Experimental Gas/Aerodynamics - Web course

COURSE OUTLINE

The course covers experimental aspects in the study of Aero/Gas Dynamics and is organized in two parts. First part covers lectures on aero/gas dynamic facilities for experimentation in the various speed ranges corresponding to subsonic, supersonic and hypersonic Mach numbers. Important considerations for the design of such facilities, significance of their components and some hard ware details are included.
The second part covers various measurement devices and techniques. Important measurement parameters included are pressure, temperature and velocity. In all cases, classical and state of the art devices and techniques are covered. Flow visualisation techniques meant for incompressible and compressible flows are also included in the course.

References:

1. Low Speed wind Tunnel Testing - Rae, W.H. and Pope,Alan
2. Wind Tunnel Techniques - Pankrust, R.C and Holder, D.W.
3. High Speed Wind Tunnel Testing - Pope, Alan & Goin
4. Shock Tubes in high temperature chemical physics - Gaydon, A.G. and Hurle, J.R
5. Wind Tunnels and their Instrumentation - Slezinger
6. Measurement Systems: Application & Design - Doeblin
7. Fluid Mechanicsmeasurements - edited by Goldstein

NP-TEL

NPTEL

http://nptel.iitm.ac.in

Aerospace Engineering

Pre-requisites:

1. First level courses in Fluid Mechanics and Gas Dynamics(Compressible Flows).

Coordinators:

Prof. Job Kurian
Department of Aerospace EngineeringIIT Madras