Chemical Reaction Engineering II (CENG0018)

**Description**

**Aims:**

To provide an understanding of advanced reactor design and the principles and phenomena that are present in multiphase and catalytic reactions.

**Learning Outcomes:**

Upon completion of this module student should be able to:

- design advanced chemical reactors;
- evaluate the influence of mass transfer and hydrodynamics on reactor performance;
- apply advanced concepts for the design of chemical reactors;
- combine analytical and computational approaches for reactors design;
- critically evaluate what phenomena and under what circumstances need to be considered as related to the level of accuracy required for a specific design problem;
- gain experience on the operation and data analysis form laboratory chemical reactors;

**Synopsis:**

- Nonisothermal reactor design at steady and unsteady state
- Multiple reactions in PFR/CSTR
- Introduction to heterogeneous catalysis
- Mass transfer and reaction in heterogeneous catalytic reactions
- Design of fixed bed reactors
- Mass transfer and reaction in gas/liquid and gas/liquid/solid reactions
- Design of gas/liquid and las/liquid/solid reactors
- Nonideal reactors and residence time distribution

**Key information**

- **Year**: 2019/20
- **Credit value**: 15 (150 study hours)
- **Delivery**: UG L6, Campus-based
- **Reading List**: View on UCL website
- **Tutor**: Prof Asterios Gavrilidis
- **Term**: Terms 1 and 2
- **Timetable**: View on UCL website

**Assessment**

- Written examination (main exam period): 80%
- Coursework: 20%

**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)
The Masters level (level 7) version of the module (CENG0018) has a stronger focus on unseen, and more open ended, problem solving.
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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.
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