

WHY ? TO ENROLL

Designing, developing and testing of aerospace systems and technologies

The study course programme in Aerospace Engineering offers a challenging international education for the highly competitive global aerospace sector, characterised by highly technological contents in continuous and dynamic evolution. Graduates for the programme will gain solid theoretical skills in aerospace modelling, analysis and design, as well as a general ability to approach and solve complex engineering tasks and a habit of working in teams. Specific cultural areas include: fluid dynamics, flight mechanics, aerospace structures and technologies, on board aerospace systems, aerospace propulsion. Specific training objectives are focused on the students ability to analyse, design and manage innovative systems, processes and services, as well as planning, building, execution and simulation of experiments. The ability to solve complex problems with a multidisciplinary approach makes aerospace engineers particularly attractive profiles for the employment market.

A course of study for Aeronautics and Space



Links

General Info for International student mobility
www.international.unina.it/welcome-message/

School "Politecnica e delle Scienze di Base"
www.scuolapsb.unina.it

Department of Industrial Engineering
www.dii.unina.it



Master's studies in Aerospace Engineering
aerospaziale.dii.unina.it

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UNIVERSITÀ DEGLI STUDI DI NAPOLI FEDERICO II
SCUOLA POLITECNICA E DELLE SCIENZE DI BASE

ENGINEERING

MASTER'S DEGREE IN AEROSPACE ENGINEERING



DIPARTIMENTO DI
INGEGNERIA
INDUSTRIALE

updated to July 2021

LEARNING OUTCOMES

The two-year programme in Aerospace Engineering is organized in semesters. During the first term, all students take fundamental mandatory courses. During the first semester of the second term, students choose one of the available tracks, each with elective courses. A set of recommended courses are also provided, but students choose elective courses based on their own interests. There are also many possibilities to combine courses between the tracks. The programme ends with a six-month internship and a final master's degree thesis. This project is performed either at an industry, at a university or a research center, in Italy or abroad. The research activities of the teachers in international projects enrich and complement the course lessons. The first in Italy to receive the PERSEUS label (PEGASUS European Recognition of Scientific Excellence of Universities), the programme includes a track with all courses in English within the European universities network PEGASUS. Some elective courses provide to the students strong interaction between theory and practice and the opportunity to apply theoretical skills through projects and experiences aboard ultralight aircrafts.

Students attending ESA Low Gravity

Research Summer School,
June 2019



Students during the NASA
Space Apps Challenge
at the School of Engineering in S. Giovanni a Teduccio, October 2019

Based on the Shanghai Academic Ranking of World Universities 2021, the University of Naples Federico II, for the Aerospace Engineering sector, is in the world top 26 universities, the first in Italy, the 5th in Europe. Several international programmes are available for students, including the Erasmus Lifelong Learning Programme (LLP). Teachers establish active collaborations with students by organizing events, seminars, guided tours to companies, and every year worldwide contests such as the NASA Space Apps Challenge. Immediately after the master's degree, graduated students may spend up to six months of internships in aerospace companies with insurance and pension charges borne by the University.

TRAINING PLAN

The study programme includes mandatory courses for all tracks at the first year and elective courses for each track at the second year. The tracks include: Aeronautics, Fluid Dynamic/Propulsion and Space curricula. Most of courses are in English.

First year	Credits
Mechanics applied to Aerospace Engineering	9
or	
Mathematical Methods for Engineering	
Reliability and risk in Aerospace Engineering	6
or	
Economy and organization of aerospace industry	
4 Curricula Courses - Fixed	36
Second year	
4 Curricula Courses at student's choice	30
Other courses at student's choice	15
Traineeship	12
Thesis	12

Curriculum - Aeronautics

Fixed Courses: Flight Dynamics and simulation, Aerospace Advanced Structures, Aircraft Aerodynamics, Avionics
Student's choice Courses: Rotary wing Aerodynamics, Aerospace Constructions 2, Structural dynamics, Fluid-Structure Interaction, Numerical and experimental methods for Aircraft Design, Unmanned Aircraft Systems, Aeroelasticity, Aircraft on board systems, Aircraft Design, Air Traffic Management and Control, Flight Test

Curriculum - Fluid Dynamic/Propulsion

Fixed Courses: Flight Dynamics and simulation, Computational Fluid Dynamics, Aircraft Aerodynamics, Space Propulsion
Student's choice Courses: Rotary wing Aerodynamics, Hypersonic Aerodynamics, Experimental Fluid Dynamics, Fluid-Structure Interaction, Aeroelasticity, Fluid Dynamic Stability, Space Experiments, Turbulence

Curriculum - Space

Fixed Courses: Space Systems, Aerospace Advanced Structures, Space Propulsion, Space Flight Dynamics
Student's choice Courses: Hypersonic Aerodynamics, Aerospace Remote Sensing Systems, Space Mission Design, Spacecraft Dynamics and Control, Space Experiments

JOB AND CAREER OPPORTUNITIES

The Master's programme in Aerospace Engineering aims to provide students with professional skills enabling:

- (a) to find employment as project managers, system engineers or technical specialists in european or non-european aerospace industries, or in research centres around the world;
- (b) to establish working relationships with aerospace and space agencies, as well as with the Air Force;
- (c) to connect with public institutions and companies for aircrafts testing and certification, as well as for air traffic control by airworthiness authorities;
- (d) to work within airlines, manufacturing or service companies, or as aerospace consultants.

For example, students choosing the Aeronautics track are particularly attractive to companies working in aerodynamics and aeronautics, while Space engineers may work in development, testing and operation of satellites, launchers, rockets or other space systems. Because of its inherent interdisciplinary appearance and the technological innovations, the Master programme in Aerospace Engineering prepares students for a future in the development of new products or applications for the coming decades, opening a wide range of career opportunities also in industry and research areas outside the aerospace sector.

CAMPUS AREA

Teaching activities, labs, libraries and offices of the Department of Industrial Engineering are located in Napoli (Fuorigrotta) close to the Maradona stadium.

