Liverpool John Moores University

Title:	Ecosystem Services, Land-use and Waste Management
Status:	Definitive but changes made
Code:	**7506CATSCI** (125269)
Version Start Date:	01-08-2020
Owning School/Faculty:	Natural Sciences & Psychology
Teaching School/Faculty:	Centre for Alternative Technology

Team	Leader
Colm Bowe	Y

Academic Level:	FHEQ7	**Credit Value:**	15	**Total Delivered Hours:**	37.5
Total Learning Hours:	150	**Private Study:**	112.5		

Delivery Options
Course typically offered: Semester 2

Component	Contact Hours
Lecture	29.5
Practical	7
Seminar	1

Grading Basis: 50 %

Assessment Details

Category	Short Description	Description	Weighting (%)	Exam Duration
Essay	Lit Review	Literature Review (2,400 words max.)	80	
Presentation	Pres	Scientific presentation (600 words equivalent)	20	

Aims

a) Gain a critical appreciation of the key roles played by species, populations and healthy ecosystems in provision of essential tangible and intangible services to human society, as well as the need to ensure ecological integrity on appropriate scales;
b) Develop a comprehensive understanding of the environmental impacts of

sourcing, management and disposal of material and water resources, the case for wise use and reuse where appropriate in order to function within resource, ecological and societal constraints, and the lessons to be learned from nature in resource design and processing;
c) Show critical awareness of the varied impacts of land use on environmental quality, biodiversity and ecosystem service provision, including industrial, domestic and agricultural wastes and their management;
d) Recognise the inherent lack of sustainability in modern, centralised food production and the necessity for ecologically-designed agriculture;
e) Critically evaluate the overriding roles of climate change and industrial expansion in imposing progressive change in ecosystem and resource management, and the imperative for sustainable adaptation.

Learning Outcomes

After completing the module the student should be able to:

1	Have a critical understanding of the ecological and biodiversity foundations of ecosystem functioning and the necessity for ecosystem integrity for provision of services to society, with reference to the published literature.
2	Show mastery in the comprehensive understanding of the increasing problems caused by direct and indirect societal impacts on ecosystems and biodiversity for the continued provision of ecosystem services.
3	Develop critical arguments to analyse the ecological and ecosystem service provision implications of current and future policy for the built environment and offer effective or innovative ecological solutions to the problems of sustainability and adaptation.
4	Develop critical responses to evidence from the peer-reviewed literature and primary or secondary data critically evaluate the potential impacts of climate change and biodiversity losses on both current and future ecosystem service provision within an adaptation transformation context.

Learning Outcomes of Assessments

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

Lit Review (2,400 words max.)	1	2	3
Presentation	3	4	

Outline Syllabus

Ecosystem services; land use and sustainable agriculture; contaminated land; water security; sustainable waste and sanitation management; floodplain strategies and Sustainable Drainage Systems (SuDS); resource production; food security, biomimetics, all within the context of sustainability and adaptation planning.

Learning Activities

This module will comprise lectures, seminars and optional discussion groups and will be supported by extended practical activities examining aspects of soil, plant growth or ecosystem interactions to generate data.

Distance learners will have access to all of the lecturers and other learning materials via the VLE and will be provided with instructions for carrying out a relevant practical activity at home in order to collect data for analysis. Students will also join optional topic seminars and discussions via Skype.

Notes

This module will be available onsite and via distance learning.