

20th annual short course on **Probabilistic Analysis and Design**

Computational Methods and Applications

October 5-9, 2009

Overview

The 4-1/2-day course is intended for engineers, scientists, and technical managers who are concerned with managing uncertainty and risk of structural, mechanical and other engineering systems, and desire to become familiar with the background and the use of state-of-the-art probabilistic methods.

The course will focus on the theoretical background, computational implementation, and application methods for probabilistic analysis and design. A significant portion of the course will be hands-on workshops to allow students to explore the formulation, implementation, and solution of probabilistic problems. Selected design problems will be used throughout the lectures and workshops.

Students are invited to bring a probabilistic analysis/design problem for individual discussion with the teaching staff.

Applications

- Structural analysis
- Fracture mechanics
- Reliability-based design optimization
- Automotive structures
- Geomechanics
- Turbine engine structures
- Biomechanics
- Industry case studies
- Other engineering applications

Lectures

- Probability and statistical fundamentals
- Probabilistic analysis and design
- State-of-the-art computational probabilistic analysis methods
- Component reliability
- System reliability
- Probabilistic finite element methods

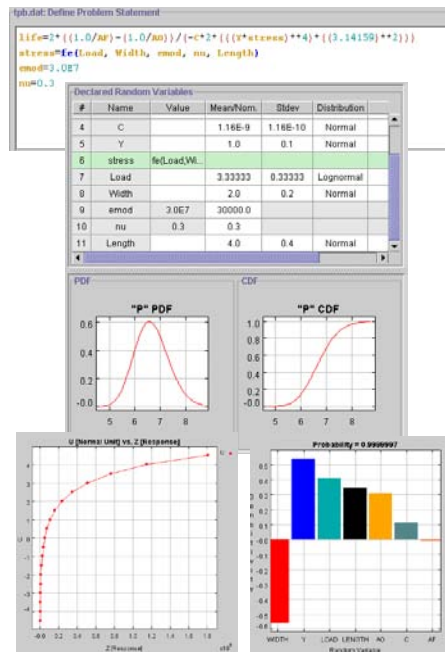
Workshops

Hands-on formulation and solution of probabilistic engineering problems.

- Analytical probabilistic methods
- Computational probabilistic methods
- Probabilistic design
- Probabilistic analysis using finite element codes

Materials/Software Tools

- Lecture notes
- Attendees will receive a 6-month license for the NESSUS probabilistic analysis computer program



Price

\$2050. A \$150 discount is available if registration is received at least 45 days in advance. This price includes social functions consisting of a social hour, course banquet, and lunches.

Instructors

Reliability and Material Integrity Section, Southwest Research Institute®

- Ben H. Thacker, Ph.D., P.E.
- Michael P. Enright, Ph.D., P.E.
- David S. Riha
- Barron J. Bichon
- John M. McFarland, Ph.D.
- Paul H. Wirsching, Ph.D. (University of Arizona)

The professional staff will be available for individual consultation during the week of the course.

Course Location

The course will be taught at Southwest Research Institute located in San Antonio, Texas. The Institute is an independent, non-profit applied research and development organization founded in 1947 to help industry, business, and government solve scientific and technological problems.

San Antonio has many places of interest including the Alamo, Riverwalk, Spanish Missions, Institute of Texan Cultures, Sea World, and the Six Flags Fiesta Texas Amusement Park.



Information

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