Columbia Business School

Process Improvement and Growth
Master Class - **Spring 2024**

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TA: TBD
Tuesdays 6:00 – 9:15pm.
January 23– April 23, 2023

COURSE OVERVIEW

This class brings business operations and management science classes to the field with real-world experience. Through experiential learning, we will bridge the gap between theory and practice with case discussions, conversations with guest speakers and hands-on company sponsored projects. Different to most classes in the school, in this class students will be exposed to a series of international cases and examples based on medium-sized, fast-growing entrepreneurial ventures. Each session will also include a guest speaker, often the protagonist of the case studied, giving the students the opportunity to learn directly from successful entrepreneurs and senior executives. Additionally, students will put into practice the concept of process improvement by working on a company-sponsored applied project. Teams of 3-4 people, 1-2 MBA and EMBA students and 1-2 graduate engineering (SEAS) students, will work hand in hand with the instructors and company representatives to achieve company goals. For example, teams may be tasked with re-designing the logistical strategy of distribution of the company to get rid of inefficiencies, or identify and find strategies to eliminate areas of waste within the companies' processes, or analyze customer feedback and design operational solutions to increase customer satisfaction, etc.

Most of the sponsoring companies in this class have been selected from the Brooklyn Navy Yard industrial park so this course also offers the opportunity for students to help small/medium, fast-growing, innovative businesses based in New York. Companies provide the data and context; faculty provides guidance on best practices and teams will provide the analysis and solutions. See below for the list of companies sponsoring projects this semester.

This course is targeted toward students wanting to have experiential learning experiences and for those planning careers in entrepreneurship, management consulting, operations and private equity or venture capital. It is a unique opportunity for students to put into practice the combination of skills acquired in different classes in a real-world situation while helping companies in the area. It is also a unique opportunity for MBA and EMBA students and Engineering students to collaborate in applied projects, interacting with company executives.

Throughout this course, students will execute on process improvement projects to:
- Use concepts and ideas from operations classes to solve interesting and important business problems
- Learn how to formulate relevant business questions that allow businesses to prioritize and grow

- Understand the various steps of the process improvement methodology like problem definition, mapping, data gathering, hypothesis generation, solution design
- Break down a complex business problem into multiple smaller, solvable problems
- Learn how to iterate on a solution to continually improve it
- Learn how to measure improvement using Key Performance Indicators (KPIs)
- Learn to develop a continuous improvement culture using the Deming Principles
- Learn how to collaborate meaningfully with multiple stakeholders
- Communicate results

There will be ongoing mentoring and guidance of the project teams by the professors throughout the semester and teams will debrief to each other at several states of their projects. Project teams will also have ongoing interactions with the project sponsors and will give a formal in person briefing to the firm. Appropriate project confidentiality will be respected.

COURSE ORGANIZATION

All sessions will be held at the Columbia campus and will be followed by meetings with company representatives for project work. The classes will be a mixture of case discussion, lectures, and appearances by guest speakers.

CONNECTION TO THE MBA/EMBA CORE

The learning in this course will utilize, build on, and extend concepts covered in Business Analytics, Operations Management, and the Statistics core courses.

METHOD OF EVALUATION

Grading will be based on attendance, participation, case reflections and an operational project.

Attendance	10%
Participation	30%
Case reflections	10%
Project	40%
Project Feedback	10%

All the components of the grade are individual assignments of type C with respect to the honor code

ATTENDANCE POLICY

Students are required to attend all class sessions and all meetings with the sponsoring companies for the projects. Attendance will be taken during both components of the class. Students should reach out to the instructors 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 1 session (unexcused absence) will at most receive at most a HP for the course grade.
- Students that miss 2 sessions (unexcused absences) will receive at most a P for the course grade.

- Students that miss 3 sessions (unexcused absences) will receive an F for the course grade.

In addition to the effect on your final course grade, absences may also affect your participation grades.

CLASS PARTICIPATION

An important course requirement is active involvement in class discussion and engagement with our guest speakers and sponsoring companies. Your participation is essential for both your own learning and that of other students. Much of the learning will take place in class discussion.

Unexcused absences will affect not only your attendance grade but also your class participation grade.

CASE REFLECTIONS

Each case studied in class will have a set of reflection questions. You will be required to submit at least 3 case reflections during the semester. These will be posted as assignments in your Canvas Calendar. They require you to read the relevant material and write your thoughts. You must submit your case reflections through Canvas by 8AM on the day of the relevant class. We will share the responses with the companies.

PROCESS IMPROVEMENT PROJECTS

The students will work in teams of 3-4 hand in hand with the instructors and sponsoring company representatives to achieve company goals. The first 3 weeks will be spent in properly defining the scope of the project and the metrics. Followed by 4 weeks of data gathering, analysis and solution design, ending with 3 weeks of implementation planning.

Deliverables include a detailed documentation of the project and a presentation in class.

Sponsoring companies will be from these industry group categories:
- Apparel & Accessory
- Biotech, Lab & Medtech
- Creative Design & Media
- Energy Tech
- Food & Beverage
- Furniture & Homegoods
- Hardware, Software & Design Engineering
- Healthcare
- Wood & Metal Fabrication

PROJECT FEEDBACK

A very important course requirement is active involvement in project discussions and engagement with the sponsoring companies. You will oversee providing feedback to your peers on their projects and you will receive feedback on your project from your peers.

<u>CLASSROOM NORMS AND EXPECTATIONS</u>

Students are expected to adhere to CBS Core Culture in this class by being:

- Present:
- On time and present for every session
- Attendance tracked
- Prepared:
- Complete pre-work needed, expect cold calling
- Bring nameplates and clickers
- Participating:
- Constructive participation expected and part of grade
- No electronic devices unless explicitly called for by the instructor

<u>COURSE OUTLINE</u>

Note: Topics and content of classes may change depending on the availability of speakers and projects progress.

Session	Date	Topic	Guest Speaker
Session 1	Jan 23rd	- Introduction to Process Improvement - Meeting of Sponsoring Companies	Entrepreneurs – Project sponsors
Session 2	Jan 30th	- Process Improvement Methodology: Problem Definition	VISIT TO BROOKLYN NAVY YARD
Session 3	Feb 6th	- Operations Strategy & Different Ways of Winning - Process Improvement Methodology: Project Scope - The case of TiendaPet (Chile)	TBD
Session 4	Feb 13th	- Process Improvement Methodology: Mapping - The case of 123Seguro (Argentina)	TBD

Session 5	Feb 20th	- Deming principles and philosophy	TBD
Session 6	Feb 27th	- Process Improvement Methodology: Measure - The case of La Zarza	TBD

Mar 4-8: Final exams for first half-term (A-term) courses

Mar 11-15: Spring break

Session 7	Mar 19th	- Process Improvement Methodology: Data and analysis - The case of Aravind	TBD
Session 8	Mar 26th	- Process Improvement Methodology: Implementation planning - The Container Case at International Paper	TBD
Session 9	Apr 2nd	- Process Improvement Methodology: Implementation issues - The future of work and role of technology - The case of Ilumexico	TBD
Session 10	Apr 9th h	- Process Improvement Methodology: Control - The case of Verdissimo (Colombia, Ecuador)	TBD
Session 11	Apr 16th	- Projects Final Presentations, Feedback and Discussion	TBD
Session 12	Apr 23rd	- Projects Final Presentations, Feedback and Discussion	TBD