

EW MBA 204: Operations

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Office Hours: I follow an open-door policy. You should feel free to stop by anytime.

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Note: If you have GSI questions, please contact the Head GSI for your cohort. That GSI will serve as the main contact point and will address issues directly or redirect them to another member of the teaching team. Each cohort's Head GSI will attend class with that cohort, unless in exceptional circumstances. As noted below, the GSIs are also available for tutoring.

Overview

Operations is the design and management of the processes that transform inputs into finished goods or services. Operations is one of the primary functions of a firm. While marketing induces the demand for products and finance provides the capital, operations *produces and delivers* the product (goods and services). It is responsible for matching supply with demand.

This course provides an introduction to the concepts and analytic methods that are useful in understanding the management of a firm's operations. The course's learning objectives are:

- (1) to understand the problems and issues confronting operations managers, and
- (2) to obtain language, concepts, insights and tools to deal with these issues in order to gain competitive advantage through operations.

Materials

The course reader includes the cases and a few other readings. It is available in an electronic form at Study.Net. All other readings will be handed out in class and/or posted to bCourses (for any bCourses tech related issues please contact helpdesk@haas.berkeley.edu). If you miss a handout, you can pick it up from the file box outside F570.

There is no required textbook. If you would like supplementary reading addressing the tools and concepts in the course, there is a recommended textbook: *Matching Supply with Demand: An Introduction to Operations Management* by Gerard Cachon and Christian Terwiesch (3rd Edition, 2013, McGraw-Hill/Irwin). Several course contents map to textbook sections and are optional

supplementary readings (see the plan for each session later in this syllabus). The textbook is on reserve at Haas' Long Library.

Grading

The course grade will be determined as follows:

- Mid-Course Take Home (10%)
- Littlefield Assignment (10%)
- Written Assignments (15%)
- Class Participation and Contribution (15%)
- Final Exam (50%)

Collaboration or sharing work in any way on the examinations is not permitted and subject to severe sanctions in line with campus policy. Assignments do permit some collaboration, but students should pay careful attention to the limits and guidelines outlined below in this syllabus and on each assignment.

Preparation and Participation

The “class contribution” portion of your grade will be based on the extent to which you demonstrate that you are prepared, the relevance and depth of your comments (their quality, not quantity), and the degree to which you listen carefully and respond to your peers. You are expected to contribute actively to the class with your participation and constructive comments. Accordingly, you should expect to be “cold called.”¹ In particular, you are expected to be well prepared for case discussions. Use of a laptop computer (or any other electronic device such a tablet or mobile phone) for anything unrelated to the course during class time will adversely affect the “class contribution” portion of your final grade. Failure to attend class will have similarly a negative effect.² In preparing for class or exams or in completing written assignments, you may not benefit from notes, discussions with course participants, or any other material from any previous offering of this, or a similar, course.

Written Assignments

The four written assignments are primarily of a “concept check” variety and are designed to make sure you are keeping up with the fundamental concepts. So as to keep your workload manageable and to allow you to focus on building the basic intuition, the concept check assignments are intended not to be overly difficult. The mid-course take home and final exams will require that you demonstrate a deeper knowledge of the material. All four written assignments should be done in groups of no more than two (individual submissions are permitted), and this rule is strict.

¹ This practice is not meant to be adversarial. Instead, its purpose is to encourage you (1) to develop the business-relevant skill of being able to think on your feet and be articulate and (2) to prepare in advance for class and be engaged in the class discussion. If exceptional circumstances leave you unprepared for a case discussion, let the instructor know *before* class begins.

² If you are interested in the details of how class contribution is evaluated, it is done as follows: At the end of each session, Jose assesses class participation for each student registered for that Cohort and, independently, your Head GSI (if she/he attended the session) does the same. At the end of the term, Jose combines these class-by-class assessments to come up with an overall assessment of your class contribution.

Submissions where two different groups cooperate in any way are not compliant with course policy and are subject to severe sanctions (students should only discuss the assignment and answers with their assignment partner). Besides the four written assignments, the National Cranberry write-up should be done in groups of no more than four. Littlefield should be done by groups of four (not five, not three) people; the Mid-Course Take Home is done individually. For group assignments, turn in only one write-up (hardcopy) for each assignment, at the beginning of the class by the due date for your cohort (if a student can't make it to a class, it's sufficient if the student's partner for assignments turns in a hardcopy by the due date as indicated above.) Submitting work bearing the name of more than one student requires that the students contributed roughly equally (a 60:40 split is acceptable, more unequal splits are not) to the assignment. The four written assignments are graded on a scale of "check plus," "check," "check minus" or "minus." The Mid-Course Take Home is an opportunity for you to assess your understanding of the material at the mid-point of the course, relative to what would be expected on an exam. You will receive "passing" credit if your work shows that you took the assignment seriously (essentially treating it as an exam for which you studied in advance), but your individual answers will not be graded. Written assignments should be turned in to your instructor at the beginning of class on assigned due dates.

Final Exam

The final exam will be closed notes, except for one page of formulas that will be provided (which you will be able to see in advance; it will be posted to bCourses before class 9). The only electronic device you may use is a calculator. The exam will be both quantitative and qualitative and it will draw on the cases, lectures, readings, and in-class discussions. You will be responsible for details in the cases that point to and illustrate the course concepts (the purpose here is to have the exams reflect the class discussion, and to reward those who prepared for and participated in those discussions). In preparing for the exam, you should anticipate that the level of difficulty would be on par with the more difficult practice problems that are provided, with some exam questions at the level of the most difficult practice problems.

There are 5 sources of practice problems:

- (1) Written Assignments
- (2) Discussion sessions (slides will be posted to bCourses)
- (3) "Practice Problems for Part I of Course" and "Practice Problems for Part II of Course" (Full Solutions for Part I will be made available on bCourses by week 4; Full Solutions for Part II will be made available on bCourses by week 9)
- (4) Mid-Course Take Home (This will be made available in week 4; a list of equations that students can use while working on the mid-course take home will be posted to bCourses after class 4)
- (5) Sample final questions (Questions will be published on bCourses by week 7; Solutions will be made available on bCourses by class 9)

Discussion Sessions

There will be optional discussion sessions at the end of the week, at times TBD. We anticipate that sessions will be held at the end of weeks 1, 2, 3, 4, 6, 7, 9; dates/times TBD. The goal of these sessions is to summarize material that we have covered in class, go over practice problems and give you the opportunity to ask questions. For each session, an outline of the topics that will be covered will be communicated to students no later than the day before the session. Some sessions will be shorter (e.g. the first one,) some others may be slightly longer (e.g. the last one)

A recording of the session will be posted to bCourses whenever possible. You can join the sessions remotely using this link:

<http://haasberkeley.adobeconnect.com/ewmba204section-bg>

Policy Regarding Switching Cohorts and Missing Class

Please attend class with the cohort for which you are registered. Doing so facilitates (1) cohort cohesion and (2) everyone having a seat. Accordingly, switching sections is discouraged. If you must miss a class due to an emergency or unavoidable conflict, you may attend with the other cohort. In this case, just go ahead and attend class with the other cohort. Contact your head GSI before the session and let him or her know that you are attending the other cohort. Before the start of the session that you are attending, let the GSI in attendance know that you are joining that session. Priority for seating and handouts will go to students attending with the cohort for which they are registered. If you must miss a class, have a classmate in the section for which you are registered turn in any assignment that is due; if this is impossible, you may email your assignment to your Head GSI before class. To catch up on the material, you are encouraged to get the handouts, ask your classmates to share their notes and discuss the material; it is also possible to request videotaping for sessions, which students can check on-demand later on (see below). If after doing this you would like additional clarifications, please go to your Head GSI and then to the instructor. To catch up, you might also find it helpful to read the “Supplemental optional readings from optional textbook”, as provided later in this document.

Requesting videotaping

Students can request video recording of a session by sending a request directly to the EW MBA program’s office (ewmba_office@haas.berkeley.edu; 510-643-9000). Media services only record a limited number of sessions per day; hence students are encouraged to send their video recording requests to the program’s office in advance. (For more information about course videos, see <http://haas.berkeley.edu/EWMBA/academics/video-requests.html>)

Conduct in the Classroom

Business school classes take place in an environment that supports learning and encourages the exchange of ideas. Behavior that distracts students and the instructor negatively affects the learning environment. Arriving to class late, leaving class early, or walking in and out of class during a class session is distracting to students and the instructor. Avoiding these behaviors shows respect to your fellow students and the learning environment.

Laptop and Electronic Device Policy

A mutually supportive learning environment depends on active attention and engagement. For this reason, **no use of laptops or any other electronic device (e.g., mobile phone, tablet) is allowed during classroom sessions.** If you violate this policy, you face, at a very minimum, a substantial penalization in the class participation portion of your grade; more substantial measures and grade penalizations can be applied at the discretion of the instructor. The one exception in which the use of electronics is allowed for the purpose of calculations is during in-class “work with your neighbor” exercises that will be announced by the instructor (students will also be requested to bring a laptop for use at the end of class 7; see details later in the syllabus).

A student might ask, “Can’t an exception be made for me, so I can use my laptop to access the case or my case analysis that I didn’t print out, take notes electronically, etc.?” Although in principle laptops could be used for legitimate purposes in class, once laptops are permitted, all uses are permitted (the instructor cannot possibly monitor how each laptop is used), and then the classroom

learning environment is so undermined that any potential gains in individual learning/convenience are far outweighed by the aggregate loss to the classroom as a whole. For this reason, the no-laptop policy is firm; it is not open to negotiation.

Emails and Modes of Communication

Email is an efficient means of communication to inform the instructor of material you think may be of interest to the class (e.g., your work experience, or a link to a video or recent article), or to ask an administrative question that is not addressed in the syllabus (most administrative issues are addressed in the syllabus, so please check before emailing). The instructor finds that, as a mode of communication, email tends to be an inefficient way to resolve subtle questions about concepts or problems. The instructor is happy to address any questions you may have of this type, but encourages you to ask in person (see the “open door” policy above) or by phone, as this is much more efficient than the route of typing out lengthy emails and going back and forth. If you have questions about the course content and cannot wait to discuss them in person or by phone with the instructor, you are encouraged to contact your cohort’s Head GSI.

Tutoring

Part of the responsibilities of each GSI is to be available for tutoring. If you have difficulty with the course, please reach out to your Head GSI to arrange for tutoring. In particular, if you perform poorly on the Midterm Exam or if you find that you are struggling with completing the written assignments, then you are encouraged to reach out to your Head GSI for tutoring.

Feedback on Your Performance

You will be able to access your grade for each assignment (e.g., written assignments, Littlefield assignment) on the Grades section in bCourses. After the term is over, you will receive an email when your letter grade is posted to bCourses. At that time you will be able to view the elements of your course performance on the Grade sections in bCourses (including your final exam).

Students with Disabilities

Students with disabilities seeking academic accommodation in this course are encouraged to promptly notify the instructor by providing a Letter of Accommodation from the Disabled Students Program. Information about special accommodations for exams will be provided via email a week before the exam is scheduled (provided that the instructor has been made aware of the Letter of Accommodation in advance). Please immediately contact your instructor if you have not received an email with detailed examination accommodation information no later than three business days prior to the date the course examination is scheduled.

Dates for Your Calendar

There are several dates that you should mark in your calendar at the beginning of the course: the dates of the Littlefield simulation (an internet-accessed simulation that runs continuously over a four-day period) and the due date of the associated assignment; the due date of the Mid-Course Take Home; and the date of the final exam. (These dates are provided subsequently in the syllabus.) The Littlefield simulation is time intensive, so you should plan in advance to devote additional time to the course during the simulation (it is also absolutely essential to do quality pre-work before the simulation begins; groups should plan on allocating time for this pre-work analysis accordingly).

EW MBA 204 – Course Outline

(Subject to change)

Class	Date for Blue C	Date for Gold C	Summary
1A	8/2	8/3	Introduction (Optional) Textbook: Chapter 1 <i>Other:</i> Syllabus and Course Policies
1B			Process Analysis and Process Choice <i>Case Study:</i> Kristen’s Cookie Company (Optional) Textbook: Sections 2.2, 2.6, 3.1-3.2, 3.4
2A	8/9	8/10	The Service Factory <i>Case Study:</i> Shouldice Hospital (Optional) Textbook: Section 2.6
2B			Responsiveness in Services: Queueing I (Optional) Textbook: Section 8.1-8.6
3 3A	8/16	8/17	<i>Turn in: Case write-up</i> Process Flows <i>Case Study:</i> National Cranberry Cooperative (Abridged) (Optional) Textbook: Section 2.3
3B			Little’s Law: Theory and Example (Optional) Textbook: Section 2.3 Responsiveness in Services: Pooling and Psychology of Waiting (Optional) Textbook: Sections 8.9, 8.11
4 4A	8/23	8/24	<i>Turn in: written assignment #1</i> Toyota Production System <i>Case Study:</i> Toyota Motor Manufacturing, USA (Optional) Textbook: Chapter 11
4B			The Economic Order Quantity Model (Optional) Textbook: Sections 2.5, 7.6
5 5A	8/30	8/31	<i>Turn in: written assignment #2</i> Betting on Uncertain Demand (Optional) Textbook: Sections 12.1--12.5, 12.7, 15.2
5B			Operations in the Digital Economy

6	9/6	9/7	<i>Turn in: Mid-Course Take Home</i>
6A			Supply Chain Innovation <i>Case Study: Zara</i> (Optional) Textbook: Sections 13.1-13.3; 15.1-15.3 <i>Others: Read Littlefield Technologies</i>
6B			Revenue Management <i>Case Study: Southwest Airlines</i> (Optional) Textbook: Section 16.1-16.3

7	9/13	9/14	<i>Turn in: written assignment #3</i>
7A			Supply Chain Demand Management <i>Case Study: Sport Obermeyer, Ltd</i> (Optional) Textbook: Sections 13.4-13.5 [Note: 1 st half 6:00-7:15; 2 nd half 7:45-9:30]
7B			Supply Chain Experimental Exercise <i>Other: Read Supply Chain Game Description</i>

8	9/20	9/21	<i>Turn in: written assignment #4</i>
8A			Supply Chain Coordination <i>Case Study: Barilla Spa (A)</i> (Optional) Textbook: Sections 17.1-17.2
8B			Littlefield Simulation Breakout Session

9	9/27	9/28	<i>Turn in: Littlefield Assignment (by Monday 9/25)</i>
9A			Littlefield Simulation Debrief
9B			Course Summary and Students Presentations

EW MBA 204 – Weekly Plan and Preparation Guidelines

(Subject to Change)

Part I: Process Analysis & Variability in Processes

Session 1

Read: Syllabus

Kristen's Cookies Company case

Session 1A: Introduction

Session 1B: Process Analysis

Discussion Questions: Read the first two pages of the *Kristen's Cookies Company* case and prepare the following questions for discussion. In answering the questions, assume that the order is for one dozen cookies (with custom ingredients) and that baking trays, cooling space, and demand are plentiful. Further, assume that task assignments (e.g., who does what in cookie making) and sequences (e.g., when various steps are performed) are as they are described in the case. As noted above, for case discussions, you should be prepared to be “cold called”.

1. Draw a diagram of the various production steps involved in cookie making (we will call this a process flow diagram).
2. A “rush order” is a custom-ingredient cookie order for which you are willing to push aside everything currently in the production system, in order to process the rush order immediately. How quickly can you fill a rush order?
3. How many orders can you fill in a night, assuming you are open four hours each night?
4. What fraction of the time will you be busy? Your roommate?
5. Because your baking trays can hold exactly one dozen cookies, your initial plan was to require that each customer place an order for one dozen cookies. Would you benefit by requiring each customer to place an order for two-dozen cookies, three-dozen cookies, or more?
6. Are there any changes you can make in your production plans that will allow you to make better cookies in less time or at lower cost?

After class: Read *Types of Processes* (Note: This reading provides more explanation and discussion of process types. If you felt you had a good grasp of our discussion in class, you will be able to get through it fairly quickly. In any case, it complements our discussion, so you will find it useful to look it over after class).

(Supplemental optional reading from optional textbook: Cachon and Terwiesch, Chapter 1)

(Supplemental optional reading from optional textbook: Cachon and Terwiesch, Sections 2.2, 2.6, 3.1.-3.2, 3.4)

Discussion Session for Week 1 – Tentative plan: The GSI will work through practice problems on process analysis and will take questions on the lecture material and cases.

Session 2

Read: *Shouldice Hospital Limited* case

Session 2A: The Service Factory

Discussion Questions:

1. How has Shouldice designed its service process to support the value proposition it offers to customers? In particular, what process design choices contribute to high efficiency and productivity? How would you describe the culture of the organization?
2. What is the resource (or resources) that is limiting the rate at which Shouldice can serve customers? Do a back of the envelope analysis to identify this resource (or resources). Here's a hint to get you started. The case provides some data on some of the key resources, which are required to process a patient: operating rooms, exam rooms, patient rooms and surgeons. For each of these resources, calculate the capacity of the resource in terms of how many patients could be processed per week, if all that were required to process a patient was that resource. Then use this analysis to come to an answer to the question above.
3. What are the advantages and disadvantages of each of the options proposed for increasing capacity? Develop a point of view on which option is most attractive.

Session 2B: Responsiveness in Services: Queueing I

This class is devoted to the introduction and discussion of queueing models

After class:

(Supplemental optional reading from optional textbook: Cachon and Terwiesch, Section 2.6)

(Supplemental optional reading from optional textbook: Cachon and Terwiesch, Section 8.1-8.6)

Discussion Session for Week 2 – Tentative plan: The GSI will work through practice problems on queueing and will take questions on the lecture material and cases. The GSI will also go through a review of the *statistical concepts and tools* that you have seen in previous courses and for which you are responsible in this course.

Session 3

Turn in Before Class: Be prepared to turn in a write-up of your answers to the first three questions for the *National Cranberry Cooperative* Case. The write-up should demonstrate that you thoughtfully considered the questions, but the write-up will not be graded, so you do not need to

worry about presentation. You should make a copy for yourself to reference during the class discussion.

Read: National Cranberry Cooperative (Abridged)
Bring calculator

Session 3A: Process Flows

Discussion Questions: In answering the questions below, ignore the light meter in your analysis. You should be prepared to write on the board at the start of class your answers to the first three questions, and you should give some thought to the last two questions. The production process described in the case is an example of a *continuous flow process*. If you want a mental picture of the various processing resources (e.g., the dechaffing unit), think of each resource as a unit built over a conveyor belt, with cranberries being transformed as they steadily move along the conveyor belt (in class, I will show pictures of a cranberry processing facility that depict this).

1. Draw a process flow diagram showing the major process steps, inventories and flows. Indicate the capacity at each of the process steps. You should assume:
 - a. 16,000 barrels per day is the average of deliveries over the 20 days from 9/20-10/9
 - b. Each truck carries 75 barrels on average
 - c. Trucks arrive uniformly over a 12-hour period
 - d. Trucks carry 70% wet berries and 30% dry berries
 - e. The plant follows “last year’s schedule,” which is described as, “Trucks arrived starting at 7:00 a.m., and we only staffed the dumpers and the bins, and then started the rest of the operation at 11:00 a.m.”
2. Which resource (or resources) is the bottleneck? That is, what is the resource (or resources) that is limiting the rate at which the plant can process berries, given the current product mix of dry and wet berries?
3. How late does the plant need to be open (i.e., when does the plant shut down) during this peak season?
4. How bad is the truck delay at the loading dock during this peak season?
5. What are the basic options for improving the operation? Which options would you recommend and why?

HINT: We will assume that the process for wet berries operates at the pace given by the bottleneck in all process steps (think of each resource as a unit built over a conveyor belt)

* Comments regarding the questions: for the first two questions, you should apply the concepts we developed in the prior classes (for question 1, the process flow diagram is a little more complicated than what we’ve seen before, but the concept is the same). Questions 3 and 4 ask you to think more deeply. Instead of just applying something we’ve already done, you’ll need to think creatively about the best way to tackle the questions. This will require some time and effort, but tackling a problem like this where you have to come up with the solution approach is

really the best way to learn. Put another way, if you were handed a solution approach and simply asked you to apply it, the learning process would not be as enriching.

Session 3B: Responsiveness in Services: Little's Law and more on Queueing Theory

Read: About Netflix

Preparation: Read *About Netflix* (available in Study.net). Our discussion will focus exclusively on Netflix's *DVD-by-mail* service (we will not discuss its streaming service), so pay particular attention to how the DVD-by-mail service works. One important question to assess the performance of the DVD-by-mail portion of the company's business model is: How long, on average, do customers hold onto DVDs, and how long, on average, do DVDs sit in the company's processing facility in between rentals? See if you can come up with an answer to these questions (don't worry if you can't, but give it some thought; bonus participation points will be given for correct answers. If the questions above are too difficult, answer the simpler question: How many DVDs (on average) are in transit between Netflix and its customers?

After Class: Read *Little's Law*

(Supplemental optional reading from optional textbook: Cachon and Terwiesch, Sections 2.3)

Read *Queueing*.

(Supplemental optional reading from optional textbook: Cachon and Terwiesch, Sections 8.9, 8.11)

To keep up with the course material (and so stay on track to be prepared for the final exam), you should work through the first half of *Practice Problems for Part 1 of Course*, which is posted to bCourses.

Discussion Session for Week 3 – Tentative plan: The GSI will work through practice problems on Little's Law, queueing (e.g., pooling) and will take questions on the lecture material and cases.

Session 4

Turn in Before Class: Written assignment #1

Read: Toyota Motor Manufacturing, USA

Session 4A: Toyota Production System

Discussion Questions:

1. You are Doug Friesen. What concrete actions are you going to take on Monday morning (may 4) to address the seat problem? (The case describes a series of meetings held on

Friday May 1, and the exhibits summarize the information obtained through those meetings. So, please do not offer an answer such as: “I would talk to so-and-so” or “I would hold a meeting with so-and-so”. Your boss wants *action*.) As a more general matter, where would you focus your attention and solution efforts?

2. What is the cause of the seat problem?
3. Where, if at all, does the current routine for handling defective seats deviate from the principles of the Toyota Production System?
4. What is the real problem (i.e., the deeper underlying problem) facing Doug Friesen?

Session 4B: The Economic Order Quantity Model

After Class: You should plan to set aside a two-and-a-half hour time window in the next 2 weeks during which to complete the Mid-Course Take Home. (The Mid-Course Take Home will be handed out at the end of this class session.)

Read *Economic Order Quantity*. To keep up with the course material, you should finish working through *Practice Problems for Part I of Course*, which is posted to bCourses.

(Supplemental optional reading from optional textbook: Cachon and Terwiesch, Chapter 11)

(Supplemental optional reading from optional textbook: Cachon and Terwiesch, Sections 2.5, 7.6)

Discussion Session for Week 4 – Tentative plan: The GSI will take questions on the solutions to written assignment #1 and the lecture material. The GSI will work through practice problems on the Economic Order Quantity model.

Part II: Supply Chain Management

Session 5

Turn in Before Class: Written assignment #2.

Session 5A: Betting on Uncertain Demand

Preparation: In this session we will develop a tool that will serve as the key logic for essentially the rest of the course. The material in this session is challenging. It relies on some statistical concepts and tools that were covered in your previous courses, and in the Stats refresher covered in in the discussion session of week 2.

Session 5B: Operations in the Digital Economy

After Class:

If your understanding of the statistical concepts used in this session (e.g., the Normal Loss Function) is hazy, please read *Statistics Review and Primer on the Normal Loss Function*. If you have a strong understanding of these concepts, you should skip this reading.

(Supplemental optional reading from optional textbook: Cachon and Terwiesch, Sections 12.1-12.5, 12.7, 15.2)

No discussion session this week (Labor Day weekend).

Session 6

Before Class: Formally register your group of four for the Littlefield Simulation. See the syllabus Appendix for the instructions to register your team.

Turn in Before Class: Mid-Course Take Home Exam

Read: Southwest Airlines (abridged) mini case
Zara (abridged) mini-case
Littlefield Technologies.

Session 6A: Revenue Management

Discussion Questions:

1. How do Southwest's operational decisions support Southwest's low costs?
2. Discuss how traditional competitors with a hub-and-spoke system could benefit/not benefit from copying Southwest's approach?

Session 6B: Supply Chain Innovation

Discussion Questions:

1. How does the Newsvendor Model Apply to Zara?
2. How does Zara differ from other, more traditional, clothing retailers?

After Class: Read How Revenue Management Killed an Airline, which is attached to the slides distributed in class.

(Supplemental optional reading from optional textbook: Cachon and Terwiesch, Sections 13.1.-13.3, 15.1-15.3)

(Supplemental optional reading from optional textbook: Cachon and Terwiesch, Sections 16.1-16.3)

Discussion Session for Week 6 – Tentative plan: The GSI will take questions on the solutions to written assignment 2 and the take-home mid-term. If you have questions about the solutions to the Mid-Course Take Home, you should attend this session; the solutions to the Mid-Course

Take Home will not be discussed anywhere else in the course. The GSI will work through practice problems on the Newsvendor model.

Session 7

Note: The timing of today's class will be slightly different. The first half meets between 6:00-7:15; the second half meets between 7:45-9:30 in the Wells Fargo Room. Bring: \$5 (in the form of one \$5 bill or five \$1 bills) and a laptop (at the end of the second part of the class groups will be requested to enter data into a spreadsheet and send it to your GSI).

Turn in Before Class: Written assignment #3

Read: *Sport Obermeyer, Ltd. Case*
Preparing for the Experimental Supply Chain Exercise

Session 7A: Supply Chain Demand Management

Discussion Questions: You should be prepared to write on the board at the start of class your answers to the first question and to articulate in class the answers for the other two questions.

1. Using the sample data given in Exhibit 10, make a recommendation for how many units of each style Wally should order during the initial phase of production. Assume that all of the ten styles in the sample problem are made in Hong Kong. Ignore the minimum order quantity constraint in your initial analysis. For this question, assume that there would be no future production for these parkas (i.e., only one production decision is taken to satisfy the demand).
 - a. First, assume that there are no constraints on the total production commitment or on any individual style. How many units of each style should Wally order for the initial production phase?
 - b. Now assume that Obermeyer's initial production commitment cannot exceed 10,000 units. How many units of each style should Wally order for the initial production phase?
2. How should Wally plan the initial phase of production if a second production run is feasible later? That is, how should Wally think about what to produce early and what to produce later?
3. What operational changes would you recommend to Wally to improve performance?

Bring a calculator to class. If you do analysis in Excel and want to reference your spreadsheet in class, bring a printout of your spreadsheet to class; this way you can reference your analysis and adhere to the course's laptop policy.

Session 7B: Supply Chain Experimental Exercise

IMPORTANT: Change in location: Class will meet in the Wells Fargo Room. Change in time: Class will meet between 7:45-9:30. (The instructor apologizes about the shorter break in today's session; the reason for a shorter break is to allow sufficient time for students to

experience the simulation played in the second part of the class. Note that the shorter break this week is also compensated with a longer break next week, where students meet at their own pace in the second part of the class)

Today's class will be devoted to a participatory simulation exercise in which students play the role of links in a supply chain: producer, distributor, wholesaler, or retailer. Students will form groups of eight participants as they enter the room, and then the game will begin.

Discussion Session for Week 7 – Tentative plan: The GSI will take questions on the solutions to written assignment 3 and will work through practice problems on Revenue Management.

Session 8

Note on switching cohorts: In the first part of today's class, we will discuss the results of the supply chain simulation played in class 7. This activity is cohort-specific; students switching cohorts will miss the opportunity to participate in the discussion with their own groups.

Turn in Before Class: Written assignment #4

Read: Barilla Spa (Abridged)

Session 8A: Supply Chain Coordination

Discussion Questions: We will have a narrow discussion focused around the questions below, primarily question two. [HINT: so read the questions below first; then skim the case focusing the reading on the aspects most directly related to these questions]

1. What is causing the orders Barilla receives to fluctuate so wildly (for evidence of this fluctuation, see Exhibit 12 which shows how the orders placed by one of Barilla's customers fluctuate from week to week)? What is the impact of these fluctuations on the operational performance of the supply chain?
2. Consider how the various constituencies would respond to JITD program.
 - a. *If your first name begins with A-L, put yourself in the position of a Barilla salesperson:* What are the three best arguments against the JITD program?
 - b. *If your first name begins with M-Z, put yourself in the position of one of Barilla's customers:* What are the three best arguments against the JITD program?
 - c. *Everyone:* Put yourself in the position of Barilla's logistics group, which wants to implement the JITD program: Anticipate the arguments against the program from Barilla's sales force and its customers. What is the best way to respond to and persuade these constituencies?

Session 8B: Littlefield Simulation Breakout Session

The Littlefield Simulation is an internet-accessed simulation. Because the simulation runs continuously and because it will occupy a significant amount of your time this week, I have

allocated this time to allow you to work as a group and think about your strategic plan for the simulation.

To prepare for the simulation and this class: Review the reading *Littlefield Technologies*, access the simulation and its first 50 days of data, and access the file “Littlefield_Processing_Times_Data.xls”, which is posted to the Littlefield folder on bCourses, for data on the processing times of the equipment on the factory floor. Complete some initial analyses of these data. Meet with your team to discuss two topics: first, what analysis you have completed and what analysis you think should be done, so as to have an analytic base to support your decisions; second, what decisions you should make and on what analysis should you base these decisions.

As discussed in the *Littlefield Technologies* reading, your assignment during this class is to create four PowerPoint slides that describe the analysis behind each of four major decisions. To get you started towards this end, in the breakout session you are encouraged to complete a draft of an initial set of slides.

The GSIs will be happy to talk with your team during the breakout session. In talking with the GSIs, you should be prepared to present the analysis you have completed to inform your decisions. The GSIs will be happy to discuss: the concepts in the course; the decisions in the game; and which concepts are relevant to which decisions in the game and why. The GSIs will also be happy to address specific questions (e.g., here is an analysis we did, but we had a question about what we did in this portion of the analysis). The GSIs will not be providing answers to questions of the type “Here’s what we thought about doing. Is this the right thing to do?” These kinds of questions will be addressed in the debrief session.

If you have forgotten your team name or password, please contact your Head GSI.

No discussion session this week due to the Littlefield Simulation.

Littlefield Simulation Begins: Wednesday, 9/20, 12:00 PM (noon)

Littlefield Simulation Ends: Saturday, 9/23, 3:00 PM

Littlefield Simulation Assignment Due: Monday, 9/25, 6:00PM

The details of the assignment, including instructions regarding how you should submit your assignment electronically, are provided in the reading *Littlefield Technologies*. Note that the Littlefield simulation is played simultaneously by all groups in a competitive environment; hence all groups are subject to the dates above.

After Class:

(Supplemental optional reading from optional textbook: Cachon and Terwiesch, Sections 17.1-17.2)

Session 9

Note on switching cohorts: In the first part of today's class, we will discuss the Littlefield simulation. This activity is cohort-specific; students switching cohorts will miss the opportunity to participate in the discussion with their own groups

Turn in Before Class (On Monday 9/25!): Littlefield assignment.

Session 9A: Littlefield Simulation Debrief

Be prepared to discuss the decisions you made in the Littlefield Simulation, your performance, and how you would make decisions differently (if at all) if you played again. Each of your team members should be prepared to discuss and to explain to the rest of the class the PowerPoint slides which your team submitted electronically.

Please sit with your Littlefield Team.

Session 9B: Course Summary and Student Presentations

The last part of this class will be devoted to course wrap-up and to some student presentations on their own work experience in Operations.

After Class: To keep up with the course material, you should finish working through *Practice Problems for Part 2 of Course*, which is posted to bCourses.

Sunday Discussion Session for Week 9 – Tentative plan: The GSI will work through practice problems from the sample final exam questions.

Key Dates

ASSIGNMENTS

There will be four written assignments (done in groups of no more than 2 students) and one case write-up (done in groups of no more than 4 students) in EW MBA 204. Assignments are due on the following days (for each cohort, respectively) at the beginning of the class:

National Cranberry Cooperative Group Case write-up – Class 3 (8/16; 8/17).

Written assignment 1 – Class 4 (8/23; 8/24)

Written assignment 2 – Class 5 (8/30; 8/31)

Written assignment 3 – Class 7 (9/13; 9/14)

Written assignment 4 – Class 9 (9/27; 9/28)

LITTLEFIELD SIMULATION

Done in groups of 4 students. The Littlefield simulation is time-intensive, so you should plan in advance to devote additional time to the course during the simulation. Dates:

Littlefield Simulation Begins: Wednesday, 9/20, 12:00 PM (noon)

Littlefield Simulation Ends: Saturday, 9/23, 3:00 PM

Littlefield Simulation Assignment Due: Monday, 9/25, 6:00PM

TURN IN MID-COURSE TAKE HOME – CLASS 6 (9/6, 9/7)

FINAL EXAM: (AT REGULAR CLASS TIME AND PLACE)

BLUE COHORT: WEDNESDAY OCTOBER 4

GOLD COHORT: THURSDAY OCTOBER 5

SYLLABUS APPENDIX: INSTRUCTIONS FOR (FORMING AND) REGISTERING YOUR LITTLEFIELD SIMULATION TEAM

Before the start of class for Session 6, you will need to create and register your team for the Littlefield Technologies simulation. *Each team will have four students (not five, not three) from the same cohort*³. Stated more explicitly, if you do not have four students, you should not register until you form a group of four. (If you have difficulty forming a group of four, please contact your Head GSI, who will try to connect students looking for teams and teams looking for students). After you have formed a group of four, come up with a team name consisting only of lower-case letters (no punctuation) and a team password. The address for the registration web page is:

<http://op.responsive.net/lt/guajardo/start.html>

The web page is shown below.

Welcome to ...



Please click on your section:

[Blue](#)

[Gold](#)

On the registration page, you will first have to click on your respective section (Blue, Gold). Then, enter the access code. The access code is *haas*. Then you will be asked for the team name and the password that you came up with, after which you will be asked for the names of each of the team members (ignore the “section number” box). After you submit this information via the web page, your team will be registered. Later, if you decide to change your team name, password, or members before the simulation begins, you can simply return to the registration page, enter the same team name and password you entered the first time, and then make your changes. To completely remove your team, delete all of the team members’ names and save the resulting team. You will not be able to make any changes to your team after the simulation begins.

Please record your password and team name so that you can remember and use it several weeks from now. You will need your password to access the simulation, which begins in the latter part of the course. You will not be able to access your factory until the simulation begins.

³ The instructor understands that you may have different team sizes for other courses, but this simulation requires *four* students. This is only one assignment, and you don’t need to do anything else with this group of four in the course