

Supply Chain Management
Course Number: 29:799:310
Course Title: Demand Planning and Fulfillment

COURSE DESCRIPTION

WELCOME TO DEMAND PLANNING. This is an upper-level undergraduate supply chain management course. It focuses on manufacturing-related topics including: inventory management, planning and forecasting, quality, scheduling and manufacturing processes. Other topics including operations and supply chain strategy may also be covered.

Demand planning facilitates the effective production of the products or services that an organization provides to its customers. Careful planning and management of internal and external operations is required if one organization is to prosper, or indeed, survive. While the course has a strong management emphasis, theoretical aspects and technical competence cannot be overlooked. Most managers and engineers find it difficult to consistently arrive at good solutions to problems without proper understanding of theory and proper use of analytical tools.

The purpose of this course is to:

- Introduce you to the important issues managers face in planning, controlling, and managing operations and supply chains.
- Equip you with SCM best practices and related analytical models/tools.
- Know-how to apply SCM models/tools within manufacturing and service contexts.

COURSE MATERIALS

- Microsoft Excel (A free student version can be downloaded from software.rutgers.edu).
- Lecture notes and course readings will be made available before each class.
- **You should read and study the material covered in the readings before the class in which the material is discussed.**
- ***Textbook:***

Jacobs, F. Robert and Richard B. Chase, Hardback Version - Operations and Supply Chain Management: The Core, McGraw-Hill/Irwin, 5th Edition, 2019 (ISBN13: 9781260238884/ ISBN10:1260238881)

LEARNING GOALS AND OBJECTIVES

Upon completion of this course, students should have an in-depth understanding of production processes. More specifically, students will be able to:

- Describe the tradeoffs among different types of production/operations systems in terms of key characteristics, management tasks, organization and control, and impact on the strategy and direction of the firm.
- Identify the strategic production/operations management issues and their relationship to the other functional areas of the firm.
- Apply quantitative tools and techniques used by supply chain practitioners in managing operations.
- Analyze the managerial implications of choosing policies that can be used to manage supply chain operations.

PREREQUISITES

It is assumed that all students have completed basic statistics and are familiar with operating MS-Excel. As this course has a significant quantitative element, these materials should be well understood. Production & Operations Management (623:311) is recommended, but not required as a prerequisite.

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 POLICY

Classes will start promptly at the listed time and will run for one hour and twenty minutes without any break. The attendance policy is simple. Sign-up sheets may be circulated in each session or the professor will take attendance. It is the student's responsibility to sign-in. Note that there are neither excused nor unexcused absences - only absences. Exceptions will also be made for religious holidays or other mandated documented circumstances, e.g. jury duty. Student tardiness and leaving an ongoing class are inappropriate behavior. At a minimum you will be charged at least a ½ absence for any class you arrive late or leave early. The expectation is that any student who knows he or she will be late to class or need to depart early will let the instructor know in advance. Students abusing the attendance policy will suffer grade penalties.

GRADING

Upon successful completion of the course, you will receive three (3) semester hours of undergraduate credit. Your grade will be based on your performance in straight scale (i.e., NO CURVE) on the following:

Participation	10%
Homework	20%
Group Project	20%
Exam #1 – Midterm	25%
Exam #2 – Final	25%
TOTAL:	100%

Grade Allocation (no rounding):

90.00% and above	A
85.00% to < 90.00%	B+
80.00% to < 85.00%	B
75.00% to < 80.00%	C+
70.00% to < 75.00%	C
65.00% to < 70.00%	D
< 65.00%	F

HOMEWORK

Homework assignments should be typed and submitted in an electronic format. Be sure to put your name and contact information (email) on all homework submitted. Specifics and due dates will be announced in class and on Canvas. Homework will be based off of the lecture notes. Each homework should be electronically submitted to Canvas.

Please DO NOT e-mail me your homework submissions.

Homework is due by 23:59:59 of due date. Penalty for late submission (within one week) is 40% of the points allocated to the assignment. Submission will not be accepted if it is more than one week late.

EXAMINATIONS

Two (2) exams (Midterm and Final Exams) will be given during the semester. Note that the exams are NOT cumulative. The exams may consist of multiple choice questions, true/false questions and short answer questions which incorporate all materials covered in lecture class, homework assignments, and assigned readings.

I will NOT hold make-up exams unless a student has a very valid reason. In my opinion, there are very few valid reasons for missing an exam.

Examples of acceptable reasons for missing an exam:

- Death in the family (documentation required)
- Unforeseen documented medical emergency (documentation required)
- Official Rutgers events

Examples of unacceptable reasons for missing an exam:

- Placement interviews
- Social events
- Schedule conflicts with other classes

GROUP PROJECT

A term project on an operations-related topic is a necessary and important part of the course for students to gain hands-on experiences by applying the techniques learned to the real world. Each project should be a team effort of 4-5 people. Each project team will select a topic of interest (following the guidelines listed below), submit and present a proposal (about the story, the problem, and your solution approach), and make a thorough presentation for about 10-15 minutes towards the end of the semester (see weekly schedule for dates). Each team member must specify his/her percentage of contribution on the final submitted work. The project will be graded as a whole, but each team member's grade also depends on his/her contribution.

Select one of the two formats below (an operations-case or an operations-technology), and follow carefully the reporting instructions. If you want to do a project that does not obviously fall within the suggested categories, please contact me for permission. In any event, please select a topic that will be a benefit to the team. You may be as original and creative about the topic as possible, but please keep your fellow team-members in mind.

OPTION 1: Operations-Case

Describe an Operations-related problem, present data and facts, apply the methods/tools of this class and show how it can be solved. Please also include and be prepared to discuss implementation issues. You can draw on your own work experience (that would likely be most interesting to the class) or study such a case, appearing in the literature or press. Avoid the very popular press or a shallow source. Rather, look for a serious professional article, such as a financial magazine, economics magazine, or a trade magazine (Sloan Management Review, Supply Chain Management Review, Inbound Logistics, etc.).

OPTION 2: Operations-Technology

First, select a novel Operations technology, and describes its contribution (or projected contribution if really new) to the current state of the art. It would be most useful if you have been exposed to that technology

on your job/internship/co-op, and can report on it first hand. Examples of technologies of interest are manufacturing/operational strategies, forecasting strategies, artificial intelligence, lean six sigma, or anything else that is of interest to you and would likely interest class members, but within the domain of the course material. If in doubt, contact me.

Second, research the current state of the chosen technology and summarize it in your report. Find out the current or emerging commercial “players”, and look at their future technological directions. Based on at least three sources (ordinary articles or Web pages, to be referenced in your report), address at least the following points using data and facts:

- What are the key technical and economical aspects of the technology which benefit the marketplace (consumers of this technology, both individual and corporate)?
- Who are the current “movers and shakers” in this area? Compare and contrast their technological and business approaches, products, etc.
- What are the current impediments to their approaches for acceptance in the marketplace? Examples are ease of use, price, technological longevity, etc.

Third, based on the current state of the technology, express your personal opinion and conclusions on the future of the chosen technology and its applications. Make sure your arguments are logical and backed by your research; you are encouraged, however, to voice opinions gleaned from your personal “crystal ball” (convictions and intuition), but be reasonable (and brief...). You may attach to your report supporting material, such as graphs and charts. Remember, anybody can collate material from the Web, but it is more difficult to analyze such material and reach conclusions. Analysis and conclusions will be the components of your term project most heavily weighted.

Note: You should not cut-and-paste verbatim material from Web pages or copy verbatim material from any other sources, unless you use that material as exact quotes. In that case be sure to enclose any pasted text material in double quotes and to provide an exact reference for it! All pasted graphs and charts should also be properly referenced. If you are unsure about referencing materials, please see the Academic Integrity information online and/or the Academic Integrity at Rutgers webpage.

SUBMISSION

The project proposal is due towards the end of the semester (see weekly schedule). I expect a one page executive summary on the proposal where you describe the story, the problem and your solution approach. A word document of the summary is expected from each team. I will ask questions and provide (by email) suggestions and comments if I have any.

SCHEDULE

A sign-up sheet will be distributed electronically to schedule the presentation. The last two weeks of class will be used for presentations. Please plan on presenting on one of the four days. Once you select your presentation date, it is YOUR responsibility to be prepared on that date or find another student to change with you. Only documented illness will be considered a reason to change your presentation date at the last minute.

PROJECT SUBMISSIONS

The final project is due the evening before your presentation by 23:59:59. For fair evaluation, each student/team CANNOT change/resubmit their presentation file after the due.

By the deadline, each team should submit three (3) documents online:

1. Presentation slides.
2. A Word document that includes background story, assumptions, the model, the solution, the interpretation and citations (5 pages MAX).
3. An Excel file with all data and the calculations (if appropriate).

A space will be created in at the course website where your project documents are to be submitted.

GRADING

- Presentation: 50%
 - The presentation portion of the project will be graded by the instructor and your classmates on the following three (3) criteria:
 1. Relevance to the course (i.e. application of theories and tools from the classroom to specific industries or companies),
 2. Interests of the research (i.e. well-known vs. interesting),
 3. Contribution to other students' learning in this course. Thus, your presentation is **STRONGLY** recommended to contain your own arguments on the above three grading criteria.
- Write-Up + Excel Analysis: 50%
 - This will be graded by the instructor.

LATE POLICY

Late submission will lose 20% of its face value for every 24 hours that it is late after being due (e.g., 2 hours late means 20% off; 26 hours means 40%).

WHAT YOU SHOULD KNOW TO SUCCEED IN THIS COURSE:

I am NOT here to try to fail you or to give you a hard time; I am here to educate you and help you ALL succeed in this course.

Attend every class on time and actively participate in discussions.

My goal as an instructor is to make this course as enjoyable and beneficial to you as possible. I hope you will leave my course with useful knowledge that will provide you with a new outlook on the business world around you. Thus, feel free to ask me lots of questions if you are unclear about anything from

the lecture, course materials or in-class discussion.

Start studying for exams early. By studying and reviewing each night you are not only helping to prepare for the exam more effectively, you are also more prepared for class each day and your assignments.

The time to seek help from me is BEFORE, not after, the exams. Do NOT wait until the last week of classes to ask for help. The earlier you seek help, the better.

Have a positive attitude. Again, I am here to help you, but you must be willing to help YOURSELF.

Read and be familiar with the syllabus. I have tried to include everything you need to know to succeed in this course. Yes, this is a bit lengthy document but definitely worth it.

COURSE SCHEDULE

Class schedule can be changed/modified as the semester progresses at the discretion of the instructor, and it is the student's responsibility to keep up with such changes/ modifications that will be announced in class and/or on Canvas. In general, even if the specific date of coverage may change, the order of coverage should remain as presented below.

Week	Topic	Assignment	Due Date
1	Course Intro/Presentation Groups		
	No class		
2	Time Series (1/3)	HW #1	
	Time Series Models (2/3)		
3	Time Series Models (3/3)		
4	Causal Models (1/3)	HW #2	
	Causal Models (2/3)		
	Causal Models (3/3)		
5	Sales and Operations Planning (1/2)	HW #3	
	Sales and Operations Planning (2/2)		
6	Linear Programming	HW #4	
	Manufacturing Processes		
7	Midterm Exam Review	Project Proposals Due	
	Midterm Exam		

8	Inventory Management (1/2)	HW #5	
	Inventory Management (2/2)		
9	Service Processes (1/2)	HW #6	
	Service Processes (2/2)		
10	Material Requirements Planning (1/2)	HW #7	
	Material Requirements Planning (2/2)		
11	Project Management (1/2)	HW #8	
	Project Management (2/2)		
12	Strategy & Sustainability	No HW	
	Lean Manufacturing		
13	Class Presentations		
	No class		
14	No class		
	Class Presentations		
15	Class Presentations		
	Class Presentations/ Class wrap up		
16	Final Exam Review		
	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. 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.]