IE 409 PROJECT SCHEDULING AND MANAGEMENT
Fall 2023

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

Teaching Assistants: Deniz Tuncer & Saeedeh Ahmadi Basir
Office Hours: To be announced.

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: Midterm Exam / Stochastic unconstrained project scheduling
Eighth Week: Stochastic unconstrained project scheduling / Progress and cost control of projects
Ninth Week: Progress and cost control of projects / Resource levelling
Tenth Week: Resource-constrained project scheduling
Eleventh Week: Uncertainty and risk issues
Twelfth Week: Agile and hybrid project management
Thirteenth Week: Agile and hybrid project management
Fourteenth Week: Project contract types and bidding

**Grading**
- Project Planning Assignment 20
- Ind MS Project Assignment 10
- Midterm Exam 20 (Monday, November 17, 2023 15:40-17:00)
- Project Selection Assignment 20
- Final Exam 30 (TBD) (Covers the scope of the whole term).

**Make-up Policy**
Make-up is given only to those with an official excuse, i.e., a medical report issued or approved by the SU Health Centre. Those 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.

**Project Assignments**
For the Project Planning Assignment, MS Project software will be employed. An Individual MS Project Assignment will be given, counting for 10% of the total grade. The Project Selection Assignment will be based on AHP. In these assignments, besides MS Project software, you might also use Gurobi, Python, or C++, according to which one you are familiar with.

**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