

**Business Analytics and Information Technology****COURSE NUMBER: 33:136:386****COURSE TITLE: Operations Management****COURSE DESCRIPTION**

The core of this course is analytical mathematical and simulative ways of approaching planning and decision-making problems that arise frequently in certain business contexts.

This "mindset" is called **Management Science (MS)** or **Operations Research (OR)** or **Business Analytics**. Basically, the MS/OR approach involves forming (imperfect) models of business situations, analyzing these models, and then deciding on some "optimal" course of action. A key concept in this approach is to separate the solution of the decision problems into two steps, first mathematical/simulative *modeling*, and then analysis of the resulting model. In this class, we will do the analysis using existing computer software. The main purpose of this course is to acquaint you with this mindset, which might be new to many of you, and to build your skill and experience in its use.

MS/OR is most helpful in situations where quantitative information is available and there are relatively few intangible or psychological considerations, making it easier to produce accurate quantitative models. It is also particularly beneficial when the decision or planning situation is complex, making it hard for managers to simply "eyeball" the decision. Such situations arise most often at the **operational** level of the management hierarchy, and less often at the tactical and strategic levels, hence the application to **operations management** at large and to **supply chain management** in particular. "Operations management" courses at some other schools may deal more with qualitative generalities of managing business operations; this course basically focuses on the quantitative tools needed for such management by applying them to classroom treatable mini business case.

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**COURSE MATERIALS****• Required Textbook**

The textbook is "Operations Management: An Introduction to Decision Analytics" by Jonathan Eckstein, University Publishing Solutions. The book is available for purchase at the Rutgers University Bookstore.

*2012 edition of the book is fine also*

*Please bring the textbook to all classes except exams.*

**• Course software**

Microsoft Excel, and the [Solver](#) and [YASAI](#) add-ins.

*Please make sure to have a working username and password on Rutgers' computers.*

**• Computer Lab**

All software needed for this course is installed in the computer lab in 100 Rock.

## Computer Lab

- **Using non-lab computers**

You may use the 100 Rock computer labs, other university computers, or your own computers. If the Solver add-in does not appear on the menu in Excel, you may have to go to Add-Ins and add it from the list.

**For Windows PCs**, you will find Add-ins under File menu/Options in recent versions of Excel and under tools menu in older versions.

If Solver is not installed on your computer, you can install it from the Microsoft Office CD-ROM. Check this Website for details on Solver [Help for Microsoft Excel Solver Users](http://www.solver.com/content/basic-solver-define-and-solve-problem) (<http://www.solver.com/content/basic-solver-define-and-solve-problem>).

**For Macintosh computers** with Office 2011, Add-Ins option is in the tools menu of Excel 2011. If Solver is not installed on your Mac computer with Office 2011, make sure you have the latest update as it includes Solver.

For YASAI, on computers outside the lab, you will need to download the YASAI add-in from its website (<http://www.yasai.rutgers.edu/>).

\*\*\* The current version of YASAI doesn't work on Mac.

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## CLASS ORGANIZATION & ADMINISTRATION

- **Assignments**

There will be between 6 and 10 homework assignments in this course. Typically, homework assignments will be due after one week. I will drop your lowest assignment score in computing your overall homework performance with missing assignments counting as a zero. This policy effectively allows you to skip one homework assignments without penalty. However, I would definitely recommend against not working out the solutions of skipped homework. Most homework problems will involve computer work.

Homework assignments are a significant amount of work, and they count for a small percentage of your grade. Think of the homework as a critical part of the learning process: I evaluate that learning process mainly by exams, but you learn mainly by the homework. Do not count on high homework scores to boost your overall grade.

- **Collaboration**

All homework assignments are to be completed on your own. You are encouraged to discuss ideas and techniques broadly with other students, TAs, and myself, but all submitted work is to be generated independently. You are not allowed to sit together and work out the details of the assignments with your peers. Nor should you compare your solutions or your final work product to other students' work. You are welcome to discuss homework problems with me during office hours.

- **Late Policy**

To be considered on time, assignments must be turned in by date and time specified for each assignment. Late assignments will incur a penalty of 20% of the assignment's available points up to

a maximum of two days after the due date.

- **Teaching Methods**

I will use several teaching methods to best achieve the course goals. These methods include lecturing, group activities, hands-on computer practice, and others. I expect students to come to class prepared, and that means reading the chapters and course materials in advance. Please participate actively in class.

- **Questions**

Questions are encouraged during class and office hours, and via e-mail. Questions by email must be sent to your recitation TA.

- **Attendance**

Regular attendance is required and will be recorded using the clicker device (or other means) . In severe weather, please check the class website -- if at all possible, I will also email any class cancellation or schedule change information as soon as I can. You can also monitor the Rutgers' main website, WCTC AM 1450, or Rutgers INFO AM 530 for possible university closing information.

- **E-Mail List**

I may use the Blackboard e - mail system to send important information such as class cancellations or homework problem corrections and hints. Please check your e - mail regularly for class announcements -- it will be your responsibility if you miss one of these announcements. Please use your Rutgers' e-mail address in Blackboard, which is usually your "eden" e -mail account. If you prefer to receive e-mail at another address, you must configure your eden account to forward mail. For more information go to

<http://www.nbcs.rutgers.edu/newdocs/gen00301/gen00301.php3>

- **Exams**

There will be one in- class midterm exams and a final. For the midterm, you can bring a one-page "cram sheet" in your own handwriting (both sides of the page are allowed). No solved problems or slides are allowed in the cram sheet. The final allowable materials will be announced. The final will be "cumulative", covering all topics in the course. *There will not be makeup exams for missed midterm.*

- **Final Exam Date and location**

A common date and location for all sections will be announced later.

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## FINAL GRADE ASSIGNMENT

20%	Quizzes
30%	Homework
20%	Midterm Exam
30%	Final Exam

No letter grades are assigned to individual assignments or exams, only numeric scores from 0 to 100.

Your course grade will be based on your aggregate score, calculated by combining your scores on all written class work.

*I reserve the right to penalize unjustified poor attendance by a loss of points.*

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## Business Analytics for Info Tech (33:136:386)

### COURSE SCHEDULE

For 10 classes, we will study a variety of applications of *linear programming*. We will spend 5 classes on a related topic called (mixed) *integer programming*. Finally, we will spend 10 classes on elementary probability modeling, using *simulation* as our main analytical tool.

*See the file implementation calendar for details*

- **Accommodations for Students with Special Needs**  
I will make special arrangements for students with special needs upon the advice of the students' adviser. Please submit your official request for special arrangements by the second week of class.
- **RBS and RUTGERS Student Conduct and Integrity Codes**  
*Honor Pledge For All Exams:* "I pledge, on my honor, that I have neither received nor given any unauthorized assistance on this examination."  
*Code of Student Conduct:* <http://judicialaffairs.rutgers.edu/university-code-of-student-conduct>

*Academic Integrity Site:* <http://academicintegrity.rutgers.edu/academic-integrity-at-rutgers>.

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