



MODULE SPECIFICATION

Part 1: Information			
Module Title	Water and Wastewater Engineering		
Module Code	UBGMTN-15-M	Level	Level 7
For implementation from	2018-19		
UWE Credit Rating	15	ECTS Credit Rating	7.5
Faculty	Faculty of Environment & Technology	Field	Geography and Environmental Management
Department	FET Dept of Geography & Environmental Mgmt		
Contributes towards			
Module type:	Standard		
Pre-requisites	None		
Excluded Combinations	None		
Co- requisites	None		
Module Entry requirements	None		

Part 2: Description	
<p>Educational Aims: See Learning Outcomes</p> <p>Outline Syllabus: Water treatment design: Design of conventional treatment processes – aeration, coagulation, flocculation, sedimentation, clarification, filtration, floatation, disinfection.</p> <p>Wastewater treatment design: Preliminary treatment – screening, grit removal, odour control, flow equalization; primary treatment; Biological processes – attached growth and suspended growth processes, anaerobic processes and sludge treatment; land based and on-site treatment facilities.</p> <p>Advanced treatment technology: Suspended solids removal – granular media filtration, filtration and chlorination for virus removal,</p>	

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carbon adsorption; nutrient removal – biological and chemical phosphorous removal, biological nitrification, denitrification and ammonia stripping; reduction of dissolved salts – distillation, reverse osmosis and electro analysis.

Teaching and Learning Methods: Student time will be allocated as follows:

Lectures: 54 hours

Tutorials/project follow-up: 21 hours

Directed learning: 12 hours

Summative assessment: 23 hours

Self directed learning: 40 hours

Total student hours: 150 hours

Scheduled learning includes lectures, seminars, tutorials, project supervision, demonstration, practical classes and workshops; fieldwork; external visits; work based learning; supervised time in studio/workshop.

Independent learning includes hours engaged with essential reading, case study preparation, assignment preparation and completion etc.

The module will be delivered by means of a series of lectures and problem-solving tutorial sessions.

The lecture course primarily introduces the basic unit processes that are used in the treatment of water and wastewater, the standards applied. A number of additional reading materials are provided to help reinforce the basic material covered in the lecture course.

Part 3: Assessment

The strategy has been chosen to ensure that fundamental engineering principles are assessed under controlled conditions, while a more open ended research based assignments are used to encourage wider engagement and reflection on this topic

Assessment is based on a written examination and a project report of 3000 words. For the project students are expected to submit individual reports.

The examination assesses the students' knowledge and understanding and the project assesses their ability to apply their knowledge and understanding within the context of specific situation.

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For the examination worksheets which build on the lecture content are discussed during tutorial sessions. Introductory and follow-up tutorials support the project. Students are encouraged to attend all tutorial sessions these provide the opportunity for students to gain formative feedback.

First Sit Components	Final Assessment	Element weighting	Description
Report - Component B		50 %	Report (3000 words)
Examination - Component A	✓	50 %	Examination (150 minutes)

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Resit Components	Final Assessment	Element weighting	Description
Report - Component B		50 %	Report (3000 words)
Examination - Component A	✓	50 %	Examination (150 minutes)

Part 4: Teaching and Learning Methods		
Learning Outcomes	On successful completion of this module students will be able to:	
	Module Learning Outcomes	
	MO1 Select from a range a series of appropriate unit processes for a particular water and wastewater treatment	
	MO2 Carry out correct context design, process design and capacity calculations	
	MO3 Critically analyze problems that may arise in the operation of water and wastewater treatment plant	
	MO4 Demonstrate the ability to critically review process design of water and wastewater treatment processes	
Contact Hours	Contact Hours	
	Independent Study Hours:	
	Independent study/self-guided study	63
	Total Independent Study Hours:	63
	Scheduled Learning and Teaching Hours:	
	Face-to-face learning	66
	Tutorials	21
	Total Scheduled Learning and Teaching Hours:	87
	Hours to be allocated	150
	Allocated Hours	150
	Reading List	<i>The reading list for this module can be accessed via the following link:</i> https://uwe.rl.talis.com/index.html