

Sydney, NSW
Brisbane, QLD
Melbourne, VIC

27 February
15 May
28 August

An intensive one day workshop focussing on flexible pavements for engineers and engineering technologists working for federal, state, or local authorities, consultants and contractors

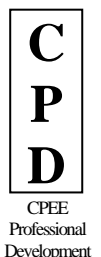
Course (\$695)

This Workshop introduces two major developments that facilitate heavy duty pavement design:

- The software package **HIPAVE (Heavy Industrial PAVement)**. **HIPAVE** is a layered elastic software program that conveniently models the effects of detailed payload distributions (spectrum of container weights) by calculating axle loads from vehicle configurations and payloads. It also includes a provision for vehicle wander. **HIPAVE** handles the variety of equipment used in container facilities, such as forklifts, straddle carriers, gantry cranes and side loaders.
- The **Heavy Duty Industrial Pavement Design Guide**. The Guide reflects best practice in the design of new construction and rehabilitation of industrial pavements. The Guide steers the designer through key design considerations and suggests external sources for research updates. It has been created as a 'living document' that will be routinely modified to reflect advances in pavement technology and made freely available via the Internet.
- HIPAVE aids those involved in designing, constructing and using flexible pavements in heavy duty applications. Although the main emphasis of the workshop will be on **HIPAVE** and container terminal pavements, all of the concepts are directly applicable to the **APSDS (Airport Pavement Structural Design System)** software and Airport Pavement design.

This HIPAVE Workshop, and the companion one day CIRCLY Workshop (to be held on the preceding day) are for intensive uptake. The CPEE Distance Learning units CPE651 Pavement Design, and CPE656 Industrial & Heavy Duty Pavements, are part of the CPEE post graduate distance education programs specialising in Road Engineering becomes a natural extension for in depth study.

Course supported by:



Course Program

This is a hands-on Workshop with a major emphasis on giving students practice with HIPAVE. Each participant will have access to a computer for hands-on use of the HIPAVE package

Overview

History of Port Pavement Design Methods

- British Ports Association
- CIRCLY/APSDS (Mincad Systems, 1990+)
- ASCE Port and Intermodal Yard Pavement Design Guide (Draft)
- HIPAVE (2005+)
- Heavy Duty Industrial Pavement Design Guide (Mincad Systems and Pioneer Road Services, 2006)

Overview of HIPAVE capabilities

- Automation of Vehicle Loads
- Automation of Payload Distributions
- Parametric and Economic Analysis
- Lateral Vehicle Wander
- Dynamic Load Factors

Overview of Mechanistic Pavement Design Heavy Duty Industrial Pavement Design Guide

- Overview
- Modelling For Heavy Loads
- Innovations in Asphalt Characterization
- Rigiphalte

Case Studies

- Crawford Street Intermodal Terminal, Hamilton, New Zealand.

Pavement design and input parameters

Review of Mechanistic Pavement Design Theory

- Layered Elastic Model
- Loading
- Critical Strains
- Performance Criteria – Fatigue and Rutting
- Cumulative Damage Factor

Material Modelling

- Subgrade
- Unbound Granular Materials – Sublayering
- Asphalt / RMA
- Block Pavers
- Rigid Concrete Modelling

HIPAVE – application

- Heavy Duty Industrial Pavement Design Guide
- Introduction to HIPAVE User Interface
- Demonstration of job assembly from existing components
- How to modify HIPAVE databases
- Workshop exercises
- Review workshop exercises
- Port Botany Case Study
- Open Discussion / Optional Topics

Prerequisite Knowledge

No specific level of knowledge in the use of HIPAVE (or CIRCLY) is assumed of the participants. At the conclusion of the Workshop participants will:

- understand the theoretical basis of mechanistic pavement design methods
- appreciate the role and limitations of computer models in pavement design
- understand the sources of appropriate input data for pavement design, and
- have experience and knowledge on the use of HIPAVE for the design of flexible pavements as prescribed by the Heavy Duty Industrial Pavement Design Guide.

Course Presenters

Dr. Leigh Wardle of **Mincad Systems**, is the developer of leading edge software for pavement design and analysis:

- **CIRCLY** is the leading general purpose pavement design package. CIRCLY is an integral component of the Austroads Australian Pavement Design Guide.
- **HIPAVE (Heavy Industrial PAVement)** for Heavy Industrial Pavements such as intermodal container terminal pavements.
- **APSDS (Airport PAVement Structural Design System)** is the leading edge pavement design package for Airports

Who Should Attend?

- State road authority and local government engineers with responsibilities in the provision, approval, design and maintenance of flexible road pavements. This to also include project managers and senior supervisors.
- Consulting engineers with involvement in road projects.
- Road construction contractors, engineers, project managers and supervisors.
- Local Government engineers, project managers and senior supervisors.
- Engineering graduates and “cadets” looking for specialist knowledge for career development.

CPEE Professional Development (CPD)

This course, with content, based on CPEE postgraduate distance learning study Units “CPE 655 Pavement Maintenance and Rehabilitation” 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.

Organiser & Endorsements

CPEE: This course is presented by the Centre for Pavement Engineering and Education. A non-profit, specialist private provider (roads and pavements) of tertiary education, founded by AUSTRROADS and AAPA. CPEE offers Graduate Certificate, Master of Technology and Master of Engineering qualifications in pavement engineering, and has links to La Trobe University and the Chifley Business School.

This course is supported by:

Austrroads: Austrroads is the Association of Australian and New Zealand road transport and traffic authorities. Austrroads 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 New Zealand Transport Agency.

APESMA & Chifley Business School

The Association of Professional Engineers, Scientists and Managers, Australia is the largest national non-profit organisation representing professional employees, inclusive of engineers, scientists, managers, architects, and many other professionals. Chifley Business School is one of the longest-standing independent higher education institutions and Registered Training Organisations (RTO) in Australia providing business management training across Australia and internationally – from short courses to nationally accredited certificate and diploma and postgraduate programs including specialist graduate certificates.

IPWEA: The Institute of Public Works Engineering Australia is a professional 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.

SRA: The State Road Authority 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.

It's Engineering expertise is used to design and construct new roads and bridges and to maintain and enhance existing infrastructure. Scientific expertise is used to test and develop superior road surfaces. It provides support to CPEE in developing expertise and undertaking education in all aspects of the flexible pavements industry.

Course Size, Enquiries & Management

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

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			 <p>CHIFLEY BUSINESS SCHOOL</p>

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 full refund, minus a \$100 (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. See Registration Form for full details.

CPEE SHORT COURSE ENROLMENT FORM



* Indicates mandatory fields. Please ensure these fields are completed. Incomplete applications will not be processed.

PERSONAL DETAILS

Title* Dr Mr Mrs Miss Ms Other

First Name* Surname*

Position/Title*

Organisation*

Day Telephone* () Mobile

E-mail*

Special Dietary Requirements Date of Birth*

PREFERRED CORRESPONDENCE ADDRESS*

Is this address Home or Work / Business

Address

Suburb State Postcode

COURSE TITLE	CITY	DATE	FEE* AU\$
Pavement Design—2 days			\$995
CIRCLY Workshop—1 day			\$695
HIPAVE Workshop—1 day			\$695
Total			\$

* Fees include G.S.T.

REFUND AND CANCELLATION POLICY

Payment	Payment of course fees must be made at least 10 working days prior to the commencement of the course. Payment can be made by credit card - either via phone or cheque (payable to Chifley Business School Pty Ltd) or authorised purchase orders. Late registrations (bookings received within 10 working days of the course commencement date) will only be accepted with payment (credit card, cheque or purchase order) or nominate a replacement.
Withdrawals	Written notification of withdrawal from a course is required 10 working days or more prior to the course date. Alternatively, a participant may choose to transfer to another course (see Transfers).
Transfers	A participant may not transfer out from a course within 10 working days prior to the course commencement date. If you wish to transfer your registration to another course more than 10 working days prior to the course commencement date, there is no charge provided the replacement course has the same fees as the original course. There is a limit of three (3) transfers per participant per year for a single registration.
Late Withdrawals	When a written notification of withdrawal from a course is received within 10 working days prior to the course date, no refund of the course fee will be made and the participant may not transfer to another course. As the participant has paid for a place in the course, an alternate participant may be nominated at no extra charge.
Course Cancellations	Chifley Business School/CPEE reserves the right to cancel any course. When a course has been cancelled by Chifley Business School/CPEE full refunds are offered to all registered participants.

PAYMENT*

Please choose a payment option that suits you. To ensure your place, payment **must** accompany this form. If payment is not enclosed, Purchase Order details should be completed. Payment must be received prior to the commencement of the course.

1. Cheque	Enclosed is my cheque for AU\$ (please make cheques payable to Chifley Business School Pty Ltd)
2. Credit card	Please debit my credit card AU\$ <input type="checkbox"/> AMEX <input type="checkbox"/> Diners <input type="checkbox"/> VISA <input type="checkbox"/> MasterCard Card Number <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> Cardholder's name Expiry date <input type="text"/> <input type="text"/> / <input type="text"/> <input type="text"/> Cardholder's signature
3. Telegraphic transfer	Please contact us for bank details should you wish to pay by this method.
4. Govt./Council order	A copy of your purchase order must accompany this form.

PRIVACY STATEMENT*

Chifley Business School/CPEE respects your privacy and strictly controls use of personal information. Personal information you provide on this form will be used solely for the provision of our services to you. You may obtain details of your personal information held by Chifley Business School or the privacy statement of our parent company, APESMA, by contacting the Privacy Officer on 03 9695 8800 or visiting www.apesma.asn.au.

Please complete this form and return to:

Post: Chifley Business School | GPO Box 1272, Melbourne VIC 3001 Facsimile: 03 9695 8901

Confirmation of your registration will be forwarded to you in writing within 5 working days. If you do not receive confirmation, please contact us.