

July 2 to 4, 2013

9:00 - 11:00h

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FLUID MECHANICS AND AEROACOUSTICS OF FANS & COMPRESSORS

A 3-day short course will be offered to provide basic understanding of flow behavior in axial and centrifugal compressors and fans, noise generation mechanisms, and noise simulation methodology. This is an introductory-level course suitable for senior undergraduate or graduate students, practicing engineers, and those with an interest on the subject.

Day 1: Axial Flow Compressors and Ducted Fans

Basic definitions and nomenclature, stage thermodynamics, losses and efficiency, preliminary design, 3D effects, flow instabilities.

Day 2: Centrifugal Compressors and Fans

Geometry and definitions, impeller and diffuser system, slip factor, performance, effect of backward-swept vanes.

Day 3: Introduction to Fan Noise Simulation

Sources of noise, propagation and duct coupling, fan noise modeling (acoustic analogy, computational methods).

C O U R S E

(matematika mugaz bestalde)