COURSE DETAIL

AN INTRODUCTION TO FLUID DYNAMICS

Country
United Kingdom - England

Host Institution
Exeter College, University of Oxford

Program(s)
Summer in Oxford

UCEAP Course Level
Upper Division

UCEAP Subject Area(s)
Physics

UCEAP Course Number
105

UCEAP Course Suffix
S

UCEAP Official Title
AN INTRODUCTION TO FLUID DYNAMICS

UCEAP Transcript Title
INTRO FLUID DYNAMIC

UCEAP Quarter Units
6.00

UCEAP Semester Units

4.00

Course Description

This course introduces students to the mathematical theory of fluids via the Navier Stokes Equations. The equations can be used to successfully model almost any fluid on Earth, but our mathematical understanding of them remains limited. So much so, that a $1-million prize exists for anyone that can help to further our understanding of problems involving vortex reconnection, turbulence, and whether or not the equations are "well-posed." We will look at examples in inviscid flow theory which provide insight into physical phenomena such as flight, vortex motion, and water waves. Students also explore the basic fluid dynamics necessary to build mathematical models of the environment in which we live, focusing on problems such as climate change, pollution, or the spread of infectious aerosol droplets within our buildings.

Language(s) of Instruction
English

Host Institution Course Number

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AN INTRODUCTION TO FLUID DYNAMICS

Host Institution Course Details

Host Institution Campus
Exeter College Oxford

Host Institution Faculty

Host Institution Degree

Host Institution Department

Course Last Reviewed

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