

Fall 2023

## **OM 375-001: Business Op Mgmt & Analytics**

Olena Rudna

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**OM 375-001 (3 Credits)**

**Operations Management  
Fall 2023**

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*“As the economy changes, as competition becomes more global, it’s no longer company vs. company but supply chain vs. supply chain.”*

— Harold Sirkin,  
author and consultant—

**Class Hours  
T/R, 1:00 pm - 2:20 pm**

**Location:  
Tiernan Hall LECT 1**

**Office Hours  
T/R 2:30PM -4:00 PM  
And by appointment**

**184-198 Central Ave, Newark, NJ 07103  
4th floor, Room 4020**

- Note:**
- \* **The best way to contact me is via e-mail.**
  - \* Instructor reserves the right to change/modify this syllabus as deemed necessary.
  - \* Students are responsible for keeping themselves informed about any announcements, syllabus adjustments or policy changes made during scheduled classes.

## **COURSE DESCRIPTION:**

Welcome to Operations Management. This is an upper-level undergraduate management course. It focuses on manufacturing-related topics including procurement, inventory management, planning and forecasting, quality, scheduling, and manufacturing processes. Other topics including operations and supply chain strategy may also be covered.

Operations 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 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. Prerequisite: MGMT 216 is required as a prerequisite.

## **REQUIRED AND OPTIONAL MATERIALS:**

- Microsoft Excel (A free student version can be downloaded from NJIT software portal).
- 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.**
- **Case studies: will be announced during the semester**
- **Access to the “Hunger Game” simulation**
- **Textbook (Optional, for those who are deeply interested into OM learning):**
  - *Hard back version:*
    - [http://www.amazon.com/gp/product/0073525235/ref=pd\\_lpo\\_sbs\\_dp\\_ss\\_1](http://www.amazon.com/gp/product/0073525235/ref=pd_lpo_sbs_dp_ss_1)

- Jacobs, F. Robert and Richard B. Chase, Hardback Version - Operations and Supply Chain Management: The Core, McGraw-Hill/Irwin, 3rd Edition, 2015 (ISBN-13: 978-0073525235)
- *Loose-leaf version:*
  - <http://www.amazon.com/Loose-leaf-Version-Operations-Supply-Management/dp/0077597508>
  - Jacobs, F. Robert and Richard B. Chase, Loose-Leaf Version - Operations and Supply Chain Management: The Core, McGraw-Hill/Irwin, Sm Edition, 2015 (ISBN: 978-0077597504)

## ACADEMIC INTEGRITY

*I do NOT tolerate cheating.* Students are responsible for understanding the NJIT Academic Integrity Policy: <http://www5.njit.edu/middlestates/sites/middlestates/files/lcms/docs/2012/academic-integrity-code.pdf>. I will strongly enforce this Policy and pursue *all* violations.

## ELECTRONIC DEVICES:

**It is encouraged that you bring your laptop to class.** Any other electronic device is optional and not needed to perform the work required of you in class. If a cellphone, laptop, tablet, or other device is being used, it should only be used for class-related activities.

Why do I state this? Several studies (and my past experience) have shown that students using electronic devices in class spend a great deal of time on non-class-related activities and that these distractions negatively impact both learning and grades (e.g., Ellis, Y., B. Daniels, & J. Andres (2010), *Research In Higher Education Journal* 8(1), pp.1-10). Using electronic devices in class also can hinder instruction and learning, not only for the student using the device but also for other students. Recent studies have supported the fact that non-class-related use of electronic device distracts and impacts the learning of other students nearby (e.g., Fried, C. B. (2008), *Computers & Education* 50(3), pp.906-914; Turner, R. (2011), *VIU Faculty of Education* 2(1), pp.1-39).

*If I find that a device is being used for non-class related activities, you may be asked not to bring it with you to class again.*

## ATTENDANCE AND PREPARATION POLICY

As you must attend class in order to participate, attendance will be taken in every class (10% of your final grade). Like others, class attendance is very important in this course because learning occurs through interaction. You are allowed to miss a maximum of two (2) classes throughout the semester without losing any attendance grades. More absences will be allowed with justification note about an absence. Please note that I have a “no excuses” policy regarding absences — I trust you to use your own judgment about your reasons for missing class and whether you can afford to do so. I will deduct one (1) point for every absence beyond 2 missed classes. Use these “free” absences as you like (job interview, personal matters, religious holidays, etc.). You may choose any day for a free absence except a day *in which you present or when there is an evaluation activity*. **However, if you are absent or has missed any part of the class, then it is YOUR responsibility to obtain the missed information from the instructor or other students.**

It is important that you arrive on time so that we may start class promptly. Arriving late to class is very disruptive and discourteous to the class. Being late three (3) times will be counted as one (1) absence.

### **HOMEWORK:**

Homework will account for 20% of your final grade. 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. **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 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 (required the solution) which incorporate all materials covered in lecture class, homework assignments, and assigned readings. All tests will be offered in person on Canvas. The laptop with an internet access is required.

Seating chart may be randomized on the exam day. You will be tested on all materials covered from lectures and text. Exams will test your ability of solving problems and understanding of concepts. The exams are closed book (tentative); however, a formula sheet will be allowed. All books and notes will be placed under desks during exams. All hats are to be removed during exams and placed under desks. All noise making devices should be turned off before the exam begins to avoid distracting others.

**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 NJIT events

Examples of unacceptable reasons for missing an exam:

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

### **IN-CLASS PRESENTATION:**

In groups of 4, students will be expected to introduce a recent article regarding recent topics/issues/news on supply chain management and present his/her thoughts/opinions to the class using MS-PowerPoint. The oral presentations are designed to help you improve your communication skills and to become more comfortable with public speaking. The time allotted for each presentation will be approximately 20 minutes (consisting of a 15-minute presentation and 5-minute Q&As) depending on the number of students and time available.

### **SCHEDULE:**

A sign-up sheet will be distributed in class to schedule the presentation. The last two weeks of class before the final exam 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. Please note, all students must present. The presentation is a team activity and cannot be done individually.

#### PRESENTATION FILE SUBMISSION:

Your presentation team must be formed at the 3d class of the semester.

Please see the schedule for the final day of presentation topic approval (10% of your presentation score).

Final draft of your presentation is recommended and has to be submitted on Canvas by specified in the syllabus date.

Presentation file should be submitted to the designated drop box at Canvas, and then the instructor will download the files to his laptop for students' convenience (Please DO NOT e-mail me your presentation file submissions). The presentation file submission is **due the evening before the first presentation**. For fair evaluation, each student/team CANNOT change/resubmit their presentation file after the due.

#### GRADING:

In-class presentation will be graded on the main 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. The more detailed grading criteria list can be found on Canvas.

#### SOURCES:

Potential sources of your presentation topic include (but are not limited to):

*Wall Street Journal, Fortune Magazine, Business Week, Forbes, Economist, Barron's, Financial Times, Harvard Business Review, Sloan Management Review, California Management Review, Supply Chain Quarterly, Supply Chain Management Review, CPO Agenda, and/or another business periodical.*

#### 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%).

#### **HUNGER GAME SIMULATION**

The Hunger Game is the business simulation related to supply shortage case. A supply shortage is a situation in which demand for a good or service exceeds the available supply. Possible causes of a shortage include miscalculation of demand by a company producing a good or service, resulting in the inability to keep up with demand, or government policies such as price fixing or rationing, natural disasters, strikes upstream of supply chain, etc.

The simulation will allow you to apply knowledge gained in the classroom.

At the end of the game, you need to submit on Canvas 1-2 paragraphs that describes your game experience.

**Note:** If, for a valid reason, you cannot participate in this class activities, you have to conduct a personal case study related to the supply shortage. Please select the business filed by your interests and describe the supply shortage problem in the sector. The paper must be 7-10 pages including references. Please follow the proposed paper structure.

1) **Introduction, Research Question:** *What is the problem, why it is important.*

2) **Literature review:** how the problem was studied prior the research.

3) **Methodology:** Please propose the method to solve the problem.

4) What would be expected outcome of your proposed solution.

5) What implementation challenges a company/industry may face.

**PLAGIARISM:**

Plagiarism is the deliberate use and appropriation of another's work without any indication of the source and the representation of such work as the student's own. Any student, who fails to give credit for ideas, expressions or materials taken from another source, including internet sources, is guilty of plagiarism. Any student helping another to plagiarize may be found guilty of academic misconduct.

**GRADING SCALE:**

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:

**Percentage of Final Grade:**

Attendance	5%
Field Trip	5 %
Oral Presentation	20 %
Homework	20%
Hunger Game Simulation	10 %
Exams	40 %

**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

**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 any bonus assignments or quizzes that may be given.

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.

## Academic Resources

### Academic Integrity:

You are expected to be honest in all your academic work. Students should review and study the honor code at: <https://www.njit.edu/policies/sites/policies/files/academic-integrity-code.pdf>

New Jersey Institute of Technology is an institution dedicated to the pursuit of knowledge through teaching and research. The university expects that its graduates will assume positions of leadership within their professions and communities. Within this context, the university strives to develop and maintain a high level of ethics and honesty among all members of its community. Imperative to this goal is the commitment to truth and academic integrity. This commitment is confirmed in this NJIT University policy on Academic Integrity. The essential quality of this Policy is that each student shall demonstrate honesty and integrity in the completion of all assignments and in the participation of the learning process. Adherence to the University policy on Academic Integrity promotes the level of integrity required within the university and professional communities and assures students that their work is being judged fairly with the work of others. This Policy defines those behaviors which violate the principles of academic integrity, describes a range of appropriate sanctions for offenses, and identifies a method for promoting the principle of academic integrity on campus. No grade is worth compromising your personal integrity!

### Students with disabilities:

Students with disabilities needing accommodations of any nature so as to have a fair opportunity to perform in the class need to contact the [counseling center](#). Staff at the counseling center will determine what constitutes a reasonable accommodation and inform the instructor of what it is.

### Statement on Academic Integrity:

“Academic Integrity is the cornerstone of higher education and is central to the ideals of this course and the university. Cheating is strictly prohibited and devalues the degree that you are working on. As a member of the NJIT community, it is your responsibility to protect your educational investment by knowing and following the academic code of integrity policy that is found at:

<http://www5.njit.edu/policies/sites/policies/files/academic-integrity-code.pdf>.

Please note that it is my professional obligation and responsibility to report any academic misconduct to the Dean of Students Office. Any student found in violation of the code by cheating, plagiarizing or using any online software inappropriately will result in disciplinary action. This may include a failing grade of F, and/or suspension or dismissal from the university. If you have any questions about the code of Academic Integrity, please contact the Dean of Students Office at [dos@njit.edu](mailto:dos@njit.edu)”



**APPROXIMATE 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 Blackboard. In general, even if the specific date of coverage may change, the order of coverage should remain as presented below.

**Tentative Schedule**  
(Deviations may be necessary)

<b>Date</b>	<b>Topics</b>	<b>Homework Exercises</b>	<b>Note</b>
<b>9/5,</b>	<i>Week 1:</i> Course Intro; Intro to Supply Chain and Operations		
<b>9/12</b>	<i>Week 2:</i> Demand Forecasting and Suppliers selection Strategies		9/11 Last day to add/drop
<b>9/19,</b>	<i>Week 3:</i> Strategic Cost Management, Price, and Contract Management		Form a group for the final project
<b>9/26,</b>	<i>Week 4:</i> Service Design	HW1 due 9/25	
<b>10/3,</b>	<i>Week 5:</i> Quality Management		
<b>10/10,</b>	<i>Week 6:</i> Sales & Operations Planning I	HW 2 due 10/9	
<b>10/17</b>	<i>Week 7:</i> Exam Review	HW 3 due 10/16	
<b>10/19</b>	<b>Exam 1</b>		<b>No Makeup</b>
<b>10/24,</b>	<i>Week 8:</i> Sales & Operations Planning II	Project Proposal due 10/27	
<b>10/31,</b>	<i>Week 9:</i> Inventory Management I	HW4 due 10/30	
<b>11/7,</b>	<i>Week 10:</i> Inventory Management II		
<b>11/14,</b>	<i>Week 11:</i> Project Management and Supply Chain Cooperation	<b>HW5 due 11/13</b>	Last Day to Withdraw is 11/14
<b>11/21,</b>	<i>Week 12:</i> Hunger Game Simulation		<b>Final Project draft due 11/20</b>
<b>11/28</b>	<i>Week 13:</i> Final Project Presentation		<b>Final Group Project due 11/27</b>
<b>12/5</b>	<i>Week 14:</i> Final Project Presentation		
<b>12/12</b>	Week 15: Class Summary and Exam Review; Q&A		
<b>TBA</b>	<b>Exam 2</b>		<b>No Makeup</b>