Fall 2013 Course Announcement

AE / TAM 529 - THEORY OF LINEAR AND NONLINEAR VISCOELASTICITY

8:00 - 9:20 am  Tu & Th  225 A Talbot Lab.

Prerequisite: consent of the instructor
Instructor: Harry H. Hilton
316 Talbot Lab., MC 236, 217-333-2653
Email: h-hilton@illinois.edu
http://www.ae.illinois.edu/people/faculty/hilton.html

Who should take this course: Students interested in fundamental viscoelasticity, mechanics, asphalt, concrete, composite & bio-mechanical materials, high temperature metals, rheology, structures

Brief course description: Fundamental concepts in isotropic & anisotropic viscoelasticity theory, material modeling and simulations, constitutive relation characterizations (including aging, temperature, electrical & moisture effects) with applications to elastic-viscoelastic analogies, composites, polymers, rheological materials. Analytical & finite element formulations of static and dynamic (wave motion) mechanics & numerous engineering problems with solutions. Non-linear viscoelasticity, creep rupture.

Text: Instructor’s handouts

This course will not be offered again until the Fall 2015 semester

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