Advanced Process Optimisation (CENG0023)

**Description**

**Aims:**
Advanced use of computers in process design, operation and management. Particular emphasis is placed on Process Synthesis.

**Learning Outcomes:**
On completion the students will be expected:

- to be aware of the role of optimisation techniques in plant design, operation and management;
- to be aware of numerical techniques for solving continuous and discrete optimisation problems;
- to be able to formulate and solve complex optimisation problems both analytically and using computational tools;
- to be aware of techniques for process synthesis and be familiar with a contemporary tool.

**Synopsis:**

- Approaches to process synthesis and process optimisation.
- Linear programming by the simplex and graphical methods.
- Introduction non-linear process optimisation, optimality criteria, conditions for an optimum, unconstrained optimisation, constrained optimisation. Application to flowsheet optimisation.
- Process synthesis under uncertainty. Flexibility analysis.

**Key information**

- **Year**: 2019/20
- **Credit value**: 15 (150 study hours)
- **Delivery**: PGT L7, Campus-based
- **Reading List**: [View on UCL website](#)
- **Tutor**: Prof Lazaros Papageorgiou
- **Term**: Term 1
- **Timetable**: [View on UCL website](#)

**Assessment**

- Written examination (main exam period): 50%
- Coursework: 50%

**Find out more**

For more information about the department, programmes, relevant open days and to browse other modules, visit [ucl.ac.uk](http://ucl.ac.uk)
Chemical Engineering

Advanced Process Optimisation (CENG0023)

Description

Aims:
Advanced use of computers in process design, operation and management. Particular emphasis is placed on Process Synthesis.

Learning Outcomes:
On completion the students will be expected:

- to be aware of the role of optimisation techniques in plant design, operation and management;
- to be aware of numerical techniques for solving continuous and discrete optimisation problems;
- to be able to formulate and solve complex optimisation problems both analytically and using computational tools;
- to be aware of techniques for process synthesis and be familiar with a contemporary tool

Synopsis:

- Approaches to process synthesis and process optimisation.
- Linear programming by the simplex and graphical methods.
- Introduction non-linear process optimisation, optimality criteria, conditions for an optimum, unconstrained optimisation, constrained optimisation. Application to flowsheet optimisation.
- Process synthesis under uncertainty. Flexibility analysis.

Key information

Year: 2019/20
Credit value: 15 (150 study hours)
Delivery: UGM L7, Campus-based
Reading List: View on UCL website
Tutor: Prof Lazaros Papageorgiou
Term: Term 1
Timetable: View on UCL website

Assessment

- Written examination (main exam period): 50%
- Coursework: 50%

Find out more

For more information about the department, programmes, relevant open days and to browse other modules, visit ucl.ac.uk

Disclaimer: All information correct as of August 2019. Please note that aspects of the module may be subject to change. UCL will make best efforts to inform applicants of major changes.