****

**29:623:311:02/04**

**Production and Operations Management Section 02/04**

Fall 2022; Tuesday and Thursday 4:00~5:20 pm, 1WP-308 (Sec 02)

Tuesday and Thursday 11:30~12:50 pm, 1WP-303 (Sec 04)

Yuan Qu; Email: [yuan.qu@rutgers.edu](mailto:yuan.qu@rutgers.edu)

**COURSE DESCRIPTION**

The objective of decision modeling is to develop mathematical models for a variety of business production and operations management problems. Applications can be drawn from manufacturing, transportation and distribution, marketing and finance. Because operations problems are usually complicated, the mathematical models used to represent them are typically analyzed and solved using computer software (spreadsheet add-ons or dedicated programs).

**COURSE MATERIALS (texts to be referenced)**

“Introduction to Management Science” by Bernard W. Taylor III, Pearson,13th Edition

**Software:** This course uses Excel Solver Add-in to solve linear programming models.

**Delivery Mode:** The course will be delivered in the offline mode. Further announcements will be released if there are any modifications.

**LEARNING GOALS AND OBJECTIVES**

At the end of the course, you will be able to:

1)      Develop linear programming models for a wide class of business decision problems.

2)      Use computer software to obtain solutions to these problems.

3)      Model real-life problems using appropriate formulations and suggest solution methodologies.

**PREQUISITES**

None.

**ACADEMIC INTEGRITY**

*I do* NOT *tolerate cheating*. Students are responsible for understanding the RU Academic Integrity Policy (<https://slwordpress.rutgers.edu/academicintegrity/wp-content/uploads/sites/41/2014/11/AI_Policy_2013.pdf>)

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.” Don’t let cheating destroy your hard-earned opportunity to learn. See [business.rutgers.edu/ai](http://www.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 Blackboard as far in advance as possible. If you are to be absent, report your absence in advance at <https://sims.rutgers.edu/ssra/>. If your absence is due to religious observance, a Rutgers-approved activity, illness, or family emergency/death and you seek makeup work, also send me an email with full details and supporting documentation one week ahead of the occurrence.

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. 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.

**CLASSROOM CONDUCT**

Cell phones or any other course-unrelated electronic devices are banned from class.

**GRADING POLICY**

Homework problems will be assigned as a means to help understand concepts and applications. *Late homework will not be accepted.* Though collaboration is encouraged, each is expected to work out his/her answers. There will be two exams. Both will be non-cumulative and closed-book. Students may use a one-page cram sheet in their own handwriting. *No make-up exam will be given.* The following is a breakup of points.

        Two homework assignments at 20 points each (40 points in total);

        Two exams at 30 points each (60 points in total).

The proposed letter grade assignment is as follows:

**F** 0--29.999

**D** 30--49.999

**C** 50--64.999

**C+** 65--69.999

**B** 70--84.999

**B+**  85--89.999

**A** 90--100

**COURSE SCHEDULE (Tentative Course Progress)**

|  |  |
| --- | --- |
| **Date** | **Coverage** |
| Sept. 6 | Chap 1: Introduction |
| Sept. 8, 13 | Chap 2: Liner Programming (LP) |
| Sept. 15, 20 | Chap 3: Computer Solutions |
| Sept. 22, 27 | Chap 4: LP Applications |
| Sept. 29, Oct. 4 | Chap 5: Integer Programming (IP) |
| Oct. 6, 11 | Chap 6: Transportation and Assignment |
| Oct. 13 | Chap 7: Network Flow |
| Oct. 18 | No Class |
| Oct. 20, 25 | Chap 8: Project Management |
| Oct. 27 | Review and HW1 due (before class), |
| Nov. 1 | Mid-term Exam |
| Nov. 3, 8 | Chap 10: Nonlinear Programming (NLP) |
| Nov. 10, 15 | Chap 11: Probability and Statistics |
| Nov. 17, 22 | Chap 13: Queueing Models |
| Nov. 29, Dec. 1 | Chap 15: Time Series and Forecasting |
| Dec. 6, 8 | Chap 16: Inventory Management |
| Dec. 13 | Review and HW2 due (before class) |
| TBD | Final Exam |

**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. <https://ods.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/>

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/>]