UNIVERSITÀ DI PISA

AIRCRAFT CONSTRUCTION

LUIGI LAZZERI

Anno accademico	2019/20
CdS	AEROSPACE ENGINEERING
Codice	230II
CFU	12

Moduli	Settore/i	Tipo	Ore	Docente/i
COSTRUZIONI AERONAUTICHE I	ING-IND/04	LEZIONI	60	LUIGI LAZZERI
COSTRUZIONI AERONAUTICHE II	ING-IND/04	LEZIONI	60	LUIGI LAZZERI

Learning outcomes

Knowledge
The course aims at providing the student the ability to operate a synthesis of all the basic aeronautical disciplines required for performing the conceptual design of an aircraft. Moreover, the student will have capacity of performing structural analysis of aircraft structures; in this aspect, load assessment and stress analysis methodologies will be provided to assess the static strength, the fatigue and damage tolerance behaviour and the response to aeroelastic phenomena.

Assessment criteria of knowledge
During the oral examination, the student must be able to discuss some aspects of the report he has prepared on the conceptual design of an aircraft. Moreover, the student must show full and clear knowledge of the methodologies for the structural design of certain aircraft primary components, from various points of view.
Methods:

- Final oral exam
- Written report

Teaching methods

Delivery: face to face
Learning activities:

- attending lectures
- participation in seminar
- preparation of oral/written report

Attendance: Advised
Teaching methods:

- Lectures
- Seminar
- project work

Syllabus

Fundamental design aspects: regulations, loads, atmospheric turbulence, structural deformation and gust loads; aeroelastic phenomena and critical velocities, load spectra, "fail safe", "safe-life" and "damage tolerance" design criteria, minimum weight structures, conceptual and preliminary design of the aircraft; design criteria of subsystems: wings, fuselage, control and stabilization surfaces, engines, landing gears, lift augmentation devices. Verification and analysis methods.

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