COURSE DETAIL

AN INTRODUCTION TO FLUID DYNAMICS
Country United Kingdom - England
Host Institution Exeter College, Oxford University
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

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Host Institution Campus
Exeter College Oxford

Host Institution Faculty

Host Institution Degree

Host Institution Department

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