

Hot Mix Asphalt Pavement Structural Design

COURSE DESCRIPTION:

A review of the major methods of hot mix asphalt (HMA) pavement structural design. While a previous seminar covered HMA pavement rehabilitation design, this seminar will concentrate on methods for structural design of new pavements. The most prominent methods will be covered including the 1993 AASHTO method, the California method and the Asphalt Institute method. Plus, newer methods such as the NCHRP 1-37A mechanistic method (often called the "2002 Design Guide") and PerRoad will be briefly overviewed and compared to existing methods. If you are involved in pavement design either from a consultant, agency or review perspective this seminar can provide you with useful HMA structural design knowledge and skills. All attendees receive a free copy of the HAPI *Asphalt Pavement Guide* (www.hawaiiiasphalt.com) CD-ROM and course notes.

WHAT TO EXPECT

Come to the seminar with a calculator and be prepared to work on HMA design problems in small groups. You are expected to have a background in HMA and be ready and willing to design pavements during the seminar. This is the fourth of a four-part seminar series about hot mix asphalt. The first three seminars, in 2004, covered HMA basics, maintenance and rehabilitation and construction. This is a more specialized topic than the preceding three seminars. The seminar will cover a significant amount of design equations, inputs and assumptions.

TOPICS:

1. An overview and history of HMA pavement structural design
2. Structural design considerations
 - a. Subgrade
 - b. Loading
 - c. Environment
 - d. Drainage
3. 1993 AASHTO "Design of Pavement Structures" method
4. California method (as modified for HDOT)
5. Asphalt Institute method
6. Use of new methods
 - a. NCHRP 1-37A ("2002 Design Guide")
 - b. PerRoad
7. Comparison of methods
8. Group work on structural design

LEARNING OBJECTIVES:

Upon completion of the seminar, the attendee will be able to:

- Describe the 1993 AASHTO, California and Asphalt Institute methods of structural design
- Compare strengths and weaknesses between methods
- Discuss use and implementation of newer methods and how they relate to existing methods
- Select appropriate input values for local conditions for each method
- Discuss the implications of assumptions and input values for each method
- Design new HMA pavement structures using the 1993 AASHTO, California and Asphalt Institute methods

INSTRUCTOR:

Steve Muench is an Assistant Professor in the University of Washington's Department of Civil and Environmental Engineering. Steve is the developer of the HAPI *Asphalt Pavement Guide*. He is a licensed professional engineer in Washington State. Steve is a graduate of Kailua Elementary, Kailua Intermediate and Kalaheo High School (class of 1986). His parents still live in Kailua and he still calls Hawai'i "home".

Registration Procedure

Please contact Gail Ikeda at 956-8367, 956-8851 (FAX) or gail@eng.hawaii.edu by **Thursday, June 9, 2005**.

Cancellations

Please contact us if you must cancel your registration or if someone will be substituting for you.

Parking

Parking for the East West Center is \$4/day. If you would like to receive a parking pass, please contact us by June 9, 2005. Make checks payable to **Research Corporation of the University of Hawaii (RCUH)** and mail to:

Hawaii LTAP
University of Hawaii
Dept of Civil and Environmental Engineering
2540 Dole St, Holmes 383
Honolulu, HI 96822
Attn: Gail Ikeda

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June 29, 2005

East-West Center
Jefferson Hall
Asia Room
8:30 a.m. – 5:00 p.m.

Workshop sponsored by the
**Hawaii Asphalt Paving Industry
and
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in cooperation with the
*Hawaii State Department of Transportation
University of Hawaii's Department of Civil and Environmental
Engineering and the Federal Highway Administration*

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