PMRF-ISSS Teaching Programme

Prime Minister Research Fellowship students' teaching requirement
facilitated by the Institute of Smart Structures and Systems

Module PMRF-ISSS032/II/2025

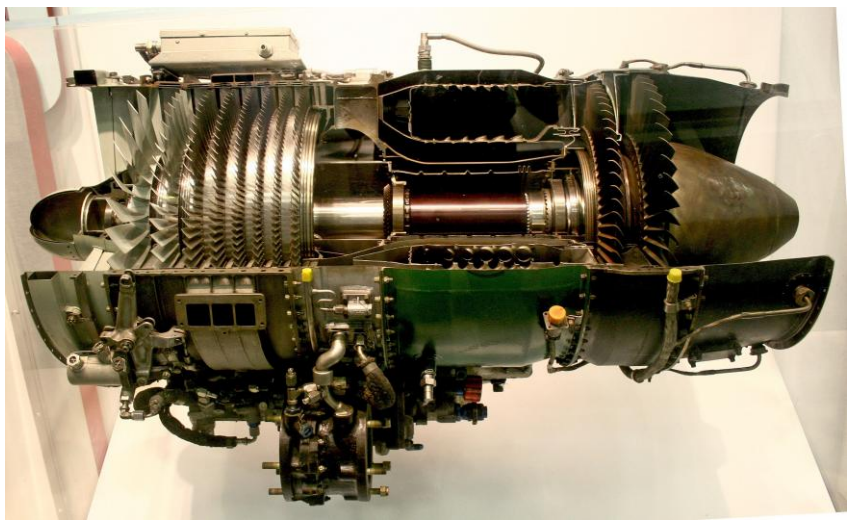
Introduction to Gas Turbines

Name of the PMRF student

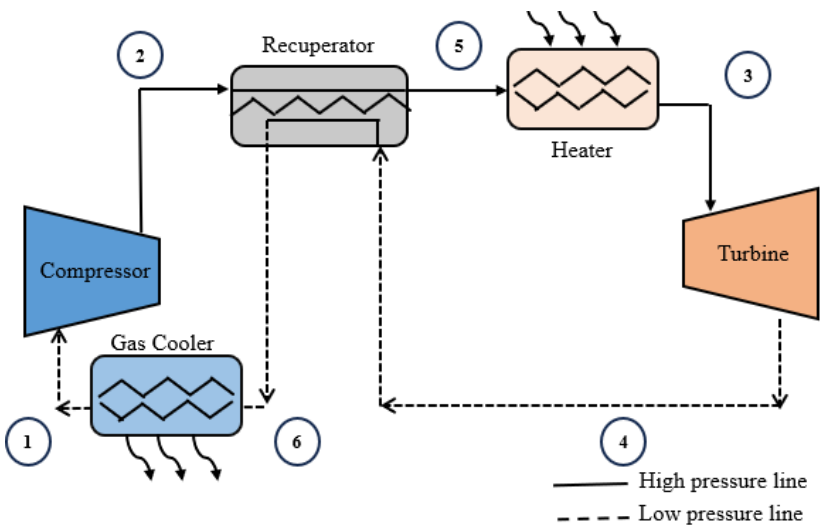
Goutam Mandal

Required background of the students taught

Engineering Mechanics
Fluid Mechanics
Thermodynamics



Axial-flow gas turbine turbojet, the J85
Source: Wikipedia



Schematic of a recuperating type Power Plant

Details of the content of the module

This course introduces the concept of gas turbines for the application of propulsion and power generation. Starting with the basic equations, applying conservation laws to control volume and a detailed discussion on the components is the primary target of this course. There will be ample problem-solving sessions. At the end of the course, there will be a brief discussion on design of each process. The overall course looks as follows:

1. Kinematics
2. Basics of fluid mechanics and thermodynamics
3. Conservation Laws
4. Design of fixed Components (Diffusers and nozzles)
5. Design of rotating components (Turbomachines)

Schedule of the module

Start Date: 7th April, 2025 (tentative)

End Date: 31st May, 2025 (tentative)

Timings: Monday (6:30 PM – 7:30 PM)
Wednesday (6:30 PM – 7:30 PM)
Friday (6:30 PM – 7:30 PM)

Meeting link : Will be shared later

Link

Contact email ID: isss.forum@gmail.com

Registration link:
https://forms.gle/McKL17M[redacted]b[redacted]3