

COURSE DETAIL

HEAT, MASS AND MOMENTUM TRANSFER 3

Country

United Kingdom - Scotland

Host Institution

University of Edinburgh

Program(s)

University of Edinburgh

UCEAP Course Level

Upper Division

UCEAP Subject Area(s)

Chemical Engineering

UCEAP Course Number

100

UCEAP Course Suffix**UCEAP Official Title**

HEAT, MASS AND MOMENTUM TRANSFER 3

UCEAP Transcript Title

HEAT MASS&MOMENTUM

UCEAP Quarter Units

8.00

UCEAP Semester Units

5.30

Course Description

This course covers the following topics: Heat, Mass and Momentum Transfer. The fundamentals of heat, mass and momentum transfer are presented, including analogies between the transfer mechanisms for convective transfer and treatment of radiative heat transfer. On completion of this course, the student will be able to: - Identify and describe transport mechanisms for heat, mass and momentum, developing & solving models, appropriately simplified, which address transport phenomena and conservation laws, of physical transport problems (including with 1-D fluid flow) - Solve problems in turbulent transport using empirical approaches and the Chilton-Colburn analogy - Understand the phenomena of phase change and how this affects transport problems - Perform a preliminary heat exchanger design using Kern's method - Extend simple cases of heat transfer to include radiation and for fluid flow to use 2-parameter non-Newtonian models to obtain velocity profiles.

Language(s) of Instruction

English

Host Institution Course Number

CHEE09013

Host Institution Course Title

HEAT, MASS AND MOMENTUM TRANSFER 3

Host Institution Course Details

Host Institution Campus

University of Edinburgh

Host Institution Faculty

Host Institution Degree

Host Institution Department

College of Science and Engineering

Course Last Reviewed

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