

Module Title:	Highway and Traffic Eng I
Language of Instruction:	English
Credits:	5
NFQ Level:	8
Module Delivered In	1 programme(s)
Teaching & Learning Strategies:	Lectures; Practice/Field Work; Project Work; Private Study
Module Aim:	The aims of this module are: to provide the students with a knowledge of traffic flow analysis and resulting applications including the preparation of traffic analysis reports; to provide the students a knowledge of geometric design of highways; to provide students with a comprehensive knowledge of the use of bituminous materials in pavement design including the design of flexible pavements.
Learning Outcomes	
<i>On successful completion of this module the learner should be able to:</i>	
LO1	Evaluate and analyse traffic flow and relate this to road/junction capacity.
LO2	Evaluate junction capacity for Priority junctions, Roundabouts and Signalised Junctions.
LO3	Evaluate parking requirements and determine appropriate parking options for developments.
LO4	Communicate with other engineers and society at large via written communication techniques.
Pre-requisite learning	
Module Recommendations <i>This is prior learning (or a practical skill) that is recommended before enrolment in this module.</i>	
No recommendations listed	
Incompatible Modules <i>These are modules which have learning outcomes that are too similar to the learning outcomes of this module.</i>	
No incompatible modules listed	
Co-requisite Modules	
No Co-requisite modules listed	
Requirements <i>This is prior learning (or a practical skill) that is mandatory before enrolment in this module is allowed.</i>	
Bachelor of Engineering (Ordinary) in Civil Engineering	

Module Content & Assessment

Indicative Content

Traffic Engineering Studies

(a) Travel Time and Delay Studies (b) Parking studies (c) Accident studies (d) Expansion of traffic counts into AADT flow (e) Scoping design and reporting on a Traffic Engineering Study

Basic Elements of Highway Traffic Analysis

(a) Flow-density relationships (b) Speed density relationships (c) Speed flow relationships (d) Highway capacity and level of service (e) Design methods used to establish maximum service flow rates for 2- lane and multi- lane highways (f) Derivation of design reference flows (g) Geometric layout for major / minor intersections (h) Equations used for determining capacities and delays at intersections (i) Traffic capacity at roundabouts

Geometric Design for Highways

(a) Geometric details of Roundabouts (b) Geometric parameters on design speed

Assessment Breakdown	%
Continuous Assessment	10.00%
Project	10.00%
Practical	20.00%
End of Module Formal Examination	60.00%

Continuous Assessment

Assessment Type	Assessment Description	Outcome addressed	% of total	Assessment Date
Project	n/a	1,2,3,4	10.00	n/a

Project

Assessment Type	Assessment Description	Outcome addressed	% of total	Assessment Date
Project	n/a	1,2,3,4	10.00	Sem 2 End

Practical

Assessment Type	Assessment Description	Outcome addressed	% of total	Assessment Date
Practical/Skills Evaluation	n/a	1,2,3,4	20.00	n/a

End of Module Formal Examination

Assessment Type	Assessment Description	Outcome addressed	% of total	Assessment Date
Formal Exam	Exam	1,2,3	60.00	End-of-Semester

SETU Carlow Campus reserves the right to alter the nature and timings of assessment

Module Workload

Workload: Full Time		
<i>Workload Type</i>	<i>Frequency</i>	<i>Average Weekly Learner Workload</i>
Lecture	Every Week	3.00
Estimated Learner Hours	Every Week	3.00
Total Hours		6.00

Module Delivered In

Programme Code	Programme	Semester	Delivery
CW_CMHCE_B	Bachelor of Engineering (Honours) in Civil Engineering	6	Mandatory