

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

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UCEAP Official Title

MATERIALS SCIENCE: THE ESSENTIAL EVOLUTION OF MATERIALS

UCEAP Transcript Title

MATERIALS SCIENCE

UCEAP Quarter Units

5.00

UCEAP Semester Units

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**

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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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