

## Liverpool John Moores University

Title: RIVER MONITORING AND MANAGEMENT  
Status: Definitive  
Code: **6111NATSCI** (119654)  
Version Start Date: 01-08-2019

Owning School/Faculty: Natural Sciences & Psychology  
Teaching School/Faculty: Natural Sciences & Psychology

Team	Leader
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**Academic Level:** FHEQ6      **Credit Value:** 24      **Total Delivered Hours:** 44  
**Total Learning Hours:** 240      **Private Study:** 196

### Delivery Options

Course typically offered: Standard Year Long

Component	Contact Hours
Lecture	24
Off Site	12
Practical	4
Workshop	4

**Grading Basis:** 40 %

### Assessment Details

Category	Short Description	Description	Weighting (%)	Exam Duration
Report	Report	Consultancy-style report	60	
Report	Report	Executive Summary	40	

### Aims

*To understand the main water-related legislative and management frameworks that environmental regulators and consultants work within.*

*To study the application of scientific principles to the management of contemporary river management issues.*

*To understand the methodologies used to investigate, monitor, manage and improve river environments.*

*To develop the practical skills and knowledge required by professional environmental regulators and consultants working in river management.*

## **Learning Outcomes**

After completing the module the student should be able to:

- 1 Recognise the main legislative and management frameworks governing the management of rivers.
- 2 Explain the main issues and challenges involved in river management.
- 3 Develop and apply practical skills to the investigation and analysis of different river pollution issues.
- 4 Compile consultancy-style reporting documents that address major issues in river management.

## **Learning Outcomes of Assessments**

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

Consultancy report	2	3	4	
Executive briefing report	1	2	3	4

## **Outline Syllabus**

*EU Water Framework Directive; River Ecosystems and Pollution; River Catchment Management; Principles of River Monitoring and Analysis; Source-Pathway-Receptor Models; Agriculture and River Pollution; Mining and River Pollution; River Pollution Remediation Practices*

## **Learning Activities**

Teaching on this module is in the form of lectures, practicals, field work and workshops. Important environmental legislation and river management issues and approaches are explored through lectures and workshops hosted by LJMU staff and professional environmental consultants. Field visits to two project sites allow appropriate field investigations of river management issues. Assignment 1: Students are required to conduct a WFD assessment of the ecological status of a river system in northwest England. Students will produce an executive summary document intended for environmental managers. This document will present findings and recommendations in a clear, concise and scientifically robust manner. Assignment 2: Students are required to conduct a metal loading survey of a river system in central Wales that is impacted by contaminated drainage from an abandoned metal mine. The results of this investigations will be presented in a detailed consultancy-style

environmental report.

## **Notes**

The module is intended to provide students with practical skills and knowledge required by employers such as environmental regulators and consultants working in the area of river management. Teaching on this module is set in the context of the European Union Water Framework Directive (WFD), the ecosystem approach to environmental management and river catchment management. The WFD requires all EU Member States including the UK to protect and improve the ecological and chemical status of water bodies including rivers. To achieve this, EU Member States are required to develop River Basin Management Plans that outline strategies to monitor, manage and improve the quality status of rivers at the river catchment level. The river catchment is used as the management framework as all human and natural processes operating in a river catchment (air, land and water) have the capacity to influence the chemical and ecological status of water bodies within that catchment. Important river pollution issues that will be covered in this module include diffuse agricultural pollution and abandoned mine pollution.