

# SYLLABUS

# Quantitative Methods for Business

**Course Number:** MGMT 4100

**Credit Hours:** 4

**Semester/Year:** Fall 2020

**Room Location:** Voorhees Computing Center NO

**Lecture Days/Time:** Monday and Thursday 10:10 AM – 12:00 PM

**RPILMS:** <https://lms.rpi.edu/>

**Prerequisites:** (Undergraduate level MGMT 2100 Minimum Grade of D or Undergraduate level MGMT 2150 Minimum Grade of D or Undergraduate level ENGR 2600 Minimum Grade of D) or Undergraduate level MGMT 2510 Minimum Grade of D

**Website:** [http://qm.analyticsdojo.com](http://qm.analyticsdojo.com/)

***INSTRUCTOR (REQUIRED)***

**Instructor Name:** Jason Kuruzovich **Office Location:** Pitt. 4th Floor (Sev. Center)

**Tel. No.:** 518-698-9910 **Email Address:** kuruzj@rpi.edu

**Office Hours:**Tuesday 2:00 PM – 4:00 PM

## COURSE DESCRIPTION:

This course is designed to provide the student with an understanding of the quantitative methodology for the management of both services and manufacturing. The course will help solve business problems with quantitative techniques and highlight the advantages that the quantitative analysis can provide for the organization.

**REQUIRED TEXT(S):**

Introduction to Management Science, 13th Edition

Taylor

Pearson | **ISBN:** 9780134730660

## STUDENT LEARNING OUTCOMES *(REQUIRED)*

This course will enable participants to develop a general understanding of the management science/operations research approach to decision making. Participants will realize that quantitative applications begin with a problem situation and understand that many managerial situations have quantitative considerations that are important in the decision making process. Students will (1) obtain an understanding to quantitative techniques and their use in practice; (2) understand management science models in terms of what they are and why they are useful; and (3) understand the use of computer software packages such as Microsoft Excel in applying quantitative methods to decision making.

## COURSE ASSESSMENT MEASURES

Homework Assignments:

There will be frequent homework assignments, listed on the course website. These assignments are intended for you to become more familiar with the concepts that are covered in lectures and in the text. Some of these exercises will require the use of computer and computer packages like Excel Solver. You may work with others; however, all work submitted should be your own.

Check the course website for delivery dates and submit the files to the LMS. On-paper/hard-copy submissions and email submissions will NOT be accepted. Late homework will NOT be accepted.

Term Paper:

You are expected to investigate topics covered in class being utilized in real settings. You will read and report on different articles that are published within the last 10 years (2010-2020) and that relates to one or more topics in the class. The term paper will help students learn to use multiple resources (e.g. library holdings, news agencies, Internet, etc.). Students in class are expected to form groups of four members each.

When searching for an article, follow these guidelines: You will need to present and report on how real companies do better by using the techniques we learned in class. So, in the article you find, there needs to be a real firm, a real problem, a proposed solution within the boundaries of the class topics, use of these tools, and the realized results of the implementation.

You will find the article and submit the “pdf” of this article using the designated LMS assignment tab. The due date for the term paper selection can be found on the course calendar (by the beginning of the class).

Each group will present a summary of the selected paper, how it relates to our topics, why you find it interesting, and what you have learned. Check the course calendar for the date which presentations are scheduled for. All group members are expected to participate in presentation.

Each group is also expected to prepare a written report on the selected paper. The report, excluding the references, should be no less than 1 page and no more than 2 pages in length (Times New Roman, 12-point font size, single spaced), and should include the appropriate references. Submit the “pdf” of your final report using the designated LMS assignment tab. The due date for the report is available on the course calendar.

Exams:

There will be two in-class exams – see the course calendar (on the last page) for the dates. Each test will primarily emphasize the material covered during the preceding weeks. The tests are all closed-book and closed-note exams. Tests are individual work; students cannot collaborate in any way. Copying, communicating or using any materials during an exam is cheating.

**GRADING CRITERIA**

The course is structured to provide students with multiple opportunities to demonstrate their understanding of the course concepts and contents. Final grade in the course will depend on performance in the following components.

Midterm 25%

Final  25%

Homework  30%

Term Paper Report  20%

**TOTAL 100%**

The following is a list of lowest total points necessary in order to obtain the corresponding letter grade. I reserve the right to adjust those cut-off points at the end of semester – if any adjustments are made, those will be in favor of students.

**COVID-19 Syllabus Guidelines – Lally School of Management**

Students taking Lally School of Management classes are required to abide by the **COVID-19 code of conduct** below. This code will apply to any class that meets fully or partially in an on-campus physical classroom for in-person instruction.

**Violations:** Refusal to comply with the COVID-19 code of conduct will be treated just as any classroom disruption, which will receive request for immediate compliance, failing which the student will be asked to leave the classroom. Any further noncompliance will result in the dismissal of the entire class. All Covid-19 related violations will be reported by the instructor to the Compliance Officer at Lally School, and the Dean of Students. A student found to be in violation of the code, or required repeated reminders for compliance, will be asked to participate in all classes remotely. This is to protect their health and safety as well as the health and safety of their classmates, instructor, and the university community.

**Masks**: All students must wear a mask in classrooms and all public places including anywhere inside Pittsburgh building. Masks will be provided to the student by the Institute.

**Traffic Flow and Social Distancing**: Students and faculty will respect the need for social distancing. They are required to follow the traffic flow arrows posted in all rooms and buildings, including bathrooms and common areas.

**In-Class Seating**: Students should sit in the appropriate designated seating in the classroom. Students are not allowed to move furniture or sit in seats not designated by the Institute.

**Cleaning of Spaces**: Students are encouraged to clean the surfaces of the chairs/tables/desks they occupy before they sit down and as they prepare to leave. Cleaning and sanitizing solutions will be provided the classroom.

**Students who are ill, under quarantine for COVID-19, or suspect they are ill should not come to class.**All faculty will make every reasonable effort to accommodate the student’s absence and will communicate that accommodation directly to the student. Students who need to report an illness should contact the [Student Health Center](https://exchange.rpi.edu/owa/redir.aspx?C=uCftuaxd0yD0J5bm5ltQddtFz9bXKopWYByeS4cuPOgz2gaVgkTYCA..&URL=https%3a%2f%2fstudenthealth.rpi.edu%2f)via [email](https://exchange.rpi.edu/owa/redir.aspx?C=nqFQr6AEawCDLVmtVdRe4QEm7FgJYsuyly5l9mdpfJYz2gaVgkTYCA..&URL=mailto%3a%2520healthcenter%40rpi.edu) or call 518-276-6287. For student seen off campus, a student may request an excused absence via [www.bit.ly/rpiabsence](https://exchange.rpi.edu/owa/redir.aspx?C=6lGWAPwqlG1Yc2n4rQ8rjsG18CSHTHtWXVKaAfbVYBYz2gaVgkTYCA..&URL=https%3a%2f%2fprovost.rpi.edu%2flearning-assessment%2fcourse-syllabus%2fwww.bit.ly%2frpiabsence) with an uploaded doctor’s note that excuses them.

## ACADEMIC INTEGRITY

Student-teacher relationships are built on trust. For example, students must trust that teachers have made appropriate decisions about the structure and content of the courses they teach, and teachers must trust that the assignments that students turn in are their own. Acts that violate this trust undermine the educational process.

The Rensselaer Handbook of Student Rights and Responsibilities and the Graduate Student Supplement (For 6000 level and above courses) define various forms of Academic Dishonesty and you should make yourself familiar with these. In this class, all assignments that are turned in for a grade must represent the student’s own work. In cases where help was received, or teamwork was allowed, a notation on the assignment should indicate your collaboration. Submission of any assignment that is in violation of this policy will result in (1) an academic (grade) penalty and (2) reporting to Lally’s Associate Dean of Academic Affairs and either the Dean of Students (for Undergraduates) or the Dean of Graduate Education (for Graduate students).

**In this course, the academic penalty for a first offense is *a grade of zero for the corresponding assignment AND one letter grade reduction at the end of semester (e.g., A- dropping to B+, D dropping to F).* A second offense will result in failure of the course as noted in Lally’s Three Strikes Policy.**

If you have any questions concerning this policy before submitting an assignment, please ask for clarification.

## ACADEMIC ACCOMMODATIONS

## Rensselaer Polytechnic Institute strives to make all learning experiences as accessible as possible. If you anticipate or experience academic barriers based on a disability, please let me know immediately so that we can discuss your options.

## To establish reasonable accommodations, please register with The Office of Disability Services for Students (<mailto:dss@rpi.edu>; 518-276-8197; 4226 Academy Hall).  After registration, make arrangements with me as soon as possible to discuss your accommodations so that they may be implemented in a timely fashion.”

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## COURSE CALENDAR

**Please refer to the course website for the updated course calendar. The existing course calendar here is temporary.**

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| --- | --- | --- | --- | --- |
| Week | Session | Date | Day | Topic |
| 1 | 1 | 8/31/20 | [Mon](https://exceljet.net/excel-functions/excel-text-function) | Welcome and class overview |
| 1 | 2 | 9/3/20 | [Thu](https://exceljet.net/excel-functions/excel-text-function) | Intro to Management Science |
| 2 |  | 9/7/20 | [Mon](https://exceljet.net/excel-functions/excel-text-function) | Labor day – no class |
| 2 | 3 | 9/8/20 | [Tue](https://exceljet.net/excel-functions/excel-text-function) | Linear Programming 1 (First in Person Class, Tuesday follow Monday Schedule) |
| 2 | 4 | 9/10/20 | [Thu](https://exceljet.net/excel-functions/excel-text-function) | Linear Programming 2 |
| 3 | 5 | 9/14/20 | [Mon](https://exceljet.net/excel-functions/excel-text-function) | LP - Sensitivity Analysis 1 |
| 3 | 6 | 9/17/20 | [Thu](https://exceljet.net/excel-functions/excel-text-function) | LP - Sensitivity Analysis 2 |
| 4 | 7 | 9/21/20 | [Mon](https://exceljet.net/excel-functions/excel-text-function) | LP - Modeling Examples 1 |
| 4 | 8 | 9/24/20 | [Thu](https://exceljet.net/excel-functions/excel-text-function) | LP - Modeling Examples 2 |
| 5 | 9 | 9/28/20 | [Mon](https://exceljet.net/excel-functions/excel-text-function) | Integer Programming |
| 5 | 10 | 10/1/20 | [Thu](https://exceljet.net/excel-functions/excel-text-function) | Distribution Models |
| 6 | 11 | 10/5/20 | [Mon](https://exceljet.net/excel-functions/excel-text-function) | Review for Exam 1 |
| 6 | 12 | 10/8/20 | [Thu](https://exceljet.net/excel-functions/excel-text-function) | Exam 1 |
| 7 |  | 10/12/20 | [Mon](https://exceljet.net/excel-functions/excel-text-function) | Columbus day – no class |
| 7 | 13 | 10/15/20 | [Thu](https://exceljet.net/excel-functions/excel-text-function) | Probability and Statistics 1 |
| 8 | 14 | 10/19/20 | [Mon](https://exceljet.net/excel-functions/excel-text-function) | Probability and Statistics 2 |
| 8 | 15 | 10/22/20 | [Thu](https://exceljet.net/excel-functions/excel-text-function) | Decision Analysis 1 |
| 9 | 16 | 10/26/20 | [Mon](https://exceljet.net/excel-functions/excel-text-function) | Decision Analysis 2, |
| 9 | 17 | 10/29/20 | [Thu](https://exceljet.net/excel-functions/excel-text-function) | Term paper overview |
| 10 | 18 | 11/2/20 | [Mon](https://exceljet.net/excel-functions/excel-text-function) | Waiting Lines Analysis 1 |
| 10 | 19 | 11/5/20 | [Thu](https://exceljet.net/excel-functions/excel-text-function) | Waiting Lines Analysis 2 |
| 11 | 20 | 11/9/20 | [Mon](https://exceljet.net/excel-functions/excel-text-function) | Forecasting 1 |
| 11 | 21 | 11/12/20 | [Thu](https://exceljet.net/excel-functions/excel-text-function) | Forecasting 2 |
| 12 | 22 | 11/16/20 | [Mon](https://exceljet.net/excel-functions/excel-text-function) | Inventory Management 1 |
| 12 | 23 | 11/19/20 | [Thu](https://exceljet.net/excel-functions/excel-text-function) | Inventory Management 2 |
| 13 |  | 11/23/20 | [Mon](https://exceljet.net/excel-functions/excel-text-function) | Thanksgiving |
| 13 | 24 | 11/26/20 | [Thu](https://exceljet.net/excel-functions/excel-text-function) | Simulation 1 |
| 14 | 25 | 11/30/20 | [Mon](https://exceljet.net/excel-functions/excel-text-function) | Simulation 2 |
| 14 | 26 | 12/3/20 | [Thu](https://exceljet.net/excel-functions/excel-text-function) | Term Paper Presentations |
| 15 | 27 | 12/7/20 | [Mon](https://exceljet.net/excel-functions/excel-text-function) | Term Paper Presentations |
| 15 | 28 | 12/10/20 | [Thu](https://exceljet.net/excel-functions/excel-text-function) | Review for Final |
|  |  | TBD |  | Final Exam |