

## MODULE SPECIFICATION

Part 1: Information						
Module Title	Technology 6 - Smart Materials					
Module Code	UBLMXP-8-M		Level	Level 7		
For implementation from	2018-	2018-19				
UWE Credit Rating	8		ECTS Credit Rating	4		
Faculty	Faculty of Environment & Technology		Field	Architecture and the Built Environment		
Department	FET [	ET Dept of Architecture & Built Environ				
Module type:	Proje	Project				
Pre-requisites		None				
Excluded Combinations		None				
Co- requisites		None				
Module Entry requirements		None				

### Part 2: Description

**Overview**: To critically introduce the students to the newly invented materials and technologies and their implications on architecture as seen through applied situations and case studies globally.

Features: CSA code ARCH/TECH 2721

Educational Aims: See Learning Outcomes.

**Outline Syllabus:** The module will contribute to students' critical knowledge and understanding of:

THE USE OF SMART MATERIALS AND TECHNOLOGY IN ARCHITECTURE

The module will have guest lecturers and specialists introducing some of the following areas to the students:

Introduction to the role of research and newly invented materials and technologies and their implications on architecture.

Applications of new materials and technologies as seen through applied situations and case

## studies.

Advanced technologies of conventional materials - wood, glass, steel and concrete and related technologies, physical and chemical properties, advantages and disadvantages and applications in building design.

Polymers and related technologies and their use in buildings: ETFE,PTFE,GRP etc. Physical and chemical properties, advantages and disadvantages.

Sustainable materials and technologies.

Smart materials such as nano materials, new textiles, interactive membranes and their use in buildings and the building envelope. Physical and chemical properties, advantages and disadvantages of use.

Digital materiality of architecture: new media facades.

CAD/CAM prototyping technologies.

Time based architecture: cybernatics, interactive design, tangible interfaces, wearable technologies.

Teaching and Learning Methods: See Assessment.

### Part 3: Assessment

Strategy:

Being a technical module where students are required to demonstrate key analytical and problem solving skills. The coursework requires the students to critically demonstrate, throughout the academic year, that they understand how these smart materials concepts introduced in the lectures will and can be applied in practice (CW).

The coursework is used to integrate strands of critical knowledge presented as separate topics and to develop students' academic writing with particular emphasis being placed on the managing and referencing of evidence based work.

Formative Feedback will be given to drafts of the coursework and to the final coursework piece prior to submission.

First Sit Components	Final Assessment	Element weighting	Description
Written Assignment - Component A	✓	100 %	Individual written coursework submission which will cover smart materials and advanced technologies
Resit Components	Final Assessment	Element weighting	Description
Written Assignment - Component A	~	100 %	Resubmission of Written Submission

n successful completion of this module students will achieve the follo	wing learning o	outcomes:		
following and the first off and the state of		Reference		
of the properties, including critical understanding of their advantages and disadvantages as well as its applications of new polymers: ETFE,PTFE, GRP etc.				
of the properties, including critical understanding of their advantages and disadvantages and applications of smart materials and smart technology.				
of the properties, including critical understanding of their advantages and disadvantages and applications of digital materials and digital technologies.				
of the properties, including critical understanding of their advantages and disadvantages of cybernetics and time based technologies.				
of the advantages and applications of sustainable materials and technologies in buildings. of the properties of advanced technologies as applicable to conventional materials such as wood, glass, steel and concrete. And evaluate their advantages and disadvantages				
				Module Learning Outcomes
Critical Awareness:		MO1		
of the innovative concepts in materials and building technologies that ntegrated in building design globally.	are			
Critical Understanding:		MO2		
Critical Understanding :		MO3		
naterials and advanced technologies.	smart			
Ability:		MO4		
ndependent Study Hours:				
Independent study/self-guided study 2				
Total Independent Study Hours:		7		
Scheduled Learning and Teaching Hours:				
Eace-to-face learning				
Hours to be allocated 80				
	f the properties, including critical understanding of their advantages isadvantages of cybernetics and time based technologies. If the advantages and applications of sustainable materials and tech uidings. If the properties of advanced technologies as applicable to conventio uch as wood, glass, steel and concrete. And evaluate their advantage isadvantages Dodule Learning Outcomes Tritical Awareness: If the innovative concepts in materials and building technologies that tegrated in building design globally. Tritical Understanding: If the use and integration of new materials and technologies in archill elated construction details, construction processes, maintenance an applications. Tritical Understanding : If the potential opportunities for design innovation through the use of naterials and advanced technologies. bility: the potential opportunities for design innovation through the use of naterials and advanced technologies. bility: the integrate the understanding of Smart materials, process of assemt naintenance aspects in the design of middle and high rise buildings of buildings for different usages in different situational contexts. Independent Study Hours: Independent Study Hours: Face-to-face learning Total Independent Study Hours: Face-to-face learning Total Scheduled Learning and Teaching Hours:	f the properties, including critical understanding of their advantages and isadvantages of cybernetics and time based technologies. If the advantages and applications of sustainable materials and technologies in uildings.   if the advantages of cybernetics and applications of sustainable materials and technologies in uildings. If the advantages and applications of sustainable materials and technologies in duch as wood, glass, steel and concrete. And evaluate their advantages and isadvantages.   lodule Learning Outcomes irritical Awareness:   f the innovative concepts in materials and building technologies that are tegrated in building design globally. irritical Understanding:   f the use and integration of new materials and technologies in architecture and elated construction details, construction processes, maintenance and cost applications. irritical Understanding :   f the potential opportunities for design innovation through the use of smart taterials and advanced technologies. buildings and complex to the design of middle and high rise buildings and complex to buildings for different usages in different situational contexts.   independent Study Hours: 2:   Independent study/self-guided study 2:   Face-to-face learning 5:   Face-to-face learning 5:   Total Scheduled Learning and Teaching Hours: 5:		

# STUDENT AND ACADEMIC SERVICES

	Allocated Hours	80
Reading List	The reading list for this module can be accessed via the following link:	
	https://uwe.rl.talis.com/index.html	

Part 5: Contributes Towards	
This module contributes towards the following programmes of study:	