MODULE SPECIFICATION

Part 1: Information			
Module Title	Sustainable Engineering for Global Challenges		
Module Code	UFMFBM-30-M	Level	Level 7
For implementation from	2019-20		
UWE Credit Rating	30	ECTS Credit Rating	15
Faculty	Faculty of Environment & Technology	Field	Engineering, Design and Mathematics
Department	FET Dept of Engin Design & Mathematics		
Module type:	Standard		
Pre-requisites	None		
Excluded Combinations	None		
Co- requisites	None		
Module Entry requirements	None		

Part 2: Description

Educational Aims: The aim of this module is to ensure students are aware of the major global issues facing society and organisations and the potential for engineering-based solutions.

This module will prepare students to understand:

What is strategy and strategic planning?

Ethical Leadership.

Change leadership vs change management.

Responsible business and global challenges

Global risk analysis

Students will be equipped with advance knowledge, tools and techniques to identify social-economic impact of global challenges and identify appropriate strategies that delivers long-term benefits for both their business and the world as a whole.

Outline Syllabus: Global challenges themes include, but not limited to:

Environment and climate change,

Natural resources scarcity,

Sustainable energy,

Healthcare,

Urbanisation and smart cities.

This module will prepare students to:

Recognise the complexity of our interconnected world

Understand the socioeconomic impact of our challenges

Recognise their role as technology/engineering managers in facing global challenges

Understand the ethical, moral and legal responsibilities of their decision and conduct

Solve complex problems through innovation and entrepreneurship

Develop global mind-set by working in diverse teams

Teaching and Learning Methods: Students will experience real-world sustainability challenge simulations. In this real-world simulation, students take the role of either middle or a senior manager who act as an internal change agent at an engineering company, students must make decisions to convince a critical mass of key employees to adopt a sustainability initiative.

In addition, students will be presented with real-world case studies that represent a theme of global challenge. Case method teaching immerses students into realistic business situations help them to appreciate the challenge of implementing an enterprise-wide, strategic change initiative that involves various stakeholders; organisations, government and societies.

Part 3: Assessment

In Component B1 students submit a group report of 2,500 words to demonstrate their understanding of the complexity, risks and adverse impact of their chosen global challenge. The impact needs to be assessed using academic and practitioner literature.

In Component B2, the students submit a 3,000 words group report that is designed to encourage students to evaluate the outcomes of the first group investigation and exercise critical thinking and problem solving skills to provide practical and justifiable recommendation for an industry and/or government. These recommendations are to be presented in strategic management and lean enterprise model known as “Business Model Canvas”.

Finally, a controlled element consists of an individual presentation to the tutors to demonstrate managerial level of communication of a complex multifaceted problem. It provides an opportunity for individuals to develop Independent leadership qualities through demonstrating critical understating of the challenge. In addition, it assesses the extent to which individuals achieve the learning outcomes. This element enhances students’ performance and contribution to the group work.

A transparent published method is in place for identifying students’ contribution to group work. This peer assessed process is moderated by the module leader.

Both assessment components are designed to encourage students to evaluate the theoretical concepts encountered within the module and apply them to a real-world problem.

The referred assignment will be based on the original written tasks (component B) and will use feedback received

from the initial submission. The length of the referred individual report is 3,000 words.

The referred presentation will differ from the first presentation in that it will take place after the submission of the report. It will be based on presenting the challenge and suggested outcome in their written report.

First Sit Components	**Final Assessment**	**Element weighting**	**Description**
Report - Component B		30 %	Group report 1 (2500 words)
Report - Component B		45 %	Group report 2 (3000 words)
Presentation - Component A	✓	25 %	Individual presentation (15 minutes)
Resit Components	**Final Assessment**	**Element weighting**	**Description**
Report - Component B		75 %	Individual report (3000 words)
Presentation - Component A	✓	25 %	Individual presentation (15 minutes)

Part 4: Teaching and Learning Methods

Learning Outcomes

On successful completion of this module students will achieve the following learning outcomes:

Module Learning Outcomes	**Reference**
Conduct, synthesise and critically evaluate professionally relevant information, arguments and assumptions of a selected global challenge	MO1
Apply theoretical knowledge, critical thinking and problem solving skills and analyse complex information in a specific global context	MO2
Demonstrate systematic knowledge and critical understanding of your chosen topic in a form of practical yet sustainable recommendations	MO3
Demonstrate independent leadership qualities via planning, monitoring and evaluating significant constraints, barriers and opportunities	MO4
Demonstrate the requirements of professional standards of consultancy report and presentations	MO5

Contact Hours

Independent Study Hours:	
Independent study/self-guided study	230
Total Independent Study Hours:	230
Scheduled Learning and Teaching Hours:	
Face-to-face learning	70

	Total Scheduled Learning and Teaching Hours:	70
	Hours to be allocated	300
	Allocated Hours	300
Reading List	*The reading list for this module can be accessed via the following link:* https://uwe.rl.talis.com/modules/ufmfbm-30-m.html	

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