

CENG4940/BIEN4940 Industrial Project

Background:

This course is an alternative format for the capstone experience for Chemical or bioengineering students, in which students will be engaged in a co-op experience instead of a design project in the university. This version of the final-year project will enable students to spend more time on a meaningful internship and be involved in solving real-life engineering problems for the chemical engineering industry.

Intended learning outcomes

- 1) Integrate and synthesize the knowledge they learned in various courses in the curriculum
- 2) Design and conduct wet-lab or dry-lab experiments to optimize and evaluate designs
- 3) Design processes or products in the realm of chemical, environmental and biomolecular engineering creatively to meet societal needs
- 4) Function effectively in multi-cultural and multi-disciplinary teams
- 5) Articulate the problem being solved and the solution provided by the design effectively both in writing and orally
- 6) Evaluate the impact of engineering design on contemporary society from various pertinent perspectives
- 7) Research and evaluate information related to their disciplines, and use it effectively in their own design
- 8) Manage a project effectively by proper work allocation and personal management, and setting and meeting appropriate goals and deadlines

Project Nature

To satisfy the requirement, the project should not be limited to operations, but rather should involve open-ended problem solving and/or engineering design, experimentation and/or prototyping, working in teams, and societal and economic impact evaluation. Student is expected to spend more than half of their work time for a specific project, on top of their other duties assigned by the company. Briefly, they need to identify an engineering problem, compare and identify a feasible solution, conduct experiment or data analysis, and/or design/optimize a product or process, etc.

Schedule

Generally, Co-Op projects will be finalized before summer for the coming whole year, both Fall (Aug to Jan) term and Spring term (ca. Jan to July). The exact period/starting time may be mutually decided by the company and students.

There will be regular progress meetings between the student and the two co-supervisors to ensure that the project is on track. Students are also required to submit a project report of similar length and format as a capstone design project, as well as go through similar assessments.

Then enrollment of this course needs approval from the Department Co-Op coordinator (email: keintern@ust.hk).

Assessment

To ensure the quality and depth of the projects, the students will be co-supervised by a representative in the company (preferably a practicing engineer) and a faculty member, and the project scope and deliverables should be jointly defined. Student's performance will be assessed by both the company and the department, based on their working attitude and efforts, progress reports, final thesis, and presentation.

The detailed assessment schemes

Assessment for proposal and interim report:	30%
Assessment panel for final report and poster presentation:	40%
Industrial adviser on motivation, teamwork, work attitude and quality:	30%