

# COURSE DETAIL

## FLUID MECHANICS (CHEMICAL) 4

**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**

107

**UCEAP Course Suffix****UCEAP Official Title**

FLUID MECHANICS (CHEMICAL) 4

**UCEAP Transcript Title**

FLUID MECH / CHEM 4

**UCEAP Quarter Units**

4.00

**UCEAP Semester Units**

2.70

## Course Description

This course builds on previous treatment of fluid mechanics in SCEE08003 Fluid Mechanics 2 and CHEE09013 Heat, Mass and Momentum Transfer 3. It presents fundamental concepts in fluid mechanics as a basis for chemical engineering design. Simplifications which allow analytical solutions to the 3D Navier Stokes and continuity equations are explored, including low Reynolds number flows and inviscid, irrotational flow. The use of inviscid flow coupled with boundary layer theory to model high Re flows is presented, together with current ideas on the nature of turbulence, including turbulence spectra and decay of turbulence. Turbulence models are used to predict dispersion in mixed flows and free jets. Models for predicting pressure drops in two-phase, liquid-gas flows are discussed.

## Language(s) of Instruction

English

## Host Institution Course Number

CHEE10004

## Host Institution Course Title

FLUID MECHANICS (CHEMICAL) 4

## Host Institution Course Details

## Host Institution Campus

Edinburgh

## Host Institution Faculty

## Host Institution Degree

## Host Institution Department

Chemical Engineering

## Course Last Reviewed

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