Project in Operations Management

Course Number: 099776
Number of credit points: 5
Mini-Semester: 3   Academic Year: 2023

Time: Thursday, 17:00-21:00

Course Instructor: Prof. (Emeritus) A. Shtub
E –mail: shtub@technion.ac.il
Telephone:+972-54-4303435

Office hours: by appointment.

Teaching Assistant: Denis Solan

E –mail: denis.solan@campus.technion.ac.il

Office hours:by appointment.

Course Goals and Description: This course is aimed at learning and applying the tools and techniques of Operations Management to real problems.
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.

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 submit a short weekly report before 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 on 4/5/2023 (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

3. Each team will submit a final report no later than 11/5/2023 (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.
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)
2/3/2023: Introduction to Operations Management, its tools and techniques.
9/3/2023 16/3/2023 23/3/2023 30/3/2023 20/4/2023: Course instructor meeting with each team focusing on the progress made so far and the plans for the next week.
4/5/2023 Presentations
11/5/2023: Last date for 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.