Liverpool John Moores University

Title:	BUILDING MATERIALS AND PATHOLOGY
Status:	Definitive
Code:	**7018BEPG** (102539)
Version Start Date:	01-08-2014
Owning School/Faculty:	Built Environment
Teaching School/Faculty:	Built Environment

Team	Leader
Alex Mason	Y
Martin Turley	

Academic Level:	FHEQ7	**Credit Value:**	20.00	**Total Delivered Hours:**	49.00
Total Learning Hours:	200	**Private Study:**	151		

Delivery Options
Course typically offered: Standard Year Long

Component	Contact Hours
Lecture	38.000
Workshop	8.000

Grading Basis: 40 %

Assessment Details

Category	Short Description	Description	Weighting (%)	Exam Duration
Exam	AS1	choice of questions	40.0	3.00
Report	AS2	materials assignment	30.0	
Portfolio	AS3	building pathology assignment	30.0	

Aims

To provide a broad knowledge of the properties and performance of building materials, along with a critical evaluation of the pathology of building defects.

Learning Outcomes

After completing the module the student should be able to:

1 Explain and investigate the properties and performance of common building materials by research, experimentation and testing.
2 Analyse and evaluate the causes of common defects within buildings and justify appropriate remedial measures, through professional reports.
3 Analyse and appraise the suitability of a range of materials in different situations within existing buildings and predict their likely behaviour and their effect upon buildings.

Learning Outcomes of Assessments

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

EXAM	3
REPORT - MATERIALS	1
PORTFOLIO - BUILDING PATHOLOGY	2

Outline Syllabus

The properties and performance of bricks (clay, concrete and calcium silicate), concrete blocks, gypsum plasters, lime plasters, lime mortars, cement mortars, concrete, timber (hardwoods, softwoods and manufactured timbers), plastics, steel, lead, copper, aluminium, alloys.
Building defects and causes including, dry rot, wet rot, beetle infestation, rain penetration, rising dampness, condensation, corrosion of iron and steel, concrete defects, frost attack, efflorescence, staining, settlement, subsidence, heave, biological defects, chemical defects.
Building Pathology including;
Defects in context. Building obsolescence, dilapidations and users obligations.
Building and defect analysis models. BRE and PSA evaluation and diagnosis models.
Advanced monitoring and analysis techniques.
Reporting conclusions and recommendations.
Selection criteria for remediation options.
Method statements and risk assessments for building surveys and remedial works.

Learning Activities

Lectures, workshops.

References

Course Material	Book
Author	Harris, S.

Publishing Year	2001
Title	Building Pathology: Deterioration, Diagnostics and Intervention
Subtitle	
Edition	
Publisher	John Wiley and Sons
ISBN	0471331724

Course Material	Book
Author	Illston, J.M. & Domone, P.L.J.
Publishing Year	2001
Title	Construction Materials: Their Nature and Behaviour
Subtitle	
Edition	3rd Edition
Publisher	Spon
ISBN	0419258604

Course Material	Book
Author	Richardson, B.
Publishing Year	2000
Title	Defects and Deterioration in Buildings: A Practical Guide to the Science and Technology of Material Failure
Subtitle	
Edition	
Publisher	Spon
ISBN	041925210X

Course Material	Book
Author	Watt,D
Publishing Year	2007
Title	Building Pathology
Subtitle	
Edition	2nd
Publisher	Blackwell
ISBN	9781859463086

Course Material	Book
Author	Hoxley,M
Publishing Year	2009
Title	Good Practice guide: Building Condition Surveys
Subtitle	
Edition	
Publisher	RIBA Publishing
ISBN	9781859463086

Notes

The module provides a broad knowledge of the properties and performance of building materials, along with a critical evaluation of the pathology of building defects.