

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

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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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