2008-2009

Graduate Seminar Series

The Department of
Mechanical Engineering – Engineering Mechanics

Proudly Presents

Professor Madhukar Vable
Michigan Technological University

Dr. Vable obtained his BS in mechanical engineering and MS in aerospace engineering from Indian Institute of Technology at Kanpur, India. He obtained his Ph.D. in aerospace engineering from University of Michigan, Ann Arbor. He has been teaching at MTU since 1984. His current research is development of mesh refinement techniques in boundary element method which is a precursor to the development of e-handbooks on stress concentration factors, stress intensity factors, and adhesively bonded joints. He is author of two mechanics of materials textbooks and numerous research papers on computational mechanics. He was awarded "Michigan Technological University Distinguished Teacher" award in 1998, and "Distinguished Faculty Member" award from Michigan Association of Governing Boards of State Universities in 1999.

Thursday, Jan. 29, 2009 3:00 – 4:00 p.m. Room 112, ME-EM Bldg.

Engineering triumphs and disasters: a mechanics of materials viewpoint

Stories of engineering triumphs and failures can excite students about their course materials and help them in retaining concepts. Several modules called "MoM in Action" have been developed which use **m**echanics of **m**aterials concepts to explain phenomenologically engineering triumphs and disasters. The presentation will discuss several of these modules including

1. Pyramids, an engineering design for the ages.
2. Tale of two bridges. One famous and one notorious whose failure is incorrectly explained as a resonance problem in some physics courses.
3. Why Titanic dubbed the 'unsinkable' sank in less then 3 hours after hitting an iceberg?
4. Why the World Trade Center towers collapsed the way they did?

Funding for the ME-EM Graduate Seminar Series is provided by Professional Plating, Inc. of Anoka, MN www.proplate.com
and the Department of Mechanical Engineering – Engineering Mechanics www.me.mtu.edu/seminar