

Announcement

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PHYS 4421 - PHYSICS OF CONTINUUM MATTER: Exotic and everyday Phenomena in the Macroscopic World

INSTRUCTOR: Predrag Cvitanovic'

TIME: Fall semester 2002, Tue, Thu 09:35-10:55 in Howey N209

COURSE DESCRIPTION: Continuum physics describes the macroscopic physical world around us. The enormous progress of quantum physics in 20th century has almost eliminated this kind of physics from the core physics curriculum - still research in nonlinear science, biology, engineering, demands increased mastery of its methodology. This course (new to GT curriculum) attempts to redress the balance. It offers a modern, unified introduction to the basic concepts and phenomenology of continuous systems.

The course is intended for physics, biomedical engineering, math, engineering and geophysics advanced undergraduates, starting graduate students. The mathematical prerequisites are modest and are developed further as the need arises.



- Historical perspective.
- Gravitational fields.
- Fluids.
- Euler/Lagrange description.
- Viscosity.
- Navier-Stokes equations.
- Whorls and vortices.
- Stress, strain.
- Elastodynamics.

DETAILS: check www.cns.gatech.edu/~predrag/courses/PHYS-4421-02.

TEXTBOOK: *Continuum Physics, Exotic and everyday Phenomena in the Macroscopic World*, by Benny Lautrup, the only modern advanced undergraduate introduction into the subject.

TEACHING METHOD: Two lectures per week, homework sets, midterm and a final exam.

START: Tue, Aug 20 2002 in Howey N209

updated July 17 2002 --

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