	Catedra UNESCO	unesco Chaire Engineering for Society, University Politehnica of Bucharest, Romania

INFORMATION TECHNOLOGIES APPLIED IN AVIATION

Study field: Computers and information technology

Description

Information Technologies Applied in Aviation (ITAA) strongly focuses on digitalization of air transport and equips students with cross-disciplinary knowledge and abilities in aviation and ICT, with a holistic understanding of ICT options and methods applied in aviation.

Relevance to the labor market

The master will ensure knowledge and skills for challenging current and new jobs asked by Aviation 4.0, such as: Chief Data Officer, Air Transport Data Architect, Big Data Architect, Cybersecurity Engineer, Virtualisation engineer, Data Protection Officer, Auditor, Responsible with Digital Data, Data Scientist, Airport UI & UX Designer, Growth Hacker, Mechatronic Engineer, Aviation Software Engineer.

Learning outcomes

Graduates of the master program will be able to:

- integrate and apply their knowledge to solve real digitization problems involving a combination of theoretical, and experimental computational techniques such as optimized air fleet operation, intelligent airport planning and design, market analysis and aviation demand forecast, the adoption of advanced information and communication technology at airports, airlines and air traffic control, Internet of Things, cloud computing, big data, data mining, cybersecurity.
- demonstrate the ability to use cross-border knowledge between broad and complex areas, critical analysis and problemme solving relevant issues in the development and operation of systems and efficient and original approach to the use of ICT for air transport system components: airlines, airports, service providers, handling and so on.
- to use computer technologies for simulation and prediction.

Disciplines

YEAR 1

- Economic and Financial Analyses
- Strategic management in aviation
- Aviation 4.0.
- Air Transport Operations
- System Engineering Development
- Data center architecture
- Aviation Operations Optimization Methods
- Project Management
- Specific Platforms and Tools for Aviation

- Air Traffic Management and Information Networks
- Safety Management Systems
- Airworthiness

YEAR 2

- Data & Decision Support Management
- CAD/CAM Methodology
- Computer Vision
- Unmanned Air Vehicles and their IT Needs
- Cybersecurity Systems Management in Aviation
- Reliability of Hardware and Software in Aviation

During this master's program, students will undertake scientific research in the field of digitalization of air transport in cooperation with professionals from air transport providers and international aviation bodies as ICAO, ACI, IATA.

Research topics

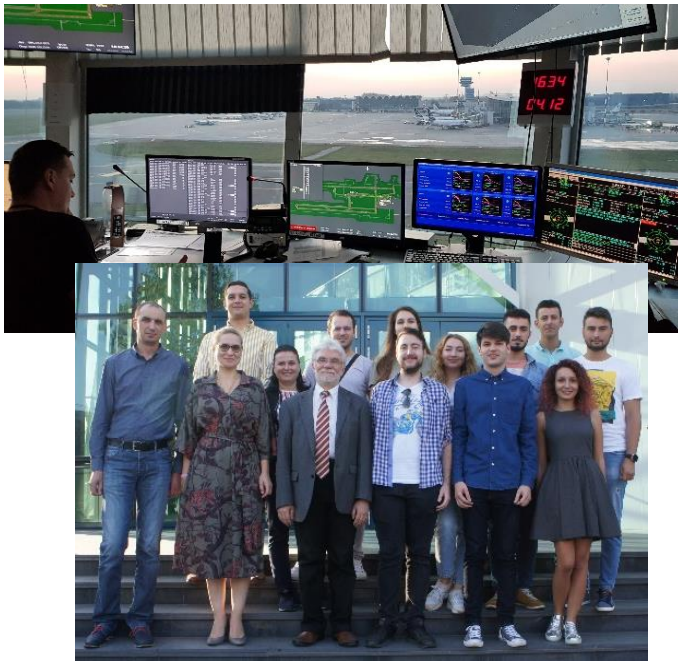
- Machine learning methods for anomaly detection in aviation
- Cybersecurity on airport
- Development of flight simulators that integrate control services using natural language processing techniques
- IT applications for airport health measures; creating a world class digital passenger experience
- Airport systems integration & IT support
- E-business in aviation; risks and opportunities of e-business
- Ensuring safety within ground operations during the age of automation
- Using biometrics in multiple stages of the passenger's journey
- Optimization of airport operations for digitalized airports
- Urban airports in the context of urban mobility concept implementation
- The impact of digitalization on airport management
- Digital transformations of airports; Airport 4.0
- Use of blockchain for enhancing baggage tracking

Other information of interest

Academic partners: University of Zagreb, Instituto Superior Técnico Lisbon, University of Strasbourg, University of Zilina.

Professional partners: Menzies Aviation, Cluj Airport, Blue Air, Safety Investigation and Analysis Authority, Iași Airport, Romanian Airports Association, Croatia Airlines.

International aviation partner organizations: ACI, ICAO.



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