

# COURSE DETAIL

## INTRODUCTION TO MODERN PHYSICS

**Country**

United Kingdom - England

**Host Institution**

King's College London

**Program(s)**

English Universities,King's College London

**UCEAP Course Level**

Upper Division

**UCEAP Subject Area(s)**

Physics

**UCEAP Course Number**

112

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

INTRODUCTION TO MODERN PHYSICS

**UCEAP Transcript Title**

INTRO MODRN PHYSICS

**UCEAP Quarter Units**

6.00

**UCEAP Semester Units**

4.00

## **Course Description**

This course explores topics in modern physics such as quantum mechanics, special relativity, particle physics, and cosmology. The first section of the course is an introduction to Relativistic Mechanics, and it includes elements of special relativity, the Lorentz transformation, invariant (observer-independent) quantities, energy-mass equivalence, and the nonrelativistic limit: from Lorentz to Galilean mechanics. The second section involves quantum ideas for the microcosmos and includes topics such as particle-wave dualism, the uncertainty principle, the Photoelectric effect, the Davisson-Germer experiment, tunneling manifestation in nature, and nuclear fission and fusion. The third section looks at macrocosmos and cosmological scales, with attention to the known universe, dark energy, and dark matter.

## **Language(s) of Instruction**

English

## **Host Institution Course Number**

4CCP1905

## **Host Institution Course Title**

INTRODUCTION TO MODERN PHYSICS

## **Host Institution Course Details**

### **Host Institution Campus**

King's College London

### **Host Institution Faculty**

### **Host Institution Degree**

### **Host Institution Department**

Physics

## **Course Last Reviewed**

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