

**COURSE CATALOGUE 2024/2025**  
**”GEORGI BENKOVSKI” AIR FORCE ACADEMY BULGARIA**

Name of the course	№ of hours	ECTS	Description of the course	Teacher
<b>Aircraft aerodynamics</b>	45	6	<p>The course concerns with the following basic topics:</p> <ul style="list-style-type: none"> <li>- „The Atmosphere“</li> <li>- „Basic Aerodynamic Definitions“;</li> <li>- „Basic Aerodynamics“;</li> <li>- „Lift Generation“</li> <li>- „Lift Analysis“</li> <li>- „Lift Augmentation“</li> <li>- „Drag“</li> <li>- „Stalling“.</li> </ul>	Assoc.Prof. Vladimir Savov, PhD
<b>Hydraulics and pneumatics of aircraft systems</b>	45	5	<p>Principles of hydraulics and pneumatics. Equations. Flow in pipes. Pumps. Boosters. Valves. Hydraulic and pneumatic systems in aircraft.</p>	Col. Assoc.Prof. Lyubomir Mitov, PhD
<b>Basic radar principles</b>	60	6	<p>The students will learn the basic radar principles. Radar range equation and radar resolution are discussed. The principles of moving target indication are explained. Different radar types (pulse radar, CW radar, pulse-doppler radar, etc.) are considered.</p>	Col. Prof. Marin Marinov, PhD
<b>Mechatronics and mechatronics systems</b>	60	6	<p>The course concerns the following topics:</p> <ul style="list-style-type: none"> <li>- Mechatronics and mechatronics systems;</li> <li>- Data acquisition and processing in mechatronics systems;</li> <li>- Actuators in mechatronics systems;</li> <li>- Controlers and computers in mechatronics.</li> </ul> <p>The main goal of the course of “Mechatronics and mechatronics systems” is to make students familiar with the mechatronics models and systems on such level so that they are able to apply it in their professions.</p>	Col. Assoc. Prof. Stefan Biliderov, PhD
<b>Computers for automation control</b>	60	4	<p>The course includes the following topics:</p> <ul style="list-style-type: none"> <li>- Introduction to computer and computer system for automation control;</li> <li>- Operating systems for real time control;</li> <li>- The Hardware core for real time cintrol;</li> <li>- Computer interfaces controlling real devices.</li> </ul> <p>The main aim of the course is to introduce these topics to the students and to teach them in developing algorithms and testing them in computer systems for controlling real time devices.</p>	Col. Assoc. Prof. Stefan Biliderov, PhD
			The course provides basic knowledge of the principles of design, working conditions,	

<b>Mobile and satellite Communications</b>	30	2	operation and main services of mobile communications systems and communications systems on basis of artificial satellites of the Earth. Furthermore, practical examples of mobile communications systems and satellite communications systems are discussed.	Assoc.Prof. Georgi Stanchev, PhD
<b>Basic principles of navigation</b>	45	5	The goal of the course is to give basic knowledge to students about navigation systems and radars; to develop skills for calculations relating to radio navigation systems and radars; to build competences for analyzing and assessing of navigation information. Main topics are: introduction to navigation, radio waves and antenna parameters, autonomous onboard navigation systems, ADF/NDB navigation system, VOR/DME navigation system, instrument landing systems, satellite based navigation systems, satellite based navigation systems, principles and types of radars, second surveillance radar systems.	Assoc. Prof. LTC Penyo Penev, PhD Col. Prof. Marin Marinov, PhD
<b>Military English</b>	60	4	The aim of the course is to prepare military and civilian personnel for their successful professional realization in an English-speaking military environment. A balance of receptive (reading, listening) and productive (speaking, writing) skills is developed. The course covers a variety of topics.	An English teacher from the Language department
<b>Foreign Language - English</b>	60	4	The aim of the course is to prepare military and civilian personnel for their successful realization in an English-speaking environment. A balance of receptive (reading, listening) and productive (speaking, writing) skills is developed. The course covers a variety of topics, including preparation for STANAG6001.	An English teacher from the Language department
<b>Civil Aviation Transport System</b>	30	3	The module aims to acquaint students with attributes and tendencies for development of the Air Transport System (ATS). - getting acquainted with the history, operating environment, structure and different elements of ATS; - learning the development trends of ATS; - discovering how Civil ATS stands among other means of transport. By completing this module successfully, students will master: - basic knowledge in ATS` operating environment, structure and functionality of individual key elements; - the basic knowledge of performing quantitative assessments of ATS` parameters. After successful completion of the module, students will be able to apply a systematic approach in examining the ATS as a whole and in inspecting its individual elements.	Chief asst. prof., Major Plamen Krastev
<b>Theory of automatic control</b>	30	3	The main goals are to acquire basic theoretical knowledge and to form practical skills in building linear mathematical models, the transformation between different types of models and the simulation of their dynamic properties. The lecture material gives information about the classical methods of automatic control in open or closed control loop.	Assos. Prof. LTC Martin Kambushev PhD

			<ul style="list-style-type: none"> <li>• As a result of the training under this program, the trainees should acquire new knowledge about: <ul style="list-style-type: none"> <li>○ analyzing and synthesize standard models for control purposes;</li> <li>○ processing and analyzing type characteristics of dynamic units;</li> <li>○ apply known methods and approaches for connection and research of complex dynamic systems;</li> </ul> </li> <li>transforming standard mathematical models for describing dynamic objects from one form to another;</li> </ul>	
<b>General Navigation</b>	30	3	<p>The main goal of the studied discipline is the need for knowledge and skills for the use of geotechnical means and navigation systems.</p> <p>As a result of training under this discipline, students will acquire new knowledge on:</p> <ul style="list-style-type: none"> <li>• The principle of determining the main navigation parameters for the flight of an aircraft - direction, distance, altitude, speed, influence of wind, and visual navigation;</li> <li>• The concept of operation of the main geotechnical means for aircraft guidance - compass, altimeter, speedometer;</li> <li>• The use of basic geotechnical means for aircraft navigation.</li> </ul> <p>As result of the stipulated in the discipline knowledge, trainees must build the following new abilities:</p> <ul style="list-style-type: none"> <li>• Solving practical tasks on the use of geotechnical means for aircraft guidance - compass, altimeter, speedometer;</li> </ul> <p>Planning and preparing the flight map and flight documentation for the execution of a route flight.</p>	LTC Assoc. Prof. Ivan Ivanov, PhD
<b>Defense Management Introduction</b>	30	3	<p>The "Defense Management Introduction" provides students with structured and focused knowledge and skills, to master the concept of defense policy formation, subordinated to national interests and goals. Another aim is to create alternatives for development of defense capabilities of the armed forces, required to meet combinations of security challenges that arise during future security environments growth, and within the framework of available resources. Training includes a practical application of the methodologies of planning based on capabilities, program management of the development of the armed forces, and the basics of managing defense investment projects for acquisition of modern defense systems.</p>	Assoc. Prof. Ivan Valkov PhD
<b>Aerospace structural components design using multi-physics engineering software (ANSYS Workbench)</b>	30	3	<p>Aerospace structural components design using multiphysics engineering software (ANSYS Workbench)" is an introductory course in fundamental concepts and tools for aerospace structural components design using a modern multiphysics engineering software. All students will have access to a free download of ANSYS Student. At the end of the course students will have knowledge for:</p> <ul style="list-style-type: none"> <li>• the basic workflow of the engineering analysis with multiphysics software;</li> </ul>	CPT Chief asst. prof. Nikolay Kanchev, PhD

			<ul style="list-style-type: none"> <li>• the fundamental concepts and tools for 3D modelling of structural components;</li> <li>• aeronautics and aerospace industries;</li> <li>• the most common engineering analysis types.</li> </ul> <p>After successful completion of this course students will be able to:</p> <ul style="list-style-type: none"> <li>• plan the stages for aerospace structural component design using multiphysics software;</li> <li>• model the geometry of an aerospace structural component in 3D CAD environment;</li> <li>• perform different types of engineering analysis using the finite element method;</li> <li>• apply common methods for structural optimization of an aerospace structural component using multiphysics software environment;</li> </ul> <p>suggest a suitable method or approach for manufacturing of the designed aerospace structural component.</p>	
<b>Custom policy</b>	60	4	<p>The goal of the course is to give basic knowledge to students about the characteristics and function of duty, customs tariffs, customs dutiable value, economical customs regimes. At the end of the course students will have knowledge for:</p> <ul style="list-style-type: none"> <li>• General aspects of the origin and development of duty;</li> <li>• The structure of customs tariffs;</li> <li>• The objectives, activities and role of custom policy in foreign trade;</li> <li>• The Importance of Customs policy on imported goods and services;</li> <li>• Different aims and tasks in economic, political, social and fiscal sphere.</li> </ul> <p>The training is conducted through lectures, exercises and self-study. The results of the course is assessed by coursework or exam after the training.</p>	Col. Prof. Nikolay Nichev, PhD
<b>Air Transport Economics</b>	60	4	<p>The goal of the course is to give basic knowledge to students about the characteristics and function of duty, customs tariffs, customs dutiable value, economical customs regimes. At the end of the course students will have knowledge for:</p> <ul style="list-style-type: none"> <li>• Place of air transport in the economic system</li> <li>• Characteristics of supply and demand in air transport.</li> <li>• Airline cost structure.</li> <li>• Market structures</li> <li>• Economics of freight transport</li> <li>• Irregular air transport and low cost airlines</li> </ul> <p>The training is conducted through lectures, exercises and self-study. The results of the course is assessed by coursework or exam after the training.</p>	Col. Prof. Nikolay Nichev, PhD
<b>Signals and Systems</b>	30	3	<p>The course contains the following topics:</p> <ul style="list-style-type: none"> <li>• Introduction to signals</li> <li>• Communication devices</li> <li>• Communication processes. The course aims to give the basic terms in</li> </ul>	Asst. Prof. Eng. Antonio Yordanov

			electronics and communication technologies.	
<b>Common Security and Defence Policy</b>	30	2	<p><b>Goal of the Module</b> Standardized familiarization of officer students with CSDP with a view to Europeanisation of officer training</p> <p><b>Knowledge</b> Europeanisation of officer training</p> <ul style="list-style-type: none"> <li>• European Security Strategy</li> <li>• History</li> <li>• Institutions</li> <li>• CFSP &amp; CSDP</li> <li>• Civilian and military crisis management</li> <li>• Capability development</li> <li>• Human rights</li> <li>• EU missions and operations</li> <li>• Comprehensive approach</li> <li>• EU and partners: UN, NATO,</li> <li>• OSCE, AU, ASEAN</li> <li>• Regional aspects and neighbourhood policy</li> <li>• Legal aspects</li> <li>• Gender issues</li> <li>• The way ahead (future perspectives)</li> </ul> <p><b>Skills</b> Ability to apply CSDP-knowledge and develop creative solutions within a specialized CSDP-field to solve complex or unpredictable problems.</p> <p><b>Competences</b></p> <ul style="list-style-type: none"> <li>• Is capable of making decisions during syndicate work.</li> <li>• Solves problems tasked during the CSDP-Module.</li> <li>• Performs activities and roles specific to the syndicate work on different responsibilities.</li> <li>• Is able to deal with people in learning and working communities</li> </ul>	Senior teacher Vanya Katsarska, PhD
<b>Cyber Warfare</b>	30	2	<p><b>Goal of the Module</b></p> <ul style="list-style-type: none"> <li>• To familiarize students with the basic aspects of the cyber war</li> <li>• To help students understand the threats and the targets in the connected world</li> <li>• To analyze the offensive and defensive cyberwarfare techniques</li> <li>• To describe the cyber environment as a military domain</li> </ul>	Assoc. Prof. Georgi Stanchev, PhD

			<ul style="list-style-type: none"> <li>• To present the cyber capabilities by nation-states</li> <li>• To discuss the legal, ethical and political aspects of cyber warfare</li> <li>• To outline the future trends in cyber warfare</li> </ul> <p><b>Knowledge</b></p> <ul style="list-style-type: none"> <li>• Understands the Cyber Threat Landscape</li> <li>• Identifies the High-Value Assets of the Military Organizations</li> <li>• Recognizes an Advanced Cyber Attack Attempt</li> <li>• Describes Issues Regarding Privacy, Anonymity and Security</li> </ul> <p><b>Skills</b></p> <ul style="list-style-type: none"> <li>• Identifies and Explains the Various Types of Vulnerabilities in a Cyber Ecosystem</li> <li>• Analyses a Cyber Attack and Identify Effective Countermeasures</li> <li>• Uses Software Tools to Attack or/and Defend Computer Systems</li> <li>• Investigates Actively Security Incidents</li> </ul> <p><b>Responsibility &amp;Autonomy</b></p> <ul style="list-style-type: none"> <li>• Applies the Technologies Used to Actively Defend Systems and Networks</li> <li>• Identifies How Threat Actors Conduct Activities in Cyberspace</li> <li>• Identifies the Emerging Trends in Cyber Warfare</li> <li>• Understands the Ethical, Legal, Military and Political Aspects of Cyber Warfare</li> </ul>	
<b>Military Ethics</b>	30	2	<p><b>Goal of the Module</b></p> <ul style="list-style-type: none"> <li>• Understand how moral philosophy and ethical reasoning are related to the military profession</li> <li>• Discuss the concept of a culture of war and the connection between ethics, law, politics, and religion</li> <li>• Identify and explain the relationship between different theoretical approaches employed in the ethics of war and the use of force</li> <li>• Explore the viability of the 'just war' framework for justifying actual wars and for regulating the conduct of hostilities</li> <li>• Discuss ethical dilemmas present in different forms of war (inter-state war, insurgency/counter-insurgency, terrorism/counter-terrorism, pre-emptive/preventive)</li> </ul> <p><b>Knowledge</b></p> <ul style="list-style-type: none"> <li>• Demonstrate knowledge and understanding of basic forms of moral reasoning and of diverse ethical conceptions of war</li> <li>• Engage with and analyze the major traditions of thought pertaining to justice and warfare, i.e., realism, pacifism, and just war</li> <li>• Discuss the continuing utility (or lack thereof) of the just war tradition in the context of the War on Terror and contemporary conflict</li> <li>• Explore consequentialist and deontological justifications for actions before/during/after war</li> </ul>	Assoc. Prof. Philip Philipov, PhD

			<p><b>Skills</b></p> <ul style="list-style-type: none"> <li>• Analyze and evaluate moral problems arising from the conduct of hostilities</li> <li>• Be familiar with decision making during critical situations in an ethical and legal manner and know how to confront life-and-death ethical dilemmas that might arise during war and military operations</li> <li>• Understand the role of specific parameters in military dynamics, such as ethical and cultural values, military discipline, and the reasoning behind pre-emption/prevention/dissuasion strategies</li> <li>• Work independently and unsupervised on complex tasks displaying effective time management</li> </ul> <p><b>Responsibility &amp; Autonomy</b></p> <ul style="list-style-type: none"> <li>• Think cogently, critically and rigorously with particular reference to issues of war, terrorism, and peace</li> <li>• Demonstrates empirical knowledge and ethical awareness of a range of military practices and technologies (AI, security robotics, and use of drones)</li> <li>• Enables how to think, decide, and plan for operational/tactical action in an ethical and legal manner</li> <li>• Being able to promote the respect of Law of Armed Conflict, International Humanitarian Law and the Rules of Engagement</li> </ul>	
<b>Space Applications for Security and Defense</b>	30	2	<p><b>Goal of the Module</b></p> <ul style="list-style-type: none"> <li>• To demonstrate the basic concepts associated with space issues.</li> <li>• To introduce students to the main functions of space systems.</li> <li>• To present the space programs needed in EU capabilities to carry out crisis management operations.</li> <li>• To provide the CSDP space needs and the shortfalls from lessons learnt in relevant missions and operations</li> </ul> <p><b>Knowledge</b></p> <ul style="list-style-type: none"> <li>• Knows the basic concepts related to Space activities.</li> <li>• Describe the role of space assets in security and defense.</li> </ul> <p><b>Skills</b></p> <ul style="list-style-type: none"> <li>• Can demonstrate an informed view on space issues.</li> <li>• Is capable of analyzing central ideas regarding the use of space systems in the CSDP domain.</li> </ul> <p><b>Responsibility &amp; Autonomy</b></p> <ul style="list-style-type: none"> <li>• Is able to use space based command, control, information, and communication technologies.</li> <li>• Is able to deal with different people in promoting the synergies between all actors in order to respond in a comprehensive way in the CSDP domain.</li> </ul>	Sr Lt Asst. Prof. Milen Simeonov

			<ul style="list-style-type: none"> <li>• Can support the argument that the CSDP needs have to be taken into account on the EU Space Policy and its associated programs</li> </ul>	
<b>Aviation Meteorology</b>	30	2	<p><b>Goal of the Module</b></p> <ul style="list-style-type: none"> <li>• To acquire specialized terminology in the field of aviation meteorology.</li> <li>• To inform the students and develop their ability to understand the mechanisms by which meteorological factors influence flight activities.</li> <li>• To acquire knowledge on meteorological phenomena and hazards that affect flight activities.</li> <li>• Learning of a specialized language, coherent and concretely, able to ensure the achievement of a level of scientific training in accordance with the current requirements in the field.</li> </ul> <p><b>Knowledge</b></p> <ul style="list-style-type: none"> <li>• General information of aviation meteorology and definitions specific to this field.</li> <li>• Classification of meteorological information.</li> <li>• Understanding the observations on the weather.</li> <li>• Associate weather patterns with phenomena which are known to influence flight activity.</li> <li>• Possess knowledge about atmospheric phenomena, the interaction between them and the possible danger and impact on the flight safety.</li> <li>• Students acquire necessary information in special codes used in the messages transmitted in aeronautical meteorology.</li> </ul> <p><b>Skills</b></p> <ul style="list-style-type: none"> <li>• The ability to understand the meteorological information that affects flights.</li> <li>• The ability to encode / decode meteorological information, according to the special codes used in the messages transmitted in aeronautical meteorology (METAR/SPECI, TAF, SIGMET)</li> <li>• The ability to identify the influence of meteorological factors on the flight activities, supported by aeronautical meteorology messages, weather charts, and satellite and radar imagery.</li> <li>• Appropriate decision-making skills for organizing and planning a flight</li> </ul>	Major Jordan Katsarov
<b>Flight and Ground Safety</b>	30	2	<p><b>Goal of the Module</b></p> <ul style="list-style-type: none"> <li>• To provide students with the tools to understand and develop and use flight and ground safety management systems.</li> <li>• To enable students to understand, comply and compel others to a safety based culture.</li> <li>• To enhance the students' awareness to the importance of workplace safety and best practices in aviation.</li> </ul> <p><b>Knowledge</b></p>	Asst. Prof. Danail Damyanov



			<ul style="list-style-type: none"> <li>• Flight and ground safety management systems;</li> <li>• The importance of human factors in accident prevention and flight and ground safety</li> </ul> <p><b>Skills</b></p> <ul style="list-style-type: none"> <li>• Be able to use flight and ground management systems;</li> <li>• Be able to understand the role of human factors in flight and ground safety.</li> </ul> <p><b>Responsibility &amp; Autonomy</b></p> <ul style="list-style-type: none"> <li>• Comply and compel other to adhere to a flight and ground safety culture;</li> <li>• Autonomously promote workplace safety and best practices in aviation.</li> </ul>	
<b>Aviation English</b>	60	4	<p><b>Goal of the Module</b></p> <ul style="list-style-type: none"> <li>• To teach aviation terminology in English;</li> <li>• To enhance communication skills in English in professional environments;</li> <li>• To raise awareness related to the standardized language proficiency required by the ICAO;</li> <li>• To raise awareness related to the use of Aviation English by non-native professionals;</li> <li>• To assure a better functionality of future aviation officers in international contexts.</li> </ul> <p><b>Knowledge</b></p> <ul style="list-style-type: none"> <li>• aviation-related terms;</li> <li>• routine radio-telephony vocabulary and procedures;</li> <li>• aviation Jargon (acronyms and abbreviations);</li> <li>• correct pronunciation</li> </ul> <p><b>Skills</b></p> <ul style="list-style-type: none"> <li>• development of listening skills;</li> <li>• development of speaking skills;</li> <li>• correct use of standardized radio-telephony communication;</li> <li>• strategies to confirm, clarify and repair communication breakdowns</li> </ul> <p><b>Responsibility &amp; Autonomy</b></p> <ul style="list-style-type: none"> <li>• communicating successfully via radio stations;</li> <li>• using clear pronunciation, structures, vocabulary, fluency, comprehension and interactions;</li> <li>• using language functions in aviation – issuing orders and advice, making requests, asking for permission, providing information about past, current or future situations, describing intentions, describing states and ongoing processes, expressing necessity, capacity, and possibility, resolving conflicts, paraphrasing and clearing ambiguity.</li> <li>• awareness of miscommunication hazards.</li> </ul>	An English teacher from the Language department
<b>Aerial Navigation</b>	30	2	<p><b>Goal of the Module</b></p> <ul style="list-style-type: none"> <li>– To give basic knowledge to students about navigation systems and radars.</li> </ul>	Major Asst. Prof. Velislava Peneva

			<ul style="list-style-type: none"> <li>- To develop skills for calculations relating to radio navigation systems and radars.</li> <li>- To build competences for analyzing and assessing of navigation information.</li> </ul> <p><b>Knowledge</b></p> <ul style="list-style-type: none"> <li>- The navigation parameters</li> <li>- Fundamental principles of different radio navigation systems</li> <li>- Principles and applications of radio navigation systems during flight and air traffic management</li> <li>- Impact of operating conditions on radio navigation systems</li> <li>- The basic principles and parameters of radars</li> </ul> <p><b>Skills</b></p> <ul style="list-style-type: none"> <li>- Work out theoretical performance calculations relating to radio navigation systems</li> <li>- Work out theoretical performance calculations relating to radars</li> <li>- Assess potential decreasing in performances of radio systems related changes of conditions or some parameters</li> </ul> <p><b>Responsibility &amp; Autonomy</b></p> <ul style="list-style-type: none"> <li>- Adapting the information to changing environment and changed parameters of systems.</li> <li>- Assessing situation, using data from navigation systems and/or radars</li> <li>- Analyzing information from navigation systems and radars</li> </ul>	
<b>Avionics Systems</b>	60	4	<p><b>Goal of the Module</b></p> <ul style="list-style-type: none"> <li>• To present the concept of avionics systems architecture in modern aircraft;</li> <li>• To present the operating principles of the main avionics systems, namely Communications, Navigation and Surveillance, including military's exclusive use systems</li> <li>• To present the principles of automatic flight control, flight deck displays and air traffic management</li> <li>• To present specific topics on electronic warfare</li> </ul> <p><b>Knowledge</b></p> <ul style="list-style-type: none"> <li>• Understands and identifies different avionic system's architectures</li> <li>• Understands the operating principles of the main avionics systems, namely Communications, Navigation and Surveillance, including military exclusive use systems</li> <li>• Understands the principles of automatic flight control, flight deck displays and air traffic management</li> <li>• Understands the purpose and working principles of different electronic warfare applications</li> </ul> <p><b>Skills</b></p> <ul style="list-style-type: none"> <li>• Identifies different avionic systems' architectures, and enunciates their main</li> </ul>	Col. Prof. Marin Marinov, PhD

			<p>characteristics</p> <ul style="list-style-type: none"> <li>• Identifies the main components of a communications system and describes the different forms of free space radio propagation</li> <li>• Understands the main parameters of communications system's components and is able to perform simple computations</li> <li>• Identifies different analogue and digital communications modulations and understands how their main working principles are implemented in an actual avionics system</li> <li>• Is able to describe the working principles of ground and space-based navigation aids, as well as instrument landing systems;</li> <li>• Identifies different types of radar systems, enunciate their working principles and describes their typical applications in avionics systems</li> <li>• Is able to perform simple computations for different radar systems' applications</li> <li>• Understands the working principles of air-data, magnetic, inertial and electro-optical sensors, identifies different technological implementation solutions for each system and enunciates their main characteristics</li> <li>• Enunciates the principles of automatic flight control, identifies its main elements and describes the principles of navigation</li> <li>• Understands the technological evolution of flight deck displays and identifies different display systems architectures</li> <li>• Describes the workings and requirements of flight data recorders and emergency beacons</li> <li>• Describes the main principles of air traffic management and future trends on this subject</li> <li>• Enunciates the main principles of electronic warfare systems</li> </ul> <p><b>Responsibility &amp; Autonomy</b></p> <ul style="list-style-type: none"> <li>• Own the technical knowledge on avionics systems of military aircrafts, that contributes to enhance student's performance as future air force pilots</li> </ul>	
<b>Propulsion systems</b>	30	2	<p><b>Goal of the Module</b></p> <ul style="list-style-type: none"> <li>• To broaden the knowledge on Propulsion Systems for Aircraft, especially for Air Breathing Internal Combustion and Gas Turbine Engines</li> <li>• To gain sufficient insight to comprehend the working principles of the engine types mostly used in aviation</li> <li>• To acquire knowledge and understand the thermodynamic principles of air breathing combustion engines</li> <li>• To identify different types of engines, engine components, accessories used in aviation</li> </ul>	Major Chief assistant Nikolay Kanchev, PhD

• To engage in a multi-national course where all students are expected to bring their knowledge and contribution to the lectures and teaching sessions

**Knowledge**

- To foster the interest of young cadets in the topics of propulsion, fluid dynamics and thermodynamics;
- To gain technical knowledge on Internal Combustion engine and Gas Turbine engine mechanical and thermodynamic principles;
- To acquire in-depth knowledge on the main factors affecting powerplant design and selection for different types of aircraft;
- To understand and identify the main pros and cons on each engine type and configuration, depending on the type of application;

**Skills**

**Technical**

- To understand and apprehend the working principles of internal combustion and jet/turbo engines;
- To identify different types of engines, engine components and accessories;
- To identify the main technical design variables that influence the selection of a power plant design feature and power plant selection for a specific type of aircraft;
- To understand the main limitations of current engines and propellers;

**Transversal**

- Develop a multi-cultural awareness;
- Improve team spirit, in heterogeneous, multi-cultural environment;
- To improve English language level and skills;
- To develop communication skills

**Responsibility & Autonomy**

- To considerably increase independence and autonomy in solving problems;
- To grow and foster transnational cooperation spirit, engaging in multinational classes and projects;
- To develop the student's sense of responsibility and understanding of foreign nation's AFA's rules, culture and history