

Advanced Materials

Module Information

2022.01, Approved

Summary Information

Module Code	7314MECH
Formal Module Title	Advanced Materials
Owning School	Engineering
Career	Undergraduate
Credits	10
Academic level	FHEQ Level 7
Grading Schema	50

Teaching Responsibility

LJMU Schools involved in Delivery
Engineering

Learning Methods

Learning Method Type	Hours
Lecture	11
Practical	3
Tutorial	11

Module Offering(s)

Display Name	Location	Start Month	Duration Number Duration Unit
SEP-CTY	CTY	September	12 Weeks

Aims and Outcomes

Aims	To develop a wide knowledge of advanced materials and to study the materials development and selection process.
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After completing the module the student should be able to:

Learning Outcomes

Code	Number	Description
MLO1	1	Critically review the mechanical performance and applications of a range of engineering materials.
MLO2	2	Gain comprehensive knowledge of the principles and mechanisms of the advanced materials.
MLO3	3	Select materials to meet the performance requirements of a range of engineering applications.
MLO4	4	Have knowledge of new materials design and developments.

Module Content

Outline Syllabus	Structure, properties and applications of engineering materials. Advanced materials, mechanisms, functions and applications. The selection and design of materials on the basis of performance requirements. New modern materials developments. Life cycle analysis, degradation of materials related to environmental.
Module Overview	
Additional Information	This module will provide an in-depth understanding of the structures, functions and applications of advanced materials together with techniques available for improving properties of materials. The design and selection of materials based on applications will also be developed. This module includes content which relates to the following UN Sustainable Development Goals: SDG8 – This module will consider how to provide youth with skills that match labour market in materials and manufacture field and allow youth attain productive employment. SDG9 – This module will consider how to promote sustainable industrialisation and poster innovation. SDG12 – This module will consider the issues of materials waste and recycling when designing engineering solutions.

Assessments

Assignment Category	Assessment Name	Weight	Exam/Test Length (hours)	Module Learning Outcome Mapping
Centralised Exam	Examination	100	2	MLO1, MLO2, MLO3, MLO4

Module Contacts

Module Leader

Contact Name	Applies to all offerings	Offerings
James Ren	Yes	N/A

Partner Module Team

Contact Name	Applies to all offerings	Offerings
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