

COURSE DETAIL

FUNDAMENTALS OF MATERIALS 1

Country

United Kingdom - England

Host Institution

University College London

Program(s)

University College London

UCEAP Course Level

Upper Division

UCEAP Subject Area(s)

Mechanical Engineering

UCEAP Course Number

133

UCEAP Course Suffix**UCEAP Official Title**

FUNDAMENTALS OF MATERIALS 1

UCEAP Transcript Title

FUND MATERIALS 1

UCEAP Quarter Units

6.00

UCEAP Semester Units

4.00

Course Description

This course presents students with the major theoretical concepts associated with materials science, such as bonding, atomic and molecular structure, phase equilibria, crystallography, and dislocation theory, so that a strong understanding of the relationship between structure and properties in materials can be developed. It also introduces and presents the basic theory associated with the mechanical behavior of engineering materials when under load, both in the elastic and plastic regimes, as appropriate to the material. The course also presents the materials science theory within a real-world context, with a particular emphasis on the manufacturing methods that are employed to turn basic materials into components and products. Through this study it will hopefully become apparent that the properties of materials are strongly determined by the structure of materials (on levels ranging from the nano to the macro scale) and that such structure is, in turn, itself strongly influenced by the manufacturing methods utilized. It is through manufacturing methodology that engineers have the greatest ability to alter and optimize materials properties such as strength and toughness, stiffness and even corrosion resistance.

Language(s) of Instruction

English

Host Institution Course Number

MECH0007

Host Institution Course Title

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Host Institution Course Details

Host Institution Campus

University College London

Host Institution Faculty

Host Institution Degree

Host Institution Department

Mechanical Engineering

Course Last Reviewed

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