

Module Details	
Module Title	Transportation Studies
Module Code	CSE6013-B
Academic Year	2024/5
Credits	20
School	School of Built Environment, Architecture & Creative Industries
FHEQ Level	FHEQ Level 6

Contact Hours	
Type	Hours
Directed Study	160
Lectures	17
Practical Classes or Workshops	8
Tutorials	15

Availability	
Occurrence	Location / Period
BDA	University of Bradford / Semester 2

Module Aims
<p>This module aims to critically evaluate the design, operation, and policy formulation of road transport infrastructure in order to achieve sustainable design purpose.</p> <p>This module covers the following topics:</p> <ol style="list-style-type: none"> 1. Design of priority junctions/road links for the use for capacity calculation and driver safety determination. 2. Environmental impact assessment related to road transport infrastructure and road noise. 3. Application of sustainable road transport planning; and 4. Evaluation of specifications for durable and sustainable highways. 5. Analyse existing traffic data to use in safety design. 6. Application of data science for intelligent transportation systems.

Outline Syllabus

Week 1 Introduction to course and Transportation Studies.
 Week 2 Cost Benefit Analysis (COBA). COBA objectives and related calculations.
 Week 3 Road Design. Design issues in relation to traffic flow and safety.
 Week 4 Road Design. Design issues with an emphasis on priority and signal-controlled junctions.
 Week 5 Environmental Assessment. Environmental impact assessment and introduction of its framework.
 Week 6 Traffic Noise. Calculation and predicting traffic noise.
 Week 7 Highway Pavement. Design of highway pavement and various consideration criteria.
 Week 8 Transport Issues. The planning of road transportation and various phases of the planning.
 Week 9 Future Aspects. Future planning trend for the road transportation.
 Week 10 Future Aspects. Future policy evolvement for the road transportation.
 Week 11 Summary of the module and revision.

Learning Outcomes

Outcome Number	Description
01	Evaluate advanced road and transportation principles/issues through experimental measurements.
02	Evaluate propose transportation solutions to problems arising from analysis.
03	Calculate transportation related issues.
04	Design transportation models/issues using data science.

Learning, Teaching and Assessment Strategy

Theoretical understanding and problem solving through lectures, staff-led tutorial/example class, face-to-face practical sessions and directed study.

Summative assessments of this module are conducted by one exam, one lab report and one coursework (both individual assessments for the report and coursework). All assessment feedback will be given through feedback sessions, and question solution development in classes. These assessments will cover all 4 LOs, and they will thoroughly assess students' understanding of this module. The exam covers the lecture and tutorial taught knowledge where both design and problem-solving skills in transportation issues are emphasised (which covers LOs 2, 3, and 4). Technical report will assess the application of data science to the knowledge base of the module to illustrate the achievement of LOs 1 and 4.

Supplementary assessment is as original.

Mode of Assessment

Type	Method	Description	Weighting
Summative	Coursework - Written	Coursework Report (including Individual technical report on laboratory data and on industrial study)	40%
Summative	Examination - Closed Book	150 minutes closed book exam (road transportation studies)	60%

Reading List

To access the reading list for this module, please visit <https://bradford.rl.talis.com/index.html>

Please note:

This module descriptor has been published in advance of the academic year to which it applies. Every effort has been made to ensure that the information is accurate at the time of publication, but minor changes may occur given the interval between publishing and commencement of teaching. Upon commencement of the module, students will receive a handbook with further detail about the module and any changes will be discussed and/or communicated at this point.

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