Session: 2023/24

Title of Module: Waste Management			
Code: CEWM11005	SCQF Level: 11 **(Scottish Credit and Qualifications Framework)**	Credit Points: 20	ECTS: 10 **(European Credit Transfer Scheme)**
School:	School of Computing, Engineering and Physical Sciences		
Module Co-ordinator:	Iain McLellan		

Summary of Module
This is an attendance based, continuously assessed module. On completion of this module you will gain the following Graduate Attributes: • **Critical thinking** by working **collaboratively** with colleagues on **research-minded** assignments • **Problem solving** and **effective communication** • Your research will be **innovative** and **creative** producing **resilient** solutions to our environmental and waste management challenges Waste Management provides students with access to best practice in operational controls and techniques for waste reduction, handling, treatment, disposal and diversion. Passive and active technologies for waste management are covered and include a full range of waste types ie: food waste, compostable materials, electrical waste, hazardous waste and wastes suitable for waste-to-energy facilities. This module considers processes for waste handling and conversion and uses case studies from industrial facilities that deal in handling waste materials. Included in this module is a focus on international practices, with case studies to support the lectures. A site visit to view current technology in managing waste is planned. Class materials, research resources, exercises, class communications, administrative information and assignment handling will be supported by a Virtual Learning Environment Students will gain a comprehensive and detailed knowledge of options for reduction of waste generation and waste materials handling, treatment and disposal.

Module Delivery Method					
Face-To-Face	Blended	Fully Online	HybridC	HybridO	Work-based Learning
	✓				

Face-To-Face
Term used to describe the traditional classroom environment where the students and the lecturer meet synchronously in the same room for the whole provision.
Blended
A mode of delivery of a module or a programme that involves online and face-to-face delivery of learning, teaching and assessment activities, student support and feedback. A programme may be considered "blended" if it includes a combination of face-to-face, online and blended modules. If an online programme has any compulsory face-to-face and campus elements it must be described as blended with clearly articulated delivery information to manage student expectations
Fully Online
Instruction that is solely delivered by web-based or internet-based technologies. This term is used to describe the previously used terms distance learning and e learning.
HybridC
Online with mandatory face-to-face learning on Campus
HybridO
Online with optional face-to-face learning on Campus
Work-based Learning
Learning activities where the main location for the learning experience is in the workplace.

Campus(es) for Module Delivery

The module will **normally** be offered on the following campuses / or by Distance/Online Learning: (Provided viable student numbers permit)

Paisley:	Ayr:	Dumfries:	Lanarkshire:	London:	Distance/Online Learning:	Other:
✓						

Term(s) for Module Delivery

(Provided viable student numbers permit).

Term 1		Term 2		Term 3	
	✓				

Learning Outcomes: (maximum of 5 statements)

On successful completion of this module the student will be able to:
L1. Critically evaluate and succinctly communicate the roles of a range of sustainable waste management techniques
L2. Apply critical analysis and prioritise optional approaches to reducing types and amounts of wastes requiring treatment and disposal
L3. Evaluate, in detail, the impacts and benefits of various techniques in managing wastes in a variety of environmental situations (including international examples)

Employability Skills and Personal Development Planning (PDP) Skills

SCQF Headings	During completion of this module, there will be an opportunity to achieve core skills in:
Knowledge and Understanding (K and U)	SCQF Level 11. Gain a critical understanding of the range and variety of waste management techniques, particularly the options for reducing waste to landfill Evaluate the effectiveness of waste management techniques.
Practice: Applied Knowledge and Understanding	SCQF Level 11. Identify waste management/treatment/disposal options with particular regard to environmental impacts and benefits Evaluate information and gain a coherent understanding of theories and practices in implementing a range of techniques for waste management.
Generic Cognitive skills	SCQF Level 11. Develop and demonstrate an ability to communicate effectively in a variety of professional settings and provide clear guidance on appropriate techniques for waste handling. Demonstrate a detailed understanding of an issue and develop a solution to a waste problem.

Communication, ICT and Numeracy Skills	SCQF Level 11. Demonstrate a full understanding of the process of preparing oral and written reports, using IT and other presentation techniques. Communicate complex waste management options in a professional setting.	
Autonomy, Accountability and Working with others	SCQF Level 11. Work as part of a professional team to analyse information from a waste generation situation, formulate a solution and present it to peers, colleagues and specialists. Work independently to develop a plan to manage a specific waste stream and prepare a presentation that would be suitable to present to an industrial or business client.	
Pre-requisites:	Before undertaking this module the student should have undertaken the following:	
	Module Code:	**Module Title:**
	Other:	All applicants must satisfy the qualification and/or experience requirements as established in the admission criteria. See Reg. 6.3
Co-requisites	**Module Code:**	**Module Title:**

* Indicates that module descriptor is not published.

Learning and Teaching	
Learning Activities During completion of this module, the learning activities undertaken to achieve the module learning outcomes are stated below:	**Student Learning Hours** (Normally totalling 200 hours): (Note: Learning hours include both contact hours and hours spent on other learning activities)
Lecture/Core Content Delivery	30
Tutorial/Synchronous Support Activity	6
Independent Study	164
	200 Hours Total
**Indicative Resources: (eg. Core text, journals, internet access)	
The following materials form essential underpinning for the module content and ultimately for the learning outcomes: Chartered Institution of Wastes Management publications, websites, student membership materials and conference proceedings (www.ciwm.co.uk) Waste Management Industry Training and Advisory Board materials and websites (www.wamitab.org.uk)	

Healthcare without Harm, Non-incineration Medical Waste Treatment Technologies in Europe, 2004.

Waste treatment in the food processing industry / edited by Lawrence K. Wang ... [et al.]. Boca Raton, Fla. Taylor & Francis, 2006.

Department of Health, Health Technical Memorandum 07-01: Safe Management of Healthcare Waste, 2006

Barbour Index on-line

www.netregs.gov.uk

www.defra.gov.uk

www.sepa.org.uk

www.wascot.org.uk

(**N.B. Although reading lists should include current publications, students are advised (particularly for material marked with an asterisk*) to wait until the start of session for confirmation of the most up-to-date material)

Engagement Requirements

In line with the Academic Engagement Procedure, Students are defined as academically engaged if they are regularly engaged with timetabled teaching sessions, course-related learning resources including those in the Library and on the relevant learning platform, and complete assessments and submit these on time. Please refer to the Academic Engagement Procedure at the following link: **Academic engagement procedure**

Supplemental Information

Programme Board	Physical Sciences
Assessment Results (Pass/Fail)	No
Subject Panel	Physical Sciences
Moderator	Professor Andrew Hursthouse
External Examiner	A Oke
Accreditation Details	CIWM
Changes/Version Number	2.12 Updated contact hours to reflect Curriculum Framework Update face to face to blended

Assessment: (also refer to Assessment Outcomes Grids below)

There are two assignments in this module, worth 80% (40% each) of the final mark.

Presentation worth 20% of the final mark

(N.B. (i) **Assessment Outcomes Grids** for the module (one for each component) can be found below which clearly demonstrate how the learning outcomes of the module will be assessed.
(ii) An **indicative schedule** listing approximate times within the academic calendar when assessment is likely to feature will be provided within the Student Handbook.)

Assessment Outcome Grids (Footnote A.)

Component 1					
Assessment Type (Footnote B.)	**Learning Outcome (1)**	**Learning Outcome (2)**	**Learning Outcome (3)**	**Weighting (%) of Assessment Element**	**Timetabled Contact Hours**
Essay	✓	✓	✓	80	0
Component 2					
Assessment Type (Footnote B.)	**Learning Outcome (1)**	**Learning Outcome (2)**	**Learning Outcome (3)**	**Weighting (%) of Assessment Element**	**Timetabled Contact Hours**
Presentation	✓	✓	✓	20	1
Combined Total For All Components				100%	1 hours

Footnotes
A. Referred to within Assessment Section above
B. Identified in the Learning Outcome Section above

Note(s):

1. More than one assessment method can be used to assess individual learning outcomes.
2. Schools are responsible for determining student contact hours. Please refer to University Policy on contact hours (extract contained within section 10 of the Module Descriptor guidance note).
This will normally be variable across Schools, dependent on Programmes &/or Professional requirements.

Equality and Diversity
This module is appropriate for all students. UWS Equality and Diversity Policy
(N.B. Every effort will be made by the University to accommodate any equality and diversity issues brought to the attention of the School)