IE 409 PROJECT SCHEDULING AND MANAGEMENT
Fall 2023

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Office Hours: Monday 13:40-15:00 by appointment

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Office Hours: Deniz Tuncer W12:40-13:30 by appointment
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The Objective of the Course
The objective of this course is to introduce the student to the quantitative aspects of the body of knowledge in project management, including agile and hybrid approaches. Emphasis is given to implementing quantitative techniques already acquired in other courses.

Course Outline
Overview of project management process; project and portfolio selection; project idea generation, formulation, financing, bidding, budgeting, and cash flow analysis; deterministic and stochastic unconstrained project scheduling; resource levelling; resource-constrained project scheduling algorithms; progress and cost control of projects; agile and hybrid project management; examples of management of projects from various sectors.

Learning Outcomes
Upon successful completion of the IE 409 Project Scheduling and Management course, students are expected:
- to grasp the project management process and be able to use quantitative tools of project management;
- to be able to identify, analyse, and model management problems suitable for formulation as projects;
- to be capable of participating in practice in the formulation, description, planning, scheduling, control, and proper termination of the project;
- to be able to transform project descriptions into mathematical programming models by employing project networks and solving them using appropriate solution techniques;
- to grasp the essentials of project selection and financial aspects of project management such as financing, bidding, budgeting, and cash flow analysis;
- to learn the use of one major project management software tool (MS Project).
Topics To Be Covered and the Weekly Schedule
First Week: Introduction and modelling of projects
Second Week: Project and portfolio selection models
Third Week: Project and portfolio selection models
Fourth Week: Initiation and planning of projects
Fifth Week: The deterministic unconstrained project scheduling process
Sixth Week: Time-cost trade-off
Seventh Week: Stochastic unconstrained project scheduling
Eighth Week: Midterm Exam / Stochastic unconstrained project scheduling
Ninth Week: Resource levelling / Resource-constrained project scheduling
Tenth Week: Progress and cost control of projects
Eleventh Week: Project contract types and bidding
Twelfth Week: Uncertainty and risk issues
Thirteenth Week: Agile and hybrid project management
Fourteenth Week: Agile and hybrid project management

Grading
Individual Project Assignment 15
Midterm Exam 20 (Monday, November 20, 2023 15:40-17:00)
Group Project Assignment 15
Quizzes 20 (5 quizzes)
Final Exam 30 (TBD) (Covers the scope of the whole term).

Make-up Policy
Those having missed the Midterm Exam but with a valid medical report given or approved by the SU Health Centre will be given a make-up exam the week before the last week of classes or in the last week covering the scope of the whole term.
There will be no make-up given for the quizzes missed.

Project Assignments
In both the Group Project Assignment and the Individual Project Assignment, MS Project software will be employed. In these assignments, besides MS Project software, you will also use Gurobi, Python, or C++, according to which one you are familiar with.

Project Calendar
Group Project Part 1
November 22 – November 29
Group Project Part 2
December 8 – December 18
Individual Project
December 22 – December 29

Homework (Exercise) is assigned but not graded.

Disclaimer
The instructor reserves the right, when necessary, to alter the grading policy, change the exam dates, and modify the syllabus and course content. Modifications will be announced on SUCourse+. Students are responsible for following the changes announced.

Attendance
Attendance is compulsory. You must attend minimum of 70% of the lectures.
(Requirement of the Higher Education Council - YÖK)

Academic Integrity
Each student in this course is expected to abide by the Sabanci University Academic Integrity Statement (available at https://www.sabanciuniv.edu/en/academic-integrity-statement). Cheating is subject to disciplinary action and a null grade.

**Textbook**
Two hard copies of this book will be put on Reserve.

**Reading Material**
The Powerpoint presentations, handouts, and journal paper assignments.

**Optional Reading**