COURSE DETAIL

MATERIALS SCIENCE: THE ESSENTIAL EVOLUTION OF MATERIALS
Country United Kingdom - England
Host Institution University of Cambridge, Pembroke College
Program(s) Summer in Cambridge
UCEAP Course Level Upper Division
UCEAP Subject Area(s) Materials Science
UCEAP Course Number 112
UCEAP Course Suffix S
UCEAP Official Title MATERIALS SCIENCE: THE ESSENTIAL EVOLUTION OF MATERIALS
UCEAP Transcript Title MATERIALS SCIENCE
UCEAP Quarter Units 5.00
UCEAP Semester Units

3.30

Course Description

The dramatic progress in living standards, over the last hundred years especially, has been possible only by the evolution of new materials. The course provides an introduction to the wide breadth of Materials Science. It shows how the radically different responses of the huge range of materials we use in quite varied situations in everyday life enable us to exploit and benefit from their distinctive characteristics. Topics include atomic structure and its relevance to all classes of materials, the basis of mechanical and physical properties, environmental degradation and optimization using anisotropy. Examples of materials evolution are used to show how diverse materials are tailored to specific applications including transportation, power generation, communication, and health care. Further understanding and development of materials are essential given the demanding and growing challenges of sustainability. Science and technology must provide some solutions and Materials Science has a pivotal role in enabling innovation and change.

Language(s) of Instruction
English

Host Institution Course Number

Host Institution Course Title
MATERIALS SCIENCE: THE ESSENTIAL EVOLUTION OF MATERIALS

Host Institution Course Details
https://www.pem.cam.ac.uk/international-programmes/pembroke-cambridge-summer-pr...

Host Institution Campus

Host Institution Faculty
Science and Mathematics

Host Institution Degree

Host Institution Department

Course Last Reviewed
2023-2024

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