

Business Analytics and Information Technology
Course Number: 33:136:386
Course Title: Operations Management

COURSE DESCRIPTION

This course focuses on key quantitative techniques essentials for analyzing and improving business operations. It involves modelling business decision problems with and without data uncertainty: through applying linear, integer, and non-linear programming optimization models and Monte Carlo simulation.

COURSE MATERIALS

1. Textbook(s): **“Introduction to Management Science”** by Bernard W. Taylor III, Pearson, 13th Edition (previous editions also work). It is available at the Barnes and Noble book store. Additionally, **Reserved** copies are available in the following libraries: **Alexander, Carr** and **Stephen and Lucy Chang Science library**. (**optional**)
 2. **Microsoft Excel (required)**. It is available in any of the RBS computer labs and you can also have access to Microsoft Office through this source:
 3. Canvas (**required**): We will be using Canvas for all online tests as well as course documents.
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LEARNING GOALS AND OBJECTIVES

By the end of the semester:

1. Students will understand the current basic concepts in the functional areas of business and be able to apply key quantitative techniques for analyzing and improving business operations.
2. Students will develop the ability to apply appropriate quantitative methods to analyze business data, and to apply quantitative modeling techniques to analyze business plans and decisions.
3. Students will be able to understand risk from the perspective of elementary applied probability modeling using Monte Carlo simulation as the main analytical tool.

Students develop these skills and knowledge through the following course activities and assignments:

1. In class model exercises
2. Class slides

3. Online tests

PREREQUISITES

Prerequisites: 01:640:135 (Calculus 1), 01:960:285 (Introduction to Statistics for Business)

ACADEMIC INTEGRITY

I do NOT tolerate cheating. Students are responsible for understanding the RU Academic Integrity Policy (<http://academicintegrity.rutgers.edu/>).

I will strongly enforce this Policy and pursue *all* violations. On all examinations and assignments, students must sign the RU Honor Pledge, which states, “On my honor, I have neither received nor given any unauthorized assistance on this examination or assignment.” I will screen all written assignments through *SafeAssign* or *Turnitin*, plagiarism detection services that compare the work against a large database of past work. Don’t let cheating destroy your hard-earned opportunity to learn. See business.rutgers.edu/ai for more details.

ATTENDANCE AND PREPARATION POLICY

- Expect me to attend all class sessions. I expect the same of you. If I am to be absent, my department chair or I will send you notice via email and Canvas as far in advance as possible.
- For weather emergencies, consult the campus home page. If the campus is open, class will be held.
- Expect me to arrive on time for each class session. I expect the same of you.
- Expect me to remain for the entirety of each class session. I expect the same of you.
- Expect me to prepare properly for each class session. I expect the same of you. Complete all background reading and assignments. You cannot learn if you are not prepared. The minimum expectation is that for each class session, you have prepared by studying for at least twice as many hours as the class hours.
- Expect me to participate fully in each class session. I expect the same of you. Stay focused and involved. You cannot learn if you are not paying attention.
- I am very happy to reply any questions through the forum. **The forum is found on our Canvas page.** It will help other students that share the same question. Unless you have a personal issue that you would like to discuss with me, **please use the forum, not the email.**
- I won't be posting on Canvas everything I talk about in classes, it is your responsibility to take notes and you will need it to study for the tests.
- I do receive a lot of emails about issues that I have addressed intensely in classes so again **please be mindful when emailing me:** read the syllabus before, many of the answers are here. I will also be

giving announcements during the classes so make sure you attend them and when you don't please **get the content with a colleague – including my announcements**. I will not be replying to emails about issues that I have addressed in class or in this syllabus, because unfortunately I don't have the availability to do so. **Please make sure you check the syllabus and forum for the answer to your question**. If you still need me to advise feel free to email me but please **do not expect me** to reply your email after business hours (after 5:00pm of business days and during the weekends).

- A make-up test will only be scheduled due to illness – **a doctor's statement is required. It is your responsibility to be aware of the correct dates and times of the tests**. If you miss the make-up exam, I will have to give you a zero, unless it is extremely justified (due to really serious illness – when it turns out to be impossible to be physically present to take the exam).
- Office hours can be re-scheduled according to my availability – it might change if necessary – please keep that in mind. I would love to meet every student's availability, but unfortunately it is impossible. Please note that office hours are **extremely busy a week before an exam**. There is a line and since I can only see 3 students at a time it is likely that you might not be able to see me. Due to my work schedule I cannot increase the office hours. I don't want you to be left with no answers so please make sure you always ask your questions in class. If you need to go to the office hours **plan ahead and do not leave it for the last minute**.

CLASSROOM CONDUCT

- All cell phones should be turned off, or be under a sleep, silence, or airplane mode
- Computers should be used for educational purposes only
- Please raise your hand before asking questions
- Refrain from side conversations, sleeping, and other disruptive behaviors.

EXAM DATES AND POLICIES

There is one exam in class for this course:

Final Exam (FE) date: comprehensive, in-class, paper based, multiple-choice, closed book/notes, NO graphing calculator allowed, no laptops or PDAs, all cell phones turned off.

During in-class exams, the following rules apply:

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| <ul style="list-style-type: none">- If you have a disability that influences testing procedures, provide me an official letter from the Office of Disability Services at the start of the semester.- On your desk, it is only allowed to have your pencil, eraser, pen, and your Rutgers photo ID - any other item placed on your desk during the exam will result in points deduction.- You must show a valid Rutgers photo ID to enter the room and to turn in the exam.- The chairs are assigned on the exams, so you are responsible to check the place where you should sit. Sitting in the wrong chair may result in points deduction. |
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-When the exam is over, you MUST hand in your exam. Delaying in handing in your exam may result in points deduction.

GRADING POLICY

Course grades are determined as follows:

Online Test (OT1)	15%
Online Test (OT2)	15%
Online Test (OT3)	15%
Online Test (OT4)	15%
Final Exam (FE)	40%

Extra Credit: None

Grade Distribution:

Letter	Percentage
A	90-100
B+	87-89.99
B	80-86.99
C+	77-79.99
C	70-76.99
D	60-69.99
F	<60

1. **Grades will not be rounded up or down** – they are calculated and recorded to the one hundredth place automatically and are used in that form to assign midterm and final grades. There will be no “curve”.
2. The Online Tests are not cumulative. However, the Final Examination **should be considered cumulative**.
3. Grade posting: Grades will be provided **within 2 weeks** of an exam. Grades on hardcopy items and online/Canvas items will be provided through Canvas.
4. On the off chance that a mistake was made in grading (an incorrect answer was registered as correct and a correct answer were thus registered as incorrect), I will adjust grades appropriately. **There are no arguing back points if they were taken away because of this.**
5. Return of graded items: graded items, including **Final exam will not be returned**. Canvas for this course will be turned off and archived at the end of the final exam.
6. **No grade related information will be provided through email.** It is expected that you are to be respectful when discussing your grade with me. Please do not use abusive language in email or in person. **Any instances of that will be reported according to the university guidelines.**

7. **Warning grade roster:** warning grades will be issued if needed. You must watch for warning grades.
8. **There is no in-person review of exams** as they are multiple choice. If you think there is an error with your grade you can request your TA (if you are in a large class) or me to check if there was a problem - **within one week of the specific items being posted.**
9. If there was an issue with your exam or you need to talk to me about your grade, please email me appropriately and briefly explain what the issue is. I will not change grades or give extra credit to particular students unless warranted.
10. **Final grade distribution:** your final grade is not subject to negotiation. If you feel I have made an error and want me to review the final grade, submit your **written argument to me within one week of receiving your grade of the specific item.** Clarify the precise error I made and provide all due supporting documentation. If I have made an error, I will gladly correct it. But I will adjust grades only if I have made an error. **I cannot and will not adjust grades based on consequences, such as hurt pride, lost scholarships, lost tuition reimbursement, masters admission, GPA, lost job opportunities, dismissals, etc.** Do not ask me to do so. It is dishonest to attempt to influence faculty in an effort to obtain a grade that you did not earn, and it will not work.
11. Course grade will be issued when **all** course requirements are met.

COURSE SCHEDULE

- Please note that this is a TENTATIVE SCHEDULE, so it is subject to change! Also, that our
 - Academic week starts on () and ends on ().

Week (W)	Topic	Items Due
W1:	- Introduction to course - Introduction to Operations Management - Management Science (IMS Chapter 1)	
W2:	- Linear Programming: Model Formulation and Graphical Solution (IMS Chapter 2)	
W3:	- Linear Programming: Model Formulation and Graphical Solution (IMS Chapter 2)	
W4:	- Linear Programming: Computer Solution and Sensitivity Analysis (IMS Chapter 3)	
W5:	- Linear Programming: Computer Solution and Sensitivity Analysis (IMS Chapter 3)	Most likely week for OT 1
W6:	- Linear Programming: Modeling Examples (IMS Chapter 4)	
W7:	- Linear Programming: Modeling Examples (IMS Chapter 4)	
W8:	- Integer Programming (IMS Chapter 5)	Most likely week for OT 2

W9:	- Integer Programming (IMS Chapter 5)	
W10:	- Integer Programming (IMS Chapter 5) - Nonlinear Programming (IMS Chapter 10)	
W11:	- Nonlinear Programming (IMS Chapter 10)	Most likely week for OT 3
W12:	- Simulation (IMS Chapter 14)	
W13:	- Simulation (IMS Chapter 14)	
W14:	- FE Review	Most likely week for OT 4
W15	- FE Review	
W16	- Reading days () - FE: () : () – ()	FE

- Important Final Exam Information: You must be available to take the final exam during the date and time it is already scheduled. No exceptions will be made for any student unavailable to appear for testing for any reason, including family events, interviews, medical appointments, or leaving/traveling off-campus. Please plan accordingly.

SUPPORT SERVICES

If you need accommodation for a *disability*, obtain a Letter of Accommodation from the Office of Disability Services. The Office of Disability Services at Rutgers, The State University of New Jersey, provides student-centered and student-inclusive programming in compliance with the Americans with Disabilities Act of 1990, the Americans with Disabilities Act Amendments of 2008, Section 504 of the Rehabilitation Act of 1973, Section 508 of the Rehabilitation Act of 1998, and the New Jersey Law Against Discrimination. More information can be found at ods.rutgers.edu.

[Rutgers University-New Brunswick ODS phone (848)445-6800 or email dsoffice@echo.rutgers.edu]

[Rutgers University-Newark ODS phone (973)353-5375 or email ods@newark.rutgers.edu]

If you are *pregnant*, the Office of Title IX and ADA Compliance is available to assist with any concerns or potential accommodations related to pregnancy.

[Rutgers University-New Brunswick Title IX Coordinator phone (848)932-8200 or email jackie.moran@rutgers.edu]

[Rutgers University-Newark Office of Title IX and ADA Compliance phone (973)353-1906 or email TitleIX@newark.rutgers.edu]

If you seek **religious accommodations**, the Office of the Dean of Students is available to verify absences for religious observance, as needed.

[Rutgers University-New Brunswick Dean of Students phone (848)932-2300 or email deanofstudents@echo.rutgers.edu]

[Rutgers University-Newark Dean of Students phone (973)353-5063 or email DeanofStudents@newark.rutgers.edu]

If you have experienced any form of **gender or sex-based discrimination or harassment**, including sexual assault, sexual harassment, relationship violence, or stalking, the Office for Violence Prevention and Victim Assistance provides help and support. More information can be found at <http://vpva.rutgers.edu/>.

[Rutgers University-New Brunswick incident report link: <http://studentconduct.rutgers.edu/concern/>. You may contact the Office for Violence Prevention and Victim Assistance at (848)932-1181]

[Rutgers University-Newark incident report link: https://cm.maxient.com/reportingform.php?RutgersUniv&layout_id=7 . You may also contact the Office of Title IX and ADA Compliance at (973)353-1906 or email at TitleIX@newark.rutgers.edu. If you wish to speak with a staff member who is confidential and does **not** have a reporting responsibility, you may contact the Office for Violence Prevention and Victim Assistance at (973)353-1918 or email run.vpva@rutgers.edu]

If students who have experienced a temporary condition or injury that is adversely affecting their ability to fully participate, you should submit a request via <https://temporaryconditions.rutgers.edu> .

If you are a military **veteran** or are on active military duty, you can obtain support through the Office of Veteran and Military Programs and Services. <http://veterans.rutgers.edu/>

If you are in need of **mental health** services, please use our readily available services.

[Rutgers University-Newark Counseling Center: <http://counseling.newark.rutgers.edu/>]

[Rutgers Counseling and Psychological Services–New Brunswick: <http://rhscaps.rutgers.edu/>]

If you are in need of **physical health** services, please use our readily available services.

[Rutgers Health Services – Newark: <http://health.newark.rutgers.edu/>]

[Rutgers Health Services – New Brunswick: <http://health.rutgers.edu/>]

If you are in need of *legal* services, please use our readily available services: <http://rusls.rutgers.edu/>

Students experiencing difficulty in courses due to *English as a second language (ESL)* should contact the Program in American Language Studies for supports.

[Rutgers–Newark: PALS@newark.rutgers.edu]

[Rutgers–New Brunswick: eslpals@english.rutgers.edu]

If you are in need of additional *academic assistance*, please use our readily available services.

[Rutgers University-Newark Learning Center: <http://www.ncas.rutgers.edu/rlc>

[Rutgers University-Newark Writing Center: <http://www.ncas.rutgers.edu/writingcenter>]

[Rutgers University-New Brunswick Learning Center: <https://rlc.rutgers.edu/>]

[Optional items that many faculty include:

- Students must sign, date, and return a statement declaring that they understand the RU Academic Integrity Policy.
- Students must sign, date, and return a statement declaring that they understand this syllabus.]