

University of California, Berkeley  
Walter A. Haas School of Business

## **UGBA 141: Production and Operations Management**

Spring 2022 Course Syllabus

(Last updated: 3/21/2022)

Instructor: Professor Park Sinchaisri  
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Office Hours: Mondays 2-3pm (Chou N458), or by appointment

Class Hours: Mondays/Wednesdays 12:30-2pm Lectures  
Fridays 1-2pm Discussion  
Classroom: Chou N270 for both  
Zoom:   
(for online lecture and discussion sessions, office hours)  
Discord: Contact us for the invite link  
(for questions on concepts, logistics, and assignments, office hours)

GSI: Hansheng Jiang ([hansheng\\_jiang@berkeley.edu](mailto:hansheng_jiang@berkeley.edu))  
GSI Office Hours: Tuesdays 1-2pm, Fridays 2-3pm (Chou N455), or by appointment.

### **Course Description and 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.

We will cover topics in Operations that are relevant both for products and services. Our aim is to (1) familiarize you with the problems and issues confronting operations managers, and (2) provide you with language, concepts, insights, and tools to deal with these issues in order to gain competitive advantage through operations. We will cover seven modules: process analysis, quality management, inventory management, supply chain management, queueing, operations strategy, and emerging topics including sustainability, people operations, and the future of work. Examples will be drawn from a diverse set of services and products, from food to fashion, from hotels to healthcare, from design-consulting to ride-sharing.

Class sessions will have a mix of (i) a lecture and discussion that will provide the foundational material on a topic, and (ii) a case discussion. The Friday discussion sections will take several different formats, including reviews of materials, problem-solving sessions, and informal sessions to help you in preparing the cases. Throughout the course, you will also gain hands-on exposure to the concepts from experiential simulation games and a four-week consulting project with our industry partner.

**Assignments and Grading**

Your course grade will be determined by your performance on graded assignments, recitation exercises, and the final exam, with the following weights:

Class preparation and contribution	10%
Problem sets (x 5)	15% (3% x 5 <u>or</u> 3.75% x 4 if HW4/5 is skipped)
Case and simulation assignments (x 4)	15% (3% x 3 + 6% x 1)
Consulting project	15%
Midterm exam (Monday 3/7/2022)	20%
Final exam (Wednesday 5/11/2022)	25%

Class contribution grades will be determined 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. Although participating in lecture sessions is also of value, a primary means by which students will distinguish themselves in their “class contribution” is by thoroughly preparing cases and participating in case discussions in a way that brings insight to the rest of the class. Failure to attend class will have adversely affect the “class contribution” portion of your final grade. Use of an electronic device (e.g., phone, tablet, computer) for anything unrelated to the course during class time will materially and adversely affect your final course grade.

There will be five problem sets designed to ensure that you understand basic analysis tools and are keeping up with the fundamental concepts. To keep your workload manageable and to allow you to focus on building the basic intuition, these problem sets are intended not to be overly difficult but may challenge you to adapt the concepts in complex settings. While completing these assignments, you are allowed to collaborate with other students registered this semester in the course. However, each student must submit their own assignment.

Deadlines for problem sets:

Problem Set	Topic(s)	Available	Due Date
HW1	Process I, II, III, IV	1/24	2/7 11:59pm
HW2	Quality I, II, III	2/5	2/20 11:59pm
HW3	Inventory I, II, III	2/14	3/2 11:59pm
HW4	SCM I, II, III	3/14	4/8 11:59pm
HW5	Queue I, II, III, Strategy I	4/1	4/26 11:59pm

There will be four graded case and simulation assignments. Prior to the case discussion, you may work with a small team of up to five people to prepare your analysis and recommendations. Many cases will require you to thoughtfully apply the analysis tools that you have learned, while some will prepare you for new materials to be discussed during class. For at least three cases of your choice, you are expected to prepare a short case write-up (individually or up to five people).

The fourth required assignment is *Littlefield Simulation*, which is an internet-accessed simulation that runs continuously for 3 days and 3 hours (75 hours total). You will work with your Consulting Project group to manage (virtually) the operations of an organization. Each group will submit PowerPoint slides on their strategy and discuss them in class.

Deadlines for case reports (choose at least 3) and a simulation report:

Case	Report Due	In-class Discussion
National Cranberry Cooperative*	1/30 11:59pm	Monday 1/31
Ritz Carlton*	2/6 11:59pm	Monday 2/7
Marks & Spencer and Zara	2/22 11:59pm	Wednesday 2/23
Sport Obermeyer*	3/15 11:59pm	Wednesday 3/16
Amazon	3/27 11:59pm	Monday 3/28
Google	3/29 11:59pm	Wednesday 3/30
Littlefield Simulation (required) Simulation runs from 4/11 to 4/14 2% performance + 4% slides	4/22 11:59pm	Monday 4/25

\* denotes cases with data

Consulting project is a hands-on consulting engagement with our industry partner that will give you experience in identifying operational problems, collect appropriate data for analysis, apply some of the analysis tools learned in class, and to develop useful recommendation. You will work in a team of five under a supervision of the instructor and a Facebook mentor. The list of projects will be provided in February and each team will submit their preference ranking. The project will kick off in early March and conclude with in-class presentations on Wednesday, **April 20, 2022**. The grade will be determined by (1%) the brief report, (4%) in-class presentation, (5%) final report, and (5%) feedback from the industry partner.

Consulting Project Assignments/Events	Deadlines/Dates
Projects revealed	Monday 2/28
Submit project ranking	Friday 3/4 11:59pm
Projects matched to teams	Wednesday 3/9
Scheduling First Sponsor Meeting	Week of 3/7
First Sponsor Meeting	Week of 3/14
Submit brief report of progress	Sunday 4/3 11:59pm
Second Sponsor Meeting	Week of 4/4
Submit presentation slides	Tuesday 4/19 11:59pm
In-class Presentation	Wednesday 4/20

Submit final report, team assessment	Wednesday 5/11 11:59pm Highly recommended to submit before/during RRR period.
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**All assignments are due by 11:59pm PT of the assigned due date. Late assignments are not accepted, even for partial credit.** You must submit your assignments electronically via bCourses. Submitting group work requires that the students contributed roughly equally (a 60:40 split is acceptable; more unequal splits are not) to the assignment.

**Midterm exam** will be in-class on Monday, **March 7, 2022**. The exam covers materials discussed through February 28, 2022 (including case discussions and guest lectures).

**Final exam** will be in-person on Wednesday, **May 11, 3-6pm** with emphasis on materials covered in March and April, but also including material of a more integrative nature.

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 discussions, and to reward those who prepared for and participated in those discussions). Students who expect to have unusual difficulty taking the exam at the designated time should contact the instructor at least 10 days in advance. Executing and fully understanding the problem sets and practice problems and preparing the material for each class will be critical to performance on exams.

### **Academic Integrity**

The Haas School of Business has a zero tolerance policy for academic dishonesty. In preparing for class or exams or in completing 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. The Undergraduate Program also has a Code of Ethics (<https://haas.berkeley.edu/undergrad/academics/curriculum/degree-requirements/>) that all Undergraduate students are expected to adhere to.

It will be a violation of academic integrity if you base your assignments on solutions you have found on the Internet or which you have obtained from classmates in prior years. I reserve the right to fail you for the course if I become aware of such a violation.

### **U.C. Berkeley Academic Accommodations Policy:**

<https://evcp.berkeley.edu/programs-resources/academic-accommodations-hub#accommodations>

UC Berkeley is committed to creating a learning environment that meets the needs of its diverse student body including students with disabilities. If you anticipate or experience any barriers to learning in this course, please feel welcome to discuss your concerns with me.

If you have a disability, or think you may have a disability, you can work with the Disabled Students' Program (DSP) to request an official accommodation. The Disabled Students' Program (DSP) is the campus office responsible for authorizing disability-related academic accommodations, in cooperation with the students themselves and their instructors. You can find more information about DSP, including contact information and the application process here: [dsp.berkeley.edu](http://dsp.berkeley.edu). If you have already been approved for accommodations through DSP, please meet with me so we can develop an implementation plan together."

Students who need academic accommodations or have questions about their accommodations should contact DSP, located at 260 César Chávez Student Center. Students may call 642-0518 (voice), 642-6376 (TTY), or e-mail [dsp@berkeley.edu](mailto:dsp@berkeley.edu)

## Course Materials

bCourses (<https://bcourses.berkeley.edu/courses/1510160>) will be the source for all class materials and assignments. Lecture slides, Course Reader (Study.Net), as well as discussion materials and additional materials, will be posted on bCourses. **You are required to purchase a Study.net Course Reader, which includes access to Littlefield Lab Simulation.** The Course Reader includes the cases for our in-class discussion. It is available in an electronic form at Study.Net. All other readings will be handed out in class and/or posted to bCourses. Assignment questions for each case will be posted on bCourses no later than one week prior to the case discussion. For each Friday Discussion session, an outline of the topics and problems that will be covered will be posted to bCourses by Thursday night; material presented in the session will be posted to bCourses by Friday night.

### *Optional Textbooks:*

There is no required textbook. If you would like supplementary reading addressing the tools and concepts in the course, two optional books are recommended (both on reserve at Haas' Long Library and available electronically via Berkeley Library):

- Matching Supply with Demand ("**MSD**") by Gerard Cachon and Christian Terwiesch. McGraw-Hill, 4<sup>th</sup> Edition, 2019
  - [https://ucbears.lib.berkeley.edu/991054941729706532\\_C122449635/view](https://ucbears.lib.berkeley.edu/991054941729706532_C122449635/view)
- Operations Management in the Supply Chain: Decisions and Cases ("**OMSP**") by Roger Schroeder and Susan Goldstein. McGraw-Hill, 8<sup>th</sup> Edition, 2020
  - [https://ucbears.lib.berkeley.edu/991054769359706532\\_C122456185/view](https://ucbears.lib.berkeley.edu/991054769359706532_C122456185/view)

## Modes of Communication

Email is generally an efficient means of communication to inform the teaching team 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 personal and not addressed in the syllabus (most administrative issues are addressed in the syllabus, so please check first). Make sure you put [UGBA141] in your email subject.

We find that, as a mode of communication, email tends to be an inefficient way to resolve subtle questions about concepts or problems. The teaching team is happy (and, in fact, eager) to address any questions you may have of this type, but encourages you to ask in person (see our office hours) or via Discord, as this is much more efficient than the route of typing out lengthy emails and going back and forth. We set up a Discord server for our class as our *preferred* communication channel to foster collaboration and centralize all questions and answers regarding the materials, logistics, and assignments. The teaching team will also host informal office hours via Discord.

## **Expectations for Case Preparation**

You should form study groups of three to five members for the purpose of discussing case studies and preparing assignments related to them. (This group can be the same as your Consulting Project group.) This type of interaction increases learning, develops a sense of teamwork, and encourages good preparation for class discussion.

In a typical class session, one or more students will be asked to begin discussion of a selected topic. If you have thoroughly prepared the case and/or readings you should have no difficulty in handling such a leadoff request. Questions for each class session will be provided in advance to guide your thinking about the readings and cases. During case discussions, we will build a complete analysis of the case situation and address the problems and issues it presents. You will be asked to make recommendations, and we will discuss the implementation of those recommendations.

Some of the criteria that we will use to judge effective class participation for grading purposes include:

- Is the participant a good listener?
- Are the comments relevant to the discussion? Are they linked to the comments of others?
- Do the comments show evidence of appropriate and insightful analysis of the case data?
- Is there a willingness to participate?
- Is there a willingness to test new ideas, or are all comments “safe”?
- Do comments clarify and highlight the important aspects of earlier comments and lead to a clearer statement of the concepts being covered?

## **Classroom Norms**

We will follow the following classroom norms established by Haas:

- Tech-free: Keep phones in bags and on silent. **Refrain from using laptops**, unless for approved purposes. Tablets or other electronic note-taking devices are allowed, but should lie flat, be kept in airplane mode, and only used for note-taking in a manner that is not distracting or disruptive.

- Prompt: Arrive on time at the beginning of class and after breaks. If arriving late without prior approval, enter during a break in order to minimize disruption.
- Present: Do not leave class unless a personal emergency arises. For online sessions, please try to keep your camera on, raise hand when you would like to speak, mute when not speaking, and be respectful and constructive in the chat.
- Inclusive: Step up / step back in class discussions to ensure that a wide variety of voices, perspectives, and experiences are heard. Encourage your classmates to do the same.

## Other Administrative Information

It will be difficult to receive a good grade in the course without regular attendance. It is also expected that you be prepared for every class. To help the instructor and GSI learn your names as quickly as possible, we ask that you use your name cards regularly.

*Missing class:* You should make every effort not to schedule conflicts (e.g., job interviews) during the time when the class meets. If it is impossible for you to do this, you should email the teaching team in advance that you are missing class. This should be a rare event. Your email should describe in one sentence the emergency / unavoidable conflict you face.

What to do if you miss class: If you must miss class, make sure you submit any assignment that is due on that day electronically on bCourses by the deadline. To catch up on the material, get the handouts from bCourses, get the notes from your classmates, and discuss the material with them. If after doing this you would like additional clarifications, please reach out to your GSI and then the instructor.

Group work is encouraged for purposes of general class preparation and for the written assignments. You should not, however, benefit from anyone who has already participated in a faculty-led discussion of the case at Haas or any other school, or from other materials, even if they are publicly available. Much of the value of preparing cases is in the process itself, even if your group ultimately selects a less-preferred alternative or approach. Plagiarism and other forms of cheating will not be tolerated.

## Course Schedule, Assignments, and (Optional) Reading (subject to changes)

#	Date	Topic/Case	Assignment	Optional Reading
1	1/19 W (Zoom)	Process I: Introduction	Submit pre-course survey	MSD 2.2, 2.6, 3.1 OMSP 1.1, 1.6, 6.1-6.3
2	1/24 M (Zoom)	Process II: Process Analysis Case: <i>Kristen's Cookies</i>	Read <i>Kristen's Cookies</i> HW1 out	MSD 3.2-3.5 OMSP 4.1-4.4

3	1/26 W (Zoom)	Process III: Service Factory Case: <i>Beleza Natural</i>	Read <i>Beleza Natural</i>	MSD 2.6 OMSP 5.1-5.3
4	1/31 M	Process IV: Flows + Diagnostics Case: <i>National Cranberry Cooperative*</i>	Read <i>National Cranberry Cooperative</i>	MSD 3.6, 4.2-4.3 OMSP 6.4-6.5
5	2/2 W	Quality I: Intro + Statistical Process Control	HW2 out (2/6)	MSD 7.1-7.6 OMSP 8.1-8.2, 8.4, 8.8-8.10
6	2/7 M	Quality II: Capability Analysis + Service Quality Case: <i>Ritz-Carlton*</i>	HW1 due Read <i>Ritz-Carlton</i>	MSD 7.7 OMSP 8.3, 9.1-9.9
7	2/9 W	Quality III: Lean Operations	Read <i>Toyota</i>	MSD 8.1-8.5, 8.7-8.8 OMSP 7.1-7.11
8	2/14 M	Inventory I: Economic Order Quantity	HW3 out	MSD 2.5, 5.6-5.7 OMSP 14.1-14.5
9	2/16 W	Inventory II: Newsvendor	HW2 due (2/20)	MSD 14.1-14.7 OMSP 11.1-11.2
10	2/23 W	Inventory III: Risk-Pooling Case: <i>Zara*</i> Midterm Information/ Practice Midterm available	Read <i>Zara</i> Form team for Consulting Project	MSD 15.1-15.4, 16.2- 16.3, 17.2-17.4 OMSP 3.6, 14.6-14.8
11	2/28 M	Guest Speaker: Nhiem Nguyen (Facebook) Consulting Projects revealed  Emerging I: Sustainability Case: <i>Starbucks</i>	Read <i>Starbucks</i>	
12	3/2 W	Emerging II: People - Transparency Case: <i>Tessei</i> Midterm Flash Review	HW3 due Read <i>Tessei</i> Submit preference for Project (3/4)	OMSP 16.9
	3/7 M	<b>Midterm Exam</b> (Content up to 2/28)		
13	3/9 W	SCM I: Experiential Supply Chain Exercise <i>(Meet at Spieker Forum, 6<sup>th</sup> floor of Chou Hall)</i>  Guest Speaker: Byron Cheng (PepsiCo/Facebook)		
14	3/14 M	SCM II: Bullwhip Effect	HW4 out Read <i>Danone</i>	MSD 19.1-19.2 OMSP 16.3



		Emerging III: People - Knowledge Sharing Case: <i>Danone</i>	Meet with Project Sponsor	
15	3/16 W	SCM III: Quick Response and Supply Chain Contracts Case: <i>Sport Obermeyer*</i>	Read <i>Sport Obermeyer</i>	MSD 15.3-15.4, 19.4-19.5
Spring Break				
16	3/28 M	Guest Speaker: Quico Spaen (Amazon)  Emerging IV: E-Commerce + Platforms Cases: <i>Amazon*</i>	Read <i>Amazon</i>	
17	3/30 W	Emerging V: Future of Work Cases: <i>Google*</i>  Queue 0: Little's Law  Intro to Littlefield Simulation	Read <i>Google, Uber</i> <b>Read Littlefield Technologies</b>	MSD 2.3
D	4/1 F	Review advanced newsvendor models Prepare for Queue	HW5 out Project Brief Update due Sun 4/3	
18	4/4 M	Queue I: Intro + Variability Case: <i>Rent the Runway</i>	Read <i>Rent the Runway</i> <b>2<sup>nd</sup> Sponsor Meeting</b>	MSD 2.3, 9.1-5
19	4/6 W	Queue II: Waiting Time + Throughput Losses	<b>HW4 due Tues 4/5</b> (optional)	MSD 9.6, 10.2-4
D	4/8 F	Review Queue concepts		
X	4/11 M	No class to give time for Littlefield and Consulting Project	<b>Littlefield Simulation</b> starts	
X	4/13 W	No class to give time for Littlefield and Consulting Project	<b>Littlefield Simulation</b> ends Thursday	
20	4/15 F	Queue III: Pooling + Psych	<b>(Lecture during Discussion)</b>	
21	4/18 M	Strategy I: Revenue Management  Guest Speaker: Upasna Sharma (Uber)	<b>Consulting Project Presentation Slides</b> due Tuesday 4/19	MSD 18.1-18.4
22	4/20 W	<b>Consulting Project Presentations</b> (8 min/team)		

D	4/22 F	Review Queue + Revenue Management concepts	<b>Littlefield Team Strategy Slides</b> due (4 slides max)	
23	4/25 M	Final Exam Information Littlefield Simulation Debrief  Strategy II: Product Management Case: <i>IDEO</i>	Read <i>IDEO</i>  <b>HW5 due Tuesday 4/26</b>	
24	4/27 W	Course Wrap-up Final Flash Review		
D	4/29 F	Review for Final Exam		
	5/11 W	<b>Final Exam</b> 3-6pm Location: TBD	Consulting Project final report and self/peer assessment due	Highly recommended: Submit report before/during the RRR week

\* denotes cases that write-ups can be submitted for grade