

Faculty of Aviation Safety - general information
Field of study: <i>National Security</i>
Type of qualification: BA
Mode of study: full-time, part-time
Duration: 3 years
Specialization: safety and passenger service in air transport, security and protection of airports, protection of persons and property, crisis management, safety management in aviation
Educational profile: <ul style="list-style-type: none"> • safety in air transport • safety of airports; • security of airports; • security and passenger service in air transport; • safety management in aviation; • crisis management; • cyber security in aviation.
Language of instruction: Polish, English – only for the Erasmus+ incoming students.
Characteristics of qualification: The studies enable the acquisition of the knowledge and practical skills required for the professional execution of tasks in the field of security, defence, safety management in aviation with a particular focus on security area. They provide students with complete and professional training followed up by apprenticeship.
Requirements for candidates: The studies are designed for secondary school graduates who have passed secondary school leaving exam (A-level). The specializations courses are dedicated to civilian students.
Limits (number of students): 20 or multiple of 20 in subsequent years.
Faculty of Aviation Safety – general information
Field of study: <i>National Security</i>
Type of qualification: MA
Mode of study: full-time, part-time
Duration: 2 years
Specialization: safety and passenger service in air transport, security and protection of airports, protection of persons and property, crisis management, safety management in aviation.
Educational profile: <ul style="list-style-type: none"> • safety and security at the airport; • security management in aviation organisations; • crisis management in aviation organisations.
Language of instruction: Polish, English – only for the Erasmus+ incoming students.
Characteristics of qualification: The studies enable the acquisition of the knowledge and practical skills required for the professional execution of tasks in the field of security management in aviation. They provide students with complete and professional training followed up by apprenticeship.
Requirements for candidates: The studies are designed for secondary school graduates who have passed secondary school leaving exam (A-level). The specialization courses are dedicated to civilian students.
20 or multiple of 20 in subsequent years

COURSE CATALOGUE OFFER

Academic year: 2020/2021

Faculty of Aviation Safety

Field of study: National Security

ISCED - F code: 1031

Language of instruction: English



Index	Name of the course	Number of hours	ECTS	Number of hours acc. to the form of classes			
				lectures	exercises	laboratories	project
Core Module							
1	<i>Crisis management operations</i>	30	3	15	10		5
2	<i>Airport</i>	60	4	30	20		10
3	<i>Aviation safety management system</i>	60	4	30	30		
4	<i>Operational risk management in aviation</i>	45	4	10	35		
5	<i>National defence</i>	40	4	20	20		
6	<i>Air traffic management</i>	30	3	15	15	-	-
7	<i>Airport security</i>	30	3	10	10		10
8	<i>Aviation Terrorism</i>	45	4	20	20		5
9	<i>The Use of Outer Space for Security Purposes</i>	30	3	15	15		
10	<i>Human Factors in Aviation</i>	60	5	30	30		
Total	ECTS		37				

Description of the modules:**Core Module****1. Crisis management operations****Educational content:**

Theoretical foundations on crisis and crisis management. United Nations and crisis management. NATO crisis response doctrine and organization. European Union crisis management doctrine and organization. Disaster relief and humanitarian assistance. NGOs and PVOs in crisis management. Best national practices in crisis management. Case studies in peace operations and humanitarian operations. Crisis management preparedness.

Effects of education - abilities and competences:

Learning and consolidating knowledge about crisis management from perspectives of the UN, NATO, EU and NGOs. A student is supposed to know: basic theoretical concepts of crisis and crisis management, doctrine and organization of crisis management in respective international organizations, basic lessons learned from major crisis management operations. A student is supposed to be able to define crisis and crisis management, understand different philosophies and instruments of crisis management, discuss problems of crisis management related to peace operations and humanitarian assistance.

2. Airport

Educational content:

Understanding of basic concepts of airport. Airport as a system. Airport tasks, airport functions. Airport classification and airport infrastructure. General airport classification, legal regulations as well. Airport location. Navigation infrastructure. Horizontal and vertical marking. Passenger terminal and airport operations. Airport zones. Modern systems used at airports. Airport security services and other entities. Preparation of a draft airport security plan.

Effects of education – abilities and competences:

A student is able to describe model of airport, define elements of airport infrastructure. Student is aware of importance of using security systems at an airport. A student is able to predict threats to airport. A student knows airport services and responsibilities of every service.

3. Aviation safety management system

Educational content:

Concepts and evolution of aviation safety. Safety management strategies. Management of safety information. Safety management SARPs. Safety management system planning and operation. Implementation of SMS. Safety culture. State safety program fundamentals. Case studies in aviation safety management.

Effects of education - Abilities and competences:

Learning and consolidating knowledge about safety management in aviation from perspectives of state, air operator and air navigation providers. A student is supposed to know: concepts and evolution of aviation safety, safety management strategies, management of safety information, safety management SARPs, Safety management system planning and operation, state safety program fundamentals. A student is supposed to be able to define safety management system, understand philosophy of safety management, discuss problems of safety management in aviation organizations.

4. Operational risk management in aviation

Educational content:

Basic terminology related to aviation risk management. The essence of aviation risk management. Basic principles of risk management. Stages of the risk management process. Methods of risk control and hierarchy of risk reduction methods. Risk Assessment Card. Building ability to analyze and make conclusions related to operational risk management in aviation

Effects of education – abilities and competences:

A student knows and understands various stages of the operational risk management process in aviation. A student is able to discuss about impact of operational risk management in aviation on level of aviation safety. A student is able to develop and use a risk assessment card. A student can present his own views, doubts and suggestions in relation to issues related to operational risk management in aviation.

5. National defence

Educational content:

Theoretical foundations of national defence. Defence policy scope and instruments. Instruments of national defence. Strategic defence reviews. Defence strategy formulation and implementation. International defence cooperation. Armed forces as an instrument of national defence. Defence industry. National approaches to national defence establishment.

Effects of education - abilities and competences

Learning and consolidating knowledge about national defence. A student is supposed to know: basic theoretical concepts of national defence, instruments for national defence, process of formulation and implementation of national security strategy, mechanisms for reviewing and assessment of national defence establishment, armed forces roles and missions. A student is supposed to be able to comprehend the conceptual framework of national defence, know instruments for national defence, discuss problems of national defence using national examples.

6. Air traffic management

Educational content:

Organization of air traffic management system (ATM - AirTraffic Management). Air Navigation Services. Assumptions of the FUA concept. Airspace management. Air traffic flow management. ATC system capacity and control sectors capacity. Regulatory mechanisms in air traffic flow management. Permits and instructions of air traffic control services. Airspace classification. Flight information area. Controlled airspace. Uncontrolled airspace

Effects of education – abilities and competences:

A student knows basic terminology related to air traffic. A student knows and understands organization of air traffic management system. A student knows composition and main tasks of air navigation services (ANS) and essence of the FUA concept.

7. Airport security

Educational content:

Threats to the security of civil aviation. Airport security system. Airport security services – rules, organization. Airport infrastructure as a vulnerable facility. Anti-terrorism protection in air transport in relation to airport. Airport security services and procedures, security controls at airports.

Effects of education – abilities and competences:

A student knows security systems used at airports. A student is able to verify threats at airport. A student knows and understands importance of protection system. A student knows and understands usefulness of technical protection measures. A student can justify need to improve security systems.

8. Aviation Terrorism

Educational Content:

Aviation terrorism - definition and a brief history of the phenomenon; the threats to international civil aviation - trends and lessons: aircraft sabotage, the missile threat to civil aviation; approaches to counter-terrorism, recommendations and conclusions

Effects of Education - Abilities and Competences:

The students will be able to define aviation terrorism and will be familiarized with the history of the phenomenon. They will be aware of the trends and threats to international civil aviation including aircraft sabotage and the risk of missile attack. The students will know and be able to analytically examine the current approaches and undertakings to combat aviation terrorism.

9. The Use of Outer Space for Security Purposes

Educational Content:

- Terminological introduction – the notions: outer space, astronomical object, Kármán line, astronomical unit, solar wind, cosmic rays, the first, second, and third cosmic velocities.
- The Earth: orbital speed, atmosphere (troposphere, stratosphere, mesosphere, thermosphere, exosphere), the core, magnetosphere; Earth orbits: LEO, MEO, GEO (characteristics, orbital objects), their strategic significance: artificial satellites, weapons, exploration; the solar system: basic data (planets, asteroid belts).
- The development of the space industry – a historical perspective: Programmes Sputnik and Vostok, Mercury and Apollo Programmes, Luna Programme, MIR orbital station, Space Shuttle Programme, International Space Station.
- The development of the space industry – the current state and currently developed programmes: Space Launch System (SLS), SpaceX programmes (Falcon 9, Falcon Heavy, Starship and Super Heavy, Raptor engine), Blue Origin (New Shepard, New Glenn, BE-4 engine), Lunar Orbital Platform-Gateway.
- National and multinational space agencies (NASA, ESA, Roskosmos, CSA, CNSA, ISRO, Polska) – basic data, implemented programmes and future plans, both civil and military; their strategic significance for national security
- The use of artificial satellites for security purposes: current ISR satellites, navigation satellites and orbital navigation systems (GPS, GLONASS, Galileo, BeiDou 2, et al.), communication satellites, meteorological satellites; ASAT weapon systems (current and under development).
- Orbital and suborbital weapon systems – state of the art and systems under development: hypersonic rockets and gliders, fractional orbital bombardment systems, kinetic orbital strike systems, orbital laser canons.

Effects of Education - Abilities and Competences:

The students will be able to define issues related to space conditions for security purposes. He knows the economic, legal and other conditions in this area. Knows and understands the fundamental dilemmas of modern civilization, including those related to the use of space for security purposes. He is ready to point out the importance of space in ensuring national, regional and global security. The student is ready to critically assess his knowledge in this field.

10. Human Factors in Aviation

Educational Content:

The human factors is about understanding human behavior and performance. When applied to aviation operations, human factors knowledge is used to optimize the fit between people and the systems in which they work in order to improve safety and performance. Gain a comprehensive overview of the effect and management of human factors in aviation. Communicating while performing operator tasks. Receiving and processing information, making decisions, sharing commitments in a team. The impact of differences in personality on the mutual relationships of crew members. Stress in air transport as a complex psychophysiological and sociological phenomenon. Ways to deal with stress in air transport. Safety culture in aviation organization, standard operating procedures, work organization.

Effects of education - abilities and competences:

A student knows the essence and functioning of human cognitive, emotional and motivational processes and their importance for people employed in air transport; model and principles of good communication.