



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>

INSTRUCTOR (REQUIRED)

Instructor Name: Jason Kuruzovich

Tel. No.: 518-698-9910

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

Office Location: Pitt. 4th Floor (Sev. Center)

Email Address: kuruzj@rpi.edu

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 Policies

RPI is committed to the health and safety of all students. RPI will continue to monitor any new developments with COVID-19 and determine a course of action that will uphold the well-being of students while maintaining a quality educational experience.

Masks/Shields: We know from existing data that wearing a mask in public can help prevent the spread of COVID-19 in the community. Rensselaer Polytechnic Institute has determined that everyone will be required to wear a face mask in all public spaces, including classrooms. You **MUST** wear a mask appropriately (i.e., covering both your mouth and nose) in the building if you are attending class in person. Masks have been provided for students, instructors, and staff, and everyone is expected to wear one. Students who choose not to wear a mask may not attend class in person. This is to protect their health and safety as well as the health and safety of their classmates, instructor, and

the university community. Anyone attending class in person without a mask will be asked to put one on or leave.

Instructors will end class if anyone present refuses to appropriately wear a mask for the duration of class. Students who refuse to wear masks appropriately or adhere to other stated requirements may face disciplinary action for Code of Conduct violations. Student who violate not wearing a mask will be reported to the Dean of Students and will be requested to leave a classroom of building and return to their living quarters. The Dean of Students will provide the appropriate sanctions for the students per the code of conduct signed by the students.

Traffic Flow and Social Distancing: Students and faculty will respect the need for social distancing to the degree possible by the setting. Please maintain six feet of space while walking into and out of classes and enter and exiting the building.

Faculty and students will move in and out of the classroom as per the appropriate instructions of the faculty/administration. They are expected to follow printed traffic flow statements posted in all rooms and buildings.

In-Class Seating: Faculty are asked to assure that students sit in the appropriate designated seating in the classroom, using social distancing. Students are not allow 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. Faculty should advise students clean with wipes or cloths their own personal before and after class.

Student Health: On a case-by-case basis, students may consult with Student Disability Resources for accommodations if they cannot wear a mask. Students requiring such accommodations may be advised to take advantage of and participate in the course through remote learning.

Students who are experiencing COVID-19 related symptoms should not attend class in person and are encouraged to contact a health care provider. Students who are ill, under quarantine for COVID-19, or suspect they are ill will report that to Student Life. Student Life will verify and notify all faculty who have that student. Once notification is made, all faculty will make every reasonable effort to accommodate the student's absence and will communicate that accommodation directly to the student. Failure to make an appropriate accommodation for a verified or reasonably suspected case of illness may be appealable under the student grade appeal process. Students who need to report an illness should contact Office of the Dean of Student. They may also call: 518-276-6266.

Refusal: Refusal to comply with any appropriate request will be treated as would any classroom disruption (request to change the behavior; request to leave the class; dismissal of the class and referral to Student Affairs.)

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."

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](#) via [email](#) or call 518-276-6287. For student seen off campus, a student may request an excused absence via www.bit.ly/rpiabsence with an uploaded doctor's note that excuses them.

COURSE CALENDAR

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

Week	Session	Date	Day	Topic
1	1	8/31/20	Mon	Welcome and class overview
1	2	9/3/20	Thu	Intro to Management Science
2		9/7/20	Mon	Labor day – no class
2	3	9/8/20	Tue	Linear Programming 1 (First in Person Class, Tuesday follow Monday Schedule)
2	4	9/10/20	Thu	Linear Programming 2
3	5	9/14/20	Mon	LP - Sensitivity Analysis 1

3	6	9/17/20	Thu	LP - Sensitivity Analysis 2
4	7	9/21/20	Mon	LP - Modeling Examples 1
4	8	9/24/20	Thu	LP - Modeling Examples 2
5	9	9/28/20	Mon	Integer Programming
5	10	10/1/20	Thu	Distribution Models
6	11	10/5/20	Mon	Review for Exam 1
6	12	10/8/20	Thu	Exam 1
7		10/12/20	Mon	Columbus day – no class
7	13	10/15/20	Thu	Probability and Statistics 1
8	14	10/19/20	Mon	Probability and Statistics 2
8	15	10/22/20	Thu	Decision Analysis 1
9	16	10/26/20	Mon	Decision Analysis 2,
9	17	10/29/20	Thu	Term paper overview
10	18	11/2/20	Mon	Waiting Lines Analysis 1
10	19	11/5/20	Thu	Waiting Lines Analysis 2
11	20	11/9/20	Mon	Forecasting 1
11	21	11/12/20	Thu	Forecasting 2
12	22	11/16/20	Mon	Inventory Management 1
12	23	11/19/20	Thu	Inventory Management 2
13		11/23/20	Mon	Thanksgiving
13	24	11/26/20	Thu	Simulation 1
14	25	11/30/20	Mon	Simulation 2
14	26	12/3/20	Thu	Term Paper Presentations
15	27	12/7/20	Mon	Term Paper Presentations
15	28	12/10/20	Thu	Review for Final
		TBD		Final Exam