

COURSE DETAIL

REACTION ENGINEERING 1

Country

United Kingdom - England

Host Institution

Imperial College London

Program(s)

Imperial College London

UCEAP Course Level

Upper Division

UCEAP Subject Area(s)

Chemical Engineering

UCEAP Course Number

132

UCEAP Course Suffix**UCEAP Official Title**

REACTION ENGINEERING 1

UCEAP Transcript Title

REACTION ENGR 1

UCEAP Quarter Units

3.00

UCEAP Semester Units

2.00

Course Description

The course provides the fundamental theory for the design and analysis of (pseudo-) homogeneous chemical reactors. It considers ideal isothermal and non-isothermal reactor systems, and reactors involving non-ideal flow. Students learn to describe batch, semi-batch, and continuous reactor operation; homogeneous and heterogeneous reactors; and ideal and non-ideal flow models. They define conversion and the extent of reaction; product yield and selectivity; and residence time, space time, and space velocity. They derive the basic design equations for isothermal and non-isothermal reactors and perform design analysis of multistage reactor configurations, and reactors involving recycle. They determine optimal reactor configurations and operating policies for systems involving multiple reactions. Students perform analysis of reactors involving non-ideal flow based on residence time distribution theory, and zero and one-parameter flow models.

Language(s) of Instruction

English

Host Institution Course Number

CENG96004

Host Institution Course Title

REACTION ENGINEERING 1

Host Institution Campus

Imperial College London

Host Institution Faculty

Host Institution Degree

Host Institution Department

Chemical Engineering

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