DEPARTMENT OF CIVIL, STRUCTURAL AND ENVIRONMENTAL ENGINEERING

Master's Program in Bridge Engineering*



The Department of Civil, Structural and Environmental Engineering at the University at Buffalo has launched a new master's program in Bridge Engineering* to address the need for highly qualified individuals to plan, design, construct, and manage bridge and transportation infrastructure. This unique program is being developed with support from the National Science Foundation and Federal Highway Administration in collaboration with AASHTO's Subcommittee on Bridges and Structures.

Component A: Basic Bridge Engineering Knowledge and Technical Skills

Core Technical Program: (18 Credit Hours) Courses include Introduction to Bridge Engineering, Structural Dynamics, Finite Element Analysis, Earthquake Engineering, Engineering Management, Foundation Design, Steel Design and Concrete Design.

Component B: Broader Professional Perspective and Leadership Capacity

Current Practice Lecture Series: (6 Credit Hours) Topics include Emerging Technologies in Bridge Engineering (Accelerated Bridge Construction, Seismic Isolation), Bridge and Highway Infrastructure Management and Public Policy (Bridge Preservation and Asset Management, Understanding the Inner Workings of AASHTO, FHWA, and TRB; How Research is Programmed and Funded; Environmental and Sustainability Issues; Innovative Financing).

Component C: Practical Engineering Exposure and Experience

Design Projects: (6 Credit Hours) Carried out individually or in groups, supervised jointly by a faculty member and an adjunct faculty or industry mentor (from FHWA, AASHTO or a consulting engineering company).

The purpose of the program is to prepare a new generation of bridge engineers with the technical and management skills necessary to take over responsibility for renewal of our nation's aging infrastructure. Most of the highway bridges in the U.S. were designed for a 50 year service life, yet the average age of existing bridges is 43 years. In the coming years, there will be a great need for civil engineers, especially those with the skills and knowledge to develop and apply the tools to deal with this growing challenge.

Selected courses available online at: www.eng.buffalo.edu/enginet

**Pending approvals.*

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