APPROVED
By the Council of the ENDC on 28 March 2011

Amended By the Council of the ENDC
14th June 2011, 15th May 2012, 12th June 2013,
14th June 2014, 16th June 2015

Last amended by the Council of the ENDC on 14 June 2016

Name of the Curriculum in Estonian	**Sõjaväeline juhtimine mereväes**
Name of the Curriculum in English	*Military Leadership for Navy*
Level of Higher Education Studies	**Professional higher education**
Form of Study	Regular studies (full-time), external studies
Educational institution	Estonian National Defence College (ENDC)
Volume of Studies	180 European Credit Points (ECP)
Nominal Period of Study	3 years
Field of Study	National Defence
Curriculum Reg. No. in EHIS	109247
Language of Instruction	Estonian
Other Languages Required for the Achievement of the Curriculum Outcomes	English
Approval and Registration of the Curriculum in EHIS	Registered in EHIS on 25.04.2011
Approval of the Curriculum in the Educational Institution	Approved by the Council of the ENDC on 28th March 2011, Council Meeting decision No.1.
Candidate Requirements	Estonian citizenship, secondary education, eligibility for active service as a crew member, taking entrance tests.
Requirements for the Admission to the Curriculum	Male candidates are required to have completed compulsory military service, female candidates are required to have received the training prescribed for compulsory military service. Matriculation, entering active service, posting in the EDF, completion of a synchronization course in the ENDC.
Major Specialization and its Volume Within the Curriculum	Military Leadership for Navy 121 ECP, Warfare specialty 121 ECP or Engineering specialty 118 ECP.
Specialization Within the Curriculum	Warfare Specialty 59 ECP or Engineering Specialty 62 ECP. Post-specialization specialties are opened in accordance with the annual directive of the Chief of Defence.
Objectives of the Curriculum	The objective of the module is to prepare junior officers for service in the Estonian Navy in peacetime and wartime

	posts. The module has been compiled considering the work environment and tasks that an officer should perform creatively as part of his/her job - those of a leader, administrator, educator, diplomat and technician. On completion this curriculum also creates preconditions to independent continuing education or following studies on the next level. The curriculum enables specialisation in warfare or engineering specialty.
Outcomes of the Curriculum	After completion of this curriculum the student: 1) Is capable of leading commanding a department or division of a warship in different situations and grant their readiness to act in a unit subordinated to him/her both in peacetime and wartime Estonia and international operating environment; 2) Is capable of performing the duties of a warfare or engineering officer aboard a warship, according to his or her specialisation; 3) Is capable of leading an infantry platoon-sized unit in wartime conditions; 4) Has acquired the required knowledge of methodology and marking in group and individual studies and professional skills to organize studies at his or her specialty; 5) Can take into account societal and ethical questions, is able to assess his or her role and the consequences on society of his or her actions as a military leader, and understands law terminology and principles of implementing the law; 6) Knows the history of the present-day warfare and structure of the Estonian national defence system in present-day security concept; 7) Knows the scientific terms and principles necessary to operate a warship; 8) Is able to understand and explain speciality-related issues both in oral and written Estonian and English; 9) Is capable of choosing appropriate ways and means for fulfilling his or her duties by collecting information independently, and interpreting it creatively and critically; 10) Can conduct and formulate a research paper as required.
Degree Certificate Awarded Upon Graduation	A bachelor's degree of professional higher education (Naval Military Leadership)
Documents Awarded Upon Graduation	A diploma of professional higher education, a diploma supplement in Estonian and English language and a Global Maritime Distress and Safety System General Operator's Certificate

Rank Awarded Upon Graduation	Lieutenant Junior Grade
Qualifications Awarded Upon Graduation	–
Short Description of the Curriculum	The curriculum consists of the following modules: - general leadership module (27 ECP), - military leadership module for warfare specialty (42 ECP) or engineering specialty (34 ECP). - pedagogy and research module (25 ECP). - management and technology module in warfare (29 ECP) or engineering (32 ECP), - specialisation module in warfare (57 ECP) or engineering (62 ECP).
Completion of the Curriculum	Completion of all modules and subjects listed in the curriculum is obligatory for regular full-time students. Subjects are completed according to the progression of subjects as prescribed by the ENDC. External or visiting students complete the modules and/or subjects in the manner prescribed by the ENDC (passing prerequisite subjects, following the limitations to participating in studies according to the Defence Forces Service Act). The studies after the completion of the curriculum are provided with regard to the person's eligibility for active service fulfilling the post of a junior officer.
Graduation Requirements	In order to complete the entire curriculum a student must pass subjects up to a total of 170 ECP and defend a final paper valued at 10 ECP.
More Information	www.ksk.edu.ee Estonian Navy: www.mil.ee

MODULES AND SUBJECTS OF THE CURRICULUM MILITARY LEADERSHIP FOR NAVY

GENERAL LEADERSHIP MODULE (27 ECP)				
Code	**Subject**	**Volume**	**Assessment**	**Semester**
JP16.01	Fundamentals of Leadership	2 ECP	ND	I
ST16.01	Law of National Defence	2 ECP	D	I
ST16.02	Law of Armed Conflict	2 ECP	D	II
JP16.02	Individual and Society	2 ECP	D	I
ST14.01	State, Politics and Government	2 ECP	D	I
ST16.03	World Military History	4 ECP	D	I, III
ST09.02	Estonian Military History	4 ECP	D	II
ST16.04	Security Policy and National Defence	3 ECP	D	II, IV
KK16.01	English (Level B2)***	4 ECP	ND	I–II
KK16.02	English (Level B1+)***	4 ECP	ND	I–II
KK16.03	English (Level B2)***	4 ECP	ND	I–II
ME16.27	Maritime English	2 ECP	ND	III

MILITARY LEADERSHIP MODULE(42 ECP in warfare and 34 ECP in engineering)				
Code	**Subject**	**Volume**	**Assessment**	**Semester**
ME16.28	Fundamentals of Maritime Warfare	6 ECP	D	IV
ME16.29	Naval Tactics*	6 ECP	ND	V
TK15.02	Fundamentals of Infantry Platoon Tactics and Command	10 ECP	ND	II
JP16.22	Applications of Psychology in the Defence Forces	4 ECP	ND	I–II
ME16.30	Practical Placement – Seamanship	6 ECP	ND	II
ME16.31	Practical Placement – Officer of the Watch at Sea*	10 ECP	ND	VI
ME16.32	Practical Placement – Engineering Officer of the Watch at Sea**	8 ECP	ND	VI

PEDAGOGY AND RESEARCH MODULE (25 ECP)				
Code	**Subject**	**Volume**	**Assessment**	**Semester**
KK13.01	Written and Oral Self-expression in Estonian	3 ECP	D	II
JP16.13	Fundamentals of Scientific Research	4 ECP	D	IV
JP16.21	Basic Instructor Course	3 ECP	D	I
JP16.23	Organizing Infantry Squad Firing Training	3 ECP	ND	IV
ME16.33	Ship Company Training	2 ECP	ND	VI
VT14.01	Final Paper	10 ECP	D	IV–VI

ADMINISTRATION AND TECHNOLOGY MODULE (42 ECP in warfare and 32 ECP in engineering)				
Code	**Subject**	**Volume**	**Assessment**	**Semester**

LT16.02	Military Technology I: Tactical Communication and Electronic Warfare	2 ECP	ND	I
LT16.03	Military Technology II: Technical Equipment and Other Equipment of a Tactical Unit	2 ECP	ND	II
LT16.04	Military Technology III: Land Based Platforms	2 ECP	ND	II
LT16.05	Military Technology IV: Weaponry**	2 ECP	ND	II
LT16.06	Military Technology V: Optronics and Communication Equipment**	2 ECP	ND	IV
LT16.07	Military Technology VI: Field Electrical Wiring	2 ECP	ND	IV
LT14.06	Models of Exact Sciences in Military	2 ECP	D	I
TK16.22	Medical Studies	3 ECP	ND	I–II
ME16.34	Naval Weaponry	5 ECP	ND	IV
ME16.35	Damage Control Aboard a Warship	4 ECP	D	II
ME16.36	Naval Administration	2 ECP	ND	VI
ME16.37	Naval Communications*	7 ECP	ND	IV
ME16.38	Fundamentals of Naval Communications**	2 ECP	ND	IV
ME16.39	Ship Repair Technology	2 ECP	ND	IV

SPECIALISATION MODULE I - WARFARE SPECIALTY (57 ECP)				
Code	**Subject**	**Volume**	**Assessment**	**Semester**
ST16.06	Law of the Sea and Law of the Naval Warfare	2 ECP	D	VI
ME16.01	Maritime Communication	3 ECP	D	VI
ME16.02	Ship Construction	4 ECP	D	III
ME16.03	Ship Design and Stability	6 ECP	D	IV
ME16.04	Maritime Safety I	4 ECP	D	III
ME16.05	Maritime Safety II	3 ECP	D	IV
ME16.06	Ship Power Plants and Auxiliary Machinery	3 ECP	D	III
ME16.07	Navigation L I	4 ECP	D	III
ME16.08	Navigation L II	4 ECP	D	V
ME16.09	Bridge Training Simulation	6 ECP	ND	VI
ME16.10	Ship Handling I	3 ECP	D	III
ME16.11	Ship Handling II	5 ECP	D	V
ME16.12	Navigation at Sea	3 ECP	ND	IV
ME16.13	Practical Placement – Navigation at Sea	7 ECP	D	IV–VI

SPECIALISATION MODULE II – ENGINEERING SPECIALTY (62 ECP)				
Code	**Subject**	**Volume**	**Assessment**	**Semester**

ME16.14	Applied Mechanics	6 ECP	D	III
ME16.15	Electrical Engineering and Electronics	6 ECP	D	III
ME16.18	Technologies of Metals, Materials I	3 ECP	D	IV
ME16.19	Technologies of Metals, Materials I	4 ECP	D	V
ME16.16	Thermodynamics and Heat Transfer	4 ECP	D	III
ME16.02	Ship Construction	4 ECP	D	III
ME16.17	Ship Stability	4 ECP	D	IV
ME16.20	Electrical Equipment Aboard a Ship	2 ECP	D	V
ME16.22	Practical Placement – Marine Electrical Workshop Training	4 ECP	D	V–VI
ME16.21	Marine Diesel Power Plants	6 ECP	D	V–VI
ME16.23	Marine Auxiliary Machinery	7 ECP	D	V–VI
ME16.24	Ship Repair Technology	4 ECP	D	V–VI
ME16.25	Practical Placement - Ship Repair Workshop	4 ECP	D	V–VI
ME16.26	Practical Placement - Engine Room Simulation Training	4 ECP	D	V

MODULES OF THE CURRICULUM, THEIR OBJECTIVES AND OUTCOMES

GENERAL LEADERSHIP MODULE		Volume 27 ECP
Objective	The objective of the general leadership module is to provide the student with the necessary fundamental knowledge and skills that support a military leader's completion of different tasks. On completion of the module the students have formed an understanding of society in the modern security environment, of the role of the defence structures and members of defence forces in democratic society, of state principles based on the rule of law, national security policy, military history and its directions of development. On completion of the module students will be able to express themselves in English.	
Outcomes	After completion of the general leadership module the student: 1) Knows and is able to explain and analyze the rights, responsibilities and duties of a leader based on the legal and ethical principles of civil society and aspects of social sciences; 2) Understands his or her role as a member of civil society and is able to assess the influence of his or her attitudes and actions on the society and the Defence Forces; 3) Knows the stages in world military history and Estonian military history, can explain and analye the historical background of Estonian security policy; 4) Knows the fundamentals of present-day security policy and defence strategy; 5) Is proficient in English at the lower B1 level of the Common European Framework of Reference for Languages in all skills (listening, speaking, reading, writing);	
Assessment: the module is assessed on the basis of subjects.		

Code	Subject	Volume	Assessment	Semester
JP16.01	Fundamentals of Leadership	2 ECP	ND	I
ST16.01	Law of National Defence	2 ECP	D	I
ST16.02	Law of Armed Conflict	2 ECP	D	II
JP16.02	Individual and Society	2 ECP	D	I
ST14.01	State, Politics and Government	2 ECP	D	I
ST16.03	World Military History	4 ECP	D	I, III
ST09.02	Estonian Military History	4 ECP	D	II
ST16.04	Security Policy and National Defence	3 ECP	D	II, IV
KK16.01	English (Level B2)***	4 ECP	ND	I–II
KK16.02	English (Level B1+)***	4 ECP	ND	I–II
KK16.03	English (Level B2)***	4 ECP	ND	I–II
ME16.27	Maritime English	2 ECP	ND	III

Subjects in the module are obligatory for regular full-time students. The module is completed according to the progression of subjects as prescribed by the ENDC.
The English course** is passed according to the language level of students.

Subject Code	JP16.01
Subject	Fundamentals of Leadership
Volume	2 ECP
Assessment	Non-differentiated assessment
Sub-subjects, volume, semester, assessment	–
Objectives	The aim of this subject is to give the students knowledge of leadership and organization theory including their main concepts, development and current central issues. The subject aims to develop the basic knowledge and skills of the students as leaders, allowing them to understand the functioning principles of different organizations in various circumstances and plan their activities as leaders in militarily structured organizations.
Outcomes of the Subject	After completion of the subject the student: 1) Understands the nature of leadership and organisation theory and current issues in the field; 2) Knows different types of organisation and their working principles and can find correlations to militarily organised organisations; 3) Knows the underlying principles of leadership, knows the classification of leaders as well as the different roles and functions of leaders; 4) Is able to distinguish between different leadership styles and methods, and can analyze their impact on human behaviour; 5) Is able to associate different leadership and organisation theories with practical leadership solutions and is able to analyze himself as a leader in his future job.

Subject Code	ST16.01
Subject	Law of National Defence
Volume	2 ECP
Assessment	Differentiated assessment
Sub-subjects, volume, semester, assessment	–
Objectives	The aim of this subject is to give the students knowledge of the main concepts of law, fundamentals of public law and national defence law. The subject also provides the basic skills for applying this knowledge when solving routine practical tasks in active service in the defence forces.
Outcomes of the Subject	After completion of the subject the student: 1) Knows the concepts and sources of law, can distinguish between different areas of law, as well as legal subjects and relationships; 2) Is able to describe the organisation of the Republic of Estonia and its system of legal protection, and can describe their working principles; 3) Knows the legal framework of national defence and the Estonian Defence Forces. Understands the nature of service in the Defence Forces. 4) Is able to resolve routine legal problems within the framework of valid legal norms and principles pertaining to his level of competence and command.

Subject Code	ST16.02
Subject	Law of Armed Conflict

Volume	2 ECP
Assessment	Assessment
Sub-subjects, volume, semester, assessment	–
Objectives	The aim of this subject is to give the students knowledge a general overview of the sources, principles and main rules of the law of armed conflict regulating the behaviour of states, combatants and civilians in armed conflicts. The subject also provides the basic skills for applying this knowledge when solving routine practical tasks in active service in the defence forces.
Outcomes of the Subject	After completion of the subject the student: 1) Knows the sources, main concepts and rules of the law of armed conflict; 2) Is able to explain and apply the main principles of the law of armed conflict in training circumstances; 3) Is aware of the responsibility and can explain the consequences of any violation of the principles of the law of armed conflict; 4) Is able to resolve routine legal problems within the framework of valid legal norms and principles pertaining to his level of competence and command.

Subject Code	JP16.02
Subject	Individual and Society
Volume	2 ECP
Assessment	Differentiated assessment
Sub-subjects, volume, semester, assessment	–
Objectives	The aim of this subject is to give the students knowledge of the main working principles in contemporary society, addressing different aspects of society as a social system (e.g. social relations and processes, social structure). The subject helps these future officers reflect on their role as military leaders in contemporary democratic civil society, supporting the development of students towards becoming ethical and responsible citizens who value democratic values and show tolerance and respect for attitudes different from their own.
Outcomes of the Subject	After completion of the subject the student: 1) Knows the working principles of society and aspects of life in society and is able to create links between them; 2) Knows the main concepts and current issues in the social sciences and is able to relate them to military service; 3) Understands the norms and values valid in society; 4) Is able to deal with different situations involving socio-ethical and military ethical dilemmas; 5) Understands cultural diversity and is able to take it into consideration.

Subject Code	ST14.01
Subject	State, Politics and Government
Volume	2 ECP
Assessment	Differentiated assessment
Sub-subjects, volume, semester, assessment	–

Objectives	The aim of this subject is to give the students knowledge of the structure, functioning and traditions of modern states, as well as of scholarly works related to states and statehood. The knowledge of statehood, parliamentary democracy and political pluralism make future officers more successful when participating in civil-military cooperation projects, contributing to statehood and development of society as opinion leaders and citizens.
Outcomes of the Subject	After completion of the subject the student: 1) Knows the major concepts, choices and issues for citizens and servicemen related to statehood and politics, and knows the main solutions to them and is able to apply them; 2) Understands the nature of a democratic society and the rule of law; knows democratic values and understands his role and responsibility in a democratic society; 3) Knows the main components and values of public government and of the planning, performance and evaluation of politics, and can thereby effectively contribute to the execution of state politics; 4) Knows the parts and working principles of political participation and political culture; 5) Knows different political regimes and ideologies and is able to point out their strengths and weaknesses.

Subject Code	ST16.03
Subject	World Military History
Volume	4 ECP
Assessment	Differentiated assessment
Sub-subjects, volume, semester, assessment	–
Objectives	The aim of this subject is to give students knowledge of major conflicts throughout world military history, as well as of military trends in different eras and the factors that shape and influence modern warfare. The subject gives future officers understanding of the associations between modern warfare and conflicts of past history
Outcomes of the Subject	After completion of the subject the student: 1) Knows the major periods of world military history and can describe them to his subordinates using reasoned argumentation; 2) Understands the role of wars in achieving political goals; 3) Is able to describe the major events, processes and factors influencing the field of military; 4) Is able to compare different military conflicts in the past and explain the evolution of modern warfare; 5) Is able to describe the relationships between different military conflicts in the world military history.

Subject Code	ST09.02
Subject	Estonian Military History
Volume	4 ECP
Assessment	Differentiated assessment
Sub-subjects, volume, semester, assessment	–
Objectives	The aim of this subject is to give the students knowledge of 20th century Estonian military history, of the evolution of Estonian national defence

	and of the links between events in Estonian military history and the present-day security environment.
Outcomes of the Subject	After completion of the subject the student: 1) Knows the main stages and major conflicts in the 20th century Estonian military history; 2) Knows different potential forms of resistance in combat activity on Estonian territory in the 20th century and can characterize them; 3) Is able to compare different combat activities on Estonian territory and justify his/her opinions and viewpoints; 4) Is able to explain and analyze the evolution and development of Estonian national defence; 5) Is able to relate 20th century conflicts to the current security environment of the Republic of Estonia; 6) Is able to describe Estonia's role in the context of 20th century military conflicts around the world.

Subject Code	ST16.04
Subject	Security Policy and National Defence
Volume	3 ECP
Assessment	Differentiated assessment
Sub-subjects, volume, semester, assessment	–
Objectives	The aim of this subject is to give the students the knowledge of present-day security threats, of Estonian security policy, its assets and national defence solutions. The students will have an overview of national defence tasks that ensure national security, and of the logic behind developing this system of national defence.
Outcomes of the Subject	After completion of the subject the student: 1) Understands the strategic role of the Estonian Republic and territory in diverse conflicts; 2) Is able to name the fundamentals of the Estonian security and defence policy; 3) Is aware of security threats and can relate them to security and defence solutions at the state level; 4) Is able to evaluate the importance of different international organisations to ensure the security of the state and can analyze the balance of military capabilities in the Baltic Sea Region.

Subject Code	KK16.01
Subject	English (Level B1)***
Volume	4 ECP
Assessment	Non-differentiated assessment
Sub-subjects, volume, semester, assessment	–

Objectives	The aim of the subject is to develop foreign language competence at independent user's level B1 (threshold). The subject outcomes are based on the level descriptors of the Common European Framework of Reference for Languages. During the course the students acquire additional knowledge about grammar, enhance their listening, reading, writing and speaking skills, vocabulary and pronunciation. An awareness of the cultural norms of the target language is increased. Specialist vocabulary on general military topics is developed. The course aims to support the process of lifelong learning where continuity plays a key role.
Outcomes of the Subject	After completion of the subject the student: 1) Can write straightforward connected texts on a range of familiar subjects within his field of interest including military topics, e.g. descriptions, official letters and summaries based on written an oral sources in English presenting basic factual information; 2) Can reasonably fluently sustain oral communication, using basic sentence constructions and linking devices, can participate in group works, discussions and conversations; 3) Can give a prepared straightforward presentation on different topics, including military topics, based on written and oral sources in English presenting basic factual information; Can ask and provide answers to simpler questions from the audience after his/her presentation.

Subject Code	KK16.02
Subject	English (Level B1+)***
Volume	4 ECP
Assessment	Non-differentiated assessment
Sub-subjects, volume, semester, assessment	–
Objectives	The aim of the subject is to develop foreign language competence at independent user level B1+ (upper threshold). The subject outcomes and assessment criteria are based on the level descriptors of the Common European Framework of Reference for Languages. During the course the students acquire additional knowledge about grammar, enhance their listening, reading, writing and speaking skills, vocabulary and pronunciation. An awareness of the cultural norms of the target language is increased. Specialist vocabulary on general military topics is developed. The course aims to support the process of lifelong learning where continuity plays a key role.
Outcomes of the Subject	After completion of the subject the student: 1) Can write straightforward connected texts on a range of familiar subjects within his field of interest including military topics, e.g. descriptions, official letters, summaries and essays based on written and oral clearly signalled argumentative texts in English presenting accumulated factual information; 2) Can clearly express and justify his/her ideas, and participate in group works, e.g. discussions, debates and disputes; 3) Can give a prepared straightforward presentation with some degree of confidence on different topics, including military topics, based on clear written and oral sources in English presenting accumulated factual information; Can ask and provide answers with some degree of confidence to questions from the audience after his/her presentation.

Subject Code	KK16.03
Subject	English (Level B2)***
Volume	4 ECP
Assessment	Non-differentiated assessment
Sub-subjects, volume, semester, assessment	–
Objectives	The aim of the subject is to develop foreign language competence at independent user level B2 (vantage). The subject outcomes are based on the level descriptors of the Common European Framework of Reference for Languages. During the course the students acquire additional knowledge about grammar, enhance their listening, reading, writing and speaking skills, vocabulary and pronunciation. An awareness of the cultural norms of the target language is increased. Specialist vocabulary on general military topics is developed. The course aims to support the process of lifelong learning where continuity plays a key role.
Outcomes of the Subject	After completion of the subject the student: 1) Can write clear, well structured, detailed texts on a variety of subjects, including military topics, e.g. descriptions, official letters, summaries and essays, synthesizing and evaluating information and arguments from a number of sources, providing their point of view giving reasons in support of or against a particular point of view, using authentic linguistically and propositionally complex English sources; 2) Can express him or herself clearly and appropriately when participating in group works, e.g. discussions, debates, disputes, giving the advantages and disadvantages of various options on a wide range of subjects. Can expand and support ideas with subsidiary points and relevant examples; 3) Can give a clear, prepared presentation on a variety of subjects, including military tropics based on linguistically and propositionally complex authentic oral and written English sources;. Can ask and provide answers with a degree of fluency and spontaneity to a series of questions from the audience after his/her presentation.

Subject Code	ME16.27
Subject	Maritime English
Volume	2 ECP
Assessment	Non-differentiated assessment
Sub-subjects, volume, semester, assessment	–
Objectives	The aim of this subject is to develop the competence and skills of students to perform the service duties in English in general maritime fields aboard a warship.
Outcomes of the Subject	After completion of the subject the student: 1) Can describe ship construction and types of ships in English; 2) Knows and can use the standard expressions of the International Maritime Organisation (IMO SMCP); 3) Knows and can apply the English terminology of the Convention on the International Regulations for Preventing Collisions at Sea; (COLREG); 4) Can use English for the safe operation of a ship and to ensure safety;

MILITARY LEADERSHIP MODULE		Volume 42*/34** ECP
Objective	The objective of the military leadership module is to provide students with the knowledge and skills for commanding a subunit and for ensuring the combat readiness of a warship. After completion of the module the students are able to perform the tasks of a military leader in the navy as well as be platoon commanders of the land force in wartime.	
Outcomes	After completion of this military leadership module the student: 1) Knows the aims, types and assets of maritime warfare as well as different levels of command; 2) Knows and is able to perform his/her duties as a member a ship's company; 3) Is able to lead his/her subunit both at sea and in port, according to the watch and station bill; 4) Is able to perform tasks of an officer of the watch or engineering officer of the watch, according to the specialisation; 5) Knows the basic concepts of psychology, is able to distinguish between psychological processes, states and properties, and is aware of their application on performance of his/her duties; 6) Can plan, prepare and lead the combat activities of an infantry platoon, taking into account its combat capabilities and following the principles of modern combat. 7) Knows the tactics of the enemy in conditions of conventional warfare when performing combat tasks of a platoon.	
Assessment: the module is assessed on the basis of subjects.		

Code	Subject	Volume	Assessment	Semester
ME16.28	Fundamentals of Maritime Warfare	6 ECP	D	IV
ME16.29	Warfare*	6 ECP	ND	V
TK15.02	Fundamentals of Infantry Platoon Tactics and Command	10 ECP	ND	II
JP16.22	Applications of Psychology in the Defence Forces	4 ECP	ND	I–II
ME16.30	Practical Placement – Seamanship	6 ECP	ND	II
ME16.31	Practical Placement – Officer of the Watch at Sea*	10 ECP	ND	VI
ME16.32	Practical Placement – Engineering Officer of the Watch at Sea**	8 ECP	ND	VI

The subjects in the module are obligatory for regular full-time students. The module is completed according to the progression of subjects as prescribed by the ENDC.

* Warfare Specialty

** Engineering Specialty

Subject Code	ME16.28
Subject	Fundamentals of Maritime Warfare
Volume	6 ECP

Assessment	Differentiated assessment
Sub-subjects, volume, semester, assessment	–
Objectives	The aim of this subject is to give students knowledge of the purposes, environment and history of maritime warfare. The subject also gives an overview of the assets of marirtime warfare and their application opportunities in maritime operations.
Outcomes of the Subject	After completion of the subject the student: 1) Knows the specific nature of the strategic environment of maritime warfare; 2) Knows the concepts of maritime warfare and can illustrate them with examples from naval warfare history; 3) Knows the history of maritime warfare and can associate the development of tactics with technological developments; 4) Knows the assets of maritime warfare and their application opportunities; 5) Knows the areas of maritime warfare and their assets; 6) Knows maritime operations and the application opportunities of sea powers.

Subject Code	ME16.29
Subject	Naval Tactics
Volume	6 ECP
Assessment	Non-differentiated assessment
Sub-subjects, volume, semester, assessment	–
Objectives	The aim of the subject is to give students practical knowledge and skills in naval tactics in order to perform service duties as officers of the watch.
Outcomes of the Subject	After completion of the subject the student: 1) Knows the structure of the principles of action information organization (AIO) picture compilation and weapons employment and can perform basic procedures of picture compilation and weapons employment; 2) Knows the organisation of anti-air warfare and can use air picture compilation procedures; 3) Knows the organisation of anti-surface warfare and can use surface picture compilation procedures; 4) Knows the concepts and organisation of electronic warfare and can operate correctly in the environment of electronic warfare; 5) Knows the organisation of anti-submarine warfare and is familiar with the basic requirements for operating with submarines; 6) Knows CBRN reporting procedures and can plot CBRN threat areas; 7) Knows the concepts and applications of naval mine warfare and naval mine countermeasure tactics.

Subject Code	TK15.02
Subject	Fundamentals of Infantry Platoon Tactics and Command
Volume	10 ECP
Assessment	Non-differentiated assessment
Sub-subjects, volume,	–

semester, assessment	
Objectives	The aim of this subject is to give students knowledge of the planning and command of infantry platoon combat activities. It also aims to provide students with the leadership experience to be able to perform the duties of a wartime platoon leader.
Outcomes of the Subject	After completion of the subject the student: 1) Can analyze the combat power of a tactical enemy based on a higher commander's order to plan infantry platoon combat activities; 2) Is able to plan the activities of an infantry platoon (incl. under special conditions) and draft operation orders; 3) Is able to plan combat support and combat service support elements for infantry platoon combat activities; 4) Is able to lead an infantry platoon in different types of combat.

Subject Code	JP16.22
Subject	Applications of Psychology in the Defence Forces
Volume	4 ECP
Assessment	Non-differentiated assessment
Sub-subjects, volume, semester, assessment	–
Objectives	The aim of this subject is to provide students with knowledge of the applications of psychology in the military and the skills necessary to sustain their own and their subordinates' combat capability. Acquired knowledge and skills support their pedagogical competence in their service.
Outcomes of the Subject	After completion of the subject the student: 1) Knows the main concepts and fields of psychology, can identify psychological characteristics, processes and states, and understands their importance for performing service duties; 2) Knows the main trends that affect motivation and human behaviour and can take them into consideration as a military leader; 3) Knows the consequences of distress and combat stress and is able to identify the signs of stress both in himself and in subordinates; 4) Knows the main psychological theories of studying and can take into consideration various psychological states that support or hinder studying.

Subject Code	ME16.30
Subject	Practical Placement – Seamanship
Volume	6 ECP
Assessment	Non-differentiated assessment
Sub-subjects, volume, semester, assessment	–
Objectives	The subject aims to provide the students with initial work experience aboard a ship and teach the skills to cope with the everyday tasks of a deck team member or an engine room team member according to the watch and station bill.
Outcomes of the Subject	After completion of the subject the student: 1) Is familiar with the specifics of a warship and its crew as a system; 2) Can tie different knots, splice and whip; 3) Is able to use deck equipment and participate in work aboard a ship;

	4) Is able to perform different tasks on watch. 5) Is able to perform the tasks of deck team members and an engine room team members in different roles; 6) Is familiar with and follows the safety rules aboard a ship; 7) Is familiar with the environmental protection requirements aboard a ship.

Subject Code	ME16.31
Subject	Practical Placement – Officer of the Watch at Sea*
Volume	10 ECP
Assessment	Non-differentiated assessment
Sub-subjects, volume, semester, assessment	–
Objectives	The aim of this subject is to reinforce students' knowledge and skills in navigation and maneuvering in order to perform the duties of an officer of the watch aboard a warship.
Outcomes of the Subject	After completion of the subject the student: 1) Can determine the position of a ship and control the route of a ship using optical, radar and satellite navigation systems; 2) Can perform buoy manoeuvres with a training ship; 3) Can apply the international rules to prevent collision at sea; 4) Is able to apply internal rules and regulations pertaining to service aboard a warship when performing the tasks of officer of the watch; 5) Is able to complete all required documentation correctly as an officer of the watch; 6) Can perform the duties of an officer of the watch in seamanship and damage control situations; 7) Can perform the tasks of officer of the watch in port, ensuring the safety of a warship.

Subject Code	ME16.32
Subject	Practical Placement – Engineering Officer of the Watch at Sea**
Volume	8 ECP
Assessment	Non-differentiated assessment
Sub-subjects, volume, semester, assessment	–
Objectives	The aim of this subject is to provide students with the skills to be the head of a marine engineering department and engineering officer of the watch in different roles at sea and in port, to predict and plan the operating expenditure of equipment and to perform maintenance and repair.
Outcomes of the Subject	After completion of the subject the student: 1) Is able to apply internal rules and regulations pertaining to service aboard a warship when performing the tasks of en engineering officer; 2) Is able to complete all required documentation correctly; 3) Can lead the marine engineering team aboard a ship for everyday work and in different roles at sea and in port; 4) Is able to independently monitor different equipment as an engineering officer of the watch and make small repairs; 5) Is able to plan the maintenance and repair of engines and systems;

	6) Is able to predict the expenditure of fuel, lubricants and water and plan the replenishment of supplies.

PEDAGOGY AND RESEARCH MODULE	**Volume 25 ECP**
Objective	The aim of the pedagogy and research module is to provide students with the skills and knowledge necessary to perform the duties of a leader and teacher and to solve different problems that might arise when doing research.
Outcomes	After completion of this module the student: 1) Can express him-/herself correctly both in oral and written Estonian and uses his/her language register purposefully; 2) s capable of independent planning, preparing, executing and evaluating of training courses, taking into consideration the training manuals and regulations of the Estonian Defence Forces; 3) Is able to prepare and conduct firing training squad sized units; 4) Is able to formulate research questions using specialised literature and compile representative samples for basic research; 5) Knows the main data collection and statistical data analysis methods; 6) Is able to collect relevant data based on his or her research problem and objective, can analyze collected data and draw relevant conclusions.
Assessment: the module is assessed on the basis of subjects.	

Code	**Subject**	**Volume**	**Assessment**	**Semester**
KK13.01	Written and Oral Self-expression in Estonian	3 ECP	D	II
JP16.13	Fundamentals of Scientific Research	4 ECP	D	IV
JP16.21	Basic Instructor Course	3 ECP	D	I
JP16.23	Organizing Infantry Squad Firing Training	3 ECP	ND	IV
ME16.33	Ship Company Training	2 ECP	ND	VI
VT14.01	Final Paper	10 ECP	D	IV–VI

The subjects in the module are obligatory for regular full-time students. The module is completed according to the progression of subjects as prescribed by the ENDC.

Subject Code	KK13.01
Subject	Written and Oral Self-expression in Estonian
Volume	3 ECP
Assessment	Differentiated assessment
Sub-subjects, volume, semester, assessment	–
Objectives	The aim of this subject is to give the students the knowledge and skills of correct and purposeful self-expression in both oral and written Estonian. The subject deals with orthography, form and syntax, the importance of differentiation between different styles of texts. Students learn to compose and interpret different styles of texts and practice public speech.
Outcomes of the Subject	After completion of the subject the student:

	1) Knows the main rules of the Estonian orthography and is able to use them when composing a text; 2) Knows different functional text styles (literary, journalistic and scientific styles, those employed in official documents and the spoken language) and can use the most appropriate of them according to purpose; 3) Knows different stylistic mistakes and is able to avoid them when composing a text; 4) Knows the principles of text compilation and can compile a coherent text him/herself (including diverse service-related texts); 5) Is able to analyze and evaluate different media texts; 6) Is able to compose a public speech and deliver it.

Subject Code	JP16.13
Subject	Fundamentals of Scientific Research
Volume	4 ECP
Assessment	Differentiated assessment
Sub-subjects, volume, semester, assessment	–
Objectives	The aim of this subject is to give students knowledge of the composition of scientific research and requirements set for scientific research, and to introduce them to the experience of writing scientific research. The subject aims to develop the students' skills in using various data sources, formulating research problems, collecting data, analysing this collected data and drawing the appropriate conclusions from it.
Outcomes of the Subject	After completion of the subject the student: 1) Is familiar with research methodology principles and can plan scientific research; 2) Can choose appropriate literature depending on the subject (incl. from databases) and analyze them critically; 3) Can formulate research questions or hypotheses based on the purpose of a research paper; 4) Knows the main data collection methods and can choose the appropriate method depending on the purpose of a research paper; 5) Is able to interpret gathered information and/or data and draw appropriate conclusions; 6) Is able to produce an independent volume of research following correct requirements; 7) Is able to prepare and deliver a public presentation.

Subject Code	JP16.21
Subject	Basic Instructor Course
Volume	3 ECP
Assessment	Differentiated assessment
Sub-subjects, volume, semester, assessment	–
Objectives	The aim of this subject is to give students the knowledge of training methodology up to platoon-sized units and skills for how to carry out lessons on handling technical equipment and conduct individual training. The course aims to develop the students' communication, presentation and leadership skills.

Outcomes of the Subject	After completion of the subject the student: 1) Knows the principles of didactics based on andragogy; 2) Is able to carry out lessons on handling technical equipment; 3) Is able to carry out individual training using appropriate teaching methods; 4) Knows the methods for teamwork; 5) Knows evaluation methods used for evaluating platoon-sized units.

Subject Code	JP16.23
Subject	Organizing Infantry Squad Firing Training
Volume	3 ECP
Assessment	Differentiated assessment
Sub-subjects, volume, semester, assessment	–
Objectives	The aim of the subject is to give students the knowledge and skills for conducting firing training.
Outcomes of the Subject	After completion of the subject the student: 1) Knows the types and purposes of infantry squad firing exercises; 2) Is able to plan and conduct firing exercises using firearms. 3) Is able to plan and prepare live fire exercises in accordance with Estonian Defence Forces safety regulations on live fire training;

Subject Code	ME16.33
Subject	Ship Company Training
Volume	2 ECP
Assessment	Non-differentiated assessment
Sub-subjects, volume, semester, assessment	–
Objectives	The aim of this subject is to give students knowledge of the rules that regulate the organisation of ship company training and the skills to fill in the necessary documents.
Outcomes of the Subject	After completion of the subject the student: 1) Can fill in the necessary documents for planning and performing training; 2) Is able to plan the necessary time and equipment for obtaining learning outcomes, based on the objectives and needs of warship crew training; 3) Is able to prepare and deliver lectures autonomously on a given subject; 4) Is able to prepare safely and autonomously small arms and gunnery exercises at sea; 5) Is able to describe the connections between ship company collective training, combat readiness, and the operational cycle.

Subject Code	VT14.01
Subject	Final Paper
Volume	10 ECP
Assessment	Differentiated assessment
Sub-subjects, volume, semester, assessment	1. Final Paper Seminar I (2 ECP, IV, ND) 2. Final Paper Seminar II (2 ECP, V, ND) 3. Preliminary Defence (2 ECP, VI, ND)

	5. Preliminary Defence (4 ECP, VI, D)
Objectives	The aim of the final paper is to allow students to put all the knowledge acquired throughout their studies into practice by solving a theoretical or empirical research problem related to military matters. With the guidance of a supervisor, students will gain experience in compiling scientific research. Final paper seminars develop the ability to analyze texts through students reviewing each others' research projects.
Outcomes of the Subject	After successful defence of the final paper the student: 1) Is able to formulate research tasks, problems and hypotheses based on associated research tasks on a given topic; 2) Is able to select the appropriate literature and sources for dealing with a given topic and critically use these sources in his/her final paper; 3) Is able to collect data and draw conclusions based on that data, using the appropriate methods and draw conclusions; 4) *I*s able to evaluate the solution of theoretical, practical and empirical military-related problems based on conclusions; 5) Is able to compile and write up a cohesive piece of scientific research, following the academic requirements for final papers; 6) Is able to explain the statements presented in his/her final paper and defend them in an academic discussion.

ADMINISTRATION AND TECHNOLOGY MODULE	**Volume 29*/32**ECP**
Objective	The aim of the administration and technology module is to give students the knowledge of naval communication systems and weapon systems aboard a warship, as well as skills to cope with different damage control situations aboard a warship. In order to achieve this aim and obtain sufficient knowledge in the field of technology subjects the cadets are provided with necessary knowledge of sciences. On completion of this module the student is able to perform the administrative tasks of junior officer in peacetime.
Outcomes	After completion of this administration and technology module the student: 1) Understands the importance of science in the profession of officer, has thorough knowledge of military technology and technical equipment, and can apply scientific models in the analysis and resolution of problems; 2) Is able to provide first aid and perform medical tasks aboard a warship; 3) Knows the principles of marine pollution prevention; 4) Knows the structure of the Estonian Navy, its fleet composition and functions, and is able to describe their relationship with national defense and international cooperation; 5) Knows the weapon systems of Estonian warships and the principles of using; 6) Knows the naval communication means and systems, can use them according to procedures and requirements; 7) Is able to perform the administrative duties of a junior navy officer.
Assessment: the module is assessed on the basis of subjects.	

Code	**Subject**	**Volume**	**Assessment**	**Semester**

LT16.02	Military Technology I: Tactical Communication and Electronic Warfare	2 ECP	ND	I
LT16.03	Military Technology II: Technical Equipment and Other Equipment of a Tactical Unit	2 ECP	ND	II
LT16.04	Military Technology III: Land Based Platforms	2 ECP	ND	II
LT16.05	Military Technology IV: Weaponry**	2 ECP	ND	II
LT16.06	Military Technology V: Optronics and Communication Equipment**	2 ECP	ND	IV
LT16.07	Military Technology VI: Field Electrical Wiring	2 ECP	ND	IV
LT14.06	Models of Exact Sciences in Military	2 ECP	D	I
TK16.22	Medical Studies	3 ECP	ND	I–II
ME16.34	Naval Weaponry	5 ECP	ND	IV
ME26.35	Damage Control	4 ECP	D	II
ME16.36	Naval Administration	2 ECP	ND	VI
ME16.37	Naval Communications*	7 ECP	ND	IV
ME16.38	Fundamentals of Naval Communications**	2 ECP	ND	IV
ME16.39	Chemical Analyses Aboard a Warship**	2 ECP	ND	IV

The subjects in the module are obligatory for regular full-time students. The module is completed according to the progression of subjects as prescribed by the ENDC.
** Engineering Specialty

Subject Code	LT16.02
Subject	Military Technology I: Tactical Communication and Electronic Warfare
Volume	2 ECP
Assessment	Non-differentiated assessment
Sub-subjects, volume, semester, assessment	–
Objectives	The aim of this subject is to give students knowledge of the means of communication equipment, communication networks and communication requirements used at tactical level in the Estonian Defence Forces. The subject also aims to provide the skills necessary to support the combat activity of a tactical unit, to plan and command electronic warfare.
Outcomes of the Subject	After completion of the subject the student: 1) Can evaluate antenna parameters, transmitter-receiver balance and distance of radio communication; 2) Understands the types of communications networks and their application possibilities in different types of combat; 3) Is able to evaluate the limitations caused by the enemy's electronic warfare capability; 4) Can install wire communication network.

Subject Code	LT16.03
Subject	Military Technology II: Technical Equipment and Other Equipment of a Tactical Unit
Volume	2 ECP
Assessment	Non-differentiated assessment
Sub-subjects, volume, semester, assessment	–
Objectives	The aim of this subject is to give students the knowledge to understand the working principles of the electrical and mechanical tools that are part of an infantry company's standard equipment. The subject also provides the skills to perform level 1 and level 2 equipment maintenance and repair.
Outcomes of the Subject	After completion of the subject the student: 1) Is able to use theoretical models and formulae for solving tasks related to elasticity, friction, rotation and deformation; 2) Knows the technical specifications and tactical data of the technical equipment used in a company; 3) Is able to use the electrical and mechanical assets used in a company; 4) Is able to plan and organise maintenance at levels 1 and 2 of the technical parts of standard equipment.

Subject Code	LT16.04
Subject	Military Technology III: Land Based Platforms
Volume	2 ECP
Assessment	Non-differentiated assessment
Sub-subjects, volume, semester, assessment	–
Objectives	The aim of this subject is to give students the knowledge to use the land-based platforms of an infantry company. The subject also provides the skills to perform level 1 and level 2 maintenance and repair work for such equipment.
Outcomes of the Subject	After completion of the subject the student: 1) Is able to use the theoretical models and formulae for solving tasks related to transport, winching and towing; 2) Knows the structure of a battalion's logistical support and the technical specifications, tactical applications and capability of vehicles used; 3) Knows the field repair principles of wheeled transport equipment and maintenance thereof at levels 1 and 2; 4) Can organise the winching and towing of transport equipment.

Subject Code	LT16.05
Subject	Military Technology IV: Weaponry**
Volume	2 ECP
Assessment	Non-differentiated assessment
Sub-subjects, volume, semester, assessment	–
Objectives	The aim of this subject is to give students knowledge of the working principles of the weaponry of an infantry company. The subject also provides the skills to perform level 1 and level 2 maintenance and repair work for company weaponry.

Outcomes of the Subject	After completion of the subject the student: 1) Is able to evaluate the volume of energy released from explosive substances; 2) Is able to analyze the force, inertia and velocity of a bullet caused by the internal ballistics of a weapon; 3) Can evaluate the effective firing of weapons; 4) Knows the technical specifications and tactical data of the weapons used in a company; 5) Knows the life cycle of company weaponry and is able to plan and carry out level 1 and level 2 weaponry maintenance works.

Subject Code	LT16.06
Subject	Military Technology V: Optronics and Communication Equipment**
Volume	2 ECP
Assessment	Non-differentiated assessment
Sub-subjects, volume, semester, assessment	–
Objectives	The aim of this subject is to give students knowledge of the optronics and communication equipment of a company and their structure. The subject also provides the skills to perform level 1 and level 2 maintenance and repair works of such equipment.
Outcomes of the Subject	After completion of the subject the student: 1) Is able to use the theoretical models an formulae for solving the tasks related to the travelling and breaking of light; 2) Knows the technical specifications and tactical data of the weapons used in a company; 3) Knows how to plan and carry out level 1 and level 2 maintenance works of optronic and communication equipment; 4) Can carry out performance checks on optronic and communication equipment and identify problems.

Subject Code	LT16.07
Subject	Military Technology VI: Field Electrical Wiring
Volume	2 ECP
Assessment	Non-differentiated assessment
Sub-subjects, volume, semester, assessment	–
Objectives	The aim of the subject is to give students knowledge of the generators and field power networks used at tactical level, plus their installation.
Outcomes of the Subject	After completion of the subject the student: 1) Can carry out current intensity and voltage measurements of field networks using an ammeter, voltmeter and network analyser; 2) Follows the appropriate safety regulations when working with electrical devices; 3) Is able to analyze the main characteristics of a circuit diagram (voltage, current intensity, obstruction, the cross-sectional area of a cable, wattage and operation) based on theoretical formulae; 4) Can classify faulty devices with regard to repair, maintenance principles and knows the repair, maintenance and life cycles of electrical devices;

Subject Code	LT14.06
Subject	Models of Exact Sciences in the Military
Volume	2 ECP
Assessment	Differentiated assessment
Sub-subjects, volume, semester, assessment	–
Objectives	The aim of this subject is to reinforce students' knowledge of the sciences and teaches the use of the models used in sciences to resolve the problems in the military field. Topics are related to the effects of fire, radiology, materials science, strength of materials, foundations of the electromagnetic spectrum, as well as probability theory to predict activities on the battlefield.
Outcomes of the Subject	After completion of the subject the student: 1) Can use mathematical measures to resolve military problems; 2) Can estimate the effects of fire on people and technical equipment based on calculations; 3) Can estimate the impact of ionizing radiation on people, technical equipment, and the surrounding environment; 4) Can classify the parts and application opportunities of the electromagnetic spectrum; 5) Can apply probability theory for efficient action on the battlefield; 6) Is able to compare the properties of technical and other equipment based on the strength of the materials used.

Subject Code	TK16.22
Subject	Medical Studies
Volume	3 ECP
Assessment	Non-differentiated assessment
Sub-subjects, volume, semester, assessment	1. Medical Studies I (1 ECP, I, ND) 2. Medical Studies II (2 ECP, II, ND)
Objectives	The aim of this subject is to give students the basic knowledge and skills necessary to administer medical aid and provide healthcare to casualties of combat and accidents in land and aboard a warship.
Outcomes of the Subject	After completion of the subject the student: 1) Is able to render first aid in peacetime and to combat casualties in various combat situations both on land and at sea; 2) Is able to recognize the special impact of CBRN weapons on people and equipment and can employ appropriate first aid measures and personal protection equipment; 3) Knows the main principles of medial tactics in the Estonian Defence Forces on land and at sea, and based on such is able to organise medical aid; 4) Is able to carry out tactical combat casualty care (TCCC) training.

Subject Code	ME16.34
Subject	Naval Weaponry
Volume	5 ECP
Assessment	Non-differentiated assessment
Sub-subjects, volume, semester, assessment	–
Objectives	The aim of this subject is to give students knowledge of the weapon and

	sensor theories, surface and submarine weapon systems, and about weapon systems used aboard Estonian warships, and the safety rules for handling the above water gunnery.
Outcomes of the Subject	After completion of the subject the student: 1) Knows the main concepts of radio, radar and sonar theory; 2) Knows the working principles of artillery pieces, missiles, torpedos and sea mines: 3) Knows the working principles of unmanned underwater vehicles; 4) Can use the small calibre gunnery weapons used aboard a warship; 5) Can follow the visual fire control procedures of the above water gunnery weapons; 6) Can plan and conduct above water gunnery shooting, following safety regulations.

Subject Code	ME16.35
Subject	Damage Control
Volume	4 ECP
Assessment	Differentiated assessment
Sub-subjects, volume, semester, assessment	–
Objectives	The aim of this subject is to give the students knowledge of damage control and CBRN protection aboard a warship in order to perform the duties of deck crew and officer of the watch.
Outcomes of the Subject	After completion of the subject the student: 1) Knows the organisation and procedures of damage control and CBRN protection in the Estonian Navy; 2) Know the process of burning and fire propagation; 3) Knows and can use the equipment for CBRN protection, fire prevention and flooding control used in the Estonian Navy; 4) Can keep a damage control plot.

Subject Code	ME16.36
Subject	Naval Administration
Volume	2 ECP
Assessment	Non-differentiated assessment
Sub-subjects, volume, semester, assessment	–
Objectives	The aim of this subject is to provide navy officers with the knowledge and skills necessary for administrative work at subunit level.
Outcomes of the Subject	After completion of the subject the student: 1) Knows the record management principles of the Estonian Defence Forces; 2) Can draft service-related administrative documents, including those of a warship; 3) Knows the main legislation regulating the main peacetime activities of the Estonian Defence Forces; 4) Understands the nature and principles of disciplinary proceedings and can resolve routine service-related cases.

Subject Code	ME16.37
Subject	Naval Communications*

Volume	7 ECP
Assessment	Non-differentiated assessment
Sub-subjects, volume, semester, assessment	–
Objectives	The aim of this subject is to provide students with the knowledge of naval communications, and necessary skills for performing the duties of officer of the watch aboard a warship.
Outcomes of the Subject	After completion of the subject the student: 1) Knows the overall organisation of naval communication, the structure of NATO naval communication, and the appropriate regulations; 2) Can use visual communication; 3) Can use voice communication; 4) Can use message communication and write ACP-127 messages; 5) Can use tactical manoeuvring procedures and techniques on a manoeuvring board; 6) Can use lower level codes.

Subject Code	ME16.38
Subject	Fundamentals of Naval Communications**
Volume	2 ECP
Assessment	Non-differentiated assessment
Sub-subjects, volume, semester, assessment	–
Objectives	The aim of this subject is to provide students with the basic knowledge of naval communications, and necessary skills for performing duties of the engineering officer of a warship.
Outcomes of the Subject	After completion of the subject the student: 1) Knows the overall organisation of naval communications; 2) Can use the regulations regulating naval communication; 3) Can use voice communication; 4) Can use message communication and write ACP-127 messages; 5) Is able to compose routine logistical messages;

Subject Code	ME16.39
Subject	Chemical Analyses Aboard a Warship**
Volume	2 ECP
Assessment	Non-differentiated assessment
Sub-subjects, volume, semester, assessment	–
Objectives	The aim of this subject is to provide students with the knowledge of liquids used aboard a warship and skills to analyze them.
Outcomes of the Subject	After completion of the subject the student: 1) Knows which liquids are used in the technology section of a warship, their properties and how these liquids are used; 2) Is able to analyze oils used aboard of a warship; 3) Is able to analyze diesel fuel used on the warship; 4) Is able to determine the hardness and purity of water.

SPECIALIZATION MODULE I -	**Volume**

* WARFARE SPECIALTY		57 ECP
Objective	The objective of the warfare specialty is to provide the student with the knowledge of ships and navigation, and skills to perform duties of a warfare officer, and ensure warship's combat readiness as stated by internationally established rules.	
Outcomes	On completion of the module the student: 1) Knows the obligations and limitations regulated by the law of the sea and naval warfare, and how to apply them on performing daily service duties aboard a warship; 2) Knows the types of ships, their characteristics and construction; 3) Can use different methods for determining the position of a ship; 4) Can perform simple calculations regarding the operation of a ship and its sea-worthiness; 5) Can use the communication equipment aboard a ship for domestic and international communication; 6) Has acquired the knowledge and skills to handle the ship in different circumstances, taking into account the factors affecting navigation; 7) Knows the measures to ensure safe navigation and is able to behave in emergency situations; 8) Knows the principles of tactical navigation and can apply them.	
Assessment: the module is assessed on the basis of subjects.		

Code	Subject	Volume	Assessment	Semester
ST16.06	Law of the Sea and Law of the Naval Warfare	2 ECP	D	VI
ME16.01	Maritime Communication	3 ECP	D	VI
ME16.02	Ship Construction	4 ECP	D	III
ME16.03	Ship Design and Stability	6 ECP	D	IV
ME16.04	Maritime Safety I	4 ECP	D	III
ME16.05	Maritime Safety II	3 ECP	D	IV
ME16.06	Ship Power Plants and Auxiliary Machinery	3 ECP	D	III
ME16.07	Navigation L I	4 ECP	D	III
ME16.08	Navigation L II	4 ECP	D	V
ME16.09	Bridge Training Simulation	6 ECP	ND	VI
ME16.10	Ship Handling I	3 ECP	D	III
ME16.11	Ship Handling II	5 ECP	D	V
ME16.12	Navigation at Sea	3 ECP	ND	IV
ME16.13	Practical Placement – Navigation at Sea	7 ECP	D	IV–VI

The subjects in this module are obligatory for the students completing the specialisation module. The module is completed according to the progression of subjects as prescribed by the ENDC.

Subject Code	ST16.06
Subject	Law of the Sea and Law of the Naval Warfare
Volume	2 ECP

Sub-subjects, volume, semester, assessment	–
Objectives	The aim of this subject is to give the students fundamental knowledge of the international law of the sea, including the subdivision of marine waters, and of the regulations valid in these areas. The subject also addresses issues regarding the status, rights and obligations of ships. In addition, the subject gives an overview of naval warfare and of the regulations pertaining to security and policing operations at sea, and the basic rules of applying such regulations.
Outcomes of the Subject	After completion of the subject the student: 1) Knows the sources of the law of the sea and the law of naval warfare; can explain the division of maritime zones and regulations valid in different areas. Can determine the status of vessels; 2) Is able to interpret the general rules of the law of armed conflict in the context of naval warfare and explain the rules specific to naval warfare; 3) Understands the role of the navy in security and policing operations at sea; can introduce the rules thereof and highlight the main problems in them; 4) Is able to resolve hypothetical situations based on the law of the sea and the law of naval warfare and evaluate similar historical examples;

Subject Code	ME16.01
Subject	Maritime Communication
Volume	3 ECP
Assessment	Differentiated assessment
Sub-subjects, volume, semester, assessment	–
Objectives	The aim of the subject is to give students the knowledge of the international maritime communication and the skills to use the means of communication at sea, allowing the student to transmit and receive messages, and providing qualification for performing the tasks of an officer on watch related to seafaring.
Outcomes of the Subject	After completion of the subject the student: 1) Knows general and operating principles of GMDSS ("Global Maritime Distress and Safety System") subsystems; 2) Knows the radio communication requirements of SOLAS ("Convention for the Safety of Life at Sea"); 3) Knows the radio communication documentation of ITU (International Telecommunication Union) and IMO (International Maritime Organization); 4) Can use the GMDSS equipment, depending on situation and necessity; 5) Is able to communicate in English via radio telephone and using the letter typing mode; 6) Can use the manuals of international radio communication.

Subject Code	ME16.02
Subject	Ship Construction
Volume	4 ECP
Assessment	Differentiated assessment
Sub-subjects, volume,	–

semester, assessment	
Objectives	The aim of the subject is to give students the knowledge of different types of ships and their equipment and the particularities of their using, for the student to consider constructional and operational limits when manoeuvring a ship.
Outcomes of the Subject	After completion of the subject the student: 1) Knows the types of ships and their objectives of using; 2) Is able to analyze sea worthiness and operational properties of a ship that result from ratio of its shape and dimensions; 3) Can name all the parts of the hull, construction elements and details; 4) Can make simple calculations regarding the using and sea worthiness of the ship, taking into account its registered tonnage; 5) Knows the problems that may arise due to the general and local structural strength of the ship, and cargo stowing; 6) Is able to describe the principles of buoyancy and construction to ensure floodability of the ship; 7) Knows the function and structure of ship technical equipment; 8) Knows the components of the ship systems, and the classification of systems according to their purpose.

Subject Code	ME16.03
Subject	Ship Design and Stability
Volume	6 ECP
Assessment	Differentiated assessment
Sub-subjects, volume, semester, assessment	–
Objectives	The aim of the subject is to give students the knowledge and skills to determine the hydrostatic data of ships; to calculate and adjust the stability, heeling and trim of vessels; to determine the longitudinal strength of vessels; to estimate the consequences of flooding in ship compartments; and to stow cargo in accordance with IMO stability requirements.
Outcomes of the Subject	After completion of the subject the student: 1) Knows the fundamentals of ship construction body lines and can build the model of the hull of a ship using a computer programme; 2) Knows the factors affecting the stability of a ship and the IMO recommendations for it, and is able to calculate or find the source data to determine the stability of ships; 3) Can calculate the forces and tensions on the hull of a vessel; 4) Can calculate floodability and stability of a ship in the event of water intrusion; 5) Can calculate the ship's draught in different conditions using a ship stability book; can make a stowage plan.

Subject Code	ME16.04
Subject	Maritime Safety I
Volume	4 ECP
Assessment	Differentiated assessment
Sub-subjects, volume, semester, assessment	–
Objectives	The aim of the subject is to give the students knowledge of various international regulations for maritime safety and how to apply them, and

	also the skills to ensure the safe operation of a ship, how to act in emergency situations, and solve any emergency situations at sea and in port.
Outcomes of the Subject	After completion of the subject the student: 1) Knows and can apply the International Ship Collision Avoidance Rules (COLREGS 72); 2) Is familiar with the international aviation and maritime search and rescue manual "International Aeronautical and Maritime Search and Rescue Manual" (IAMSAR); 3) Knows the proper manoeuvres and how to act when a person falls overboard; 4) Knows the pre- and post-actions to be taken for assessing the situation and maintaining buoyancy of a ship in the event of running aground; 5) Knows the procedures for rescuing people in distress, and helping a distressed ship; 6) Knows the techniques to refloat a grounded ship; 7) Knows the operating rules for rescuing a distressed ship in port; 8) Can organise the liquidation of consequences of an accident and can evaluate the effectiveness of the measures taken.

Subject Code	ME16.05
Subject	Maritime Safety II
Volume	3 ECP
Assessment	Differentiated assessment
Sub-subjects, volume, semester, assessment	–
Objectives	The aim of the subject is to give the students knowledge of how to act on a damaged ship and the skills to operate properly and ensure the safety of the ship and people aboard.
Outcomes of the Subject	After completion of the subject the student: 1) Knows the warning signals, can use the means of communication within the ship in case of emergency, and behave appropriately; 2) Knows the tools, procedures and methods for launching lifeboats, rafts and guard boats; 3) Knows the influence of hull damage and water intrusion into a room to the trim and stability of a ship, and also the methods of stopping leakage and restoring the trim and stability; 4) Knows IMO recommendations for ensuring stability throughout a journey; 5) Can plan actions to reduce damage and maintain the operability of a ship after fire and explosion; 6) Can draft action plans for emergency situations and assess their effectiveness.

Subject Code	ME16.06
Subject	Ship Power Plants and Auxiliary Machinery
Volume	3 ECP
Assessment	Differentiated assessment
Sub-subjects, volume, semester, assessment	–

Objectives	The aim of the subject is to give the students knowledge of ship power plants and related mechanisms, their purpose, using possibilities and limitations.
Outcomes of the Subject	After completion of the subject the student: 1) Knows the classification of marine mechanisms, their purpose and functional interactions; 2) Knows the factors and fundamental concepts that influence the operability of a ship; 3) Knows the working principles and structure of marine diesel engines and their classification according to different features; 4) Knows the purpose, components and typical schemes of structure of the systems that ensure the operation of diesel engines; 5) Knows the main schemes of a propulsion complex of a motor ship, and the purpose, structure and co-operation of its components; 6) Knows the purpose, classification and structure of marine boilers, steam and gas turbines; 7) Knows the purpose, classification and structure of auxiliary machinery of vessels; 8) Knows the purpose, structural principles and technical operability requirements of the general systems aboard a ship; 9) Can identify the type and main components of the main engine; 10) Can choose the appropriate operating systems for vessels in different circumstances based on maximum workload of the main mechanisms in continued loading or in temporary overloading.

Subject Code	ME16.07
Subject	Navigation L I
Volume	4 ECP
Assessment	Differentiated assessment
Sub-subjects, volume, semester, assessment	–
Objectives	The aim of the subject is to give students the knowledge of fundamentals of cartography and navigational aids, and the skills for the chart work.
Outcomes of the Subject	After completion of the subject the student: 1) Knows the basic points, circles and planes of the Earth; 2) Can describe various cartographic projections; 3) Knows the main formulae for calculating courses; 4) Can calculate covered distances; 5) Can determine the position of a ship by geographic coordinates; 6) Is familiar with navigational aids; 7) Dan determine the visibility distance of objects; 8) Can calculate the position of a vessel based on a course and the distance covered; 9) Can consider drifting caused by the wind; 10) Can calculate the position of a vessel analytically; 11) Can calculate tidal data;

Subject Code	ME16.08
Subject	Navigation L II
Volume	4 ECP
Assessment	Differentiated assessment

Sub-subjects, volume, semester, assessment	–
Objectives	The aim of the subject is to give the students knowledge and skills for navigation in accordance with the requirements of STCW-95 AII/2 "Navigation at Command Level" and the professional standard "Deck Officer IV".
Outcomes of the Subject	After completion of the subject the student: 1) Knows the methods for determining the position of a vessel and is able to assess the precision of such measures; 2) Knows how to prepare a voyage; 3) Can determine the position of a ship using land and afloat marks and electronic navigation systems; 4) Can correct a course; 5) Can calculate the position of a vessel based on a course and the distance covered; 6) Can take drift and current into consideration; 7) Can calculate the periods of high and low water in primary and secondary ports; *8)* Can calculate the elements of the great circle and initial and final courses;

Subject Code	ME16.09
Subject	Bridge Training Simulation
Volume	6 ECP
Assessment	Non-differentiated assessment
Sub-subjects, volume, semester, assessment	–
Objectives	The aim of the subject is to give students the knowledge and skills to be able to use electronic navigation tools to determine the course and location of a ship.
Outcomes of the Subject	After completion of the subject the student: 1) Can use radar navigation; 2) Can use electronic navigation tools; 3) Can plan the voyage of a ship both on paper and on electronic charts; 4) Can use ship manoeuvring characteristics when planning turnings; 5) Can determine the position of a ship by observation; 6) Can determine the position of a ship using electronic devices.

Subject Code	ME16.10
Subject	Ship Handling I
Volume	3 ECP
Assessment	Differentiated assessment
Sub-subjects, volume, semester, assessment	–
Objectives	The aim of the subject is to give the students knowledge of manoeuvres to perform the standard movements of a ship safety.
Outcomes of the Subject	After completion of the subject the student: 1) Can determine the manoeuvring characteristics of different types of ships; 1) Knows the impact of wind and current on ship handling in coastal and

	open waters; 2) Knows the impact of displacement, draught, trim, speed and the depth of water under the keel on the size of the tactical diameter and its stoppage way; 3) Knows the activities required when performing mooring and anchoring manoeuvres; 4) Knows how to recover ship steerability by using an emergency steer; 5) Knows the characteristics of low-water manoeuvring, taking into account changes in the draught in different conditions; 6) Knows the interactions of ships in motion, and the character of the nearshore effect;

Subject Code	ME16.11
Subject	Ship Handling II
Volume	5 ECP
Assessment	Differentiated assessment
Sub-subjects, volume, semester, assessment	–
Objectives	The aim of the subject is to give the students knowledge of the impact of environmental factors to manoeuvrabilty of a ship and how to anchor and tow it.
Outcomes of the Subject	After completion of the subject the student: 2) Knows the necessity to reduce speed to avoid damage that waves may cause to the bow and stern; 3) Knows the methods of controlling and manoeuvring a ship in a storm; 4) Knows the precautionary measures and manoeuvring techniques when moving in ice or near ice and in case of overicing; 5) Knows the techniques of ship and tug collaboration; 7) Knows the methods and procedures of emergency towing and can make necessary calculations; 6) Knows the principles of taking a ship to dry docks considering the effects of wind, currents and tide in both cases: either by using the tug or not; 7) Knows the principles of choosing a place for anchoring and how to anchor.

Subject Code	ME16.12
Subject	Navigation at Sea
Volume	3 ECP
Assessment	Non-differentiated assessment
Sub-subjects, volume, semester, assessment	–
Objectives	The aim of the subject is to give the students knowledge of tactical navigation on a surface warship and the associated skills for tactical manoeuvring at sea.
Outcomes of the Subject	After completion of the subject the student: 1) Knows the principles of tactical navigation and can apply them; 2) Can perform vector calculations of relative and true wind, and of relative and true course and speed; 3) Can determine the closest point of approach and the time to closest point of approach;

	4) Can perform vector calculations for the best course and speed of stationing; 5) Can perform vector calculations to determine the best course and speed for collision avoidance; 6) Can determine flying course and speed.

Subject Code	ME16.13
Subject	Practical Placement – Navigation
Volume	7 ECP
Assessment	Differentiated assessment
Sub-subjects, volume, semester, assessment	–
Objectives	The aim of the subject is to reinforce students' knowledge of navigation. Students will acquire the skills of terrestrial navigation and ship handling.
Outcomes of the Subject	After completion of the subject the student: 1) Can plan the voyage of a ship; 2) Knows the procedures to work with maps; 3) Can determine the position of a ship and control the route of a ship; 4) Is familiar with the wheel and other orders used on the bridge; 5) Can apply the international rules of ship collision avoidance;

SPECIALIZATION MODULE II - ENGINEERING SPECIALTY	**Volume 62 ECP**
Objective	The objective of the Engineering module is to provide the student with the knowledge and skills of the operability of ship equipment and systems, to perform tasks of a technical officer, and ensure technical operability and combat readiness of a warship.
Outcomes	On completion of the module the student: 1) Knows the fundamentals of mechanics, electrical engineering and thermodynamics; 2) Knows the types of ships, their specific properties and stability; 3) Knows the physical characteristics, ways of processing and use of the mechanisms aboard; 4) Can perform the calculations necessary to ensure the operability of the hull and machinery systems; 5) Can use the electrical, power and auxiliary equipment, and control gauges aboard a ship; 6) Can assess the operability of equipment and systems aboard a ship, and plan and do maintenance and repair work.
Assessment: the module is assessed on the basis of subjects.	

Code	Subject	Volume	Assessment	Semester
ME16.14	Applied Mechanics	6 ECP	D	III
ME16.15	Electrical Engineering and Electronics	6 ECP	D	III
ME16.18	Technologies of Metals, Materials I	3 ECP	D	IV
ME16.19	Technologies of Metals, Materials I	4 ECP	D	V
ME16.16	Thermodynamics and Heat Transfer	4 ECP	D	III

ME16.02	Ship Construction	4 ECP	D	III
ME16.17	Ship Stability	4 ECP	D	IV
ME16.20	Electrical Equipment of a Ship	2 ECP	D	V
ME16.22	Practical Placement – Marine Electrical Workshop Training	4 ECP	D	V–VI
ME16.21	Marine Diesel Power Plants	6 ECP	D	V–VI
ME16.23	Marine Auxiliary Machinery	7 ECP	D	V–VI
ME16.24	Ship Repair Technology	4 ECP	D	V–VI
ME16.25	Practical Placement - Ship Repair Workshop	4 ECP	D	V–VI
ME16.26	Practical Placement - Engine Room Simulation Training	4 ECP	D	V

The subjects in this module are obligatory for the students completing the specialisation module. The module is completed according to the progression of subjects as prescribed by the ENDC.

Subject Code	ME16.14
Subject	Applied Mechanics
Volume	6 ECP
Sub-subjects, volume, semester, assessment	–
Objectives	The aim of this subject is to give students the knowledge of mechanics, to teach working principles of different machines and mechanisms as well as provide the knowledge of their use.
Outcomes of the Subject	After completion of the subject the student: 1) Is able to balance determined structural elements and solve beam reactions; 2) Is able to calculate dimensions of simple determined details and check their strength; 3) Is able to describe the main features of a mechanical system in motion and the mechanisms used in machines; 4) Knows the fields of application of machine elements and details, as well as main methods of constructing details; 5) Can read the blueprints of details and assemblies used on the ship; 6) Is able to design simple details, elements and junctions for machines; 7) Knows the basics of constructing transfers and the principles of lubricating mechanisms and joints.

Subject Code	ME16.15
Subject	Electrical Engineering and Electronics
Volume	6 ECP
Assessment	Differentiated assessment
Sub-subjects, volume, semester, assessment	–
Objectives	The aim of this subject is to give the students knowledge of electrotechnics and electronics and skills to use electrical devices on the ship and accomplish simple maintenance and reparation tasks to perform their service duties.
Outcomes of the Subject	After completion of the subject the student: 1) Can explain the laws of electrotechnics and is able to use them in

	calculating direct and alternating current circuits; 2) Knows the terminology and symbols of electrical engineering and electronics and can read electrical wiring diagrams; 3) Knows the electronic components and switches used aboard a ship; 4) Is able to put together simple electrical circuits; 5) Can use electrical measurement instruments.

Subject Code	ME16.18
Subject	Technologies of Metals, Materials I
Volume	3 ECP
Assessment	Differentiated assessment
Sub-subjects, volume, semester, assessment	–
Objectives	The aim of this subject is to give the students knowledge of different metals and materials, their properties, processing and application possibilities in the maintenance of machines and their systems aboard a warship. The subject addresses modern trends regarding the choice of materials and technological opportunities, structure, properties and the design of materials.
Outcomes of the Subject	After completion of the subject the student: 1) Knows the internal structure of metals and alloys, the basic criteria of their classification, and can determine their mechanical properties; 2) Knows and can choose non-metallic materials; 3) Knows the physical principles of specific methods of technological processing and application possibilities; 4) Based on literature, is able to choose the appropriate materials and processing techniques for the task, depending on the properties of the materials and existing conditions for making or repairing details.

Subject Code	ME16.19
Subject	Technologies of Metals, Materials II
Volume	4 ECP
Assessment	Differentiated assessment
Sub-subjects, volume, semester, assessment	–
Objectives	The aim of this subject is to give the students knowledge of different metals and materials, their properties, processing and application possibilities in the maintenance of machines and their systems aboard a warship.
Outcomes of the Subject	After completion of the subject the student: 1) Knows the production methods of cast iron and steel; 2) Is able to choose the methods and regimes of thermal treatment and welding; 3) Knows the physical principles of specific methods of technological processing and using possibilities; 4) Can choose appropriate corrosion protection measures; 5) Based on literature and existing conditions is able to choose appropriate materials; 6) Is able to choose appropriate materials and processing techniques regarding the properties of the materials and existing possibilities in order to make or repair details, including in ship construction.

Subject Code	ME16.16
Subject	Thermodynamics and Heat Transfer
Volume	4 ECP
Assessment	Differentiated assessment
Sub-subjects, volume, semester, assessment	–
Objectives	The aim of this subject is to give students the knowledge of thermodynamics and heat transfer, and to understand the working principles of heating systems and how to operate heating systems aboard a warship.
Outcomes of the Subject	After completion of the subject the student: 1) Knows the types of heat exchange, its principles and types of heat exchangers; 2) Is able to describe the circular processes of combined heat and power and cooling equipment, and analyze their thermal efficiency; 3) Knows the circular processes of combustion engines, compressors, gas turbine and steam power equipment; 4) Knows the thermodynamic parameters and basic processes, and is able to perform thermodynamic calculations using relevant tables and diagrams; 5) Is able to calculate the heat exchangers heating space and the amount of heat transferred by thermal conductivity, convection, and heat radiation, using specific heat capacity table.

Subject Code	ME16.02
Subject	Ship Construction
Volume	4 ECP
Assessment	Differentiated assessment
Sub-subjects, volume, semester, assessment	–
Objectives	The aim of the subject is to give students the knowledge of different types of ships and their equipment and the particularities of their using, for the student to consider constructional and operational limits when manoeuvring a ship.
Outcomes of the Subject	After completion of the subject the student: 1) Knows the types of ships and their purposes of use; 2) Is able to analyze sea worthiness and operational properties of a ship that result from ratio of its shape and dimensions; 3) Can name all the parts of the hull, construction elements and details; 4) Can make simple calculations regarding the using and sea worthiness of the ship, taking into account its registered tonnage; 5) Knows the problems that may arise due to the general and local structural strength of the ship, and cargo stowing; 6) Is able to describe the principles of buoyancy and construction to ensure the floodability of a ship; 7) Knows the function and structure of ship technical equipment; 8) Knows the components of the ship systems, and the classification of systems according to their purpose.

Subject Code	ME16.17
Subject	Ship Stability
Volume	4 ECP
Assessment	Differentiated assessment
Sub-subjects, volume, semester, assessment	–
Objectives	The aim of the subject is to give students the knowledge of ship construction, stability and how to calculate it, allowing him/her to act in emergency situations at sea and in port.
Outcomes of the Subject	After completion of the subject the student: 1) Knows the fundamentals of blueprint of a ship; 2) Knows the factors affecting the stability of a ship and is able to calculate or find the source data to determine the stability of the ship, using tables, diagrams and instruments; 3) Knows how to calculate the overall strength of hull, using tables, diagrams and instruments; 4) Can calculate floodability of the ship in case of water intrusion; 5) Can calculate the ship's draught in different conditions and use a ship load scale.

Subject Code	ME16.20
Subject	Electrical Equipment of a Ship
Volume	2 ECP
Assessment	Differentiated assessment
Sub-subjects, volume, semester, assessment	–
Objectives	The aim of the subject is to give the students knowledge and skills of the electrical equipment of a ship to perform the duties of a guard mechanic in accordance with the requirements of STCW 95.
Outcomes of the Subject	After completion of the subject the student: 1) Knows the composition, working principles, theoretical foundations and exploitation properties of the electrical devices used aboard a warship; 2) Is familiar with the schemes used in commanding ship mechanisms; 3) Knows electrical safety requirements; 4) Can use the documentation of the electrical devices aboard a ship (e.g. guidelines and diagrams).

Subject Code	ME16.22
Subject	Practical Placement – Marine Electrical Workshop Training
Volume	4 ECP
Assessment	Differentiated assessment
Sub-subjects, volume, semester, assessment	–
Objectives	The aim of this subject is to give the students knowledge and skills for assembling electrical devices aboard a ship in accordance with STCW-78 and its annexes A-III/I Ch. 3-2, A-VIII/2 Ch 3-2 and 5-2, and in accordance with professional standard “Guard Mechanic III” of the Republic of Estonia.
Outcomes of the Subject	After completion of the subject the student:

	1) Knows electrical materials, their properties and methods of choosing them; 2) Knows the methods of installing electrical devices; 3) Is familiar with the safety requirements and fire and electrical safety requirements set for the installation and exploitation of electrical devices; 4) Can choose the appropriate tools and processing methods depending on the electrical devices or materials assembled; 5) Is able to draft working electrical circuits in accordance with given blueprints and IEC requirements; 6) Can use electrical measurement instruments.

Subject Code	ME16.21
Subject	Marine Diesel Power Plants
Volume	4 ECP
Assessment	Differentiated assessment
Sub-subjects, volume, semester, assessment	–
Objectives	The aim of the subject is to give students the knowledge of marine diesel engines, their working principles and modes of operation to ensure their safe operability and maintenance.
Outcomes of the Subject	After completion of the subject the student: 1) Knows the purpose, components and typical schemes of structure of the systems that ensure the operation of diesel engines; 2) Knows the basic diagrams of propulsion complex of a motor ship, its components and structure; 3) Knows the classification of marine diesel engines according to their different characteristics, and working principles of different types of internal combustion engines; 4) Knows the structure and working conditions of a diesel engine and the materials used for manufacturing diesel engines; 5) Knows the interaction between the main engine and propeller, and the effect of a propeller to the work of the main engine; 6) Can prepare a diesel engine and its systems, run and monitor its work, change the operating mode and shut it down, based on its technical documentation, technical safety and environmental protection requirements; 7) Can evaluate the engine load mode and its technical condition based on the instrumentation readings and malfunctions, identify common faults and act when they occur.

Subject Code	ME16.23
Subject	Marine Auxiliary Machinery
Volume	7 ECP
Assessment	Differentiated assessment
Sub-subjects, volume, semester, assessment	–
Objectives	The aim of the subject is to give students the knowledge and skills for the technical use of auxiliary machinery aboard a ship. The students acquire knowledge of the classification of auxiliary machinery and systems aboard a ship, their classification, working principles, structure and of the main

	classification and exploitation requirements set forth in the MARPOL 73/78.
Outcomes of the Subject	After completion of the subject the student: 1) Knows the classification, purpose, working principles, structure, working parametres and requirements of classification societies of the auxiliary machinery aboard a ship (pumps, compressors, ventilators, separators, desalinators, as well as deck equipment and lifting equipment); 2) Knows fuel and oil purification opportunities aboard a ship, their structure and ship systems; 3) Knows the ways of producing fresh water aboard a ship, and the structure of desalinators and heat exchangers; 4) Knows the structure and purpose of the general systems aboard a ship; 5) Can read and use the technical documentation of the auxiliary machinery aboard a ship; 6) Can prepare, run, stop and monitor the work of auxiliary machinery aboard a ship, and monitor their work when used; 7) Can evaluate the technical condition of the auxiliary machinery, and adjust mechanisms and systems; 8) Can detect possible problems and malfunctions of mechanisms and take appropriate action.

Subject Code	ME16.24
Subject	Ship Repair Technology
Volume	4 ECP
Assessment	Differentiated assessment
Sub-subjects, volume, semester, assessment	–
Objectives	The aim of the subject is to give students the knowledge and skills to evaluate the technical condition of the equipment aboard and plan repair and maintenance.
Outcomes of the Subject	After completion of the subject the student: 1) Knows the methods for determining the technical condition of the hull, engines and equipment; 2) Knows the main techniques for eliminating malfunctions and damages; 3) Knows the possibilities for ship repairs using the existing facilities; 4) Can identify and evaluate the technical condition of the machinery aboard a ship; 5) Can plan the repairs of the machinery aboard a ship; 6) Can make a list of repair works, and determine the need for spare parts, materials and tools.

Subject Code	ME16.25
Subject	Practical Placement - Ship Repair Workshop
Volume	4 ECP
Assessment	Differentiated assessment
Sub-subjects, volume, semester, assessment	–
Objectives	The aim of the subject is to give students the knowledge and skills necessary for various metal and locksmith works and mechanical systems

	and equipment maintenance to ensure the work readiness of a ship.
Outcomes of the Subject	After completion of the subject the student: 1) Can apply the basic locksmith techniques, and use craft tools and measuring instruments, in accordance with safety requirements and using protective equipment; 2) Can use metal-cutting table for simple turning, milling, shavings, drilling and grinding work in accordance with safety requirements and using protective equipment; 3) Can perform simple tasks as shielded metal arc welding, gas welding and gas cutting in accordance with safety requirements and using protective equipment; 4) Can prepare a diesel engine to be partially disassembled in accordance with safety requirements and choosing the right tools and measuring instruments; 5) Can disassemble a diesel engine, clean and survey the details, compile measure maps and assemble an engine, check the clearances and make minor adjustments.

Subject Code	ME16.26
Subject	Practical Placement - Engine Room Simulation Training
Volume	3 ECP
Assessment	Differentiated assessment
Sub-subjects, volume, semester, assessment	–
Objectives	The aim of the subject is to give students the knowledge and skills to operate in an engine room in everyday and emergency situation, ensuring safe operation of a ship as well as operating of engines and auxiliary machinery.
Outcomes of the Subject	After completion of the subject the student: 1) Understands the operations and interaction of the mechanisms and systems in the engine room; 2) Can prepare the main engine and auxiliary mechanisms, run and adjust loads, stop the main engine and auxiliary mechanisms; 3) Can detect and eliminate the common faults in work of mechanisms aboard a ship; 4) Can perform the tasks of a duty engineman ; 5) Can use the means of communication in the engine room.

Practical Training in the Professional Higher Education Curriculum of the Estonian National Defence College
of the Estonian National Defence College

Pursuant to subsection 3(8) of the Higher Education Standard, the volumes and percentages of practical training in the curriculum of professional higher education (15% of the total volume of the curriculum) are as follows.

The volume of practical subjects in the main specialty and in specialisation (WARFARE SPECIALTY)

Code	Subject	Volume	Volume of practical training
TK15.02	Fundamentals of Infantry Platoon Tactics and Command	10 ECP	3 ECP
ME16.30	Practical Placement – Seamanship	6 ECP	2 ECP
ME16.31	Practical Placement - Officer of the Watch at Sea	10 ECP	10 ECP
JP16.21	Basic Instructor Course	3 ECP	1 ECP
JP16.23	Organizing Infantry Squad Firing Training	3 ECP	1 ECP
ME16.33	Ship Company Training	2 ECP	1 ECP
TK16.22	Medical Studies	3 ECP	1 ECP
ME16.37	Naval Communications	7 ECP	6 ECP
ME16.35	Damage Control	4 ECP	3 ECP
ME16.09	Bridge Training Simulation	6 ECP	6 ECP
ME16.13	Practical Placement – Navigation at Sea	7 ECP	7 ECP
	Total volume of practical training		**41 ECP**
	Percentage of practical training in curriculum		**~23%**

The volume of practical subjects in the main specialty and in specialisation (ENGINEERING SPECIALTY)

Code	Subject	Volume	Volume of practical training
TK15.02	Fundamentals of Infantry Platoon Tactics and Command	10 ECP	3 ECP
ME16.30	Practical Placement – Seamanship	6 ECP	2 ECP
ME16.32	Practical Placement – Engineering Officer of the Watch at Sea**	8 ECP	8 ECP
JP16.21	Basic Instructor Course	3 ECP	1 ECP
JP16.23	Organizing Infantry Squad Firing Training	3 ECP	1 ECP
ME16.33	Ship Company Training	2 ECP	1 ECP
TK16.22	Medical Studies	3 ECP	1 ECP
ME16.38	Fundamentals of Naval Communications	2 ECP	1 ECP
ME16.35	Damage Control	4 ECP	3 ECP
ME16.39	Chemical Analyses Aboard a Warship	2 ECP	1 ECP
ME16.21	Marine Diesel Power Plants	6 ECP	1 ECP
ME16.23	Marine Auxiliary Machinery	7 ECP	2 ECP

ME16.22	Practical Placement – Marine Electrical Workshop Training	4 ECP	2 ECP
ME16.24	Ship Repair Technology	4 ECP	1 ECP
ME16.25	Practical Placement - Ship Repair Workshop	4 ECP	4 ECP
ME16.26	Practical Placement - Engine Room Simulation Training	4 ECP	4 ECP
	Total volume of practical training		**36 ECP**
	Percentage of practical training in curriculum		**20%**