

LoD-01/02/08

4th June 25, Constanta



Prof. Tom SIMOENS
Assoc. Prof. Nikolaos (Nikos) KARADIMAS
CAPT (N) Prof. Nedko DIMITROV

Review results - INS module 1

Country	Institution	Course title:	ECTS
ITA	Naval Academy	NAVAL SENSORS	2
Service Navy	Minimum Qualification for Lecturers PhD degree in Communications Engineering		
Languages English	English: Common European Framework of Reference for Languages (CEFR) Level B2 or NATO STANAG Level 2+.		
SQF MILOF	Competence area - Military technician Learning area - Employment of weapon/ operating platform/ systems Organisation level – Single Arm/Branch		
Prerequisites for international participants: English: Common European Framework of Reference for Languages (CEFR) Level B1 or NATO STANAG Level 2. Elements of real, complex and vector calculus, <u>electromagnetics</u> and wave physics, and basic circuit theory.		Goals of the Module: • Explain technical specifications and design of relevant naval sensors • Demonstrate the effective exploitation of the relevant naval sensors with due consideration of safety measures	
Learning outcomes	Knowledge	• Perform review of the characteristics and possibilities of the naval sensors (Navigational radar, Early Warning radar, CW radar, <u>Multistatic</u> radar, Over the Horizon radar, Phased Array radar, EW systems, Electro-optical systems) • Formulate basics of naval sensors management (military radar systems for detecting, tracking and locking on targets, EW systems, Electro-optical systems) as parts of integrated combat information systems in the sustainment realm of operations	
	Skills	• Recognize the constructive type of equipment and integrated system by various specific criteria. • Deal with integrated combat information systems using the data provided by naval sensors.	
	Responsibility and Autonomy	• Make correct tactical decisions exploiting information from different systems. • Manage on-board naval sensors in different warfare and scenarios.	
Verification of learning outcomes			

Observation: - Class time is primarily assigned to lecturing. Educational materials such as slides or videos may be used in order to illustrate some of the basic points in the lecture in order to encourage discussions and debates about focus points. - Methods of teaching/lecturing are: lecturing, heuristic conversation, explanation, discussions/debates, case study, <u>simulation</u> of situations. Tests: Final exam (written test).
Evaluation: The final exam will consist in examination based on a multiple-choice test and applications of the taught subject.

Module details		
Main Topic	Recommended WH	Details
Pulsed radars	4	- Principles and performances 2D, 3D, OTH, Phased Array radar overview - E.M. propagation effects - Block diagram - Clutter
CW radars	1	- Principles and performances - Block diagram - FM-CW radar
Secondary radars	2	- SIF modes - S mode
Fire control radars	1	- Target acquisition - Angular tracking techniques - Range tracking technique
Electronic warfare (EW)	1	- Terminology and principles of operation - Doctrine overview and outlooks
Passive EW	3	- Operational parameters - Interceptors and different types of receivers - Goniometric techniques
Active EW	2	- Operational parameters - Jamming techniques - Deception techniques

Review results - INS module 2

Country GR	Institution HNA	Course title: NAVAL ELECTRONICS	ECTS 2
---------------	--------------------	------------------------------------	-----------

Service Navy	Minimum Qualification for Lecturers	
Languages English	• PhD degree in Electrical Engineering • English: Common European Framework of Reference for Languages (CEFR) Level B1 or NATO STANAG Level 2.	
SQF MILOF	Competence area - Military technician Learning area - Employment of weapon/ operating platform/ systems Organisation level - Single Arm/Branch	
Prerequisites for international participants: • English: Common European Framework of Reference for Languages (CEFR) Level B1 or NATO STANAG Level 2. • Minimal knowledge of electronic physics		Goal of the Module: • Understand the principles of operation and design of discrete electronic circuits • Familiarize with the concepts, the techniques, the visualization and measurement methods that the electric signals undergo before and after their processing by the electronic circuit • Acquire the necessary knowledge on basic telecommunications electronic circuits (eg amplifiers, filters, oscillators, demodulators), explain and correct the undesirable phenomena during signal processing

Learning outcomes	Knowledge	• Formulate basics of Message, Electronic Signal, EM signal, Analog Electronic Components, Circuits and Systems, Basic RF Telecommunication Circuits • Describe and distinguish the operating principles of the on-board electronic equipment
	Skills	• Interpret the physic phenomena of electronic devices functionalities. • Explain measurable parameters, process measurements and compare theoretical, experimental and simulation results.
	Responsibility and Autonomy	• Design and analyse electronic circuits making use of different types of passive and active elements. • Recognize and manage the electronic components of the electronic circuits.

Verification of learning outcomes
• Observation: ○ The theoretical part will be uploaded as prerequisite on eclass.hna.gr platform, as well as simulation programs except ADS for which a special license will be given. • Tests: ○ The assessment strategy is based on pre-post assessment method and a personal interview in laboratory premises. • Evaluation: ○ The observation and the practical exercises in the lab result in the overall grading of the module. Qualified individual feedback will be provided to participants.

Module details		
Main Topic	Recommended WH	Details
Electronic Signals and Components	5	• Electronic Signals (<u>Analog</u>, Digital) • <u>Analog</u> Electronic Signal (Fourier Transform) • Electronic Components (Laplace Transform) • Definition of dB, <u>dBm</u>, <u>dBW</u> • Time Domain and Frequency Domain • Spectrum
Passive Filters	3	• Classification, Transfer Function • Slope in the cut-off region • Integrating and Differentiating Circuits • Design and Analysis of a Low-Pass, High-Pass, Band-Pass, Band-Rejecting Filter • Filters of Higher Order
Laboratory 1	2	• Passive Filters construction and measures • Simulation
Power Supplies	4	• Semiconductor diodes • <u>Zener</u> • Rectifiers, Simple – Full rectification, • Smoothing circuits (Filters C, Π and L) • Stabilization
Laboratory 2	2	• Power Supplier design, construction, measurement and

Review results - INS module 3

Country BG	Institution NVNA	Course title: Naval Cyber Threats	ECTS 3
----------------------	----------------------------	---	------------------

Service Navy	Minimum Qualification for Lecturers		
Languages English	• PhD degree in Cyber Security • English: Common European Framework of Reference for Languages (CEFR) Level B1 or NATO STANAG Level 2.		
SQF MILOF	Competence area - Military technician Learning area - C4ISR systems & cyber defence Organisation level – Single Arm/Branch		
Prerequisites for international participants:		Goals of the Module:	
• English: Common European Framework of Reference for Languages (CEFR) Level B1 or NATO STANAG Level 2. • Computer network basic knowledge		• To identify cyber security risks and cyber threats. • To defend system's vulnerability against possible cyber-attack. • To understand the complex cyber security basic principles of cyber security strategies in maritime domain.	

Learning outcomes	Knowledge	• Formulate basics of information security, security of communications and data Encryption, Systems evaluation techniques, Vulnerability and methodologies of attack, the complex cyber security. • Perform review of principles of cyber security strategies in maritime domain.
	Skills	• Analyze threats for confidentiality, integrity and availability in IT and OT systems, risks for IT/OT networks and common applications. • Improve the personal and organizational cyber security identifying the task and tools.
	Responsibility and autonomy	• Evaluate Risk Assessments and VA&PT reports. • Deal with cyber threats.

Verification of learning outcomes

- **Observation:**
 - The course is consisted of theoretical classes followed by practice on cyber security laboratory.
- **Tests:**
 - The module learning outcomes verification concept is based on assessment of trainee's knowledge, skills, and competences revealed after personal tasking during training process supported by fictitious scenarios.
- **Evaluation:**
 - The final evaluation of trainees is made on basis of observation of results and practical tests during the final stage of the presented module. Certificate of attendance and individual feedback is provided to participants.

Module details		
Main Topic	Recommended WH	Details
Cyber security - characteristics and risk management in the Maritime Domain	8	• Cyber security characteristics • IT and OT systems • Development of protection plans and procedures - Roles, responsibilities, and tasks of maritime institutions.
The threats identification process	4	• Types of cyber threats • A cyber incident – definition and stages • Let's measure a cyber-threat.
Identification of vulnerabilities and risk management	4	• Typical vulnerable systems • Presenting a "Likelihood" as a projection of threat over vulnerability. • Assessment the Impact over critical vulnerabilities. • Risk assessment.
Dimensions of IT/OT convergence in cyber protection of the Maritime domain	4	• Common tasks and design of IT/OT systems. • The integration of information technology systems with operational technology systems onboard ships. • IT/OT convergence in Maritime Transportation System. • Development of protective measures.

Review results - INS module 4

Country RO	Institution RNA	Course title OCEANOGRAPHY	ECTS 2
---------------	--------------------	------------------------------	-----------

Service Navy	Minimum Qualification for Lecturers - o Bachelor/ master degree in Nautical Sciences; - o English: Common European Framework of Reference for Languages (CEFR) Level B1 or NATO STANAG Level 2+.	
Languages English	Competence area - Military technician Learning area - Employment of weapon/ operating platform/ systems Organisation level – Single Arm/Branch	
SQF MILOF		
Prerequisites for international participants: - o English: Common European Framework of Reference for Languages (CEFR) Level B1 or NATO STANAG Level 2. - o Minimal knowledge of the principles of fluid mechanics and physics.		
Goals of the Module: • correctly use of oceanography equipment on board the ship; • identify oceanographic features and phenomenon represented on prognosis charts; • identify and prevent dangerous phenomenon for the ship, sensors and crew; • understand acoustic parameters and propagation loss mechanism of sound waves; • optimize sonar performance accordingly to the sound speed profile; • planning sea routes in accordance with METOC information to prevent shipping accidents and other situations affecting safety of mission; • use NATO METOC documents and oceanographic information;		

Learning outcomes	Knowledge	• Basic knowledge of the main topics of general and military oceanography. • Understand the Oceanographic Weather Organization (METOC) within NATO.
	Skills	• Enhance capabilities in navigation, <u>hydrography</u> and ship manoeuvring at the operational level; • Planning route, executing navigational watch in safe conditions and ship management in order to ensure a good seaworthiness of the ship, even the ship is alone or in a task group or task force.

Responsibility and autonomy	• Collect and manipulate oceanic, atmospheric, and geospatial data sets and rigorously analyse and interpret observational data, in situ experimental data, and model results. • Analyse and interpret flow of operational METOC data, in naval military operations.
-----------------------------	---

Verification of learning outcomes	
o Observation:	- o Class time is primarily assigned to lecturing. Different materials from the supplementary readings will be used in order to illustrate some of the basic points in the lecture as scheduled for that day, in order to encourage discussions and debates about these focus points. - o Methods of teaching/lecturing are: lecturing, heuristic conversation, explanation, discussions/debates, case study, problem-solving, simulation of situations, methods of group work, individual and frontal methods for developing critical thinking, self-study of references.
o Tests:	a. The ongoing assessment during the seminars and problem-solving tasks will count 50%, as the average of homework evaluation during the seminars. b. Final exam (written test): 50%.
o Evaluation:	o The final exam will consist in: Examination based on a multiple-choice test and applications of the taught subject. The student should pass the final assessment with minimum grade of 5.

Module details		
Main Topic	Recom- mended WH	Details
Introduction to military Oceanography	4	<i>Lecture/seminar 4/2 hours:</i> The object of Oceanography. History of military oceanography. Physical-chemical properties of the sea water. General marine topography. Oceanic data, instruments and collection methods.
Dynamics of marine waters.	6	<i>Lecture/seminar 4/2 hours:</i> <i>Waves:</i> wind waves, swell and other forms of movement of marine waters and their influence on navigation. <i>Ocean currents flow,</i> Characteristics of main ocean currents influence against the navigation.

Review results - INS module 5

Country GR	Institution HNA	Course title: NAVAL COMMUNICATIONS	ECTS 2
---------------	--------------------	---------------------------------------	-----------

Service Navy	Minimum Qualification for Lecturers		
Languages English	• PhD degree in Electrical Engineering • English: Common European Framework of Reference for Languages (CEFR) Level B1 or NATO STANAG Level 2.		
SQF MILOF	Competence area - Military technician Learning area - Employment of weapon/ operating platform/ systems Organisation level – Single Arm/Branch		
Prerequisites for international participants:		Goal of the Module:	
• English: Common European Framework of Reference for Languages (CEFR) Level B1 or NATO STANAG Level 2. • Elements of real, complex and vector calculus, electromagnetics and wave physics, and basic circuit theory.		• Explain technical specifications of relevant naval communications • Demonstrate the effective exploitation of the relevant naval communications with due consideration of safety measures	

Learning outcomes	Knowledge	• Perform review of the characteristics and possibilities of the naval communications (spectral concepts and techniques, analog and digital modulation, basic propagation mechanisms and characteristics, antennas and wireless links, satellite links, GMDSS). • Formulate basics of naval communications management in the sustainment realm of operations.
	Skills	• Organize a frequency plan taking into consideration the skills and restrictions of naval training and appropriate propagation techniques for each use case. • Deal with terrestrial and satellite communication systems and the associated multiple access techniques to the satellite resource; GMDSS systems.

Responsibility and Autonomy	• Make correct tactical decisions developing the naval force communication plan. • Manage on-board communications in different warfare and scenarios.
-----------------------------	--

Verification of learning outcomes	
• Observation:	◦ The theoretical part will be uploaded as prerequisite on eClass platform, as well as simulation programs in GNU Octave.
• Tests:	◦ The assessment strategy is based on pre-post assessment method and a personal interview in laboratory premises.
• Evaluation:	◦ The observation and the practical exercises in the lab result in the overall grading of the module. Qualified individual feedback will be provided to participants.



Module details		
Main Topic	Recommended WH	Details
Spectral analysis and discretization of signals	4	• Fourier transform and related techniques (convolution, FFT). Application to LTI systems. • A/D conversion – sampling and quantization; The sampling theorem. • Frequency bands and spectrum allocation; Classification of emissions
Laboratory exercise 1	2	• Spectrum analyzer: principle of operation and use • Spectral analysis of RF signals and characterization of frequency generators
Fundamentals of analog and digital transmission	7	• AM modulation (DSB, DSBSC, SSB) • Frequency (up-/down)conversion and the superheterodyne principle • FM modulation; FM spectrum and the Carson rule • Digital networks; Protocol hierarchies

Review results - INS module 6

Country	Institution	Course title:	ECTS
ITA	Naval Academy	NAVAL POWER PLANTS	2
Service Navy	Minimum Qualification for Lecturers		
Languages English	• PhD degree in Naval Engineering • English: Common European Framework of Reference for Language (CEFR) Level B2 or NATO STANAG Level 2+.		
SQF MILOF	Competence area - Military technician Learning area - Employment of weapon/ operating platform/ systems Organisation level – Single Arm/Branch		
Prerequisites for international participants: • English: Common European Framework of Reference for Languages (CEFR) Level B1 or NATO STANAG Level 2.		Goals of the Module: • Explain technical specifications and design of the marine power plant and propulsion system • Demonstrate the effective exploitation of the relevant marine power plant and propulsion system with due consideration of safety measures	
Learning outcomes	Knowledge	• Formulate basics of Fluid and Gas Dynamics. • Perform review of the different types of engines and thrusters, elements and performance of marine propulsion systems, system pipeline and equipment necessary for safe navigation.	
	Skills	• Analyze ship propulsion systems on different types of ships and calculate engines fuel consumption per hour for different speeds. • Deal with different types of engines, propellers (F.P. – C.P.P.).	
	Responsibility and autonomy	• Manage propulsion plants in different scenarios. • Manage propulsion plants to obtain the best performance in relation with the mission.	
Verification of learning outcomes			
• Observation: ○ Class time is primarily assigned to lecturing. Educational materials such as slides or videos may be used in order to illustrate some of the basic points in the lecture in order to encourage discussions and debates about focus points. ○ Methods of teaching/lecturing are: lecturing, heuristic conversation, explanation, discussions/debates, case study, <u>simulation</u> of situations. • Tests: - Final exam (written test). • Evaluation:			

○ The final exam will consist in examination based on a multiple-choice test and applications of the taught subject.

Module details		
Main Topic	Reco- mended WH	Details
Ship propulsion systems	6	• Layout, Engines, Gears, Bearings, Seals, Shafts, Propeller, Diesel- Electric systems, Auxiliary systems • Terminology and definitions for main ship propulsion systems
Thermodynamics of combustion engines	6	• Ideal Thermodynamic Cycles and Actual Cycles (<u>Rankine</u>, <u>Brayton</u>, Diesel) • Calculation and measurement methods for engine power output, fuel consumption, heat exchange, temperatures, pressures, flows, speed, exhaust gas composition
Combined Propulsion Plants	6	• General overview: Gas turbines. Electric motors. 2 stroke and 4 stroke Diesel engines. Nomenclature. Layout. • Redundancy and down-graded conduct
Safety and <u>Environmental</u>	5	• Safety in Engine Room (fire hazard, crankcase explosion) • Marine fuels and emissions • Exhaust emissions • Energy Efficiency
Final evaluation	2	Pre-Post Assessment evaluation
Total lecture WH	23	

List of Abbreviations:

ITA.....	Italy
CEFR.....	Common European Framework of Reference for Languages
B2.....	Common Reference Levels
ECTS.....	European Credit Transfer and Accumulation System
NATO.....	North Atlantic Treaty Organisation
STANAG.....	Standardization Agreement

Review results - INS module 7

Country GR	Institution HNA	Course title: Computer Networks	ECTS 2
---------------	--------------------	------------------------------------	-----------

Service Navy	Minimum Qualification for Lecturers - PhD degree in Communications/computer technic - English: Common European Framework of Reference for Languages (CEFR) Level B1 or NATO STANAG Level 2.		
Languages English			
SQF MILOF	Competence area - Military technician Learning area - Employment of weapon/ operating platform/ systems Organisation level – Single Arm/Branch		
Prerequisites for international participants: - English: Common European Framework of Reference for Languages (CEFR) Level B1 or NATO STANAG Level 2. - Minimal knowledge of electronic physics and communications		Goals of the Module: - Understand the principles of operation and design of computer networks - Familiarize with the concepts, the techniques and the protocols of information management in the networks - Acquire the necessary knowledge on basic computer networks used in the naval environment	

Learning outcomes	Knowledge	- Formulate basics of computer networks - Describe and distinguish the operating principles of the on-board computer networks
	Skills	- Interpret the physic phenomena of computer networks functionalities. - Conduct software set up checks for functionality control.
	Responsibility and Autonomy	- Operate the specific type of computer networks - Diagnose functionality of the computer networks as an operator.

Verification of learning outcomes

Observation: - The theoretical part will be uploaded as prerequisite on eclass.hna.gr platform, as well as simulation programs except ADS for which a special license will be given. Tests: - The assessment strategy is based on pre-post assessment method and a personal interview in laboratory premises. Evaluation: - The observation and the practical exercises in the lab result in the overall grading of the module. Qualified individual feedback will be provided to participants.

Module details		
*Main Topic	Recommended WH	Details
Computer networks Introduction		- The OSI reference model - The TCP/IP implementation - Protocols and services
Introduction to telephone networks		- PSTN - DSL - Circuit switching - Message switching - Packet switching - Multiplexing
The TCP/IP Stack		- The host-to-network layer - The MAC sublayer - The Internet layer - The transport layer - The application layer
Ethernet		- LAN/MAN/WAN - Cabling
Internet protocols		- ICMP - ARP - DHCP - DNS - TCP vs UDP

Review results - INS module 8

Country RO	Institution RNA	Course title NAVAL ARCHITECTURE	ECTS 3
---------------	--------------------	------------------------------------	-----------

Service Navy	Minimum Qualification for Lecturers		
Languages English	• Bachelor/ master degree in Nautical Sciences or Naval Electromechanics; • Certified instructor in hydrodynamics or PhD degree holder; • English: Common European Framework of Reference for Languages (CEFR) Level B1 or NATO STANAG Level 2+.		
SQF MILOF	Competence area - Military technician Learning area - Employment of weapon/ operating platform/ systems Organisation level – Single Arm/Branch		
Prerequisites for international participants: • English: Common European Framework of Reference for Languages (CEFR) Level B1 or NATO STANAG Level 1. • Basic knowledge of IMO.		Goals of the Module: • Explain the concepts, models and methods underlying the assessment of the fundamental nautical qualities of the ship - buoyancy and transverse stability, as well as the parameters that influence these nautical qualities; • Knowledge of the main structural elements of the ship's hull as well as the nomenclature specific to shipbuilding, integrity and tightness of the hull • Demonstrate the effective actions in case of loss of buoyancy of the ship	

Learning outcomes	Knowledge	• Formulate basics of geometry, static and dynamics law of the ship • Perform review of shipbuilding elements and the main ship building methods.
	Skills	• Apply correctly the studied ship geometry, ship forms, ship's hull longitudinal strength to ship buoyancy, intact and damaged ship stability. • Understand and correctly apply seakeeping concept and principles, ship's documents and diagrams referring to hydrodynamics and ship stability.
	Responsibility and autonomy	• Solve the problems connected with the buoyancy, the stability, the resistance to advancement and the behaviour of the ship • Make correct tactical decisions on variation of stability caused by changing boarding cargo or flooding.

Verification of learning outcomes

- **Observation:**
 - The theoretical part will be discussed and included in solving stability problems conducted during the practical activities using the calculus and dedicated software (during the seminar and laboratory classes).
- **Tests:**
 - The final test will comprise problem solving exercises, to evaluate the course participants' knowledge and ability to solve buoyancy and transverse stability problems using the calculus and dedicated software.
- **Evaluation:**
 - The exam will consist in buoyancy and transverse stability exercises conducted on written test by using the calculus and dedicated software. The course participants will be asked to issue justified decisions based on provided scenario.
 - Qualified individual feedback will be provided to each participant.

Module details		
Main Topic	Recommended WH	Details
Introductory concepts	4	Short history of shipbuilding evolution, ship constructions rules and regulations, nautical features.
Ship geometry	2	Shipbuilding terminology, system of axis, main planes, main dimensions, ratios between dimensions, fineness ratio.
Buoyancy	4	Floating parameters, forces acting on the ship, equilibrium conditions, weight of the ship, coordinates of the center of gravity, groups of masses that make up the ship's displacement, calculation of hydrostatic elements of the hull and their variation curves with draft, straight hull diagram, calculation of inclined hulls, Bonjean diagram, trim chart, influence of embarkation and mass landing on board on the buoyancy of the ship, unit displacement (TPC), buoyancy reserve) Exercises for these topics.
	4	Mechanism of creation of the moment of stability, disturbing forces,

Review results - INS module 9

Country BG	Institution NVNA	Course title: MARITIME SECURITY	ECTS 2
---------------	---------------------	---	-----------

Service Navy	Minimum Qualification for Lecturers		
Languages English	- Naval experience as CO, XO or OOW - English: Common European Framework of Reference for Languages (CEFR) Level B1 or NATO STANAG Level 2.		
SQF MILOF	Competence area - International Security/Diplomacy Actor Learning area - International relations Organisation level - Single Arm/Branch		
Prerequisites for international participants: English: Common European Framework of Reference for Languages (CEFR) Level B1 or NATO STANAG Level 2.		Goal of the Module: - Analyze the maritime security dimensions of different theories in International relations - Highlight the role and place of maritime security elements by analyzing the context, rationale and key principles of employing various power levers within an integrated / whole of government approach to conflict and crisis - Evaluate the role of the military instrument at the national and international levels within the national and global maritime security environment.	

Learning outcomes	Knowledge	- Formulate basics of Security Environment in the Maritime Domain and of Naval Control and Guidance of Shipping. - Define aim and role of the EU maritime strategy.
	Skills	- To orient in dynamic maritime security environment obtaining common situational awareness. - Develop creative and efficient decision making in accordance with security and tactical factors in the Maritime domain.
	Responsibility and Autonomy	- To understand the course of action of the higher command level and takes the necessary initiative to contribute to its success. - To make decisions in an unpredictable operating naval environment

Verification of learning outcomes

- **Observation:**
 - The course is consisted of theoretical classes followed by practice on Full Mission Virtual Ship handling Simulator resembling battle ship navigational bridge.
- **Tests:**
 - The module learning outcomes verification concept is based on assessment of trainee's knowledge, skills, and competences revealed after personal tasking during training process supported by fictitious scenarios developed into a virtual environment.
- **Evaluation:**
 - The final evaluation of trainees is made on basis of observation of results and practical tests during the final stage of the presented module. Certificate of attendance and individual feedback is provided to participants.

Module details		
Main Topic	Recommended WH	Details
EU maritime strategy.	4	- Core principles - Objectives - overall security and peace, rule of law and freedom of navigation, external border control, maritime infrastructure, natural resources and environmental health, climate change preparedness - Actions - <u>international cooperation, maritime surveillance, capability development, research and innovation, risk management, education and training</u>
Command, Control and Communication on Tactical Level. Resource management.	2	- Theoretical basis of C3 principles - Implementation of C3 principles on Tactical Level in the Navy - Leadership and Adequate Management of Available Resources on board
NCAGS - Relationship with civilian shipping	2	- NCAGS Concept and Structure - NCAGS Information Formats
Protective Measures Against Threats to Merchant Ships	4	- Situational Awareness - Threat Warnings - General Threat Considerations

Review results - INS module 10

Country RO	Institution RNA	Course title NAVAL LEADERSHIP	ECTS 2
Service Navy	Minimum Qualification for Lecturers		
Languages English	• Bachelor/ master degree in Military <u>Sciences</u>/Navy <u>Specialities</u>; • Onboard experience; • Certified instructor in Leadership or PhD degree holder; • English: Common European Framework of Reference for Languages (CEFR) Level B1 or NATO STANAG Level 2+.		
SQF MILOF	Competence area - Leader and Decision-Maker Learning area – Military leadership; command Organisation level – Single Arm/Branch		
Prerequisites for international participants: • English: Common European Framework of Reference for Languages (CEFR) Level B1 or NATO STANAG Level 1.		Goals of the Module: • Explain the leader's role in building cohesive, disciplined teams / subunits / units • Analyse the context and conditions of assuming higher level command / deputizing command in uncertain / short term situations	
Learning outcomes	Knowledge	• Perform review of leadership theories and their application to military domain, mainly at tactical level • Describe and distinguish the theory and models of performance management of the military organization	
	Skills	• Carries out tasks in accordance with specified dynamic and complex security environments and allocates specific tasks to subordinate levels • Develop creative solutions within a specialised professional communication, both orally and in writing, including negotiation and mediation techniques, and the necessary terminologies allowing him/her to express opinion, arguments, orders and feedbacks in appropriate manner.	
	Responsibility and autonomy	• Take initiative and responsibility for decisions made in unpredictable or changing environments in the command of a subunit/unit at the tactical level. • Assumes responsibilities of the leader, based on modern means of Leadership in complex military operations;	
Verification of learning outcomes			

Observation: - The theoretical part will be discussed and included in case studies and solving problems conducted during the practical activities. Tests: - The final test will comprise brief theoretical aspects, case studies and exercises for testing the MDMP skills and abilities. Evaluation: - The exam will consist in brief theoretical aspects, case studies and exercises for testing the MDMP skills and abilities. - Qualified individual feedback will be provided to each participant.
--

Module details		
Main Topic	Recommended WH	Details
COURSE TOPICS		
Basics of Leadership.	2	Concepts and definitions: management-leadership, the role and competencies of the leader, interpersonal relationships, strategies for motivating and influencing subordinates
Defining the military leader – leaders' attributes.	4	Attributes of the military leader: person of character, presence and intellect. Navy leaders' attributes particularities.
Military Leadership Competences: Lead, Develop, Achieve.	4	Military Leadership Competences: Lead, Develop, Achieve.
Navy Leadership particularities onboard the ships.	2	Competences, onboard activities, onboard rules and regulations. Navy first line leadership principles.
Leadership at organizational and strategic levels.	2	Crew leadership principles. Organizational leadership onboard the ships. Lead, develop and achieve the mission in Navy operations.
Military Tactic and Strategic Leadership in the Naval Forces. Maritime Leadership competence.	2	Navy structures and Navy commanding chain. Rules of Engagement (RoA), LOAC rules at sea, UNCLOS rules and regulations. IMO rules and regulations. Maritime leadership competence

Review results- IAFS module 1

Country PR	Institution PrAFA	Module Description Propulsion Systems	ECTS 2
Service AF	Minimum Qualification for Lecturers - English: Common European Framework of Reference for Languages (CEFR) Level B2 or NATO STANAG Level 3. - Thorough knowledge in Propulsion Systems - Adequate knowledge in Thermodynamics and heat exchange - Adequate knowledge in Principles of Flight and Aerodynamics - Adequate knowledge in Military Aviation		
Language English			
SQF MILOF	- Competence area – Military technician - Learning area – Employment of weapon/ operating platform/ systems - Organisation level – Single Arm/Branch, Single service		

Prerequisites for international participants:		Goal of the Module
- English: Common European Framework of Reference for Languages (CEFR) Level B1 or NATO STANAG Level 2. - At least 1 year of national (military) higher education.		- To broaden the knowledge on Propulsion Systems for Aircraft, especially for Internal Combustion and Gas Turbine Engines - To gain sufficient insight to comprehend the working principles of the engine types mostly used in aviation - To identify different types of engines, engine components, accessories used in aviation - To engage in a multi-national course where all students bring their knowledge and contribution to the lectures and teaching sessions

Learning outcomes	Know-ledge	- Describe Internal Combustion engine and Gas Turbine engine, in both mechanical and their thermodynamic principles; - Explain in-depth the main factors affecting power plant design and selection for different types of aircraft.
	Skills	- Identify different types of engines, engine components and accessories; - Use technical English language in multi-cultural environment.
	Responsi-bility & Autonomy	Increase independence and autonomy in solving technical problems.

Verification of Learning Outcomes	
Observation	- The lecturer is responsible for the in-class observation of the Learning Outcomes detailed above, especially, on the items related with Knowledge and Skills; - The lecturer should promote excel in-class environment and enough ease

	and proximity with the students to allow them to participate, ask questions and share experiences; The lecturer will promote the participation of all students, equally, and assess their interest, responses and dedication;
Test	An exam will be provided at the end of the course. All questions will have a multiple answer decision sheet;
Assignment	If possible, a second evaluation method should be employed, whether if its continuous in-class assessment, laboratory sessions, student presentations, or other activities that serve the same purpose

Review results- IAFS module 2

Country PT	Institution PrAFA	Module Description Flight & Ground Safety	ECTS 2
Service AF	Minimum Qualification for Lecturers • Officers: - o English: Common European Framework of Reference for Languages (CEFR) Level B2 or NATO STANAG Level 3. - o Thorough knowledge in aviation safety management; - o Thorough knowledge in ground safety management, including weapons and explosives safety; - o Adequate knowledge in aircraft maintenance safety; - o Adequate knowledge in human factors in aviation safety; • Civilian Lecturers: - o English: Common European Framework of Reference for Languages (CEFR) Level B2 or NATO STANAG Level 3. - o Thorough knowledge in aviation safety management; - o Thorough knowledge in ground safety management, including weapons and explosives safety; - o Adequate knowledge in aircraft maintenance safety; - o Adequate knowledge in human factors in aviation safety;		
Language English			
SQF MILOF	• Competence area – Military technician • Learning area – Sustaining the force • Organisation level – Single Arm/Branch, Single service		
Prerequisites for international participants: • English: Common European Framework of Reference for Languages (CEFR) Level B1 or NATO STANAG Level 2. • At least 1 year of national (military) higher education.		Goal of the Module • To provide students with the tools to understand and develop and use flight and ground safety management systems. • To enable students to understand, comply and compel others to a safety based culture. • To enhance the students awareness to the importance of workplace safety and best practices in aviation.	
Learning outcomes	Know-ledge	• Describe principles and application of flight and ground safety management systems; • Explain the role of human factors in accident prevention and flight and ground safety.	
	Skills	• Use flight and ground management systems; • Assess the role of human factors in flight and ground safety.	
	Responsibility & Autonomy	• Comply and compel other to adhere to a flight and ground safety culture; • Autonomously promote workplace safety and best practices in aviation.	

Verification of Learning Outcomes	
Observation	• Posture / Class participation (continuous assessment)
Test	• Written test comprised of multiple choice and open answer questions.
Assignment	• Group assignment related to specific flight and ground safety topics.
Case study	• Open discussion of the real life examples.

Review results- IAFS module 3

Country GR	Institution HAFA	Module Description Cyber Warfare	ECTS 2.0
---------------	---------------------	-------------------------------------	-------------

Service AF	Minimum Qualification for Lecturers		
Language English	- English: Common European Framework of Reference for Languages (CEFR) Level B2 or NATO STANAG Level 3. - Thorough knowledge in cyber security threats and technologies - Thorough knowledge of security tools and systems - Adequate knowledge of forensic techniques - Adequate knowledge in military information systems		
SQF MILOF	Competence area – Military technician Learning area – C4ISR systems & cyber defence Organisation level – Single Arm/Branch, Single service		

Prerequisites for international participants:		Goal of the Module
- English: Common European Framework of Reference for Languages (CEFR) Level B1 or NATO STANAG Level 2. - At least 1 year of national (military) higher education.		- To familiarize students with the basic aspects of the cyber war - To help students understand the threats and the targets in the connected world - To analyze the offensive and defensive cyberwarfare techniques - To describe the cyber environment as a military domain - To present the cyber capabilities by nation-states - To discuss the legal, ethical and political aspects of cyber warfare - To outline the future trends in cyber warfare

Learning outcomes	Know-ledge	- Describe the Cyber Threat Landscape and the Various Types of Vulnerabilities in Cyber Ecosystems - Identify the High-Value Assets of the Military Organizations
	Skills	- Use Software Tools to Attack or/and Defend Computer Systems - Investigate Actively Security Incidents
	Responsibility & Autonomy	Make decisions in coherence with the methods and technologies used to actively defend systems and networks

Verification of Learning Outcomes	
Test	A final exam will be given to the cadets for verifying their understanding of the course topics
Assignments	Individual assignment will be given to the cadets to test their understanding of individual threats, tools and techniques used in cyber war
Case study	A case study will be discussed in the context of the module regarding the risks a person might face in the cyber war era

Review results- IAFS module 4

Country PT	Institution PrAFA Portuguese Air Force Academy	Module Description Avionics Systems	ECTS 4.0
Service AF	Minimum Qualification for Lecturers English: Common European Framework of Reference for Languages (CEFR) Level B2 or NATO STANAG Level 3.		
Language English			
SQF MILOF	Competence area – Military technician Learning area – Employment of weapon/operating platform/ systems Organisation level – Single Arm/Branch, Single service		

Prerequisites for international participants:	Goal of the Module
- English: Common European Framework of Reference for Languages (CEFR) Level B1 or NATO STANAG Level 2. - At least 1 year of national (military) higher education.	- To present the concept of avionics systems architecture in modern aircraft; - To present the operating principles of the main avionics systems, namely Communications, Navigation and Surveillance, including military's exclusive use systems; - To present the principles of automatic flight control, flight deck displays and air traffic management; - To present specific topics on electronic warfare.

Learning outcomes	Knowledge	- Define different avionic system's architectures. - Explain the purpose and operating principles of: - The main avionics systems. - An automatic flight control, flight deck displays and air traffic management. - Electronic warfare applications.
	Skills	- Deal with: - Different avionic systems' architectures. - The main avionics systems (Communications, Navigation and Surveillance). - Air-data, magnetic, inertial and electro-optical sensors, automatic flight control, display systems architectures, flight data recorders and emergency beacons. - The main electronic warfare applications. - Discuss about avionics systems topics in English.
	Responsibility & Autonomy	Operate the avionics systems of military aircrafts, that contributes to enhance student's performance as future air force pilots

Verification of Learning Outcomes	
Test	Knowledge assessment is carried out through two written tests

Module Details		
Main Topic	Recommended WH	Details
Avionics Technology and Architectures	4	- Evolution of Avionics Architectures - Avionics computing - Data Buses
Communications Systems	10	- Brief overview of Antennas and Propagation - The RF Spectrum - Electromagnetic field - Antennas and their main characteristics - Free space propagation equation - Radio propagation modes - Brief overview of Telecommunications - Analogue and Digital Modulations - Multiple Access Methods - Aircraft voice and data communications systems - HF, VHF, UHF and SATCOM - Military datalink systems: Link 16
Navigations Aids	4	- Ground-Based Navigation Aids - ADF/NDB - VOR - DME - TACAN - VOR/TAC - Instrument Landing Systems - ILS - MLS - Space-based Navigation Systems
Radar Systems	8	- Radar systems - Principles of radar - Pulsed radar - Continuous Wave radar - Doppler radar - Synthetic aperture radar - Radar-based systems - Air Traffic Control (ATC) Transponder (modes A, C, S) - IFF - TCAS
Sensors	6	- Air Data Sensors - Magnetic Sensors - Inertial Sensors - Electro-optical Sensors
Flight Control Systems	4	- Principles of Flight Control - Flight Control Elements

Review results- IAFS module 5

Country RO	Institution AFAHC	Module Description AVIATION ENGLISH	ECTS 4
---------------	----------------------	--	-----------

Service AF	Minimum Qualification for Lecturers		
Language English	- Officers & Civilian Lecturers: - English: Common European Framework of Reference for Languages (CEFR) Level C1 or NATO STANAG Level 3. - Thorough knowledge in plain English - Adequate knowledge in aviation terminology in English - Thorough knowledge of teaching English for specific purposes - Adequate knowledge of Teaching Integrated Skills		
SQF MILOF	- Competence area - Communicator - Learning area - Vehicular languages - Organisation level - common		

Prerequisites for international participants:		Goal of the Module
- English: Common European Framework of Reference for Languages (CEFR) Level B1 or NATO STANAG Level 2. - At least 1 year of national (military) higher education.		- To teach aviation terminology in English; - To enhance communication skills in English in professional environments; - To raise awareness related to the standardized language proficiency required by the ICAO; - To raise awareness related to the use of Aviation English by non-native professionals; - To assure a better functionality of future aviation officers in international contexts.

Learning outcomes	Know-ledge	- Describe basic aviation and related terminology in English - Explain the relevant aviation-related vocabulary for routine and unexpected situations.
	Skills	- Apply the acquired vocabulary and language structures to correct use of standardized radio-telephony communication - Is able to use strategies to confirm, clarify and repair communication breakdowns
	Responsibility & Autonomy	- Demonstrate communication, interaction and discussion using the relevant aviation-related vocabulary and language structures - 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. - Promote and respect safety culture in aviation.

Verification of Learning Outcomes	
Observation	Direct observation; each module starts with a short review of the previously introduced topic, via interactive language exercises;
Test	Multiple-choice tests
Assignment	Assignment involves both individual work and team work.
Case study	Language errors in pilot-ATC radio communication; analysis and detection of possible incidents accidents that may occur due to miscommunication in English.

Review results- IAFS module 6

Country RO	Institution AFAHC	Module Description Aerial Navigation	ECTS 2.0
Service AF	Minimum Qualification for Lecturers - English: Common European Framework of Reference for Languages (CEFR) Level B2 or NATO STANAG Level 3. - Good knowledge in aerial navigation - Theoretical and (not necessary) practical knowledge regarding aerial navigation calculations - Adequate knowledge of English radio communications - Adequate knowledge regarding flight safety during operational procedures.		
Language English			
SQF MILOF	- Competence area – Military technician. - Learning area – Employment of weapon/ operating platform/systems - Organisation level – Single Arm/Branch		
Prerequisites for international participants: - English: Common European Framework of Reference for Languages (CEFR) Level B1 or NATO STANAG Level 2. - At least 1 year of national (military) higher education.		Goal of the Module - 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.	
Learning outcomes	Knowledge	- Define the navigation parameters - Describe principles and applications of radars and radio navigation systems during flight and air traffic management. The impact of operating conditions on radio navigation systems	
	Skills	- Work out theoretical performance calculations relating to radars and radio navigation systems - Assess potential decreasing in performances of radio systems related changes of conditions or some parameters	
	Responsibility & Autonomy	- Adapting the information to changing environment and changed parameters of systems. - Assessing situation, analyzing information from navigation systems and radars	

Verification of Learning Outcomes		
Test	A final exam will be given to the cadets for verifying their understanding of the course topics	
Assignment	An individual assignment will be given to the cadets to test their understanding of basic navigation calculations and map reading techniques	
Case study	Some case studies will be discussed in the context of the module regarding map reading and calculation.	
Module Details		
Main Topic	Recommended WH	Details
E-learning	2	- Basic Aerial Navigation refresh - Introduction to Radio Navigation Aids - Basic Radio Propagation Theory - Basic principles.
DME	3	- DME – Distance-measuring equipment - DME – Cockpit displays - DME Arcs
VOR/DME navigation system		- The VOR – Very high frequency Omni-directional Radio range - VOR radials - VOR cockpit instruments - Use of the VOR - Course Intercept - VOR and DME - VOR Instrument Approaches
TACAN		- TACAN System - Differences with VOR
Autonomous Navigation Systems and Area Navigation Systems, RNAV/FMS	2	- General philosophy and definitions; - LORAN, DOPPLER, OMEGA, INS/IRS - Basic RNAV (B-RNAV), Precision RNAV (P-RNAV), RNP-PNAV; - Flight Management System (FMS) and general terms; - Typical flight-deck equipment fitted on FMS aircraft;
Ground Radar		- Introduction - Long Range Surveillance Radar - Terminal Surveillance Radar - Surveillance (Approach) Radar

Review results- IAFS module 7

Country	Institution	Module Description	ECTS
GR	Hellenic Air Force Academy	Space Applications for Security and Defence	2.0 (+ 1.0 e-learning)

Minimum Qualification for Lecturers	
Service AF	• Officers: ○ English: Common European Framework of Reference for Languages (CEFR) Level B2 or NATO STANAG Level 3. ○ Thorough knowledge in space issues ○ Thorough knowledge of Common Security and Defence Policy • Civilian Lecturers: ○ English: Common European Framework of Reference for Languages (CEFR) Level B2 or NATO STANAG Level 3. ○ Thorough knowledge in space issues ○ Thorough knowledge of Common Security and Defence Policy
Language English	
SQF MILOF	• Competence area – International Security/Diplomacy Actor • Learning area – International organisations. • Organisation level – Single Arm/Branch or Single service

Prerequisites for international participants:	Goal of the Module
English: Common European Framework of Reference for Languages (CEFR) Level B1 or NATO STANAG Level 2.	- To demonstrate the basic concepts associated with space issues. - To introduce students to the main functions of space systems. - To present the space programs needed in EU capabilities to carry out crisis management operations. - To provide the CSDP space needs and the shortfalls from lessons learnt in relevant missions and operations

Learning outcomes	Knowledge	- Formulate the basic concepts related to Space activities. - Describe the role of space assets in security and defence.
	Skills	- Demonstrate an informed view on space issues. - Analyse the use of space systems in the CSDP domain.
	Responsibility & Autonomy	- Justify the selection of the space systems needed to support CSDP missions and operations. - Deal with promoting the synergies between all actors in order to respond in a comprehensive way in the CSDP domain taking into account the EU Space Policy.

Verification of Learning Outcomes				
Test		Written test delivered at the end of the module.		
Module Details				
Main Topic	Residential	E-learning	Details	
Topic 1	4	4	- Historical depth and theoretical background - The dawn of the Space Era	"European Space Policy: ESDP and Space" COUNCIL OF THE EUROPEAN UNION, Brussels, 16 November 2004, 11616/3/04, REV 3.
Topic 2	4	4	- Space Systems - Orbits	European Space Policy, COM (2007) Brussels, 26.4.2007, 212.
Topic 3	5	4	Types of Satellites and Main Applications for Security and Defence	EU Space Strategy for Security and Defence, Brussels, 10.3.2023 JOIN (2023) 9 FINAL.
Topic 4	5		Military Programmes of the Leading Space-faring Nations	
Topic 5	5		Strategic, Tactical and Political Dimensions of Outer Space	
Topic 6	5		Security in Space	
Topic 7	5		European Union's CSDP and Space	
Topic 8	4		Main Trends in Space	
Test	3		Module examination	
Self-Study Hours				
Topic	10	13	For all the above-mentioned topics Cadets have to prepare themselves for the next day.	
Total WH	50 2 ECTS	25 1 ECTS		

List of Abbreviations:

CEFR..... Common European Framework of Reference for Languages

Review results- IAFS module 8

Country	Institution	Module Description	ECTS
Romania	"Henri Coandă" Air Force Academy	Aviation Meteorology	2

Minimum Qualification for Lecturers	
Service AF	Officers: - English: Common European Framework of Reference for Languages (CEFR) Level B2 or NATO STANAG Level 3. - Thorough knowledge of general geography. - Medium knowledge of physics. - Medium knowledge of mathematics. Civilian Lecturers: - English: Common European Framework of Reference for Languages (CEFR) Level B2 or NATO STANAG Level 3. - Thorough knowledge of general geography. - Medium knowledge of physics. - Medium knowledge of mathematics.
Language English	
SQF MILOF	Competence area: Military technician Learning area: Sustaining the force Organisation level: Single Arm/Branch, Single Service

Prerequisites for international participants:	Goal of the Module
- English: Common European Framework of Reference for Languages (CEFR) Level B1 or NATO STANAG Level 2. - At least 1 year of national (military) higher education.	- To acquire specialized terminology in the field of aviation meteorology. - To understand the mechanisms by which meteorological factors influence flight activities. - To acquire knowledge on meteorological phenomena and hazards that affect flight activities. - 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.

Learning outcomes	Know-ledge	- Formulate the basics of the generation and development of weather elements and atmospheric phenomena and their impact on flight safety. - Describe the special codes used in the operational messages transmitted in aeronautical meteorology.
	Skills	- To understand and to interpret the meteorological information that affects flights. - To decode meteorological information, according to the special codes used in the operational messages transmitted in aeronautical meteorology (METAR/SPECI, TAF, SIGMET) in order to understand the presence of adverse weather conditions.
	Responsibility & Autonomy	Make decision with respect to handle the weather information and analysis.

Verification of Learning Outcomes	
Observation	Constantly recalling the information previously learned and observing the interest of students on aviation meteorology information and their level of understanding.
Test	Written test comprised of multiple choice and open answer questions.
Assignment	Decode meteorological information issued in METAR/SPECI, TAF, SIGMET format.
Case study	A case study will be discussed in the context of a weather scenario that affects flight safety.

Review results

- The content of the modules: the content is coordinated with the projects academic coordinators
- BIP Vs. traditional modules – the qualification requirements are the same, just the verb that explain the deepness of knowledge can vary

References

- SQF MILOF
- Bloom taxonomy

Comprehension may be defined as the ability to understand and interpret learned information. Some of the action verbs used to assess comprehension are shown in Fig. 3.4.



Fig. 3.4 Some action verbs used to assess comprehension



CM "Electronic Warfare" - SQF MILOF

methodology	Electronic Warfare
First step - determine which competence area and respective learning area covers the topic of the common module. For detailed information see section 02 of the second volume of SQF MILOF package, Reference to chapter 13.1. SQF-MILOF Learning Outcomes, Volume 1	competence area - Military technician learning area - Sustaining the force
Second Step - define the organisation level of SQF-MILOF that the common module is directed to.	Organisation level - Single Arm/Branch
Third step - define EQF level	EQF 6 (Level 2)
Fourth step - fix knowledge, skills and R&A respective to the defined learning area, organisation level and EQF level, using the table in section 04. SQF-MILOF Proper of the second volume of SQF MILOF package	Knowledge: Advanced knowledge of the characteristics and possibilities of the weapons systems / operating platform and C4ISR systems, managing resources in the sustainment realm of operations. Skills: Advanced skills required to operate and maintain specific weapons systems/operating platform and C4ISR systems in safe conditions to deliver requested or planned effects by a higher authority > Manage resources and various projects at an advanced level. Responsibility and Autonomy: Take responsibility to manage scarce organisational resources in unforeseen and changing situations of the operating environment, prioritizing and allocating appropriate resources to subordinate units to accomplish specific objectives in full spectrum of operations and in peacetime.
Fifth step - fix qualifications requirements respective to the defined learning area, organisation level and EQF level, using the table in section 05. SQF-MILOF CORE	Explain the combat service support capabilities of subunits during full spectrum operations > Define the logistics requirements of the (sub)units required to sustain full spectrum operations..



EMILYO >> Common Modules

Overview as of 14 February 2024

Under Revision

No	COMMON MODULE	ECTS	No	COMMON MODULE	ECTS
1	Advanced Technologies in Borders Surveillance	2	29	How to meet the Media	2
2	Aviation English for ICAO LPR	3	30	IMINT-GEOINT Analysis Course	4
3	Aviation English - Part 1	3	31	Individual Personal Development and Meta-Communication	2
4	Aviation English - Part 2	3	32	Interoperability	6
5	1 Basic Military English	2	33	Irregular Warfare (A)	3
6	Battle Physical, Mental and Survival Training	3	34	8 Law of Armed Conflict	2
7	Biosafety & Bioterrorism	2	35	Leadership and Agility in Complex Environments	2
8	Budget & Finance in the EU Defence Sector	2	36	Leadership in Communication – IMLA	2
9	Close Quarterly Battle	3	37	Leadership, Motivation and Influence – IMLA	2
10	Common Operating Environment	3	38	Maritime Leadership	2
11	2 Common Security and Defence Policy (BIP Version – 3 ECTS)	2	39	Maritime Security Module	2
12	3 Comprehensive Approach	4	40	Military Ethics (A)	2
13	CMO/(PSO (4 Sub-Modules A, B, C, D)	12	41	Military Ethics (B)	2
14	Crisis Management (Military Leadership) -IMLA	2	42	Military Instructor Training	3
15	Crisis Management Operations (CMO)	3	43	9 Military Leadership (A)	2
16	4 Cross-Cultural Communication	2	44	10 Military Leadership (B)	2
17	CSDP Olympiad	2	45	11 Military Leadership C (Physical Training)	4
18	5 Cultural Awareness	2	46	Military Strategy and Security In the Baltic Sea Region (A)	3
19	6 Cyber Security	2	47	Senior Cadets' Seminar on Leadership	1,5
20	Defence and Security Economics	4	48	Small Unit Tactics	4
21	Digital Leadership	3	49	Space Applications for Security and Defence	2
22	7 Electronic Warfare	2	50	Social Engineering Protection	2
23	English for Aircraft Maintenance– SET Part 1	3	51	Stress Management – IMLA	2
24	English for Aircraft Maintenance– SET Part 2	3	52	Techonolgies in Cybersecurity	2
25	English for Aircraft Maintenance– SET Part 3	3	53	Troop Leading Procedures	1
26	English for Aviation Security Personnel (AVSEC)	3	54	Unmanned Aerial Systems (UASs)	2
27	Fighting In Built Up Area	3	55	Winter Warfare Basic Module	2
28	Gender Perspectives in Security and Defence	3			
			TOTAL 55		149,5
			11 Under Revision		26



EMILYO >> Common Modules

Overview as of 23 May 2024

Under Revision

No	COMMON MODULE	ECTS	No	COMMON MODULE	ECTS
1	Advanced Technologies in Borders Surveillance	2	29	How to meet the Media	2
2	Aviation English for ICAO LPR	3	30	IMINT-GEOINT Analysis Course	4
3	Aviation English - Part 1	3	31	Individual Personal Development and Meta-Communication	2
4	Aviation English - Part 2	3	32	0207 Interoperability	6
5	0101 Basic Military English	2	33	Irregular Warfare (A)	3
6	Battle Physical, Mental and Survival Training	3	34	0108 Law of Armed Conflict	2
7	0201 Biosafety & Bioterrorism	2	35	Leadership and Agility in Complex Environments	2
8	0202 Budget & Finance in the EU Defence Sector	2	36	0208 Leadership in Communication – IMLA	2
9	Close Quarterly Battle	3	37	0209 Leadership, Motivation and Influence – IMLA	2
10	Common Operating Environment	3	38	Maritime Leadership	2
11	0102 Common Security and Defence Policy (BIP Version – 3 ECTS)	2	39	0210 Maritime Security Module	2
12	0103 Comprehensive Approach	4	40	Military Ethics (A)	2
13	0203 CMO/(PSO (4 Sub-Modules A, B, C, D)	12	41	Military Ethics (B)	2
14	0204 Crisis Management (Military Leadership) -IMLA	2	42	Military Instructor Training	3
15	0205 Crisis Management Operations (CMO)	3	43	0109 Military Leadership (A)	2
16	0104 Cross-Cultural Communication	2	44	0110 Military Leadership (B)	2
17	0206 CSDP Olympiad	2	45	0111 Military Leadership C (Physical Training)	4
18	0105 Cultural Awareness	2	46	Military Strategy and Security In the Baltic Sea Region (A)	3
19	0106 Cyber Security	2	47	Senior Cadets' Seminar on Leadership	1,5
20	Defence and Security Economics	4	48	Small Unit Tactics	4
21	Digital Leadership	3	49	Space Applications for Security and Defence	2
22	0107 Electronic Warfare	2	50	Social Engineering Protection	2
23	English for Aircraft Maintenance– SET Part 1	3	51	Stress Management – IMLA	2
24	English for Aircraft Maintenance– SET Part 2	3	52	Techonolgies in Cybersecurity	2
25	English for Aircraft Maintenance– SET Part 3	3	53	Troop Leading Procedures	1
26	English for Aviation Security Personnel (AVSEC)	3	54	Unmanned Aerial Systems (UASs)	2
27	Fighting In Built Up Area	3	55	Winter Warfare Basic Module	2
28	Gender Perspectives in Security and Defence	3			
				TOTAL 55	149,5
				11 Under Revision [61st IG]	26
				10 Proposal to Review [62nd IG/iMAF] 10 / 13	35



EMILYO >> Common Modules

Overview as of 11 September 2024

Under Revision

No	COMMON MODULE	ECTS	No	COMMON MODULE	ECTS
1	Advanced Technologies in Borders Surveillance	2	29	0305 How to meet the Media	2
2	Aviation English for ICAO LPR	3	30	IMINT-GEOINT Analysis Course	4
3	0301 Aviation English - Part 1	3	31	Individual Personal Development and Meta-Communication	2
4	0302 Aviation English - Part 2	3	32	0207 Interoperability	6
5	0101 Basic Military English	2	33	Irregular Warfare (A)	3
6	Battle Physical, Mental and Survival Training	3	34	0108 Law of Armed Conflict	2
7	0201 Biosafety & Bioterrorism	2	35	Leadership and Agility in Complex Environments	2
8	0202 Budget & Finance in the EU Defence Sector	2	36	0208 Leadership in Communication – IMLA	2
9	Close Quarterly Battle	3	37	0209 Leadership, Motivation and Influence – IMLA	2
10	Common Operating Environment	3	38	Maritime Leadership	2
11	0102 Common Security and Defence Policy (BIP Version – 3 ECTS)	2	39	0210 Maritime Security Module	2
12	0103 Comprehensive Approach	4	40	Military Ethics (A)	2
13	0203 CMO/(PSO (4 Sub-Modules A, B, C, D)	12	41	Military Ethics (B)	2
14	0204 Crisis Management (Military Leadership) -IMLA	2	42	Military Instructor Training	3
15	0205 Crisis Management Operations (CMO)	3	43	0109 Military Leadership (A)	2
16	0104 Cross-Cultural Communication	2	44	0110 Military Leadership (B)	2
17	0206 CSDP Olympiad	2	45	0111 Military Leadership C (Physical Training)	4
18	0105 Cultural Awareness	2	46	Military Strategy and Security In the Baltic Sea Region (A)	3
19	0106 Cyber Security	2	47	Senior Cadets' Seminar on Leadership	1,5
20	Defence and Security Economics	4	48	Small Unit Tactics	4
21	0303 Digital Leadership	3	49	Space Applications for Security and Defence	2
22	0107 Electronic Warfare	2	50	Social Engineering Protection	2
23	English for Aircraft Maintenance– SET Part 1	3	51	0306 Stress Management – IMLA	2
24	English for Aircraft Maintenance– SET Part 2	3	52	0307 Techonolgies in Cybersecurity	2
25	English for Aircraft Maintenance– SET Part 3	3	53	Troop Leading Procedures	1
26	English for Aviation Security Personnel (AVSEC)	3	54	0308 Unmanned Aerial Systems (UASs)	2
27	Fighting In Built Up Area	3	55	Winter Warfare Basic Module	2
28	0304 Gender Perspectives in Security and Defence	3			
				TOTAL 55	149,5
				11 Under Revision [February 2024] - Approved [61st IG]	26
				10 Under Revision Febr-May 2024 - Presented 62nd IG/iMAF	35
				8 Under Revision May-Sept 2024 - Presented 63rd IG	20



EMILYO >> Common Modules
Under Revision as of 20 November 2024
64th IG Shumen

				Under Revision			
No	COMMON MODULE	ECTS	No	COMMON MODULE	ECTS		
1	Advanced Technologies in Borders Surveillance	2	31	Individual Personal Development and Meta-Communication	2		
2	Aviation English for ICAO LPR	3	32	0207 Interoperability	6		
3	2024.09.11.R.63.01 Aviation English - Part 1	3	33	2024.11.20.R.64.05 Irregular Warfare (A)	3		
4	2024.09.11.R.63.02 Aviation English - Part 2	3	34	0108 Law of Armed Conflict	2		
5	0101 Basic Military English	2	35	Leadership and Agility in Complex Environments	2		
6	Battle Physical, Mental and Survival Training	3	36	0208 Leadership in Communication – IMLA	2		
7	0201 Biosafety & Bioterrorism	2	37	0209 Leadership, Motivation and Influence – IMLA	2		
8	0202 Budget & Finance in the EU Defence Sector	2	38	Maritime Leadership	2		
9	2024.11.20.R.64.01 Close Quarterly Battle	3	39	0210 Maritime Security Module	2		
10	Common Operating Environment	3	40	Military Ethics (A)	2		
11	0102 Common Security and Defence Policy (BIP Version – 3 ECTS)	2	41	Military Ethics (B)	2		
12	0103 Comprehensive Approach	4	42	Military Instructor Training	3		
13	0203 CMO/(PSO (4 Sub-Modules A, B, C, D)	12	43	0109 Military Leadership (A)	2		
14	0204 Crisis Management (Military Leadership) -IMLA	2	44	0110 Military Leadership (B)	2		
15	0205 Crisis Management Operations (CMO)	3	45	0111 Military Leadership C (Physical Training)	4		
16	0104 Cross-Cultural Communication	2	46	Military Strategy and Security in the Baltic Sea Region (A)	3		
17	0206 CSDP Olympiad	2	47	Senior Cadets' Seminar on Leadership	1.5		
18	0105 Cultural Awareness	2	48	Small Unit Tactics	4		
19	0106 Cyber Security	2	49	2024.11.20.R.64.06 Space Applications for Security and Defence	2		
20	2024.11.20.R.64.02 Defence and Security Economics	4	50	2024.11.20.R.64.07 Social Engineering Protection	2		
21	2024.09.11.R.63.03 Digital Leadership	3	51	2024.09.11.R.63.05 Stress Management – IMLA	2		
22	0107 Electronic Warfare	2	52	2024.09.11.R.63.06 Technologies in Cybersecurity	2		
23	English for Aircraft Maintenance– SET Part 1	3	53	Troop Leading Procedures	1		
24	English for Aircraft Maintenance– SET Part 2	3	54	2024.09.11.R.63.07 Unmanned Aerial Systems (UASs)	2		
25	English for Aircraft Maintenance– SET Part 3	3	55	2024.11.20.R.64.08 Winter Warfare Basic Module	2		
26	English for Aviation Security Personnel (AVSEC)	3	56	2024.11.20.R.64.09 Assessment and Evaluation in English Teaching	2		
27	2024.11.20.R.64.03 Fighting in Built Up Area	3	57	2024.11.20.R.64.10 Intermediate Military English	2		
28	2024.09.11.R.63.04 Gender Perspectives in Security and Defence	3	58	2024.11.20.R.64.11 Joint English Teaching Proficiency	2		
29	2024.11.20.R.64.04 Media Awareness	2					
30	IMINT-GEOINT Analysis Course	4					
Note:		11 extra modules revised		TOTAL 58	155,5		
			11	Under Revision [February 2024] - Approved [61st IG]	26		
		2 Extra Modules	10	Under Revision Febr-May 2024 - Presented 62nd IG/IMAF	35		
		5 Modules from LoD 6 (1) / LoD 18 (3) / LoD19 (1)	7+1	Under Revision May-Sept 2024 - Presented 63rd IG	20		
			8+3	Under Revision Sept 24 - Feb 2025	19		



EMILYO >> Common Modules

Under Revision as of 26 February 2025

65th IG Lamaca

Under Revision

	COMMON MODULE	ECTS	No		COMMON MODULE	ECTS
	Advanced Technologies in Borders Surveillance	2	31		Individual Personal Development and Meta-Communication	2
2	Aviation English for ICAO LPR	3	32	0207	Interoperability	6
3	2024.09.11.R.63.01 Aviation English - Part 1	3	33	2024.11.20.R.64.05	Irregular Warfare (A)	3
4	2024.09.11.R.63.02 Aviation English - Part 2	3	34	0108	Law of Armed Conflict	2
5	0101 Basic Military English	2	35		Leadership and Agility in Complex Environments	2
6	2025.02.26.R.65.01 Battle Physical, Mental and Survival Training	3	36	0208	Leadership in Communication – IMLA	2
7	0201 Biosafety & Bioterrorism	2	37	0209	Leadership, Motivation and Influence – IMLA	2
8	0202 Budget & Finance in the EU Defence Sector	2	38		Maritime Leadership	2
9	2024.11.20.R.64.01 Close Quarterly Battle	3	39	0210	Maritime Security Module	2
10	Common Operating Environment	3	40		Military Ethics (A)	2
11	0102 Common Security and Defence Policy (BIP Version – 3 ECTS)	2	41		Military Ethics (B)	2
12	0103 Comprehensive Approach	4	42		Military Instructor Training	3
13	0203 CMO/(PSO (4 Sub-Modules A, B, C, D)	12	43	0109	Military Leadership (A)	2
14	0204 Crisis Management (Military Leadership) -IMLA	2	44	0110	Military Leadership (B)	2
15	0205 Crisis Management Operations (CMO)	3	45	0111	Military Leadership C (Physical Training)	4
16	0104 Cross-Cultural Communication	2	46	2025.02.26.R.65.03	Military Strategy and Security in the Baltic Sea Region (A)	3
17	0206 CSDP Olympiad	2	47	2025.02.26.R.65.04	Senior Cadets' Seminar on Leadership	1.5
18	0105 Cultural Awareness	2	48		Small Unit Tactics	4
19	0106 Cyber Security	2	49	2024.11.20.R.64.06	Space Applications for Security and Defence	2
20	2024.11.20.R.64.02 Defence and Security Economics	4	50	2024.11.20.R.64.07	Social Engineering Protection	2
21	2024.09.11.R.63.03 Digital Leadership	3	51	2024.09.11.R.63.05	Stress Management – IMLA	2
22	0107 Electronic Warfare	2	52	2024.09.11.R.63.06	Techonolgies in Cybersecurity	2
23	English for Aircraft Maintenance– SET Part 1	3	53	2025.02.26.R.65.05	Troop Leading Procedures	1
24	English for Aircraft Maintenance– SET Part 2	3	54	2024.09.11.R.63.07	Unmanned Aerial Systems (UASs)	2
25	English for Aircraft Maintenance– SET Part 3	3	55	2024.11.20.R.64.08	Winter Warfare Basic Module	2
26	English for Aviation Security Personnel (AVSEC)	3	56	2024.11.20.R.64.09	Assessment and Evaluation in English Teaching	2
27	2024.11.20.R.64.03 Fighting in Built Up Area	3	57	2024.11.20.R.64.10	Intermediate Military English	2
28	2024.09.11.R.63.04 Gender Perspectives in Security and Defence	3	58	2024.11.20.R.64.11	Joint English Teaching Proficiency	2
29	2024.11.20.R.64.04 Media Awareness	2				
30	IMINT-GEOINT Analysis Course	4				
Note: 11 extra modules revised				TOTAL 58		155,5
	2 Extra Modules			11	Under Revision [February 2024] - Approved [61st IG]	26
	5 Modules from LoD 6 (1) / LoD 18 (3) / LoD19 (1)			10	Under Revision Febr-May 2024 - Presented 62nd IG/iMAF	35
				7+1	Under Revision May-Sept 2024 - Presented 63rd IG	20
				8+3	Under Revision Sept 24 - Feb 2025	19
				5	Under Revision Nov 24 - Feb 25	12,5



EMILYO >> Common Modules

Under Revision as of 06 June 2025
66th IG / iMAF Constanta

Under Revision

		COMMON MODULE	ECTS	No	COMMON MODULE	ECTS
		Advanced Technologies in Borders Surveillance	2	31	Individual Personal Development and Meta-Communication	2
2		Aviation English for ICAO LPR	3	32	240524R6207 Interoperability	6
3	240911R6301	Aviation English - Part 1	3	33	241120R6405 Irregular Warfare (A)	3
4	240911R6302	Aviation English - Part 2	3	34	240224R6108 Law of Armed Conflict	2
5	240224R6101	Basic Military English	2	35		
6	250226R6501	Battle Physical, Mental and Survival Training	3	36	240524R6208 Leadership and Agility in Complex Environments	2
7	240524R6201	Biosafety & Bioterrorism	2	37	240524R6209 Leadership in Communication – IMLA	2
8	240524R6202	Budget & Finance in the EU Defence Sector	2	38	240524R6209 Leadership, Motivation and Influence – IMLA	2
9	241120R6401	Close Quarterly Battle	3	39	240524R6210 Maritime Leadership	2
10		Common Operating Environment	3	40		
11	240224R6102	Common Security and Defence Policy (BIP Version – 3 ECTS)	2	41	240524R6210 Maritime Security Module	2
12	240224R6103	Comprehensive Approach	4	42	Military Ethics (A)	2
13	240524R6203	CMO/(PSO (4 Sub-Modules A, B, C, D)	12	43	Military Ethics (B)	2
14	240524R6204	Crisis Management (Military Leadership) -IMLA	2	44	240224R6109 Military Instructor Training	3
15	240524R6205	Crisis Management Operations (CMO)	3	45	240224R6109 Military Leadership (A)	2
16	240224R6104	Cross-Cultural Communication	2	46	240224R6110 Military Leadership (B)	2
17	240524R6206	CSDP Olympiad	2	47	240224R6111 Military Leadership C (Physical Training)	4
18	240224R6105	Cultural Awareness	2	48	250226R6503 Military Strategy and Security in the Baltic Sea Region (A)	3
19	240224R6106	Cyber Security	2	49	250226R6504 Senior Cadets' Seminar on Leadership	1.5
20	241120R6402	Defence and Security Economics	4	50		
21	240911R6303	Digital Leadership	3	51	241120R6406 Small Unit Tactics	4
22	240224R6107	Electronic Warfare	2	52	241120R6407 Space Applications for Security and Defence	2
23		English for Aircraft Maintenance– SET Part 1	3	53	241120R6407 Social Engineering Protection	2
24		English for Aircraft Maintenance– SET Part 2	3	54	240911R6305 Stress Management – IMLA	2
25		English for Aircraft Maintenance– SET Part 3	3	55	240911R6306 Technologies in Cybersecurity	2
26		English for Aviation Security Personnel (AVSEC)	3	56	250226R6505 Troop Leading Procedures	1
27	241120R6403	Fighting In Built Up Area	3	57	240911R6307 Unmanned Aerial Systems (UASs)	2
28	240911R6304	Gender Perspectives in Security and Defence	3	58	241120R6408 Winter Warfare Basic Module	2
29	241120R6404	Media Awareness	2		241120R6409 Assessment and Evaluation in English Teaching	2
30		IMINT-GEOINT Analysis Course	4		241120R6410 Intermediate Military English	2
					241120R6411 Joint English Teaching Proficiency	2
Note:		11 extra modules revised			TOTAL 58	155,5
		2 Extra Modules			11 Under Revision [February 2024] - Approved [61st IG]	26
		5 Modules from LoD 6 (1) / LoD 18 (3) / LoD19 (1)			10 Under Revision Febr-May 2024 - Presented 62nd IG/iMAF	35
					7+1 Under Revision May-Sept 2024 - Presented 63rd IG	20
					8+3 Under Revision Sept 24 - Feb 2025	19
					5 Under Revision Nov 24 - Feb 25	12,5
					Under Revision Feb 25 - Jun 25	



Unrevised CMs

No	COMMON MODULE	ECTS	Remarks
1	Advanced Technologies in Borders Surveillance	2	MUT (PL) 2019
2	Aviation English for ICAO LPR	3	
10	Common Operating Environment	3	
23	English for Aircraft Maintenance– SET Part 1	3	
24	English for Aircraft Maintenance– SET Part 2	3	
25	English for Aircraft Maintenance– SET Part 3	3	
26	English for Aviation Security Personnel (AVSEC)	3	
31	Individual Personal Development and Meta-Communication	2	TMA (AT) 2020
35	Leadership and Agility in Complex Environments	2	ITAFA (IT) 2018
38	Maritime Leadership	2	FR NAVY 2012
42	Military Instructor Training	3	
48	Small Unit Tactics	4	



LoDs proposal:

- IG to approve the 10 INS modules and the 8 INS modules as “common modules”
- The existing CMs **Maritime security, Maritime leadership, Military ethics A, and Military ethics B** to be replaced by the proposed **Maritime security, Naval leadership, and Military ethics**.
- The review process to continue with the developed LoDs modules



LoD 01 & 02 & 08

LoD-1 & 2 & 8 session -
Thank you for join us!

Any questions??