AEROSPACE ENGINEERING (LM52)

(Brindisi - Università degli Studi)

Teaching AERONAUTIC PROPULSION MOD. 1

GenCod A003309

Owner professor Maria Grazia DE GIORGI

Teaching in italian AERONAUTIC PROPULSION MOD. 1 C.I.

Teaching AERONAUTIC PROPULSION MOD. 1

SSD code ING-IND/07

Reference course AEROSPACE ENGINEERING

Course type Laurea Magistrale

Credits 6.0

Teaching hours Front activity hours: 54.0

For enrolled in 2019/2020

Taught in 2019/2020

Course year 1

Language ENGLISH

Curriculum Percorso comune

Location Brindisi

Semester

Exam type Oral

Assessment

Course timetable https://easyroom.unisalento.it/Orario

BRIEF COURSE DESCRIPTION	This course presents aerospace propulsive devices with particular focus on air-breathing engine
REQUIREMENTS	-Fluid dynamic and fluid machinery
COURSE AIMS	1 Gain knowledge of different types of aero-engines (turbojets, turbofans, ramjets) and to understand the aerodynamic and thermodynamic characteristics of major engine components. 2 Develop the knowledge and skills to analytically and numerically solve problems related to aerospace propulsion systems. 3 Develop skills in working independently. 4 Develop skills in critical evaluation of scientific literature. 5 Develop skills in planning and presentation of scientific talks and reports.
TEACHING METHODOLOGY	Theory and practical activities (Tutorials devoted to discussion and problem solving referred to the aeroengine.)
ASSESSMENT TYPE	The final exam consist of two part: 1)Written and oral examination covering all material covered in course 2)assignments and individual project

FULL SYLLABUS

1) Types of Airbreathing Engines. Aircraft Propulsion Requirements.
2)Elements of Thermodynamics for Aero Propulsion ; Ideal & Real Engine Cycle Analysis. Parametric Cycle Analysis.
3) Subsonic & Supersonic Inlets.
4) Turbomachiney: Axial Flow Compressors and Axial Flow Turbines.
5) Combustors.
6) Nozzles.
7) Airbreathing Engine System Considerations.

REFERENCE TEXT BOOKS

- Aerothermodynamics of Gas Turbine and Rocket Propulsion Gordon C. Oates eISBN: 978-1-60086-134-5 print ISBN: 978-1-56347-241-1 DOI: 10.2514/4.861345
- Hill, P., and Peterson, C., Mechanics and Thermodynamics of Propulsion, Addison-Wesley Publishing Co., 1992,
- Course notes