

**Fall 2013 Course Announcement**

**AE / TAM 529 - THEORY OF LINEAR AND  
NONLINEAR VISCOELASTICITY**

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

AE 529 - 54326 4 Hours

TAM 529 - 54330 4 Hours

**Prerequisite:** consent of the instructor

**Instructor:** Harry H. Hilton

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<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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