COURSE DESCRIPTION:

This course serves as an introduction to Operations Management. The coverage of the discipline is very selective: We concentrate on a small number of powerful themes that have emerged recently as the central building blocks of world-class operations. We also present a sample of operations management tools and techniques that have been proved extremely useful over the years. The topics are equally relevant in the manufacturing and service sectors.

We will meet in twelve consecutive weeks in Spring 2016 on Thursday evenings from 6 pm to 9 pm. Class participation is important. If you have to miss any session, please notify the instructor in advance. The final exam will be due on ....

INSTRUCTOR: Michael Pinedo, Room KMC 8-65, (212) 998-0287
mpinedo@stern.nyu.edu

TEACHING FELLOW: Yukian Xu (lillian.xyq@gmail.com)

MEETINGS: Thursdays, 6:00PM – 9:00PM, ..... Room KMC 3-65
NYU Classes site: If you go to the site there are five buttons especially you would like to check out:
- Announcements
- Course Information
- Course Documents
- Assignments
- External Links

Especially under the Course Documents button, there are many articles and documents you may want to download and read.

TEXTS (Optional):


Other Operations Management References (Optional):

CASE PACKET (Required; this Case Packet is available at the book store).

- Benihana
- Ritz-Carlton (Harvard Case)
- Kristen’s Cookies
- Donner
- LL Bean

ADDITIONAL CASES (Available in the Case Packet on NYU Classes):

- Panama Canal Case (NYU)
- Ritz-Carlton (Columbia Case)
- Smith Thompson Investment Bank (NYU)
- FCN Bank (NYU)
- Xenon Case (NYU)
- Dell Direct (Stanford Case)
Note that there are two different Ritz-Carlton Cases. One is a Harvard case that is in the case packet you have bought in the book store and the other is a Columbia Case that is available on NYU Classes.

OTHER MATERIAL (Available on NYU Classes under Course Documents):

- Terms Used in Operations Management
- Analysis of an Operation
- FCN Securities Demo (A), (B) and (C)
- Network Cases
- Waiting Lines Table

VIDEOS:

In the last two pages of this syllabus there are a number of links to youtube videos developed by faculty in our department on seven of the topics that are going to be covered in the course. Each topic has three videos associated with it. You may want to watch the first two videos of each one of the topics. The first one is an Introduction in the topic; the second one describes a problem in the particular area, referred to as Problem Walkthrough; the third one describes a possible Assignment (however, none of the assignments in the videos have to be done for this course).

ASSIGNMENTS:

There are five assignments that have to be handed in during the course. They all are due at the beginning of the class. They are due in Sessions 3, 5, 7, 9, 11. The assignments are described under the assignment button on the course’s NYU Classes site.

*Only numbered assignments that are specifically designated as “submit” in the syllabus are to be handed-in at the beginning of class. Keep a copy of all homework submitted for reference during class.*

The text part of an assignment may be a maximum of 2 pages (1.5 spaced). Figures, tables, diagrams, etc., may be put on additional pages. Homework will be graded on the scale of (0.5, 1, 1.5 and 2), and will not be accepted late. They must be prepared individually in order to receive credit. Please write clearly or word process your homework. You are allowed to discuss the general issues concerning the homework with one another. However, the details concerning the homework and the writing up of it, you have to do by yourself (so no two homeworks should look alike).

GRADES:

Class Participation: 20%
Assignments: 40%
Final Exam: 40% (Take-home exam due .......)
HOW TO PREPARE FOR CLASS DISCUSSIONS

Please read the cases carefully. Use the study questions supplied in the syllabus as a guide. Be prepared to be called-upon to present the facts of the case, or to carry out the analysis indicated by the study questions. Class attendance and participation will be graded on the scale of (0,2), where 1 is for attending without participating, 1.5 is for contributing some to class discussion, and 2 for a substantial contribution to class discussion.

HONOR CODE

I expect every student to be familiar with the Stern School of Business Honor Code. Some of the ways in which the code applies to this course are discussed below:

- The honor code stipulates that no student will lie, cheat, copy or otherwise behave in an unfair manner to obtain academic advantage over other students.
- As per the honor code, an individual’s name on a report should be included only if they have contributed to the analysis. If an individual has not contributed to the analysis in an intellectual manner, it is a violation of the honor code to include his or her name.
- Furthermore, you may not refer to case write-ups from classes offered in earlier semesters.
- The premise of the honor code is that ideas should be attributed to their source. Therefore, please acknowledge the main source(s) of data, facts, and ideas (other than from the instructor or textbook) in all your written work and when you make a presentation. If you use material from a source other than the lecturer, the textbooks or the lecture notes, you must attribute the source. For example, say, “I discussed this with the TA.” Or “I obtained this from the following website.”
- You may discuss the homework with your classmates, TA or me. However, you must do them individually. The discussion is limited to “how to solve” type of questions. The actual solution must be done individually. Do not be worried of getting the answer incorrect in the homework. Most of the points will be given for using the correct approach.

USE OF LAPTOP COMPUTERS IN CLASS:

You are only allowed to use laptop computers in class under the following conditions:

- You send me an email in advance notifying me that you will be using a laptop.
- You have to sit in the very last row in the class
- Within 10 minutes after the class is over, you have to email me the notes you made on your laptop.

Texting and emailing during class is absolutely not allowed.
Module I: Intro to Operating Systems: Process Design and Analysis

Session 1: (Feb 11), Production Processes and Process Design

Case assignment:
- Benihana of Tokyo, W. Sasser and J. Klug, Harvard Business School (1998). Read, analyze, and be prepared to discuss the Benihana case in class. Use the following study questions as an aid in analyzing the case:
  (a) How would a flow chart for a Benihana restaurant look like?
  (b) What would be an appropriate ratio for the number of seats in the bar divided by the number of seats in the restaurant?

It would be very helpful for the preparation of this case if you would study the Analysis of an Operation document that is downloadable from the NYU Classes site under the button “Course Documentation” (Session 1); read especially that section of the document that deals with Little’s Law. This material will be useful throughout the course.

Session 2: (Feb 18), Design of Operating Processes

- Types of Operating Processes
- Design of Goods and Services

Case assignment:

Session 3: (Feb 25), Process Flow Analysis I

- Flow Diagram
- Capacity, Throughput Time, Cycle Time
- Gantt Chart
- Bottleneck
- Factors that Affect Throughput and the Bottleneck
  - Order Size
  - Resources (Labor, Supplies)
  - Set-up Time
- Multi Product Analysis

Case assignments:
- Kristen’s Cookie Company, Roger Bohn, Harvard Business School (1990). Read, analyze, and be prepared to discuss the Kristen's Cookie Company case, utilizing the six key questions at the end as guides.
- The Donner Case. Read and be prepared to discuss the Donner Case.
- The Panama Canal Case. Read and be prepared to discuss the Panama Canal Case (we will discuss the similarities between the Panama Canal and Kristen’s Cookies).

Assignment #1: Submit at the beginning of the class
Session 4: (Mar 3), *Optimal Resource Allocation*
- Linear Programming
- Models and Applications
- Sensitivity Analysis and Shadow Prices

**Module II: Managing for Competitive Advantage**

Session 5: (Mar 10), *Time-to-Market & Responsiveness*
- Project Management
- CPM & PERT
- Crashing the project
**Assignment #2:** Submit at the beginning of the class

Mar 17  SPRING BREAK – No Class

Session 6: (Mar 24), *Quality as a Strategic Issue and Process Improvement*
- Quality – Its Definition and Basis for Competition
- Quality Analysis, Measurement and Improvement
- Continuous improvement & Six Sigma
- Control Charts

Case assignment:
Read, analyze and be prepared to discuss the quality control issues in the Ritz Carlton (Columbia) case, which is downloadable from NYU Classes.

Session 7: (Mar 31), *Statistical Quality Control and Total Quality Management (Two Cases)*

Case assignment:
Read, analyze, and be prepared to discuss the Smith Thompson case. Use the following study questions as an aid in analyzing the case

**Assignment #3:** Submit at the beginning of the class

Session 8: (Apr 7), *The Effects of Uncertainty–Waiting Lines & Queueing Theory*
- Characteristics of a Waiting-Line System
  - Arrival, Waiting Line, Service Characteristics
  - Measuring the Queue’s Performance
  - Queuing Costs
- Psychology of Queues

Case assignment:
*The First City National Bank Case*, Read, analyze, and be prepared to discuss the First City National Bank case.
Module III: Supply Chain Management

Session 9: (Apr 14), Inventory Concepts and Models
- Importance of Inventory
- Inventory Measures
- EOQ and Periodic Review Models
Case assignment:
The Xenon Case: Prepare for Class Discussion
Assignment #4: Submit at the beginning of the class

Session 10: (Apr 21), Inventory in Action
- Stochastic Inventory Management
- Newsboy Model
- The Beer Game
Case assignment:
- LL Bean. Read and be prepared to discuss the L.L. Bean, Inc. case

Session 11: (Apr 28), Supply Chain Management
Case assignment:
- Read and be prepared to discuss the Dell Direct case. What are the operational factors that contribute to Dell’s competitive advantage? In your opinion, what should Dell do to keep their competitive advantage?
- Dell can deliver a computer to your home within 3-4 days (according to your specifications). If GM would follow Dell’s business model, how much time would it take for GM to deliver you a car according to your specifications? What are all the factors that can explain the difference?
Assignment #5: Submit at the beginning of the class

Session 12: (May 5), Class Review and Wrap-Up
VIDEO LINKS

Below there are a number of links to youtube videos developed by faculty in our department on seven of the topics that are going to be covered in the course. Each topic has three videos associated with it. You may want to see the first two videos of each one of the topics. The first one is an Introduction in the topic. The second one describes a problem in the particular area, referred to as Problem Walkthrough. The third one describes a possible Assignment.

1- Process Analysis and Capacity

https://www.youtube.com/watch?v=kqWozEjl_kw&index=1&list=PLue8TeHAyWZEwHr6D1fC-zrdxM9DiQ4A

https://www.youtube.com/watch?v=3A7FW9b-uSw&index=2&list=PLue8TeHAyWZEwHr6D1fC-zrdxM9DiQ4A

https://www.youtube.com/watch?v=Gtys0zk4y0w&index=3&list=PLue8TeHAyWZEwHr6D1fC-zrdxM9DiQ4A

2- Quality

https://www.youtube.com/watch?v=3HBx_N7_tz0&index=18&list=PLue8TeHAyWZEwHr6D1fC-zrdxM9DiQ4A

https://www.youtube.com/watch?v=UU1i9EJerKI&index=17&list=PLue8TeHAyWZEwHr6D1fC-zrdxM9DiQ4A

https://www.youtube.com/watch?v=cbRRH2yFpbQ&index=16&list=PLue8TeHAyWZEwHr6D1fC-zrdxM9DiQ4A

3- Inventory

https://www.youtube.com/watch?v=kGPr9oeN0MQ&index=10&list=PLue8TeHAyWZEwHr6D1fC-zrdxM9DiQ4A

https://www.youtube.com/watch?v=JCt1IVSjsuM&index=11&list=PLue8TeHAyWZEwHr6D1fC-zrdxM9DiQ4A

https://www.youtube.com/watch?v=pIOzdf1XsXc&index=12&list=PLue8TeHAyWZEwHr6D1fC-zrdxM9DiQ4A
4- Supply Chain Management

https://www.youtube.com/watch?v=Gf-d5mIl0zs&index=9&list=PLue8TeHAyWZEwHr6D1fcC-zrdxM9DiQ4A

https://www.youtube.com/watch?v=I3daWQOaHc8&index=8&list=PLue8TeHAyWZEwHr6D1fcC-zrdxM9DiQ4A

https://www.youtube.com/watch?v=4RwT_VfS4KE&index=7&list=PLue8TeHAyWZEwHr6D1fcC-zrdxM9DiQ4A

5- Revenue Management

https://www.youtube.com/watch?v=vutHhJgSC-4&index=13&list=PLue8TeHAyWZEwHr6D1fcC-zrdxM9DiQ4A

https://www.youtube.com/watch?v=4SfMx3pVMgo&index=15&list=PLue8TeHAyWZEwHr6D1fcC-zrdxM9DiQ4A

https://www.youtube.com/watch?v=YokEJc5yO-4&index=14&list=PLue8TeHAyWZEwHr6D1fcC-zrdxM9DiQ4A

6- Queueing

https://www.youtube.com/watch?v=EXimUhimeTw&index=4&list=PLue8TeHAyWZEwHr6D1fcC-zrdxM9DiQ4A

https://www.youtube.com/watch?v=pTflL2UaKkA&index=5&list=PLue8TeHAyWZEwHr6D1fcC-zrdxM9DiQ4A

https://www.youtube.com/watch?v=7xv6F_wbCNk&index=6&list=PLue8TeHAyWZEwHr6D1fcC-zrdxM9DiQ4A

7- Simulation

https://www.youtube.com/watch?v=jNEE7ywKODM&index=19&list=PLue8TeHAyWZEwHr6D1fcC-zrdxM9DiQ4A

https://www.youtube.com/watch?v=2oT9cuf3CZ8&index=20&list=PLue8TeHAyWZEwHr6D1fcC-zrdxM9DiQ4A

https://www.youtube.com/watch?v=CVh-8cvZiz4&index=21&list=PLue8TeHAyWZEwHr6D1fcC-zrdxM9DiQ4A