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

UGBA 141: Production and Operations Management

Fall 2022 Course Syllabus
(Last updated: 7/28/2022)

Instructor:	Professor Park Sinchaisri
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Email:	parksinchaisri@haas.berkeley.edu
Office Hours:	TBD, or by appointment
Lectures:	Mondays/Wednesdays 11-12:30pm Lectures @ Chou N470
Discussions:	Fridays 1-2pm @ Chou N470
Discord:	Invite link will be provided in the first class/contact GSI for the link
GSI:	Ailiya Duan (ailiya_duan@berkeley.edu)
GSI Office Hours:	TBD

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 introduces 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 e-commerce to ride-sharing.

Class sessions will have a mix of a lecture and discussion that will provide the foundational material on a topic, and 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 final project.

Assignments and Grading

Your course grade will be determined by your performance on:

Class preparation + contribution	10%	
Problem sets (x 4)	12%	(individual, online, unlimited attempts)
Case reports (x 2)	8%	(individual or group, choose 2 out of 4 cases)
Midterm exam (Monday 10/3)	20%	
Littlefield Simulation (10/31-11/3)	8%	(group, 4% performance + 4% strategy slides)
Final project (p 11/28, r 12/4)	12%	(group, 2% proposal + 5% presentation + 5% report)
Final exam (Monday 12/12)	30%	

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 (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 **4 online 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 checks are intended not to be overly difficult but may challenge you to adapt the concepts in complex settings. You are allowed to collaborate with other students registered this semester in the course. However, each student must submit their own assignment on bCourses. You have unlimited attempts until the deadline; the latest score (not the highest) will be kept.

Problem Set	Topic(s)	Available	Deadlines
PS1	Process	Wed 8/24 12:30PM	Fri 9/16 11:59PM
PS2	Queue + Quality	Mon 9/12 12:30PM	Fri 9/30 **1PM**
PS3	Inventory	Wed 10/5 12:30PM	Fri 10/28 11:59PM
PS4	SCM + RM	Wed 10/19 12:30PM	Fri 11/11 11:59PM

There will be **2 graded case reports**. Prior to the case discussion, you may work with a small team of up to FOUR 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. The instructions are provided on bCourses (under *Files/Case Readings* and *Assignments*). You do not have to stick with the same team for all reports. You can also work individually. Since the cases will be discussed in class, the reports are due at 6PM one day before class.

- For at least TWO cases of your choice, you are expected to prepare a short case write-up (individually or up to FOUR people). You can choose among the following cases: *Ritz-Carlton, Zara, Crocs,* and *Uber*. If you submit more than 2 cases, the 2 highest scores will be kept.

Case	Topics	Report Due	Discussion
Ritz-Carlton*	quality management	Sun 9/25 6PM	Mon 9/26
Zara	inventory/omnichannel management	Tue 10/18 6PM	Wed 10/19
Crocs*	production/supply chain planning	Tue 10/25 6PM	Wed 10/26
Uber*	platform ops, innovation, experiment	Tue 11/8 6PM	Wed 11/9

* denotes case with data analysis

Another required group assignment is **Littlefield Simulation**, which is an internet-accessed simulation that runs continuously for 3 days and 3 hours (75 hours total). In this simulation, you will work as a group of FOUR to manage (virtually) the operations of an organization. Each group will submit four-slide PowerPoint deck on their strategy and discuss them in class (instructions available on bCourses). The Littlefield simulation is time intensive, so you should plan to devote additional time to the course during the simulation. In addition, it is essential to do quality pre-work before the simulation begins; groups should plan to allocate time for this pre-work analysis accordingly. The grade will be determined by (4%) simulation performance and (4%) strategy slides and discussion at the in-class debrief.

Simulation Events/Assignments	Deadlines/Dates
Register your team of 4 on bCourses	Fri 10/21 at 11:59PM
Access to simulation available	Mon 10/24 at 12:30PM
Simulation starts	Mon 10/31 at 2PM
Simulation ends	Thu 11/3 at 5PM
Submit 4-slide Strategy Deck	Sat 11/5 at 11:59PM
In-class debrief	Mon 11/7

Final project is a hands-on team assignment 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 with a group of FOUR to choose a client (could be for-profit businesses, non-profit organizations, or other systems in operations) and submit a 1-page proposal describing the client, the problem(s)/challenge(s) faced by them, the data (to be collected), and your draft plan of analysis. The proposal is due on **Friday, November 11, 11:59PM**. Your project must contain (i) data analysis (proprietary and/or public), (ii) application of tools and concepts from at least four modules of the class (*process, queue, quality, inventory, SCM,* and *strategy*), and (iii) actionable recommendations. Each team will present their work in class on **Monday, November 28** for 7 minutes each. The final report is due on **Sunday, December 4, 11:59PM**. The grade will be determined by (2%) a 1-page project proposal, (5%) an in-class presentation and slides, and (5%) a final report. Each team member is required to submit a self and team assessment, which could affect the individual grade for the project.

Project Assignments/Events	Deadlines/Dates
Register your team of 4 on bCourses	Sun 11/6 11:59PM
Submit 1-page proposal	Fri 11/11 11:59PM
Submit presentation slides	Sun 11/27 11:59PM
In-class presentation (7 minutes each)	Mon 11/28
Submit final report + team assessment	Sun 12/4 11:59PM

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. Please make sure to include team members' names in the comment section.

Midterm exam will be in-class on **Monday, October 10, 2022**. The exam covers materials discussed through October 3, 2022 (including case discussions and guest lectures). You are allowed one two-sided letter-sized reference sheet and a basic calculator. No other materials or devices are allowed. Essential formulas and tables will be provided (which you will be able to see in advance; it will be posted to bCourses at least one week prior to the exam).

Final exam will be in-person on **Monday, December 12, 11:30AM-2:30PM** with emphasis on materials covered in October through December, 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). 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. You are allowed one two-sided letter-sized reference sheet and a basic calculator. No other materials or devices are allowed. Essential formulas and tables will be provided (which you will be able to see in advance; it will be posted to bCourses at least one week prior to the exam).

There are 5 sources of practice problems:
(1) Problem sets
(2) Discussion sessions on Fridays
(3) Practice midterm and final exams (available at least 1.5 weeks before the exams)
(4) Questions in the optional textbook
(5) Flash Review: in-class Jeopardy-style review sessions (extra credits available)

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.

Course Materials

bCourses 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.** The Course Reader includes the cases for our in-class discussion and assignments as well as access to the online Littlefield Simulation later in the course. It is available in an electronic form at Study.Net/bCourses. All other readings will be handed out in class and/or posted to bCourses. Problem set solutions will only be distributed in hard copies. Course materials (e.g., lecture slides, assignments) are not to be shared with anyone outside the class. In particular, you should not upload any materials to any note sharing website.

Discussion and 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.

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, 4th Edition, 2019
    - https://ucbears.lib.berkeley.edu/991054941729706532_C122449635/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.

Expectations for Case Preparation

You should form study groups of three to four members for the purpose of discussing case studies and preparing assignments related to them. This group does not have to be the same as your Littlefield/Final 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 others' comments?
- Do the comments show evidence of appropriate and insightful analysis of the case?
- 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.
    - 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. In some lectures, we will have "work with your neighbor" exercises. The use of electronics is allowed for the purpose of calculations during these exercises, which will be announced by the instructor.

- *Prompt*: Arrive on time at the beginning of class.

- *Present*. Do not leave class unless a personal emergency arises. Raise hand when you would like to speak, and be respectful and constructive.

- *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.

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 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. 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@berkelely.edu

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 keep the same seat throughout the semester and say your name when asking questions in class.

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. Notify the GSI of your absence. 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.

Mark Your Calendar + Guest Speakers

Monday 9/19	Mitchell Williams (Manufacturing Engineer at Tesla)
Monday 10/3	In-class **Midterm Exam**
Monday 10/10	In-class **Experiential Supply Chain Exercise** (Spieker Forum, Chou 7F)
	Shaan Parasnis (Owner of Hotel Shattuck, VP of Product at Rad AI, ex-Microsoft)
Monday 10/24	Quico Spaen (PhD'19, Senior Applied Scientist at Amazon)
Wednesday 10/26	Hezekiah Burton (MBA'18, Global Supply Manager at Apple)
Monday 10/31 -- Thursday 11/3	**Littlefield Simulation** (75 hours, online), Slides due Saturday 11/5
Monday 11/14	Emily Nishi (formerly Chief People Officer at Lyft)
Wednesday 11/16	Berklee Welch (BS'20, Sustainability Analyst at Simple Mills)
Monday 11/28	In-class **Final Project Presentations**
Sunday 12/4	Final Project Report + Team Assessment due
Monday 12/12	**Final Exam** 11:30AM – 2:30PM

UGBA 141: Production and Operations Management
Course Outline (subject to changes)

#	Date	Topic/Case *(Optional Textbook Readings)*	Preparation/Assignment
Part I: Process Analysis			
L1	W 8/24	**Process I:** Introduction *(MSD 2.2)*	Submit pre-course survey Read *Mortgage Processing at Haas Bank* PS1 out
D1	F 8/26	Review basic statistics + process	
L2	M 8/29	**Process II:** Process Analysis Case: *Pick-up Pizza* *(MSD 2.6, 3.1-3.5)*	Read *Pick-up Pizza*
L3	W 8/31	**Process III:** Process Choice Case: *Beleza Natural* *(MSD 2.6, 3.6)*	Read *Beleza Natural*
D2	F 9/2	Review process analysis + choice	
	M 9/5	Labor Day (No Class)	
L4	W 9/7	**Process IV:** Process Flows Case: *National Cranberry Cooperative* *(MSD 2.3, 3.6, 4.2-4.3)*	Read *National Cranberry Cooperative (NCC)*
D3	F 9/9	Review inventory buildup + Little's Law	
Part II: Variability in Processes			
L5	M 9/12	**Queue I:** Variability + Queueing Theory Case: *Rent the Runway* *(MSD 2.3, 9.1-9.6)*	Read *Rent the Runway* PS2 out
L6	W 9/14	**Queue II:** Performance Metrics *(MSD 10.2-10.4)*	
D4	F 9/16	Review queueing theory	PS1 due 11:59PM
L7	M 9/19	**Queue III:** Pooling + Psychology	

		Guest Speaker: Mitchell Williams (Manufacturing Engineer at Tesla)	
L8	W 9/21	**Quality I:** Quality Control *(MSD 7.1, 7.3-7.6)*	Practice Midterm available
D5	F 9/23	Review quality control tools	
L9	M 9/26	**Quality II:** Service Quality Case: *Ritz-Carlton** *(MSD 7.2, 7.7)*	Read *Ritz-Carlton* Submit *Ritz-Carlton* report (Sun 6PM)
L10	W 9/28	**Quality III:** Lean Operations Case: *Toyota* Midterm Flash Review *(MSD 8.1-8.5, 8.7-8.8)*	Read *Toyota*
D6	F 9/30	Review for Midterm Exam	PS2 due **1PM**
	M 10/3	**Midterm Exam** In-class: 11:10AM-12:25PM (75 minutes) Materials up to L9 (Quality II)	
Part III: Inventory and Supply Chain Management			
L11	W 10/5	**Inventory I:** Newsvendor *(MSD 14.1-14.7)*	Review *Statistics* PS3 out
D7	F 10/7	Review Midterm sol. + newsvendor	
L12	M 10/10	**Experiential Supply Chain Exercise** Spieker Forum, Chou Hall 7th Floor Assigned seats, bring laptop to class Guest Speaker: Shaan Parasnis (Owner of Hotel Shattuck, VP of Product at Rad AI, ex-Microsoft)	
L13	W 10/12	**Inventory II:** Economic Order Quantity Experiential SC Exercise Debrief *(MSD 2.5, 5.6-5.7, 19.1-19.2)*	
L14	F 10/14	**Inventory III:** Continuous Review *(MSD 16.6-16.7)*	Lecture instead of Discussion
D8	M 10/17	Review inventory module	Discussion instead of Lecture

L15	W 10/19	**SCM I:** Risk-Pooling Case: *Zara** *(MSD 17.1-17.3)*	Read *Zara* Submit *Zara* report (Tue 6PM) PS4 out
D9	F 10/21	Review inventory + risk-pooling	Register Littlefield team
L16	M 10/24	**SCM II:** E-Commerce Case: *Amazon* Guest Speaker: Quico Spaen (PhD'19, Senior Applied Scientist at Amazon) *(MSD 17.1-17.3)*	Read *Amazon* Read *Littlefield Technologies* Access to Littlefield Simulation available
L17	W 10/26	**SCM III:** Reactive + Resilient SCM Case: *Crocs** Guest Speaker: Hezekiah Burton (MBA'18, Global Supply Manager at Apple) *(MSD 15.1-15.4)*	Read *Crocs* Submit *Crocs* report (Tue 6PM)
D10	F 10/28	Review SCM concepts	PS3 due 11:59PM
L18	M 10/31	**SCM IV:** Revenue Management + Contracts *(MSD 18.1-18.3, 19.3-19.5)*	Littlefield starts at 2PM
X	W 11/2	Littlefield Simulation (No Class)	Littlefield ends Thursday 5PM
D11	F 11/4	Review revenue management + contracts	Submit Littlefield Slides (Sat 11:59PM)
Part IV: Operations Strategy			
L19	M 11/7	**Strategy I:** Platform Operations Littlefield Debrief	Register Project team on bCourses
L20	W 11/9	**Strategy II:** Experimentation Case: *Uber**	Read *Uber* Submit *Uber* report (Tue 6PM)
D12	F 11/11	Review platform concepts	Submit Project Proposal PS4 due 11:59PM
L21	M 11/14	**Strategy III:** People Operations Case: *Tessei* Guest Speaker: Emily Nishi (formerly Chief People Officer at Lyft)	Read *Tessei*

L22	W 11/16	**Strategy IV:** Sustainability Case: *Starbucks* Guest Speaker: Berklee Welch (BS'20, Sustainability Analyst at Simple Mills)	Read *Starbucks*
	W 11/23	Thanksgiving (No Class)	
L23	M 11/21	**Strategy V:** Product Management Case: *IDEO*	Read *IDEO*
	W 11/23	Thanksgiving (No Class)	
L24	M 11/28	Project Presentation (7 minutes)	Submit Project Slides (Sun 11:59PM)
L25	W 11/30	Course Wrap-Up Course Evaluation Final Flash Review	Bring laptop to class
D14	F 12/2	Review for Final Exam	Submit Project Report + Team Assessment (Sun 11:59PM)
	M 12/12	**Final Exam** In-class: 11:30AM-2:30PM Integrative of all course materials	

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