Liverpool John Moores University

Title:	MARINE & COASTAL ENVIRONMENTS
Status:	Definitive
Code:	**6108NATSCI** (119161)
Version Start Date:	01-08-2012
Owning School/Faculty:	Natural Sciences & Psychology
Teaching School/Faculty:	Natural Sciences & Psychology

Team	Leader
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Academic Level:	FHEQ6	**Credit Value:**	24.00	**Total Delivered Hours:**	47.00
Total Learning Hours:	240	**Private Study:**	193		

Delivery Options
Course typically offered: Standard Year Long

Component	Contact Hours
Lecture	30.000
Off Site	6.000
Practical	9.000

Grading Basis: 40 %

Assessment Details

Category	Short Description	Description	Weighting (%)	Exam Duration
Exam	Exam	exam	40.0	2.00
Report	Rep	field and lab report	40.0	
Essay	Essay	essay	20.0	

Aims

To provide students with an appreciation of coastal and marine environments and their management and to equip the students with the necessary skills and techniques that are used for monitoring and comprehending these complex and

dynamic systems.

Learning Outcomes

After completing the module the student should be able to:

1 Determine the processes that drive marine and coastal environments with the use of a variety of proxies and related techniques
2 Critically review and judge advanced scientific information relating to the coasts and oceans
3 Appreciate the importance and complexity of sea level change
4 Acquire an awareness about current issues that relate to the management of coastal and marine environments

Learning Outcomes of Assessments

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

Exam	1	2	3	4
Field and Lab report	1	2		
Essay	3	4		

Outline Syllabus

Coastal, Estuarine and Deep Sea Ecosystems and processes. Tracers and related techniques in the study of marine and coastal environments and processes. Climate and sea level change. Coastal and Marine Management. Elemental cycling and human impacts. Iron fertilisation. Ocean acidification.

Learning Activities

Lectures, practicals, and field work.

References

Course Material	Book
Author	McLusky D.S. & Elliot M.
Publishing Year	2004
Title	The Estuarine Ecosystem, Ecology Threat and Management
Subtitle	
Edition	
Publisher	Oxford University Press

ISBN	9780198525080

Course Material	Book
Author	Libes S.
Publishing Year	2009
Title	An Introduction to Marine Biogeochemistry
Subtitle	
Edition	
Publisher	Academic Press
ISBN	978-0120885305

Course Material	Book
Author	French, P.W.
Publishing Year	1997
Title	Coastal and Estuarine Management
Subtitle	
Edition	
Publisher	London, Routledge
ISBN	0-415-13759-4

Course Material	Book
Author	French, P.W.
Publishing Year	2001
Title	Coastal Defences: Processes, problems and solutions
Subtitle	
Edition	
Publisher	London, Routledge
ISBN	0-415-19845-3

Course Material	Book
Author	Church J., Woodworth P.L.., Aarup T., Wilson S.
Publishing Year	2010
Title	Understanding Sea-level Rise and Variability
Subtitle	
Edition	
Publisher	Wiley, UK
ISBN	9781444334524

Course Material	Book
Author	Bianchi T.S.
Publishing Year	2007
Title	Biogeochemistry of estuaries
Subtitle	
Edition	
Publisher	Oxford University Press
ISBN	9780195160826

Notes

More than 60% of the human population lives in coastal environments and global warming with the associated sea level rise will pose a serious challenge to the management and function of these sensitive systems. The oceans as a whole provide an ever increasing fraction of our (biotic and abiotic) resources and they play a crucial role in regulating the climate. Furthermore recent work suggested that both open ocean and coastal ecosystems are as biodiverse as the land but have already been heavily affected by human activities. Grand scale bio-geo-engineering projects such as ocean iron fertilisation have the potential to mitigate climate change but little is known about their ecological and environmental effects. This course will provide students with an up to date and thorough insight into the function and management of a variety of marine and coastal environments of which the fate has the potential to affect us all.