Engineering Analysis and Design of Rigid Pavements

GIAN (MHRD, Govt. of India) Supported Advance Level Course @ NITK Surathkal

Overview

This 5-day course will address rigid pavement structural design, design of joints, pavement performance measures, pavement failure mechanisms and theoretical models for analysis of rigid pavement systems. The course will provide the state-of-the-art information regarding the analysis and design of jointed concrete pavements. The participants will have several opportunities to interact with instructor through classroom discussions, assignments and quizzes.

Course Learning Objectives

At the conclusion of this course the student's will be able to:

- Differentiate between the various Portland Cement Concrete pavement systems.
- Compute pavement responses due to traffic and environmental loads.
- Explain the underlying mechanisms associated with load and material related distresses.
- Design sustainable Portland Cement Concrete pavements to address the various distress mechanisms.

Schedule	July 25, 2016 to July 29, 2016
Course Contents	1. Overview of Portland Cement Concrete Pavements (PCCP) 2. PCCP Distress and the Design Process 3. Overview of AASHTO'93 4. PCC Materials and PCCP Design 5. PCCP Responses to Environmental and Traffic Loading 6. Element of Design for Jointed PCCP Design 7. PCA Design for Jointed PCCP

	8. PAVEMENT ME for Jointed PCCP 9. Elements of Joint Design 10. Construction of PCCP Pavements
Host Institute	NITK Surathkal, Mangalore (http://nitk.ac.in/)
Max. No.of Participants	Limited to 50
You Should Attend if...	• This workshop is designed for engineers involved in pavement design and rehabilitation, including persons employed in state or local government or the private sector (such as engineering consultants). • The workshop will be beneficial to undergraduate/graduate students/faculty interested in pavement engineering.
Course Registration Fee	• **Participants from abroad**: US $500 • **Industry/ Research Organizations**: Rs. 10,000/- • **Academic Institutions**: Rs. 5,000/- The above fee includes all instructional materials, computer use and internet facility. The participants will not be given any TA/DA and boarding / lodging support. Participant can bring their laptop for effective utilization of course delivery.

Teaching Faculty

Neeraj Buch is a Professor in the Department of Civil and Environmental Engineering and Associate Dean for Undergraduate Studies in the College of Engineering at Michigan State University. He received his Ph.D. degree from Texas A&M University, College Station in 1995 and the MS degree from the University of Michigan, Ann Arbor in 1988. As a faculty member, Prof. Buch collaborates with a number of colleagues both at MSU and at other institutions, as well as a number of talented students. His research is in the general area of concrete pavement analysis, de-sign and performance prediction. He has secured in excess of $7 million in total research funding, advised 25 graduate students (MS and PhD) and 23 undergraduate students (Honors College, sum-mer research experience and undergraduate research assistants). He has received research funding from the Michigan Department of Transportation, Federal Highway Administration, National Co-operative Highway Research Program, Strategic Highway Research Program and the National Sci-ence Foundation. Dr. Buch has disseminated his research through publishing over 100 papers (jour-nal and conference) and 24 research reports. The research has also attracted attention of agencies overseas. In the last five years Dr. Buch has been invited by highway agencies and universities in South Africa, China, Australia, Chile, India Colombia, and Brazil to share the research findings from the various projects. In recognition of his contributions to the field of concrete pavement engi-neering Dr. Buch was

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elected as a Fellow of the American Concrete Institute. Dr. Buch teaches undergraduate and graduate courses in concrete materials and pavement engineering. He is also in-volved in teaching short courses on pavement design and rehabilitation and pavement materials for practicing engineers in various locations in the United States and overseas. He has also served as an instructor for the Portland Cement Concrete (PCC) Overlays: State of The Technology Workshops sponsored by the Federal Highway Administration and the American Concrete Institute. Through-out his career Dr. Buch has consistently been recognized for his sustained excellence in teaching. This is evidenced by the fact that he has received 15 teaching awards (university, regional and national). He has been a co-PI on three National Science Foundation grants in the areas of integration of computation in engineering curricula and in the area of retention of early engineering students. Dr. Buch has served (is serving) on several national and international technical committees such as TRB committees of Properties of Concrete, Rigid Pavements and Pavement Rehabilitation, and the AASHTO TIG on Precast Concrete Pavements. He is also a member of the ASCE/T&DI highway pavements committee, ASCE LTPP Task Committee and former chairperson of ACI committee 325 on rigid pavements. He serves as the president of the International Society Concrete Pavements (ISCP).