

Liverpool John Moores University

Title: INFRASTRUCTURE, HIGHWAYS DESIGN AND INNOVATION
Status: Definitive
Code: **6501CIVSL** (123440)
Version Start Date: 01-08-2021

Owning School/Faculty: Civil Engineering and Built Environment
Teaching School/Faculty: ICBT, Colombo

| Team | Leader |
|---------------|--------|
| Khalid Hashim | Y |

Academic Level: FHEQ6 **Credit Value:** 20 **Total Delivered Hours:** 46

Total Learning Hours: 200 **Private Study:** 154

Delivery Options

Course typically offered: Semester 1 and Summer

| Component | Contact Hours |
|-----------|---------------|
| Lecture | 22 |
| Seminar | 11 |
| Workshop | 11 |

Grading Basis: 40 %

Assessment Details

| Category | Short Description | Description | Weighting (%) | Exam Duration |
|----------|-------------------|--------------------------------|---------------|---------------|
| Exam | AS1 | EXAMINATION | 70 | 2 |
| Report | AS2 | 2000 WORD REPORT ON INNOVATION | 30 | |

Aims

To develop understanding and knowledge of the role of infrastructure in supporting society, and the role of civil engineering in developing infrastructure. In particular students will develop further understanding of the design of roads and highway drainage.

The module will study recent developments within the field of infrastructure, and students will develop an understanding of innovation and entrepreneurship through consideration of case studies.

Learning Outcomes

After completing the module the student should be able to:

- 1 Critically evaluate sustainable highway design
- 2 Identify the performance of infrastructure as a system, and use a systems approach to improvement of current infrastructure
- 3 Design and evaluate effective highway drainage systems
- 4 Critically evaluate the process of innovation
- 5 Produce an innovative design and appraise both its design and its potential use within civil engineering

Learning Outcomes of Assessments

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

| | | | | | |
|--------------------------------|---|---|---|---|---|
| EXAMINATION | 1 | 2 | 3 | 4 | 5 |
| 2000 WORD INNOVATION REPORT | 2 | 4 | 5 | | |

Outline Syllabus

Develop knowledge and understanding of highway design

Critical evaluation of case studies in highway design

Design of road drainage

Identification and classification of systems, and use of systems in understanding complex infrastructure.

The process of innovation, and case studies of innovation

Development of individual innovative ideas.

Entrepreneurship

Learning Activities

Lectures, workshops, and seminars

Notes

The module develops the students' understanding of highways and road drainage design, and develops a systems approach to infrastructure analysis. Recent developments in infrastructure design are considered and evaluated, developing students' understanding of the process of innovation.