# MODULE SPECIFICATION

| Part 1: Information | | | |
|---|---|---|---|
| Module Title | Traffic Engineering | | |
| Module Code | UBGMLK-15-M | Level | Level 7 |
| For implementation from | 2019-20 | | |
| UWE Credit Rating | 15 | ECTS Credit Rating | 7.5 |
| Faculty | Faculty of Environment & Technology | Field | Geography and Environmental Management |
| Department | FET Dept of Geography & Envrnmental Mgmt | | |
| Module type: | Standard | | |
| Pre-requisites | None | | |
| Excluded Combinations | None | | |
| Co- requisites | None | | |
| Module Entry requirements | None | | |

## Part 2: Description

**Educational Aims:** See Learning Outcomes.

**Outline Syllabus:** Safety engineering including: collision prevention and reduction, road safety auditing, monitoring and statistical analysis.
Theory and modelling of traffic signal control junctions using both macroscopic and micro-simulation software.
Theory and modelling of priority junctions and roundabouts using both macroscopic and micro-simulation software.
Traffic flow theory and applications to link design.
Design of traffic engineering measures to meet the needs of cycle users and walkers.
Queuing theory and optimisation problems in transport.
Traffic management strategies: traffic calming, Urban Traffic Control, Intelligent Transport Systems, lorry management.
Introduction to air quality modelling and management in relation to transport.

**Teaching and Learning Methods:** This module is delivered through lectures, tutorials, workshops and site visits. Practical exercises will be conducted in workshops: these involve evaluating different junction designs using traffic modelling techniques. The exercises are linked to the coursework.

Scheduled learning includes lectures, seminars, tutorials, project supervision, demonstration, practical classes and workshops and external visits.

Independent learning includes hours engaged with tutorial work, essential reading, case study preparation, assignment preparation and completion etc.

Contact with students may be in one of two forms: a) weekly or bi-weekly basis across a single semester; b) two blocks of three days each. The learning will be made up of the following number of hours:
Directed contact learning: 36 hours
Independent Study: 36 hours
Assessment, including preparation: 78 hours
Total: 150 hours

**Part 3: Assessment**

The strategy of the assessments is to ensure that students have analytical capability in traffic engineering, and that they are able to report on traffic engineering analyses in an evaluative way. Hence, the assessment is divided into two parts; and examination and a coursework assessment.

Assessment: 50% coursework assignment, 50% exam.

Coursework assignment: The coursework assignment will principally involve junction design and analysis, and will include use of industry standard software. The exam will assess elements not covered in the project report. Students will be allowed to take in a transport data handbook that they have annotated throughout the course. They will be provided with other necessary design information in the examination.

| First Sit Components | **Final Assessment** | **Element weighting** | **Description** |
|---|---|---|---|
| Report - Component B | | 50 % | Project report (2000 words plus appendices) |
| Examination - Component A | ✓ | 50 % | 2 hour exam |
| Resit Components | **Final Assessment** | **Element weighting** | **Description** |
| Report - Component B | | 50 % | Project report (2000 words plus appendices) |
| Examination - Component A | ✓ | 50 % | 2 hour exam |

## Part 4: Teaching and Learning Methods

**Learning Outcomes**

On successful completion of this module students will achieve the following learning outcomes:

| Module Learning Outcomes | Reference |
|---|---|
| Evaluate and statistically analyse road safety engineering problems and monitoring data | MO1 |
| Use manual methods and software to analyse and compare the capacity and performance of priority, roundabout and signal controlled junctions | MO2 |
| Solve problems using traffic flow theory | MO3 |
| Solve transport queuing theory and optimisation problems in transport | MO4 |
| Design facilities and systems for cycle users and walkers | MO5 |
| Evaluate traffic and demand management measures and explain how they can be combined effectively in network management | MO6 |

**Contact Hours**

| | |
|---|---|
| **Independent Study Hours:** | |
| Independent study/self-guided study | 114 |
| **Total Independent Study Hours:** | 114 |
| **Scheduled Learning and Teaching Hours:** | |
| Face-to-face learning | 36 |
| **Total Scheduled Learning and Teaching Hours:** | 36 |
| **Hours to be allocated** | 150 |
| **Allocated Hours** | 150 |

**Reading List**

*The reading list for this module can be accessed via the following link:*

https://uwe.rl.talis.com/modules/ubgmlk-15-m.html

## Part 5: Contributes Towards

This module contributes towards the following programmes of study: