

## Liverpool John Moores University

Title: Materials Technology  
Status: Definitive  
Code: **7060BEPG** (119777)  
Version Start Date: 01-08-2021

Owning School/Faculty: Civil Engineering and Built Environment  
Teaching School/Faculty: Civil Engineering and Built Environment

Team	Leader
Rafal Al-Mufti	Y
Abhijit Ganguli	

**Academic Level:** FHEQ7  
**Credit Value:** 20  
**Total Delivered Hours:** 58  
**Total Learning Hours:** 200  
**Private Study:** 142

### Delivery Options

Course typically offered: Semester 1

Component	Contact Hours
Lecture	33
Seminar	11
Tutorial	11

**Grading Basis:** 50 %

### Assessment Details

Category	Short Description	Description	Weighting (%)	Exam Duration
Exam	AS1	closed book	60	3
Portfolio	AS2	portfolio of short reports	40	

### Aims

*To further develop the student's understanding of the behaviour of Civil Engineering Materials under a wide range of service conditions. To develop the student's ability to evaluate new developments in Materials Technology and to compare critically the choice of materials for specific applications.*

## Learning Outcomes

After completing the module the student should be able to:

- 1 Critically analyse the materials requirements for specific structural and nonstructural applications.
- 2 Critically analyse current developments in materials technology.
- 3 Analyse the behaviour of materials under fire conditions.
- 4 Critically evaluate recent developments in Materials Technology.

## Learning Outcomes of Assessments

The assessment item list is assessed via the learning outcomes listed:

EXAM	1	2	3	4
PORTFOLIO	2			

## Outline Syllabus

*The relationships between materials properties and environment leading to durability criteria.*

*Design for durability, life cycle planning and maintenance.*

*Production and properties of advanced materials including composite materials.*

*Assessment of novel structural materials.*

*Fire: combustion and spread of fire, behaviour and deterioration of structural materials in fire conditions.*

## Learning Activities

Lectures, seminars and tutorials

## Notes

This module develops techniques for evaluating and understanding the behaviour of engineering materials under various service conditions including exposure and loading regimes. On completion of the module students should be able to make intelligent decisions with regard to choice of materials for Civil Engineering applications. Also they will have an understanding of the performance of a range of materials commonly used in the design of structures and an appreciation of new developments in the industry.