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 Campus
University College London

Host Institution Faculty

Host Institution Degree

Host Institution Department
Mechanical Engineering

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