



**IPWEA (NSW)
Roads & Transport
Directorate**

Road Design

- the geometric design fundamentals

as of Jan 23, 2018

Moree: March 22, 2018

Venue: tba, Moree, NSW

This one-day workshop would be best suited to Engineers/Specifiers, Construction Staff, Supervisors and other staff involved in Flexible Pavements. This workshop is ideal for those involved in non-highway roads, engaged primarily in local government work.

Course Overview (1 Day) - 2018

(\$995.00 regular - \$850.00 IPWEA members incl. GST)
(Group discounts for 5 or more available)

This Workshop is designed to provide participants with a broad understanding of some practical elements relating to geometric road design. It will generally take the format of information transfer and practical aspects will be covered on a computer design package, either through live demonstration or prepared recordings. This will largely be done in the setting of a rural road, but some differences with urban roads will also be addressed. The practical demonstrations will enable better understanding of the concepts and principles through following the geometric road design process in a real-world setting. The design of a safe road involves consideration of driver and environmental issues and traffic engineering factors, so a very board overview only will be provided to situate the geometric design and to understand and justify design decisions.

Topics Covered

- Introduction & Objectives
- Fundamentals Considerations
 - location - road classification - traffic volumes - environment considerations
- Speed Parameters
 - terminology - speed factors - local & rural roads
- Cross-section
 - crossfall - crowns - lane widths - shoulders - roadside drainage
- Sight Distance
 - parameters - stopping distances - curves
- Coordination of Horizontal and Vertical Alignment
 - principles - safety considerations - horizontal & vertical curves
- Horizontal Alignment
 - design procedure - types of curves - minimum curve size - superelevation
- Vertical Alignment
 - vertical controls - grading procedure - vertical curves: forms & types
- Optimising Design
 - quantities - reports & construction



Guide to Road Design
Part 3: Geometric Design



Course supported by:



**Transport
Roads & Maritime
Service**



Course Presenters

Dr Peter Gibbins, Associate Professor, University of Southern Queensland Core Presenter

Peter, in addition to his being an Assoc. Prof he is also the Associate Dean (Learning and Teaching) in the Faculty of Health, Engineering and Sciences at the University of Southern Queensland. His professional background is in land surveying having spent 20 years in private practice, including many years designing engineering infrastructure including roads. Peter holds a Bachelor of Surveying Degree from the University of Queensland, a Graduate Diploma of Technology Management from Deakin University, a Master of Geomatics Degree and a Graduate Certificate in Tertiary Teaching and Learning from the University of Southern Queensland, and a Doctor of Education Degree from the Queensland University of Technology. He has a history of significant contribution as a practicing academic to the advancement of education and professional development. His achievements have been recognised by receiving various awards including a prestigious Carrick Australian Award for University Teaching, and Asia Pacific Spatial Excellence Award for Education and Professional Development.

This course is supported by:

Austrroads: Austrroads is the Association of Australian and New Zealand road transport and traffic agencies and its members are the six Australian state and two territory road transport and traffic authorities, the Department for Infrastructure, Transport, Regional Development and Local Government, the Australian Local Government Association (ALGA), and the N Z Transport Agency.



AustStab: The Australian Stabilisation Industry Association is a national organisation set up to educate and inform the civil engineering industry of the environmental and economic advantages of road recycling and all types of stabilisation. Its members are contractors, binder suppliers, government road authorities and plant manufacturers.



Roads Australia: Roads Australia is a not-for-profit, non-political industry association. Members are drawn from all corners of the Australian road sector, and we champion the interests of a vital national asset - Australia's road transport system - and provide a forum for policy development, networking and communication. Further, we seek to draw attention to the importance of Australia's road network to the economic and social fabric of the nation, and to ensure that information and decision-making in relation to roads and road transport is well informed and reflects an appropriate level of priorities.



SRA: State Road Agencies are responsible for the management of the road network, which includes planning, designing, construction and maintaining road use through registering vehicles, licensing drivers and traffic management, and providing information and other road user services. SRAs also provide quality assured integrated investigation, testing and design services in the pavement technology and geotechnical engineering disciplines, and provides support to CPEE in developing expertise and undertaking education in all aspects of the flexible pavements industry.



Course Organisers

Centre for Pavement Engineering and Education (CPEE): This course is presented by CPEE, a non-profit, specialist private provider (roads and pavements) of tertiary education, founded by AUSTRROADS and the Australian Asphalt Pavement Association (AAPA). CPEE offers Graduate Certificate, BE (Hons) and Master of Technology qualifications in roads, pavement engineering and infrastructure asset management, and has formal links to the University of Tasmania.



IPWEA - NSW: The Institute of Public Works Engineering Australia is a professional not for profit organisation providing member services and advocacy for those involved in and delivering public works and engineering services to the community. Previously known as the Institute of Municipal Engineering Australia (IMEA), the organisation has expanded its traditional local government engineering focus to public works and thereby covering all levels of government and private practice. IPWEA is a Technical Society of Engineers Australia.



| 8.00 Registrations Open | | | |
|---------------------------------|---------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------|
| 8.15 | Introduction, Schedule & Resources | <ul style="list-style-type: none"> • VPHS Requirements • Introduction | <ul style="list-style-type: none"> • Outline of Activities • CPEE Address |
| | Introduction & Objectives | <ul style="list-style-type: none"> • Objective of Geometric Design • Road Safety | <ul style="list-style-type: none"> • Providing for a Safe System • Design Process |
| 1 | General Road Design Considerations – Principles and Standards | <ul style="list-style-type: none"> • History • Social Considerations | <ul style="list-style-type: none"> • Principles for Modern Road Design Standards |
| 2 | Design Factors and the Influence of Geometric Design | | |
| 3 | Survey Data Collection | <ul style="list-style-type: none"> • Purposes of Survey Data • Importance of Digital Modelling <ul style="list-style-type: none"> - Terrain (DTM) - Elevation (DEM) | <ul style="list-style-type: none"> • Different Data Collection Methods |
| 10.00-10.30 Morning Tea Break | | | |
| 4 | DTM/DEMs | <ul style="list-style-type: none"> • Importance of Field Coding • Forming 3 Dimensional Models from Survey Data | <ul style="list-style-type: none"> • Stringing and Contouring |
| 5a | Horizontal Alignment | <ul style="list-style-type: none"> • Aesthetics & Design | <ul style="list-style-type: none"> • Grades & Curvature |
| 12.30-13.15 Lunch | | | |
| 5b | Vertical Alignment | <ul style="list-style-type: none"> • Controlling Factors | <ul style="list-style-type: none"> • Vertical Curves |
| 5c | Superelevation | <ul style="list-style-type: none"> • Templates | <ul style="list-style-type: none"> • Application of Superelevation |
| 5d | Base and Obstruction Consideration | | |
| 5e | 3D Views and Drive Throughs | <ul style="list-style-type: none"> • Video Presentation | |
| 15.15-15.45 Afternoon Tea Break | | | |
| 5f | Otpimising the Design – Back to Design Factors and Standards | <ul style="list-style-type: none"> • Quantities | <ul style="list-style-type: none"> • Reports |
| 6 | Construction, Road Environments, and Intersections | <ul style="list-style-type: none"> • Construction Fundamentals • Road Environs Considerations | <ul style="list-style-type: none"> • Intersection Design |
| 16.20 | Close | | |

CPEE Professional Development (CPD)

This course, with content based on the relevant CPEE postgraduate distance learning study Unit is facilitated and delivered by recognised practitioners in the field and is of such technical content that the number of hours involved should be fully acceptable toward Continuing Professional Development (CPD) standing.



Course Size, Enquiries & Management

Due to its practical nature, numbers are limited for this course, so it is advisable that you register quickly to avoid missing out. Its unique and targeted content means this course is unlikely to be offered again in this location for some time.



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Cancellation Policy: If you are unable to attend this event a substitute attendee may take your place, without penalty. However, if you wish to cancel your registration, a refund, less a \$125 (Inc GST) service fee, will be given provided you have notified us in writing, at least 10 days before the start of the event. No refund is available for cancellations under 10 days. CPEE reserves the right to cancel or reschedule any course. wherebv a full refund or course transfer will be provided.