Course Description

U (spring)
Prereq: 8.01, 18.01
Units: 1-2-6 Å

Explore the interdisciplinary nature of 21st century engineering projects with three threads of learning: a technical toolkit, a social science toolkit, and a methodology for problem-based learning. Students encounter the social, political, economic, and technological challenges of engineering practice by participating in projects with faculty and industry. Student teams create prototypes and mixed media reports with exercises in planning, design, analysis, optimization, reporting and team building. Preference to freshmen.

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Curriculum by week
(one hour lecture and two hours lab per week; one hour lecture introduces reference materials and research methodology; laboratory exercises are project-based with a two week minimum duration; four teams of five students each execute a project; each project is divided into four laboratory exercises)

Final Team Projects and laboratory exercises are introduced with a case study document with reference materials being assembled on a dedicated team wiki site.
Project I - Transportation Boston: 2058
Project II - Information Boston: 2058

Two teams for each:

Team A - Technology analysis: metrics, 'grand challenges'
Team B - Social, Economic analysis: demographics, commerce
Team A & B - Vision: Background, issues, recommendations, analysis, consequences