

Mechanistic-Empirical Pavement Design

Overview

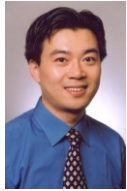
In the last two decades, most pavement structures constructed were designed using the Indian Roads Congress methods and 1993 AASHTO Design Guide which is an empirical pavement design developed based on the observation from the AASHTO Road Test that began in the 1950s. Empirical pavement designs are extrapolations, which can often lead to significant overdesign.

To improve methodology for pavement designs and the evaluation of paving materials, National Cooperative Highway Research Program (NCHRP) developed the Guide for Mechanistic-Empirical Design of New and Rehabilitated Pavement Structures (MEPDG) which is based on data collected from the Long-Term Pavement Performance (LTPP) program. The MEPDG uses mechanistic-empirical numerical models to analyze input data for traffic, climate, materials and proposed structure.

By predicting specific modes of distress under various conditions, MEPDG overcomes many of the shortcomings of empirical pavement design which provides optimized pavement design solution and results in saving of resources. This course highlights the shortcomings of empirical pavement design and differences between empirical and mechanistic-empirical pavement design procedures. The participants would be able to identify pavement performance indicators and develop design inputs. This course also exposes participants to the fundamentals of Mechanistic-Empirical Pavement Design. The course consists of a final examination apart from assignments and term paper/class project presentation.

Course	May 18 to May 31, 2016
Host Institute	National Institute of Technology, Warangal
Maximum Number of Participants	50
You Should Attend If...	<ul style="list-style-type: none">▪ you are a civil/transportation engineer involved in the design, construction, evaluation, and maintenance of roads.▪ you are a research scientist interested in characterizing pavement materials.▪ you are a research scholar or post-graduate student or faculty interested in learning how to design pavements using mechanistic-empirical principles.
Fees	The participation fees (excluding lodging and boarding) for taking this course is as follows: Faculty/Scientists/Industry Personnel from abroad : US \$200 Student participants from abroad : US \$100 Persons working in Industry/ Consultancy Firms: Rs. 8,000/- Faculty (Internal & External)/ Scientists from Research Organizations: Rs. 4,000/- Students: Rs. 1,000/- (without grading) and Rs. 2,000 (with grading) The above fee includes all instructional materials, computer use for tutorials and assignments, and session refreshments. The participants will be provided with accommodation on payment basis.

The Faculty



Prof. Lu Sun is currently Professor & Chair of Department of Civil Engineering and Director of International Institute of Safe, Intelligent and Sustainable Transportation & Infrastructure at the Catholic University of America, Washington, D.C., USA. Dr. Lu Sun's research interests include wave propagation in solids, random vibration, structural dynamics, elastodynamics inverse problem, non-destructive testing and evaluation, transportation infrastructure management information systems, asset management, pavement design and performance modeling of highway, airport and bridge; intelligent transportation systems and connected vehicles, network routing and navigation, traffic flow theory, simulation and forecasting, transportation safety, operations research, statistical science and data mining to credit scoring, financial risk and portfolio management, and transportation engineering. He has authored or co-authored four monographs and published more than 200 journal articles. Dr. Sun serves as a referee for fifty international journals, a panelist for National Science Foundation, and a member of INFORMS, SPIE, ASCE, and ITE.



Prof. Xin (Sheen) Chen currently works as a Program Manager for the Maryland State Highway Administration. At Maryland State Highway Administration, Dr. Chen oversees two technical programs: Specification Review and Geotechnics. Dr. Chen supervises teams which handle hundreds of project requests on annual basis supporting even districts and various offices on highway projects development, construction, maintenance, forensic investigation, and research. Dr. Chen is also an adjunct professor at Catholic University of America and Johns Hopkins University teaching undergraduate and graduate level courses on various topics from Infrastructure Asset Management to Geographic Information System. Dr. Chen is a registered Professional Engineer and he also has written and been invited to review publications in internationally recognized peer reviewed journals and conferences. He received his Ph.D. in Civil Engineering from the University of Tennessee, Knoxville and Master degree in Business Administration from the Robert H. Smith School of Business at the University of Maryland, College Park. Dr. Chen received Bachelor and Master of Science degrees in Civil Engineering from Tongji University, Shanghai, China.



Dr. Venkaiah Chowdary is an Assistant Professor in the Department of Civil Engineering at National Institute of Technology, Warangal. His research interests include characterization of asphalt binders and mixtures, asphalt pavement design and evaluation. He is a member of AAPT, IEI, ISAP, and IRC.



Dr. S. Shankar is an Assistant Professor in the Department of Civil Engineering at National Institute of Technology, Warangal. His research interests include planning and design of low volume roads, pavement design, pavement management system.

Course Co-ordinators

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