

**The Department of Civil, Environmental  
and Architectural Engineering  
of the University of Kansas**

**presents the**

**Spring 2006 KU CEAE Professional Development Series**

***The Science and Practice of Civil, Environmental  
and Architectural Engineering***

February 6, 2006      Adolfo Matamoros      **Design of Reinforced Concrete Members  
For Shear**

The presentation will address the design of members with small and large shear span-to-depth ratios. In the case on slender members (large shear span-to-depth ratios) the presentation will focus on the effect of member depth, compressive strength, and reinforcement ration on shear strength. In members with small shear span-to-depth ratios, the presentation will address the shortcomings of simple strut-and-tie models. A more efficient alternative for design will be presented in which there is interaction between a direct strut and compression field mechanisms associated with the horizontal and vertical transverse reinforcement.

February 13              Jie Han                      **Design of Geosynthetics-Reinforced  
Earth Structures**

Geosynthetics have been commonly used to reinforce earth structures, such as embankments, slopes, walls, roads, and landfills. This presentation will start with types, functions, properties, and testing of geosynthetics and focus on the design methods for the use of geosynthetics as reinforcement in different applications.

February 20              Yong Bai                      **Rapid Bridge Replacement Techniques**

Highway bridges, as a critical component of the nation's transportation network, have been brought to closer attention after 9/11 terrorist attacks. This presentation will help government agencies and engineering and construction communities to enhance their emergency response plans by identifying rapid bridge replacement processes, techniques, and needs for improvements.

February 27              Dave Darwin                      **Concrete Construction: What designers  
should know**

Designers are responsible for developing concrete materials and construction specifications, as well as evaluating the effects of concrete construction deficiencies. The key aspects of concrete construction are described as they impact both of these responsibilities.

March 6, 2006              Oswald Chong                      **Sustainable Construction**

Sustainable Construction is an innovative concept of integrating technology, environment, economic and cultural issues that affect building and construction. USGBC has implemented some sustainable construction techniques, like renewal, energy, and construction waste management. There are other evolving concepts for sustainable construction, like site pollution control, effective management of labor and equipment, and improving life cycle costing measurement. These concepts often save money for clients and contractors. This presentation helps professionals identify the concept best suited to their organization and go beyond what has been implemented by the USGBC.

March 13                      Bob Parsons                      **Relating Factor of Safety to Probability of Failure**

We will discuss the Corps of Engineers method for calculating the probability of failure and its relationship to Factor of Safety. Implementation of the procedure will be demonstrated using slope stability examples.

March 20                      Tom Glavinich                      **Changes in The 2005 NEC**

This presentation will provide an overview of important changes in the 2005 National Electrical Code (NEC) that affect the design and installation of power, communications, and control systems in commercial, industrial, and institutional facilities. The focus of this presentation will be on NEC Article 90 and Chapters 1 through 4 that apply generally to all electrical installations.

March 27                      Herb Tuttle                      **Building High Performance Teams**

Topics include: 1. Assessing your needs. 2. Picking/Organizing your team. 3. Establishing the norms. 4. Personalities. 5. Team Leadership. 6. Aspects of Team Dynamics. And 6. Brainstorming.

April 3                      Bryan Young                      **Understanding Geostatistics in ArcGIS**

The ArcGIS geostatistical wizard represents a powerful collection of tools for interpolating point values to contours or surfaces. The tools available include inverse distance weighting, local and global polynomial interpolation, radial basis functions, kriging, and cokriging. This session presents a review of the theory and application of these different interpolation techniques. An emphasis will be placed on the limitations of each method and on choosing the appropriate method for your particular application.

April 10                      Dennis Lane                      **Environmental Assessment – a Primer**

Topics will include Environmental Risk Concepts, Environmental Cost Accounting, Life Cycle Assessment and Industrial ecology.

April 17                      Carl Kurt                      **Improved Productivity Using CAD**

AutoCAD and similar CAD packages are typically used to create engineering drawings. However, these systems have development environments that can significantly improve the productivity and capability of engineers. This session will explore the development environments available to engineers in the AutoCAD system and ways to enhance the system.

April 24                      Edward Peltier                      **Environmental Remediation of Urban Industrial Sites**

Unique challenges can exist during the remediation of contaminated industrial sites in urban locations, including co-contamination, unusual soil conditions and uncertain site histories. This talk

will present several case studies showing how unorthodox approaches can help to reduce health risks and restore function at sites with long legacies of environmental contamination.

May 1

Ed McBride

### Non-Parametric Statistics

Something every engineer should have learned in a statistics course, but probably did not. These analytic methods permit the analysis of experimental data with no assumptions regarding the distributions of the populations from which the data were taken.

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Each participant of a session will have their admission ticket stamped confirming attendance, the topic discussed, and verifying the 2.0 PDH credit.

Session tickets, which are transferable, are \$50 for each session of the 13 session series. There are a limited number of tickets available. To obtain a ticket, contact Carol Jo Sloan, Department of Civil, Environmental & Architectural Engineering, 2150 Learned Hall, University of Kansas, Lawrence KS 66045-7609. Telephone (785) 864-3766. Email: [cjsloan@ku.edu](mailto:cjsloan@ku.edu)

Please park in the Jewish Synagogue parking lot as shown on the following map. Use the north lot, which is closest to the 9400 Building and then take the sidewalk to the front Burns & McDonnell entrance. ***This is the same parking lot we used last year. Parking in the Burns & McDonnell lot is strictly prohibited.***

