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

UGBA 141: Production and Operations Management

Fall 2024 Course Syllabus
(Last updated: August 27, 2024)

Lectures:	Mondays and Wednesdays 3:30-5pm @ Chou N100
Discussions:	Fridays 3-4pm @ Chou N100
Zoom:	[redacted]
Discord:	Contact GSI/check bCourses for the latest link
Instructor:	Professor Park Sinchaisri [redacted]
Office:	F598 Haas Faculty Building
Office Hours:	Mondays 5-5:30pm or by appointment (Location: TBD)
GSI:	Shunan Jiang [redacted]
GSI Office Hours:	Tuesdays 9-10am or by appointment (Location: 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 six modules: process analysis, queueing, quality control, inventory management, supply chain management, queueing, and operations strategy, including emerging topics such as product management, people operations, and sustainability. Examples will be drawn from a diverse set of industries, from food to fashion, from hotels to healthcare, from e-commerce to ride-hailing.

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	14%	
Concept checks (x 4)	6%	(individual; online; unlimited attempts; collaboration allowed)
Case reports (x 3)	13%	(individual or group; NCC + choose 2 out of 3 cases)
Midterm exam (Monday 9/30)	15%	
Littlefield Simulation (10/21-10/24)	12%	(group, 7% performance + 5% strategy slides/discussion)
Final project	15%	(group, 1% proposal + 6% presentation + 8% report)
Final exam (Tuesday 12/17)	25%	

Class contribution (14%) 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 or use of an electronic device for anything unrelated to the course during class time will materially and adversely affect the "class contribution" portion of your final grade.

There will be **4 concept checks (6%)** 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 concept 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 highest score will be kept. One lowest CC score will be dropped.

Concept Checks	Topic(s)	Available	Deadlines
CC1	Process	Wed 8/28 5pm	Mon 9/16 3pm
CC2	Queue + Quality	Wed 9/11 5pm	Wed 9/25 3pm
CC3	Inventory + SCM	Mon 10/7 5pm	Wed 10/30 3pm
CC4	SCM + Strategy	Wed 10/16 5pm	Mon 11/11 3pm

We will use **cases/mini cases** to connect concepts to real-world applications. 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. A number of cases are available through the required Course Reader via *Study.Net Materials*. A purchase of Study.Net Course Reader is required as it includes access to a graded online simulation. The rest of the cases/mini cases and discussion questions are provided in *bCourses/Files/Cases + Mini Cases Materials*.

- There will be **3 graded case reports (13%)** that you are expected to submit a short case write-up. You can work individually or as a group of up to FIVE people. You do

not have to stick with the same group for all reports.

- The first case report is *National Cranberry Cooperative (NCC)*, which is mandatory and counts for 3% of the course grade. For the other two reports (5% each), choose from *Ritz-Carlton, Crocs,* and *StubHub*. You can submit more than two; the lowest score will be dropped. You are expected to read every case and discussion questions.

- The reports will be graded for completion, quality/effort, and justification. The instructions and discussion questions are provided on bCourses (under *Files* and *Assignments*). The report should not exceed four pages, excluding supportive figures, tables, references, and/or code for data analysis. Since the cases will be discussed during lecture, the reports are due at 6pm one day before the in-class discussion.

Case	Topics	Report Due	Discussion
NCC[1]	process/bottleneck analysis	Tue 9/6 6pm	Wed 9/7
Ritz-Carlton[2]*	quality management	Sun 9/22 6pm	Mon 9/23
Crocs[2]*	production/supply chain planning	Tue 10/15 6pm	Wed 10/16
StubHub[2]	product and project management	Sun 11/17 6pm	Mon 11/18

[1] National Cranberry Cooperative (NCC) is mandatory and counts for 3% of the course grade
[2] You can choose to submit at least 2 of these cases for the total of 10% of the course grade (5% each).
* Denotes cases with data analysis

Littlefield Simulation (12%) 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 FIVE to manage a fictional company's operations. Each group will submit four-slide PowerPoint deck on their strategy and be ready to discuss them in class (instructions available on bCourses). The simulation is time intensive, so you should plan to devote additional time to the course during the simulation. Note that you do not need to monitor the simulation 24/7 to perform well. Strategy can be planned before the simulation begins; groups should plan to allocate time for this pre-work analysis accordingly. The grade will be determined by (7%) performance and (5%) strategy slides and discussion at the debrief.

Simulation Events/Assignments	Deadlines/Dates
Register your team of 5 on bCourses	Fri 10/11 at 11:59pm
Access to simulation available	Sun 10/13 at 12pm
Simulation starts	Mon 10/21 at 3:30pm
Simulation ends	Thu 10/24 at 6:30pm
Submit 4-slide Strategy Deck	Sun 10/27 at 12pm
In-class debrief	Mon 10/28

Final Project (15%) is a group assignment that will equip you with experience in identifying operational problems, collect appropriate data for analysis, apply some of the analysis tools learned in class to develop recommendations. You will work as a group of FIVE (not

necessary the same as your Littlefield team) to choose an organization or system of your choice to analyze their operations and offer actionable recommendations. Further details, including instructions for the deliverables will be provided later on in the course.

- Your project must contain (i) data analysis (proprietary/public/simulated), (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.

- The key deliverables are (i) a 1-page proposal describing the problem(s)/challenge(s) faced by the client and your draft plan of analysis (tools, methods, task delegation) (1%, due on **Monday November 4**), (ii) presentation slides (6%, project presentation on **Monday, December 2**, and (iii) a final report (8% due on **Sunday, December 8**). In addition, the industry client will evaluate your work and may provide bonus points. Each team member is required to submit a self and team assessment, independently from the final report, which could affect the grade.

Project Assignments/Events	Deadlines/Dates
Register your team of 5 on bCourses	Fri 11/1 11:59pm
Submit 1-page proposal	Mon 11/4 11:59pm
Submit presentation slides	Sun 12/1 11:59pm
Final project presentation	Mon 12/2 (during class)
Submit final report + team assessment	Sun 12/8 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. Only one team member should submit the work on behalf of the team. Please make sure to include team members' names in the comment section.

Midterm Exam (15%) will be in-class on **Monday, September 30**. The exam covers materials discussed through Lecture 7 (including case discussions). **Final Exam (25%)** will be in-person on **Tuesday, December 17, 7-10pm** with emphasis on materials from Lecture 8 onward, but also including earlier materials in 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.)

- 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 during the exam and also posted to bCourses at least one week prior to the exam.

- Sources of practice problems: (1) concept checks, (2) lecture discussions/slides, (3) discussion sessions on Fridays, (4) questions from the optional textbook, and (5) *Flash*

Review, in-class Jeopardy-style review sessions (extra credits available)

- Students having difficulty taking the exam at the designated time should contact the instructor at least 10 business days (~2 weeks) in advance. Honorlock will be used for the alternative exams.

Course Materials

bCourses will be the source for all class materials, assignments, and announcements. Lecture slides, Course Reader (Study.Net), as well as discussion materials and additional materials, will be posted on bCourses. **Each student is required to purchase their own Study.Net Course Reader.** The Course Reader includes the main cases for our in-class discussion and assignments as well as access to the graded, online Littlefield Simulation.

There is no required textbook. If you would like supplementary reading addressing the tools and concepts in the course, one optional book is recommended (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, 5th Edition, 2023
    - https://ebookcentral-proquest-com.libproxy.berkeley.edu/lib/berkeley-ebooks/detail.action?docID=7168671

We will post a "before" version of lecture slides on bCourses at least one day prior to the lecture and an "after" version no later than one day after the lecture. A few printed copies will be available every class. 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.

Solutions to the concept checks and exams will only be distributed in hard copies in class. All other readings will be handed out in class and/or posted to bCourses. 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.

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 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. 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 Discord, as this is much more efficient than the route of typing out lengthy emails and going back and forth. The link to join our Discord server will be posted on bCourses. You can also ask us in person (before/after class; see our office hours).

Expectations for Case Preparation

You are encouraged to form study groups 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 you should have no difficulty in handling such a leadoff request. Questions for each case discussion will be provided in advance to guide your thinking about the case. During class, 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 their implementation and impact.

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

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.
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:** It will be difficult to receive a good grade in the course without regular attendance. 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.

- **Prepared:** You are expected to complete case reading assignments prior to class. This is to your benefit; not doing so may create confusion for you during case discussions.

- **Inclusive:** Step up / step back in class discussions to ensure that a wide variety of voices, perspectives, and experiences are heard. Be respectful and constructive. Encourage your classmates to do the same.

Academic Integrity

Haas has a zero tolerance policy for academic dishonesty. 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. In completing assignments and exams, you may not benefit from notes, discussions with course participants, or any other material from any previous offering of this, or a similar, course. You should not 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. It will be a violation of academic integrity if you base your work on solutions you have found on the Internet. Much of the value of preparing cases and completing assignments 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.

Statement on AI Use

In this course, we prioritize active engagement, critical thinking, and collaborative learning. To achieve these objectives, I have chosen to prohibit the use of any AI tools or automated services during class sessions and assignments; however, this does not preclude you from using AI tools for your own background research outside of class. This decision is rooted in the belief that your individual creativity and problem-solving skills are best developed without external automated assistance. I encourage you to approach each task with a mindset focused on personal growth and authentic learning experiences. Our goal is to cultivate an environment where your creativity, originality, and problem-solving skills flourish without external automated assistance. This policy is in place to ensure that your contributions and insights are genuinely your own. If you have any questions or concerns regarding the use of technology in this course, please feel free to discuss them with me.

UC Berkeley Academic Accommodations Policy:

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

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

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Class Attendance

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 GSI 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. Make sure you submit any assignment by the deadline. To catch up on the material, get handouts from bCourses, get notes from your classmates, and discuss the material with them. If after doing this you would like additional help, please reach out to your GSI and then the instructor.

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

#	Date	Topic/Case *(Optional Textbook Readings)*	Preparation/Assignment
L1	W 8/28	**Process I:** Introduction Mortgage Exercise Process Basics *(MSD 2.2)*	Pre-Course Survey due Tuesday 8/27 11:59pm Read *Mortgage Exercise* CC1 available
D1	F 8/30	Review basics + introduce Gantt chart	
X	M 9/2	Labor Day (No Class)	
L2	W 9/4	**Process II:** Process Analysis Mini Case: *Pick-Up Pizza* Labor Productivity *(MSD 2.6, 3.1-3.5)*	Prepare *Pick-Up Pizza*
D2	F 9/6	Review process analysis	
L3	M 9/9	**Process III:** Process Choice Case: *Beleza Natural* Advanced Processes *(MSD 2.6, 3.6, 7.6)*	Prepare *Beleza Natural*
L4	W 9/11	**Process IV:** Process Flow Case: *National Cranberry Cooperative** Little's Law *(MSD 2.3, 3.6, 4.2-4.3)*	*NCC* report due Tuesday 9/10 6pm CC2 available
D3	F 9/13	Review advanced process analysis	
L5	M 9/16	**Queue I:** Variability + Waiting Time Mini Case: *Rent The Runway* *(MSD 2.3, 9.1-9.6)*	CC1 due Monday 9/16 3pm Prepare *Rent The Runway*
L6	W 9/18	**Queue II:** Throughput Loss Managing Queues *(MSD 9.9, 10.1-10.4)*	
D4	F 9/20	Review queueing theory + statistics	Read *Statistics Review*
L7	M 9/23	**Quality I:** Statistical Process Control Case: *Ritz-Carlton** *(MSD 7.1-7.7)*	*Ritz-Carlton* report due Sunday 9/22 6pm
L8	W 9/25	**Quality II:** Lean Operations Midterm Flash Review *(MSD 8.1-8.5, 8.7-8.8)*	CC2 due Wed 9/25 3pm Read *Toyota* (optional)

D5	F 9/27	Review SPC + Midterm concepts	
	M 9/30	**In-Class Midterm Exam:** 3:40-4:55pm (75 minutes) Materials up to L7	
L9	W 10/2	**Experiential Supply Chain Exercise** Spieker Forum, Chou Hall 6th Floor Bring laptop, attendance mandatory, seats will be assigned Guest Speaker: **Shaan Parasnis** Owner of Hotel Shattuck Plaza + Head of Product at GreenPen AI Labs	
D6	F 10/4	Review Midterm solutions	
L10	M 10/7	**Inventory I:** Economic Order Quantity Supply Chain Exercise Debrief *(MSD 2.5, 5.6-5.7, 19.1-19.2)*	CC3 available
L11	W 10/9	**Inventory II:** Newsvendor Intro to Littlefield Simulation *(MSD 14.1-14.7)*	
D7	F 10/11	Review EOQ + Newsvendor	Register Littlefield teams
L12	M 10/14	**SCM I:** Risk-Pooling Case: *Zara* *(MSD 17.1-17.3)*	Prepare *Zara*
L13	W 10/16	**SCM II:** Quick Response Case: *Crocs** *(MSD 15.1-15.4)*	*Crocs* report due Tuesday 10/15 6pm CC4 available
X	F 10/18	No discussion – Prepare for *Littlefield Simulation*	
X	M 10/21	**Littlefield Simulation** (no classes/discussions) Monday 10/21 3:30PM to Thursday 10/24 6:30PM Submit Littlefield Strategy Slides by Sunday 10/27 12PM	
X	W 10/23		
X	F 10/25		
L14	M 10/28	**SCM III:** Contracts Littlefield Simulation Debrief *(MSD 19.3-19.4)*	
L15	W 10/30	**SCM IV:** E-Commerce Case: *Amazon.com* Guest Speaker: Georgios Patsakis (PhD'20, Senior Applied Scientist at Amazon)	CC3 due Wed 10/30 3pm Read *Amazon.com*
D8	F 11/1	Review SCM strategies	

L16	M 11/4	**Strategy I:** Revenue Management Case: *Uber* *(MSD 18.1-18.3)*	Proposal due Monday 11/4 11:59pm Read *Uber*
L17	W 11/6	**Strategy II:** Platform Operations Case: *Upwork*	Read *Upwork*
D9	F 11/8	Review revenue management	
L18	M 11/11	**Strategy III:** Experimentation Operational Transparency Case: *Tessei*	CC4 due Monday 11/11 3pm Read *Tessei*
L19	W 11/13 (Zoom)	**Strategy IV:** Sustainability Guest Speaker: **Berklee Welch** (BS'20, Sustainability Manager at Simple Mills)	Read *Starbucks* (optional)
D10	F 11/15	Final Project Check-In	
L20	M 11/18	**Strategy V:** Product Management Cases: *StubHub**	*StubHub* report due Sunday 11/17 6pm
L21	W 11/20	**Strategy VI:** AI & Operations	
D11	F 11/22	Review for Final Exam Part I	
X	M 11/25 W 11/27 F 11/29	Prepare for Final Project + Thanksgiving (No Class)	
L22	M 12/2	**Final Project Presentations**	Slides due Sun 12/1 11:59pm
L23	W 12/4	**Course Wrap-Up** Case: *Southwest* Final Flash Review	Read *Southwest* (optional) Bring laptop to class
D12	F 12/6	Review for Final Exam Part II	Report + Assessment due Sunday 12/8 11:59pm
	T 12/17	**Integrative Final Exam:** 7-10pm,Location TBD	