participate in an intake interview, and provide documentation: https://ods.rutgers.edu/students/documentation-guidelines.

If the documentation supports your request for reasonable accommodations, your campus’s disability services office will provide you with a Letter of Accommodations. Please share this letter with your instructors and discuss the accommodations with them as early in your courses as possible. To begin this process, please complete the Registration form on the ODS web site at: https://ods.rutgers.edu/students/registration-form.