COURSE DETAIL

ADVANCED MATERIALS AND MANUFACTURING (LEVEL 3)
Country United Kingdom - England
Host Institution University College London
Program(s) Summer at University College London
UCEAP Course Level Upper Division
UCEAP Subject Area(s) Mechanical Engineering
UCEAP Course Number 140
UCEAP Course Suffix S
UCEAP Official Title ADVANCED MATERIALS AND MANUFACTURING (LEVEL 3)
UCEAP Transcript Title ADV MATS&MANUFACTUR
UCEAP Quarter Units 6.00
UCEAP Semester Units

4.00

Course Description

This course introduces students to the transformative and innovative field of advanced materials and nanomaterials, focusing on their applications in the electronics, energy, and healthcare sectors. Students are introduced to state-of-the-art material characterization techniques, such as advanced microscopy and profilometer, to analyze properties at the nanoscale. The course explores surface and particle nanoengineering, contrasting bottom-up and top-down fabrication methods, including cutting-edge advanced manufacturing techniques like 3D printing and precision machining. Highlighting successful nanotechnology applications, such as flexible electronics and energy storage devices, the module also introduces Life Cycle Assessment (LCA) to evaluate the environmental impacts of materials and manufacturing processes. Through the hands-on mini-projects, students apply knowledge to real-world challenges, gaining practical skills in sustainable material design and advanced manufacturing. This comprehensive course equips students with the expertise to innovate and address complex issues in materials science and manufacturing, sparking their curiosity and excitement for the field.

Language(s) of Instruction
English

Host Institution Course Number
ISSU0130

Host Institution Course Title
ADVANCED MATERIALS AND MANUFACTURING (LEVEL 3)

Host Institution Course Details
https://www.ucl.ac.uk/prospective-students/summer-school/modules/advanced-mater...

Host Institution Campus
Host Institution Faculty
Host Institution Degree
Host Institution Department Mechanical Engineering
Course Last Reviewed 2025-2026

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