

# 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

### **Host Institution Course Number**

### **Host Institution Course Title**

AN INTRODUCTION TO FLUID DYNAMICS

### **Host Institution Campus**

Exeter College Oxford

### **Host Institution Faculty**

### **Host Institution Degree**

### **Host Institution Department**

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