COURSE DESCRIPTION AND LEARNING OBJECTIVES

Operations Management 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. In recent years, analytics and digitization has been transforming the way operations have been managed. Whereas marketing focuses on the demand for the product, and whereas finance provides the capital for the product, operations actually produces and delivers the product or service.

This course provides a foundation for understanding the operations of a firm. Our objective by the end of the course is to provide you with the basic skills necessary to critically analyze a firm's operating performance and practices. Such knowledge is important for careers in a variety of areas, including general management, entrepreneurship, investment banking (e.g. business restructurings, mergers and acquisitions), venture capital (e.g. evaluating new business plans) and management consulting (business restructuring improvement). Unlike many courses in the core, which tend to treat the firm as a "black box", we will be primarily concerned with "opening up" the black box and discovering what makes a firm "tick" - or, for that matter, "stop ticking".

Because the operations of a firm vary widely from one industry to the next, a course like this cannot cover all topics that are relevant to any given industry. Rather, we have selected a set of topics that are fundamental to understanding operations in a wide range of industries. These concepts are then illustrated using cases from a diverse set of businesses.

ASSIGNMENTS

All of your assignment submissions are subject to the CBS Honor Code. Violations of the CBS Honor Code may lead to failing the assignment, failing the course, suspension, and/or dismissal. Use of case or lecture notes from previous sections of the course is not allowed. Any allegation of academic dishonesty will be forwarded to the Dean's office for
investigation. Any case of proven academic dishonesty will result in failure in the course. In order to avoid ambiguity that may lead to unintentional violations of the Honor Code, assignment description types have been standardized and specified below.

<table>
<thead>
<tr>
<th>Type</th>
<th>Designation</th>
<th>Grade</th>
<th>Preparation of submission</th>
<th>Discussion of Submission*</th>
<th>Discussion of Concepts**</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>Group Work</td>
<td>Same grade for all group members</td>
<td>By the group</td>
<td>Permitted to discuss (within group)</td>
<td>Permitted</td>
</tr>
<tr>
<td>B1</td>
<td>Individual w/ Discussions of Concepts and Submission</td>
<td>Individual grade</td>
<td>Individual preparation</td>
<td>Permitted to discuss; sharing solutions or submission files is not allowed</td>
<td>Permitted</td>
</tr>
<tr>
<td>B2</td>
<td>Individual w/ Discussions of Concepts Only</td>
<td>Individual grade</td>
<td>Individual preparation</td>
<td>Not permitted to share/discuss solutions or submission</td>
<td>Permitted</td>
</tr>
<tr>
<td>C</td>
<td>Individual</td>
<td>Individual grade</td>
<td>Individual preparation</td>
<td>Not permitted to share/discuss solutions or submission</td>
<td>Not permitted***</td>
</tr>
</tbody>
</table>

* The designated group can be either an assigned study group or a self-selected one.

* Submission means any work and/or output pertaining to the specific assignment. If an assignment submission contains a calculation or decision related to a specific set of data and setting, discussing the details how to make this calculation or decision with regard the data/setting is to discuss the submission. Providing another student with a draft of the calculation or decision is sharing the submission.
** Concepts mean any ideas, examples, readings, or other related materials from the class/course. Conceptual discussion should not be based on a specific set of data or setting related to a calculation or decision required in the assignment, but could be based on other related examples, preferably those from class/course materials.
*** As no conceptual discussion is permitted, Type C is akin to a take-home exam.

**Individual Assignments**

- There are three individual homework assignments for the course. The first two constitutes 8% of your final grade. The third constitutes 9% of your final grade.
- Homeworks are due at the beginning of the session on the assignment’s due date.
- Each student must turn in his or her own assignment. We encourage students to attempt completing the assignments on their own. However, to promote learning, students are allowed to discuss each assignment with other students. These are Type B1 assignments.

**Group Assignments**

- There is one group assignment. It is a Type A assignment and should be done with your learning team. It is an experiential game, “Littlefield Labs”, meant to provide some hands-on experience on some of the concepts covered in class. The game simulates a laboratory that provides blood testing to customers, and each team will have to manage several aspects of the lab (input materials, capacity at several stages of the process, etc.) in order to maximize the profit of the company. Teams will compete during one week, playing the game online (using a web browser) outside lecture hours. The grade for this activity will be calculated based your ranking in the competition (20%) and a write-up to be handed in at the end of the game (80%). This assignment will constitute 15% of your final grade.
Final Exam

- The final exam is based on the content of the course: analytical tools, case discussions, lectures, etc.
- It is a 3-hour written exam. No electronic files will be submitted.
- The format of the final exam is open book and open notes.
- Calculator and laptops allowed.
- Date: Wednesday, June 23.

GRADING

Your grade in the course will be based on individual, as well as group efforts and performance. We will use the following weighting scheme:

<table>
<thead>
<tr>
<th>Requirement</th>
<th>Weightage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Class Participation</td>
<td>20%</td>
</tr>
<tr>
<td>Individual Assignments (3)</td>
<td>25%</td>
</tr>
<tr>
<td>Group Assignment: Littlefield Labs Game</td>
<td>15%</td>
</tr>
<tr>
<td>Final Exam</td>
<td>40%</td>
</tr>
</tbody>
</table>

ATTENDANCE POLICY

Students are required to attend each class in the section which they are registered. Students should reach out to the Office of Student Affairs (OSA) by using Core Absence Form on this course’s Canvas page regarding excused absences (for religious observances; personal, medical, and family emergencies; military service; court appearances such as jury duty). Unexcused absences will affect your course grade as follows:

- Students that miss more than 33% of their classes (unexcused absences) will at most receive a P for the course grade
- Students that miss more than 50% of their classes (unexcused absences) will receive a F for the course grade
- In addition to the effect on your final course grade, absences may also affect your final exam grades as follows:
  - Students that miss the exam for an excused reason but are unable to take the exam within the stated make-up period will receive a zero for the final exam grade
  - Students that miss the exam without notifying OSA (unexcused), will receive an F for the course grade

Class Participation

We will judge class participation on the extent to which you appear prepared, the relevance and depth of your comments, the degree to which you listen carefully and respond to your peers, and your willingness to take chances in order to further the educational experiences of others. In many instances, we will ask you to provide a brief summary and/or justification for your answers to pre-class assignments in an online system (a link to the assignments will be provided on Canvas). These pre-class assignments are intended to get you to start thinking about the material for class and will not be graded on a basis of being right or wrong, but rather whether you properly prepare for class.

REQUIRED COURSE MATERIALS
The course uses a variety of teaching methods and materials. Classes will consist of lectures, discussions, and video presentations. Fundamental concepts are contained in lecture notes and readings. Analytical tools are presented in notes, discussed in lectures, and reinforced by group as well as individual assignments. Cases are also used to illustrate the context and complexity of operations issues.

**Text and Readings**

We have divided the readings into required and optional readings. The required readings, indicated with an asterisk (*) in the syllabus, should be read before class to facilitate comprehension and discussion. Recommended readings provide more background and depth of the material covered in the lectures. They help to clarify the topics covered in the lectures and provide some examples of practical applications. All readings are contained in a customized textbook that will be distributed in the first class. Use the syllabus as a guide for readings.

For those who would like to consult a textbook for additional readings, I recommend: “Matching Supply with Demand” by Cachon and Terwiesch. This book is held in the reserve of the library.

**CLASSROOM NORMS AND EXPECTATIONS**

We have made a sincere effort to keep the amount of reading for each class reasonable; in turn, however, we expect you to read the required materials and be well prepared for each class. Cases, in particular, typically require a detailed reading and will often require analysis of relevant data. We expect that students will use evidence to support their point of view, will strive to avoid making generalizations, and will aim speak from their own experience.

Business School classes take place in an environment that supports learning and encourages the exchange of ideas. Behavior that distracts students and the professor negatively affects the learning environment. For example,

- using electronic devices (including laptops) for purposes not authorized by the professor,
- arriving late to class or leaving early, and
- walking in and out during class

are particularly detrimental to the classroom environment. Such conduct violates the School’s Community Contract, the Columbia Core Culture, and/or the School’s Electronic Device Policy, and is disrespectful to classmates and instructors.
Core Culture in the Hyflex Classroom

The purpose of Columbia Core Culture is to promote the values of a consistent classroom environment of mutual respect, preparation and engagement in all courses. Students are expected to adhere to the same standard of behavior prescribed by Core Culture and Honor Code in traditional in-person, fully remote and Hyflex classes.

Present: Students should be on time and present for the entire session:

- Faculty are expected to start and end class on time and students are expected to be ready to begin class on time. You should arrive to class 10 minutes early. For remote students, this will ensure you can address any technical difficulties before class starts. For those students attending in-person, this will give instructors the opportunity to assign seating (if decided). An instructor can choose to factor consistent lateness into a student’s participation grade. Asynchronous students are expected to watch course recordings in a timely manner (generally within 24 hours).
- For in-person students, you must wear your mask fully covering your mouth and nose at all times, to protect yourselves and your peers from the risk of spreading COVID.
- For in-person students, you are required to bring your laptop (or web-enabled device) to class (as feasible) and to join the Zoom meeting, without connecting to audio or video (until advised differently by your instructor). You will also be asked to bring a headset. This will allow for in-person and remote students to remain connected during the live class; and for the professor to create Breakout Rooms that combine students across both modalities.
- For remote students only, your camera must be turned on upon joining the room and remain on throughout class, unless otherwise requested by your instructor.
- While electronic devices are necessary for remote instruction, they should only be used for educational purposes during class time. In other words, you are always expected to have Zoom as the active screen on your computer.
- Make sure your full name is visible to the instructor and as best as possible to your peers. All students are expected to rename yourself in Zoom as your name appears in Canvas. For those students attending in-person, also make sure you bring your name card and have it prominently displayed. To foster an inclusive class environment, we strongly encourage remote students to use ITG’s Zoom virtual background generator to make your name and preferred pronouns highly visible.
- Please remain on mute (unless asked to speak) and dress appropriately when attending to avoid distractions.
- As a general rule, if you wouldn’t engage in behavior or make a comment in a traditional classroom, please do not do so in a virtual or Hyflex one.

Prepared: Students should complete pre-work needed for class.

- Expect cold-calling. For remote students, your instructor will share expectations on how to answer when cold-called (i.e., unmute yourself, type in the chat box, etc.)
- Expect to use PollEverywhere during class, and that part of a student’s participation grade is to participate in polling questions.

Participate: All courses will have a meaningful component of the final grade attached to preparation and participation.

- Communications will be respectful. Inappropriate language will not be tolerated, and the faculty member has the right to determine what is inappropriate.
- Everyone’s comments are important. The diversity of experience among members of the class will enhance learning. All students will be treated equitably within the classroom. The classroom is a place of expression and discussion. Be courteous to others and do not interrupt when another student is speaking.
INCLUSION, ACCOMMODATIONS, AND SUPPORT FOR STUDENTS
At Columbia Business School, we believe that diversity strengthens any community or business model and brings it greater success. Columbia Business School is committed to providing all students with the equal opportunity to thrive in the classroom by providing a learning, living, and working environment free from discrimination, harassment, and bias on the basis of gender, sexual orientation, race, ethnicity, socioeconomic status, or ability.

Columbia Business School will make reasonable accommodations for persons with documented disabilities. Students are encouraged to contact the Columbia University’s Office of Disability Services for information about registration. Students seeking accommodation in the classroom may obtain information on the services offered by Columbia University’s Office of Disability Services online at www.health.columbia.edu/docs/services/ods/index.html or by contacting (212) 854-2388.

Columbia Business School is committed to maintaining a safe environment for students, staff and faculty. Because of this commitment and because of federal and state regulations, we must advise you that if you tell any of your instructors about sexual harassment or gender-based misconduct involving a member of the campus community, your instructor is required to report this information to a Title IX Coordinator. They will treat this information as private, but will need to follow up with you and possibly look into the matter. Counseling and Psychological Services, the Office of the University Chaplain, and the Ombuds Office for Gender-Based Misconduct are confidential resources available for students, staff and faculty. “Gender-based misconduct” includes sexual assault, stalking, sexual harassment, dating violence, domestic violence, sexual exploitation, and gender-based harassment. For more information, see http://sexualrespect.columbia.edu/gender-based-misconduct-policy-students.