Liverpool John Moores University

Title:	SCIENCE AND MATERIALS
Status:	Definitive
Code:	**4026BEHN** (102299)
Version Start Date:	01-08-2016
Owning School/Faculty:	Civil Engineering
Teaching School/Faculty:	Civil Engineering

Team	Leader
William Atherton	Y

Academic Level:	FHEQ4	**Credit Value:**	12	**Total Delivered Hours:**	62
Total Learning Hours:	120	**Private Study:**	58		

Delivery Options
Course typically offered: Semester 1

Component	Contact Hours
Lecture	24
Practical	24
Tutorial	12

Grading Basis: BTEC

Assessment Details

Category	Short Description	Description	Weighting (%)	Exam Duration
Exam	AS1	unseen	60	2
Report	AS2	assignment	40	

Aims

To introduce students through theory and experiment to the basic science underpinning engineering calculations.
To expand the students knowledge of the engineering properties of the most important construction materials, based upon scientific principles.
To introduce the principles governing the choice and specification of materials.

Learning Outcomes

After completing the module the student should be able to:

1 Use of standard laboratory experiments and report upon outcome
2 Make calculations relating to forces, motion and energy using statics, solids and fluids.
3 Describe the composition, manufacturing processes and engineering properties of the major construction materials.
4 Write and justify simple performance specifications for concrete, steel and timber.
5 Describe the most common process by which construction materials degrade, and the methods by which quality and durability are assured.

Learning Outcomes of Assessments

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

EXAM	2	3	4	5
CW	1	2	3	

Outline Syllabus

Writing laboratory reports, interpretation and presentation of data.
To identify health and safety issues and perform risk assessments.
Testing of materials: determination of properties, measurements, standard testing methods.
Basic physical science: forces and motion, energy, static's (solid and fluid), thermal properties, the use of various materials in the design of structural elements

Learning Activities

Lectures, Tutorials, Laboratory classes.
Theory is covered in lectures and practice is covered in group tutorial sessions. Laboratory experiments are used to illustrate theory and demonstrate the importance of a methodical approach to the testing of materials.

Notes

An introduction to science and materials for civil engineers. Emphasis is placed upon methodical work in experiments and clear analysis and presentation of results.