

## Liverpool John Moores University

Title: Pavement, Highways and Transport Engineering  
Status: Definitive  
Code: **7107BEUG** (120605)  
Version Start Date: 01-08-2016  
Owning School/Faculty: Built Environment  
Teaching School/Faculty: Computer Science

Team	Leader
Yue Huang	Y
Hassan Al Nageim	
Felicite Ruddock	

**Academic Level:** FHEQ7      **Credit Value:** 20      **Total Delivered Hours:** 57  
**Total Learning Hours:** 200      **Private Study:** 143

### Delivery Options

Course typically offered: Standard Year Long

Component	Contact Hours
Lecture	27
Tutorial	18
Workshop	9

**Grading Basis:** 50 %

### Assessment Details

Category	Short Description	Description	Weighting (%)	Exam Duration
Report	Report	report and presentation	40	
Exam	Exam	exam	60	3

### Aims

*To develop knowledge and critical evaluation in highways and road pavement design.*

*To appreciate the demands, and challenges in providing and maintaining sustainable road transport infrastructure.*

*Introduce fundamentals of traffic flow theory, transport planning and associated social and environmental elements such as road safety, air pollution.*

## **Learning Outcomes**

After completing the module the student should be able to:

- 1 Analyse the key elements in highway geometric design, constraints and the balance between safety, cost and environment
- 2 Evaluate contemporary approaches for road pavement design, materials and performance evaluation
- 3 Critically analyse and evaluate the impact of sustainability with reference to highways engineering and operations
- 4 Develop a critical appreciation of the theory that underpins the technical basis of the management, design and control of transport infrastructure

## **Learning Outcomes of Assessments**

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

Report and presentation	2	3		
Examination	1	2	3	4

## **Outline Syllabus**

- 1. Design speed*
- 2. Horizontal and Vertical alignment*
- 3. Pavement materials and design principles*
- 4. Road pavement maintenance and performance evaluation*
- 5. Principles of junction design, capacity assessment*
- 6. Introduction to transport modelling*
- 7. Sustainable construction in road environment*
- 8. Road materials recycling and life cycle analysis*
- 9. Introduction to road safety*
- 10. Introduction to air pollution*

## **Learning Activities**

Lectures, tutorials and workshops.

## **Notes**

This module aims to develop knowledge and critical evaluation in highways and road pavement design and to appreciate the demands, and challenges in providing and maintaining sustainable road transport infrastructure.

