COURSE DETAIL

TURBOMACHINERY
Country Ireland
Host Institution Trinity College Dublin
Program(s) Trinity College Dublin
UCEAP Course Level Upper Division
UCEAP Subject Area(s) Mechanical Engineering
UCEAP Course Number 143
UCEAP Course Suffix
UCEAP Official Title TURBOMACHINERY
UCEAP Transcript Title TURBOMACHINERY
UCEAP Quarter Units 5.00
UCEAP Semester Units 3.30

Course Description

Turbomachinery is an essential technology for delivering the power and propulsion needed for society, particularly in rapidly developing economies. This course integrates the fundamental principles of fluid mechanics and thermodynamics in order to analyze compressible flows and high speed turbomachinery. The course instills students with an awareness of different power and propulsion applications and the importance of high efficiency energy conversion devices to minimize environmental impact, both in a national and global context. The course provides an understanding of the unique issues associated with transonic flows and basic tools to analyze these. That understanding underpins a detailed treatment of design calculations for high speed turbomachinery, including aerodynamic performance, instability, losses, and structural limitations on performance. The course covers the most important types of turbomachines; centrifugal compressors, radial turbines, axial compressors, and axial turbines. Students also gain an appreciation of the manufacturer and user perspectives, such as costs, safety, durability, flexibility, and noise.

Language(s) of Instruction
English

Host Institution Course Number
MEU44B10

Host Institution Course Title
TURBOMACHINERY

Host Institution Course Details
https://www.tcd.ie/media/tcd/engineering/pdfs/current-students/MEU44B10,-MEP55M...

Host Institution Campus

Host Institution Faculty

Host Institution Degree

Host Institution Department
Engineering

Course Last Reviewed
2024-2025

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