

**Technion MBA with a focus on technology-intensive organizations**

# **Project in Operations Management**

**Course Number: 099776**

**Number of credit points: 5**

**Mini-Semester: 8    Academic Year: 2024**

**Time: Thursday, 17:00-21:00**

**Course Instructor: Prof. (Emeritus) A. Shtub**

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**Course Goals and Description:** This course is aimed at learning and applying the tools and techniques of Operations Management to real problems. Students are encouraged to apply the most advanced tools and techniques available such as Artificial Intelligence, Data Mining, and Process mining as part of their projects.

Examples are:

1. New Product development,
2. Supply Chain Management,
3. Process planning and improvement,
4. Development of Simulation based training tools.

Students can select real projects from their organizations as well as projects that are based on a literature review.

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**Learning Outcomes:** students will learn how to find the best tools and techniques available for solving a specific (real) problem in Operations Management. How to apply such tools to a real problem and how to develop an implementation plan.

**Course Content/Topics:** the following topics will be covered by self-learning and by the course instructor:

1. Introduction to Operations Management.
2. Problem definition in terms of Objective function and constraints.
3. Development of alternative solutions.
4. Selection of the best solution based on predefined performance measures.
5. Development of an implementation plan.
6. Prototype development of the selected solution.
7. Presentation of the project.
8. Writing a report summarizing the project.

**Assignments and Grading Procedures:** Students will work in teams of up to 3 team members. The following assignments are the basis of grading:

1. Each team will conduct a weekly meeting with the course instructor and will present a weekly report in each meeting. The report will summarize the work done up to that time point and a plan for the next week (20% of final grade).
2. Each team will present its project during the last class meeting (30% of final grade). The presentation will last up to 15 minutes and will cover the following issues:
  - a) Problem definition in terms of Objective function and constraints.
  - b) Alternative solutions.
  - c) Selection of the best solution based on predefined performance measures.
  - d) Proposed solution to the problem.
  - e) Q&A

Students are encouraged to apply the most advanced tools and techniques available such as Artificial Intelligence, Data Mining, and Process mining as part of their projects.

3. Each team will submit a final report no later than a week after the last meeting (50% of final grade).  
The report will cover the following issues:
  - a) Introduction and literature review.
  - b) Problem definition in terms of Objective function and constraints.

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- c) Alternative solutions.
- d) Selection of the best solution based on predefined performance measures.
- e) Detailed description of the selected solution to the problem.
- f) Summary, conclusions, and lessons learned.

#### **Course Schedule (Topics, assignments, Exams)**

23/5/2024: Introduction to Operations Management, its tools and techniques.

Next five meetings: Course instructor meeting with the teams focusing on the progress made so far and the plans for the next week.

Last meeting Presentations

A week after the last meeting: submission of the final report

#### **Course Requirements & Course Policies**

All team members should participate in the weekly meetings. During the weekly meetings the instructor will discuss with team members the work done and will help the team to solve specific problems and to develop a plan for the next week.

#### **Accommodation for Students with special needs**

Technion facilities and remote learning systems will be used in this course.

#### **Text book(s) and/or other materials**

**Text book** Shtub, A., & Cohen, Y. (2015). *Introduction to Industrial Engineering*. CRC press.

**other materials** Each team will read articles and other material related to the specific project selected by the team.