

# ES3G6-15 Transport Engineering

**21/22**

**Department**

School of Engineering

**Level**

Undergraduate Level 3

**Module leader**

Alan Bloodworth

**Credit value**

15

**Module duration**

24 weeks

**Assessment**

30% coursework, 70% exam

**Study location**

University of Warwick main campus, Coventry

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## Description

### Introductory description

ES3G6-15 - Transport Engineering

[Module web page](#)

### Module aims

This module introduces students to the principles and current practice of Highway and Transportation Engineering for roads in the UK. The aim is to gain advanced knowledge and understanding of this topic and to develop appropriate analysis and design skills through undertaking a road junction design, supported with commercial software used widely by practitioners.

### Outline syllabus

This is an indicative module outline only to give an indication of the sort of topics that may be covered. Actual sessions held may differ.

Introduction, scope and need for traffic and transport management

Traffic management and information on inter-urban highways \* Traffic management and information in urban networks

Demand management, including access control, road pricing and congestion charging  
Public transport management  
Environmental traffic management  
Parking management and control  
Speed management and traffic calming  
In-vehicle management systems for driver support, control, safety and information  
Evaluation of applications, including the use of macroscopic, mesoscopic and microscopic network modeling  
Options and opportunities for Intelligent Transport Systems (ITS)  
Case studies

## Learning outcomes

By the end of the module, students should be able to:

- Analyse traffic operations on roads and at junctions.
- Select and design roads and junctions according to requirements/specifications.
- Critique key issues in Highway and Transportation Engineering
- Propose and critically analyse alternative designs and options for transport engineering projects.
- Analyse road traffic flow and growth.
- Demonstrate critical awareness of traffic management and safety.

## Indicative reading list

Morgan, S. (2015) Transportation Engineering and Technology, Vols. 1-3. Clanrye International.  
Chartered Institution of Highways and Transportation (1994). Transport in the urban Environment.  
Salter, R.J. and Hounsell (1996). Highway traffic Analysis and Design. Palgrave.  
Daganzo, F. C. (1997). Fundamentals of Transportation and Traffic Operations. Pergamon Press.

## Subject specific skills

No subject specific skills defined for this module.

## Transferable skills

No transferable skills defined for this module.

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## Study

### Study time

Type	Required
Lectures	20 sessions of 1 hour (13%)
Total	150 hours

<b>Type</b>	<b>Required</b>
Other activity	19 hours (13%)
Private study	111 hours (74%)
Total	150 hours

### **Private study description**

111 hours of guided independent learning (including VLE use and support from Employer)

### **Other activity description**

7 hours of example classes

2 hours of revision classes

10 hours of webinars

### **Costs**

No further costs have been identified for this module.

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### **Assessment**

You must pass all assessment components to pass the module.

#### **Assessment group D1**

	<b>Weighting</b>	<b>Study time</b>
Case study	30%	
Case study on road design (6 pages length)		
Online Examination	70%	
~Platforms - AEP		

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- Online examination: No Answerbook required
- Students may use a calculator
- Graph paper

### **Feedback on assessment**

Model solutions of questions for exam preparation.

Cohort level feedback on the online examination.

Individual feedback on case study assignment.

## **Availability**

### **Pre-requisites**

1 (Core)

### **Courses**

This module is Core for:

- Year 4 of DESA-H221 Undergraduate Civil and Infrastructure Engineering (Non-integrated Degree Apprenticeship)