

## Liverpool John Moores University

Title: ADVANCED MATERIALS AND CONSTRUCTION SITE  
MANAGEMENT  
Status: Definitive  
Code: **6500CIVSL** (123272)  
Version Start Date: 01-08-2021  
Owning School/Faculty: Civil Engineering and Built Environment  
Teaching School/Faculty: ICBT, Colombo

Team	Leader
Larry Wilkinson	Y

**Academic Level:** FHEQ6  
**Credit Value:** 20  
**Total Delivered Hours:** 56  
**Total Learning Hours:** 200  
**Private Study:** 144

### Delivery Options

Course typically offered: Semester 1 and Summer

Component	Contact Hours
Lecture	36
Practical	6
Workshop	12

**Grading Basis:** 40 %

### Assessment Details

Category	Short Description	Description	Weighting (%)	Exam Duration
Report	AS1	2000 WORD REPORT	30	
Exam	AS2	EXAMINATION	70	2

### Aims

*To further develop the student's understanding of the behaviour of engineering materials under a wide range of service conditions in consideration of durability and sustainability and to critically review the choice of materials for engineering applications.*

*To provide the student with an understanding of how projects are planned and*

*monitored for any delays and corrective action necessary.  
To introduce the student to the various risks that arise on a project and determine ways to eliminate or mitigate them.*

## **Learning Outcomes**

After completing the module the student should be able to:

- 1 Critically review the use of non-destructive testing methods in the evaluation of structural concrete under high levels of exposure.
- 2 Critically analyse the materials requirements for specific structural and non-structural applications.
- 3 Critically analyse current advancements in materials development.
- 4 Examine the methods available for project planning including g programming and scheduling a typical construction project.
- 5 Determine how delays to a construction project can affect progress and cost.
- 6 Evaluate the risks that occur throughout the construction process.

## **Learning Outcomes of Assessments**

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

2000 WORD REPORT	1	4				
EXAMINATION	1	2	3	4	5	6

## **Outline Syllabus**

*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.*

*Introduction to what planning and scheduling entails.*

*Understanding how progress is monitored and the contractual processes when the delay occurs.*

*Assessment of the typical construction risks that are experienced and how they are managed.*

## **Learning Activities**

Lectures, workshops and practical sessions.

## **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 have an understanding of the performance of a range of materials commonly used in the design of major structures and an appreciation of new developments within the industry including repair techniques.

The module further develops an understanding of the various programming techniques available to determine the sequence and duration of construction activities on a project. The student will learn how to monitor progress on a project, why it is important and what happens contractually when delays are inevitable. Risk management will be explored and the student will be able to complete a typical risk register that identifies the risks that may occur on a project and how they are best managed.