

## CIV5302: Road Traffic: Engineering & Management

### Background and Aims

This unit is concerned with the planning, design and management of traffic systems. Its prime aim is to provide you with an ability to develop traffic systems that enable urban areas to function efficiently and effectively at each level of the road hierarchy. The unit introduces the general elements of the planning design of traffic systems. It then focuses on design for particular road users. This is brought together through discussion of the management of traffic at the local, arterial and freeway level. It is a compulsory unit in the program.

#### *After completing this unit participants will:*

- understand the role of the road system in developing efficient and effective urban areas,
- understand the interactions between the various users of the road system, and
- be able to plan, design and manage the traffic system

*Details of the structure of the unit are provided over the page*

### Enrolment Options

Enrol as a single unit or as part of either the Graduate Certificate in Transport and Traffic, Postgraduate Diploma in Transport and Traffic, or Masters in Transport and Traffic.

### Off-Campus Study Mode

This unit is offered by Off-Campus (distance education) and there is no requirement for participants to attend lectures. Study guides, comprising a comprehensive set of course notes, are sent following enrolment. Further support is provided through a unit web site and via e-mail. The lecturer is available to answer questions and to provide assistance as necessary throughout the semester. Assistance can be arranged by email, facsimile, mail, telephone or through the discussion groups on the unit web site. Assessment comprises two assignments and an examination (worldwide exam venues are available).

### Unit Co-ordinator



Professor William Young has over 30 years of experience in transport and education. He has taught, researched, consulted and published in the traffic, land-use/transport/environment interaction, parking, management, and education areas. Bill has worked at Main Roads Dept in Australia, Sir Alfred McAlpine & Sons in England and at Oxford, Nanyang, Karlsruhe, Michigan State and Hong Kong Universities. He holds a BE(Hons), GradDipMan, MBA, MSc and PhD and is a Fellow of the IE(Aust), the Institute of Transportation Engineers and the Chartered Institute of Transport. Bill is currently the Chair in Civil Engineering and Head of the Department of Civil Engineering at Monash University.

#### **Enrolment or General Course Enquiries:**

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# Structure

*The unit is structured around 14 topics which are generally associated with one week of study*

Topic	<i>After completing this topic, participants will:</i>
1. Introduction	<ul style="list-style-type: none"> <li>• have a an overview of the unit</li> </ul>
2. Road Hierarchy and Functional Classification	<ul style="list-style-type: none"> <li>• understand the classification of roads</li> <li>• be able to identify and determine the function of roads</li> </ul>
3. Design of New Urban Networks	<ul style="list-style-type: none"> <li>• understand the need for quality design of traffic networks</li> <li>• be able to plan, design and manage safe and efficient road networks</li> </ul>
4. Traffic Impact Analysis	<ul style="list-style-type: none"> <li>• understand the components of traffic impact analysis</li> <li>• be able to determine the impact of traffic on traffic systems</li> </ul>
5. Human Factors in Traffic and Traffic Regulations	<ul style="list-style-type: none"> <li>• understand the limitation of road users</li> <li>• be able to incorporate road user characteristics in traffic systems design</li> </ul>
6. Planning and Design for On-Street Public Transport	<ul style="list-style-type: none"> <li>• understand why public transport is a major concern in urban development</li> <li>• be able to incorporate good public transport design practice into the traffic system</li> </ul>
7. Planning and Design for Trucks	<ul style="list-style-type: none"> <li>• understand the need for planning and design for trucks</li> <li>• be able to plan, design and manage traffic systems to meet the needs of trucks</li> </ul>
8. Pedestrian Design	<ul style="list-style-type: none"> <li>• understand the importance of pedestrian movement in traffic systems</li> <li>• be able to plan, design and manage quality pedestrian facilities</li> </ul>
9. Design of a Bicycle Network	<ul style="list-style-type: none"> <li>• understand the needs of bicyclists</li> <li>• be able to integrate the needs of bicyclists into traffic systems planning, design and management</li> </ul>
10. Management and Design of Parking	<ul style="list-style-type: none"> <li>• understand the key components of parking systems</li> <li>• be able to combined the key components of parking systems into an efficient parking system</li> </ul>
11. Traffic Control Devices and Management of Urban Arterials	<ul style="list-style-type: none"> <li>• identify the various traffic control devices and explain their function</li> <li>• be able to incorporate traffic control devices to achieve efficient and effective traffic movement and access</li> <li>• be able to plan, design and manage urban arterials to develop an efficient and effective traffic system</li> </ul>
12. Local Area Traffic Management	<ul style="list-style-type: none"> <li>• outlines the basic phases of the planning, identifying areas of conflict in local area traffic management</li> <li>• understand and utilise community consultation processes</li> </ul>
13. Traffic Management on Freeways and Interchanges	<ul style="list-style-type: none"> <li>• outline the role of traffic management in terms of freeway design</li> <li>• be able to develop efficient and effective freeway interchange design</li> </ul>
14. Traffic Folklore	<ul style="list-style-type: none"> <li>• outline general guidelines for the design of traffic systems</li> <li>• utilise general design guidelines to ensure quality traffic systems design</li> </ul>