



MASTER PROGRAMME

Information Technologies applied in Aviation*



- **Cross-sectorial master programme**
- **Language: English**
2 years (4 semesters)
ECTS :120
- **Number of allocated places:**
30 without tuition fees,
20 with tuition fees

Why digitalization in aviation?

Nowadays it is unthinkable to manage a sector as air transport without using information and communication technologies.

Digitalization is one of the essential drivers of change today

The evolution to future aviation generates the creation of many new jobs or the transformation of existing ones.

These new jobs require interdisciplinary competences, digital skills for applying Information technologies in aviation.

Coordinator of master programme:
University Professor
Sorin Eugen Zaharia, Ph.D

WE WILL PROVIDE YOU WITH..

Cross-disciplinary abilities in aviation and ICT, a holistic understanding of ICT options and methods applied in aviation, the main competences to develop, analyze and manage innovative and advanced ITC systems for aviation.

Learning outcomes

- Knowledge and skills in systems engineering and applications dedicated to aircraft operations, air traffic control and air-ground interaction;
- Integrated use of advanced software applications to solve complex tasks predominantly specific to aviation activities;
- Using programming languages and software implementation of data processing algorithms for aviation processes;
- Developing innovative IT products with aerospace applications in relation to the requirements of international organizations;
- Skills in research, planning, technology management and leadership, pre-requisite for career progression.

CAREER PROSPECTS

The master will ensure knowledge and skills for the following jobs:

- Chief IoT
- Data architect
- Cybersecurity engineer
- Environmental Analyst
- Virtualisation engineer
- Responsible with digital data

Possible new jobs:

- Data Scientist
- Airport UX Designer
- Growth Hacker
- Mechatronic Engineer
- Developer

Characteristics:

- ↗ The study program will be carried out in partnership with foreign universities, in line with UNESCO's mission to provide education for sustainable development.
- ↗ First-hand experience of different European planning and practices on ITC applied in aviation, delivered by an **international interdisciplinary group of professors and lecturers combined with professional practice**: University of Zagreb, Ecole de Mines d'Albi, University of Strasbourg, University of Zilina, University of Lisbon, ICAO and professionals from the field.

* The master programme is in process of accreditation; expected start date: *October 2019*

YEAR 1

Semester I

A. STUDENTS WITH A BACKGROUND IN IT

MODULE 1A: AIR TRANSPORT ENGINEERING

- 1A1. Aerodynamics and Flight Mechanics
- 1A2. Airworthiness
- 1A3. Airline Operations

MODULE 2A: MANAGEMENT IN AVIATION

- 2AB1. Air Transport Economics
- 2A2. Airport Management and Infrastructure
- 2A3. Air Traffic Management
- 2B3. Smart Data Processing

B. STUDENTS WITH A BACKGROUND IN AERONAUTICS

MODULE 1B: IT ENGINEERING

- 1B1. Software Engineering
- 1B2. System Engineering Development
- 1B3. Intelligent Interfaces

MODULE 2B: IT DEVELOPMENT

- 2AB1. Air Transport Economics
- 2B2. Data center architecture
- 2B3. Smart Data Processing

Semester II

MODULE 3: AVIATION IT APPLICATIONS

- 3.1. Strategic Management in Aviation
- 3.2. Aviation Operations Optimization Methods
- 3.3 Modeling Theory And Tools in Aeronautical Industry
- 3.4. Specific Platforms and Tools for Aeronautical Industry
- 3.5 ATM Information Network Management
- 3.6. Aviation Safety Management

YEAR 2

Semester III

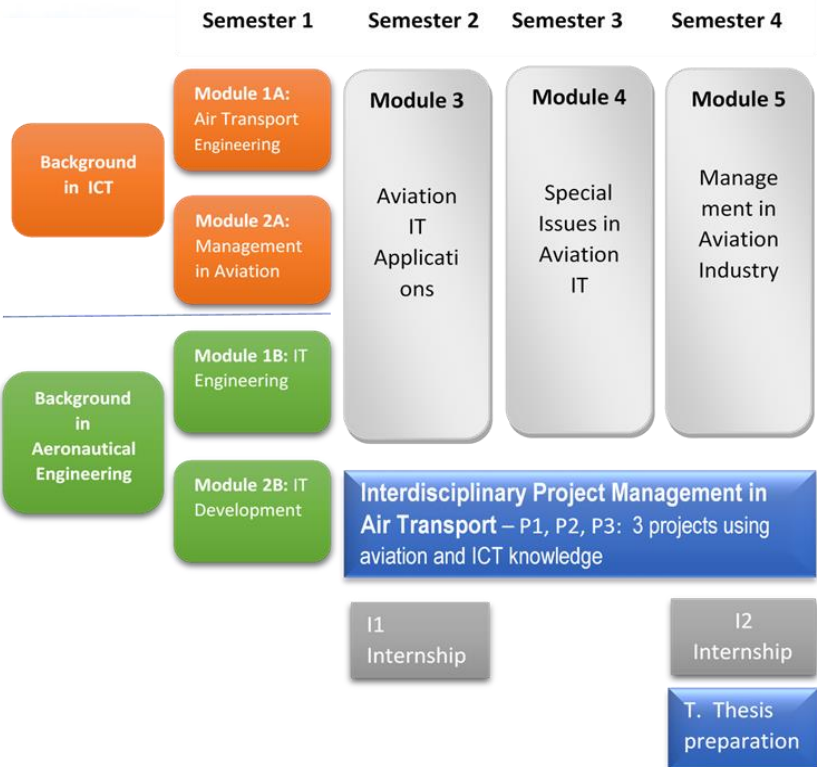
MODULE 4: SPECIAL ISSUES IN AVIATION IT

- 4.1. Data & Decision Support Management
- 4.2. CAD/CAM Methodology
- 4.3. Computer Vision
- 4.4. Unmanned Air Vehicles and their IT Needs
- 4.5. Cybersecurity Systems Management in Aviation
- 4.6. Reliability of Hardware and Software in Aviation

Semester IV

- P1,P2, P3 Interdisciplinary Project Management in Air Transport
- I1, I2 Internship in Participating Organizations
- T1 . Preparation and Defending of the Thesis

What will you learn as a student in this Master program ?



The study program will be conducted **in situ or online**, in English, with the participation of specialists in the field. Instruction will be delivered through lectures, e-learning, on-line courses and study cases, airports, airlines or systems simulation, on-site visits to air transport and IT facilities, internships and projects.



General admission requirements:

Applicants must hold a Bachelor degree.

- ❖ The admission requirements for Romanian students are described at: <https://upb.ro/admitere/>
- ❖ The admission requirements for foreign students are described at: <http://international.upb.ro/>

Registration:

01.07-12.07.2019

26.08-13.09.2019

For information and registration:

Web-site: www.upb.ro

Telephone: +40 214029097

+40 214029096

E-mail: unesco.office@upb.ro



Location: University POLITEHNICA of Bucharest, 313 Independentei Avenue, Sector 6,
CAMPUS Building, floor 7, room 709
Postal cod: RO-060042, Bucharest, Romania