

LITHUANIAN MARITIME ACADEMY (LMA)

STUDY COURSES FOR INCOMING ERASMUS+ STUDENTS 2024/2025 Autumn

MARINE NAVIGATION

No.	Course Name (EN)	Course Name (LT)	ECTS
1.	Introduction to Maritime English	<i>Įvadas į jūrinę anglų kalbą</i>	3
2.	Navigational Mathematics	<i>Matematiniai navigacijos pagrindai</i>	3
3.	Fundamentals of maritime technologies	<i>Jūrų technologijų pagrindai</i>	6
4.	Basic Seamanship	<i>Jūreivystės pagrindai</i>	6
5.	Maritime English: Meteorology, Emergency Response and Communications Terminology and Language Practice	<i>Meteorologijos, avarinių situacijų ir radijo ryšio terminija bei kalbos praktika</i>	5
6.	Ship's Theory	<i>Laivo teorija</i>	4
7.	Technical Aids to Navigation	<i>Laivavedybos techninės priemonės</i>	4
8.	Navigational Meteorology	<i>Navigacinė meteorologija</i>	5
9.	Fundamentals of Management and Human Resources Management	<i>Vadybos pagrindai ir žmogiškųjų išteklių valdymas</i>	5

MARINE ENGINEERING and MARINE ELECTRICAL ENGINEERING

No.	Course Name (EN)	Course Name (LT)	ECTS
10.	Fundamentals of engineering science	<i>Inžinerijos mokslų pagrindai</i>	4
11.	Thermodynamics	<i>Termodinamika</i>	5
12.	Basic Seamanship	<i>Jūreivystės pagrindai</i>	4
13.	Maritime English: Ship propulsion terminology and language practice	<i>Laivo varymo įrenginių terminija ir kalbos praktika</i>	3
14.	Ship's Auxiliary Machinery	<i>Laivo pagalbiniai mechanizmai</i>	5
15.	Construction of Marine Internal Combustion Engines	<i>Laivų vidaus degimo variklių konstrukcija</i>	5
16.	Terminology and language practice in marine electrical engineering and electrical systems	<i>Jūrų elektros inžinerijos ir elektros sistemų terminija ir kalbos praktika</i>	3
17.	Basics of Power Electronics	<i>Galios elektronikos pagrindai</i>	3
18.	Ship's Auxiliary Machinery Engineering Systems	<i>Laivų pagalbinių mechanizmų inžinerinės sistemos</i>	4
19.	Ship's Electrical and Power Transmission Equipment	<i>Laivų elektros ir galios perdavimo įranga</i>	3

PORT AND SHIPPING MANAGEMENT

No.	Course Name (EN)	Course Name (LT)	ECTS
20.	History of seaports and shipping	<i>Jūrų uostų ir laivybos raida</i>	5
21.	Economy Theory	<i>Ekonomikos teorija</i>	5
22.	Maritime business management and organizational communication	<i>Jūrų verslo valdymas ir organizacinė komunikacija (anglų kalba)</i>	5
23.	Fundamentals of Data Analytics	<i>Duomenų analitikos pagrindai</i>	5
24.	Personnel management and career projection	<i>Personalo valdymas ir karjeros projektavimas</i>	5

MARITIME TRANSPORT LOGISTICS TECHNOLOGIES

No.	Course Name (EN)	Course Name (LT)	ECTS
25.	Linear algebra	<i>Tiesinės algebra</i>	3
26.	Mathematical analysis	<i>Matematinė analizė</i>	3
27.	Mathematical modelling	<i>Matematinis modeliavimas</i>	4
28.	Fundamentals of logistics	<i>Logistikos pagrindai</i>	3
29.	Introduction to transport logistics	<i>Transporto logistikos įvadas</i>	3
30.	Seaport terminals and operations	<i>Jūrų uosto terminalai ir operacijos</i>	4
31.	Programming fundamental	<i>Programavimo pagrindai</i>	5
32.	Maritime English	<i>Jūrinė anglų kalba</i>	5
33.	Stevedoring technologies and mechanisation	<i>Krovos darbų technologijos ir mechanizmai</i>	2
34.	General cargo logistics technologies	<i>Generalinių krovinių logistikos technologijos</i>	3
35.	Bulk cargo logistics technologies	<i>Masinių krovinių logistikos technologijos</i>	3
36.	Dangerous goods logistics technologies	<i>Pavojingų krovinių logistikos technologijos</i>	2

GENERAL COURSE

No.	Course Name (EN)	Course Name (LT)	ECTS
37.	Transport Engineering and Information Technologies (IT)	<i>Transporto inžinerinės ir informacinės technologijos (IT)</i>	5
38.	Applied Mathematics	<i>Taikomoji matematika</i>	4
39.	Applied mathematics and programming	<i>Taikomoji matematika ir programavimas</i>	5
40.	Philosophy and Ethics	<i>Filosofija ir etika</i>	5
41.	Labour Safety, Civil Protection and Marine Environment	<i>Darbo, civilinė ir aplinkos sauga</i>	5

The course is available if minimum number of students in a group is 5 persons.

If the number is less than 5 students, LMA Erasmus+ coordinator offers another available course and change Learning Agreement.

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MARINE NAVIGATION

Introduction to Maritime English

3 ECTS

The aim of the study module is to develop students' ability to use maritime English to facilitate communication in accordance with their duties and responsibilities, using maritime terms rather than standard radio expressions and to ensure that students have sufficient knowledge, understanding and proficiency in the use of maritime English as specified in the Seafarers' Training, Certification, and Watchkeeping (STCW) Code, and to develop lifelong learning capabilities, providing the opportunity to further develop English language skills at sea.

The description of the study module was prepared in accordance with the Model Course "Maritime English 3.17" of the International Maritime Organization.

The study module is taught for four semesters. Payment for module subjects - differentiated credit, final payment for the module - exam with a committee. A cumulative evaluation system is applied.

Basics of Marine Technology

6 ECTS

To know the regularities and laws of physics, to be able to apply this knowledge in practical activities - in the performance of the duties of a captain at the leading level. During laboratory practice, improve the ability to use devices, work independently and in a group. When solving problems, learn to use formulas, solve problems in different ways. Include the positions defined in Model Course 7.03 Officer in Charge of a Navigational Watch (Appendix 2 – Physical Science) in the training process plan. The duration of teaching the subject is one semester, the final assessment is an exam, the cumulative evaluation system is applied.

Maritime English: Meteorology, Emergency Response and Communications Terminology and Language Practice

5 ECTS

The aim of the study module is to develop students' ability to use maritime English in order to facilitate communication in accordance with their duties and responsibilities, using maritime terms rather than regulatory radio expressions and to ensure that students have sufficient knowledge, understanding and proficiency in using marine English, Certification and Watchkeeping (STCW) Code, and to develop lifelong learning skills, providing an opportunity to further develop English language skills at sea.

The description of the study module is prepared in accordance with the International Maritime Organisation's Model Course "Maritime English 3.17".

The study module is taught for four semesters. Assessment for module subjects - exam, final assessment for module - exam with commission. A cumulative valuation system is in place.

Fundamentals of Management and Human Resources Management

5 ECTS

Analyze the principles of organization of human resources activities on board ships, understanding the importance of leadership and self-leadership in crew management, updating the knowledge of management and psychology necessary for effective human resources management, apply the principles of team cooperation in short-term and long-term strategic management processes. Apply the principles of management, develop the concepts of personnel management functions, decision-making in extreme conditions.

The description of the study subject has been prepared in accordance with the International Maritime Organization model course 1.39 "Leadership and Teamwork" and Model Course 1.21 "Personal Safety and Social Responsibilities." Final assessment - exam. A cumulative assessment system is applied.

Navigational Mathematics

3 ECTS

The purpose of the subject is to acquire the basic professional competences provided for in the sample program: 1.1 “Voyage planning and execution and determination of the ship's location” and Basic Knowledge Appendix no. 1 “Mathematics” (Model Course 7.03: Officer in Charge of a Navigational Watch, 2014) and comply with the provisions of the International Convention on Standards for the Training, Certification and Watchkeeping of Seafarers, as amended.

The subject is intended for future ship management specialists to get to know and master mathematical laws and possible solution methods that are applied in ship management practice. The greatest attention is paid to linear and vector algebra, analytical geometry, differential and integral calculus, application of approximate calculation methods, spherical trigonometry and methods of measurement error and accuracy estimation. This subject significantly expands students' abilities and basic knowledge before studying important subjects of ship management studies - navigation, marine astronomy, navigational devices, etc. The goals of the subject are focused on the improvement of the student's personal qualities, achieved by developing and deepening the following general abilities: entrepreneurship, mathematical, logical thinking, engineering thinking, the ability to work in a team, make decisions independently, computer and mathematical literacy, the ability to accumulate information, analytical thinking, form the entire learning life skills. The final assessment is an exam. A cumulative evaluation system is applied. Prerequisites: before studying the subject, the student must have taken the study subjects “Basics of Marine Technology”, “Applied Mathematics”.

Basic Seamanship

6 ECTS

The aim of the subject is to acquire the basic professional competencies of seafarers and shipmasters, provided for in the provisions of the International Convention on the Standards of Training, Certification and Watchkeeping of Seafarers as amended (in English - STCW) and in the model program (Model Course 7.03: Officer in Charge of a Navigational Watch).

The purpose of the subject is to provide basic knowledge and practical skills that will allow you to professionally and safely manage to maneuver, moor, and anchor the ship under various difficult sailing and hydrometeorological conditions in various sailing areas, to carry out emergency procedures in order to ensure the safety of people and the ship in accordance with National and International legislation. Develop logical and analytical thinking, develop lifelong learning skills, be able to work in a multicultural environment, make decisions independently.

The goals of the subject are focused on the improvement of the student's personal qualities, achieved by developing and deepening the following general abilities: entrepreneurship, mathematical, logical thinking, engineering thinking, the ability to work in a team, in a multicultural environment, to make decisions independently, computer and mathematical literacy, the ability to accumulate information, analytical thinking, build lifelong learning skills. The final assessment is an exam. A cumulative evaluation system is applied. There are no prerequisites for studying this subject.

Technical Aids to Navigation

4 ECTS

Acquire basic theoretical knowledge and practical skills to professionally use traditional and modern pilotage techniques, ensuring safe maneuvering in various situations and avoiding accidents when passing other vessels, calculate and apply the errors of magnetic and gyroscopic compasses, plan a voyage and perform safe navigation using: GPS receivers, echo sounders, lags, drivers, AIS - Automatic Identification System, LRIT - Long Range Identification and Tracking, VDR - Voyage Data Recorder, SSAS - Ship Security Alert System.

Ship's Theory

4 ECTS

The aim of the subject is to acquire the professional competencies provided for in the International Maritime Organisation's Model Programs: 7.03: Officer in Charge of a Navigational Watch, 2014 and 7.01: Master and Chief Mate, 2014 and to fully comply with the International Convention on Seafarers the provisions of the Standards on Training, Certification and Watchkeeping, as amended (STCW).

The subject is intended for future pilots to get acquainted with the main sea characteristics of a ship, buoyancy, stability, immersion, sway. During the internship, the student acquires skills in drawing up a ship's handling plan, how to calculate and assess the ship's buoyancy, stability and immersion or meets the requirements of national classification societies and the International Maritime Organization, introduces measures to improve the ship's stability. learns to make decisions independently when the ship's stability deteriorates, there is a threat to the ship's buoyancy or immersion, develops general skills, logical and engineering thinking. During the studies, the student performs practical-course work, during which he calculates and evaluates the stability of the ship, whether the ship meets the stability requirements. Final assessment - exam. The subject is subject to a cumulative assessment system.

Navigational Meteorology

5 ECTS

The aim of the subject is to acquire professional competencies provided for in the model programs: 1.1 "Voyage planning and execution and ship positioning" ("Model Course 7.03: Officer in Charge of a Navigational Watch, 2014") and 1.8 "Forecasting of weather and oceanographic conditions" ("Model Course 7.01: Master and Chief Mate, 2014) and comply with the provisions of the International Convention on Standards of Training, Certification and Watchkeeping for Seafarers, as amended.

The subject is designed to know and analyze the processes in the atmosphere and hydrosphere, their regularities and forecasting properties, and to be able to collect, process, evaluate and apply all this information in planning activities and direct navigation procedures, analysis and application of meteorological information; to analyze the synoptic map and forecast weather conditions taking into account local weather conditions and information received from meteorological services, to describe the characteristics of various atmospheric phenomena and apply them to pilotage, to analyze the characteristics of various weather forecasting systems, reporting procedures and their recording systems; plan the trip according to meteorological conditions. Final assessment - exam. A cumulative valuation system is in place. Prerequisites: before studying the subject, the student must have studied the study subjects "Basics of Marine Technology", "Navigational Mathematics".

MARINE ENGINEERING and MARINE ELECTRICAL ENGINEERING**Thermodynamics**

5 ECTS

Learn the basic laws and definitions of thermodynamics, recognize and name thermodynamic processes, list their main parameters, draw process graphs, explain methods of energy transformation and heat transfer in the environment and technical systems. After acquiring this knowledge, students will be able to understand the technological processes taking place in engineering systems and energy devices during the operation of the ship's power plants and auxiliary mechanisms, evaluate the obtained results and explain their influence on the operation of energy devices. The applied aspects of the thermodynamics course are examined. The subject is taught in one semester. The form of settlement is an exam. A cumulative evaluation system is applied.

Terminology and language practice in marine electrical engineering and electrical systems

3 ECTS

To develop students' ability to use maritime English to facilitate communication in accordance with their duties and responsibilities, using maritime terms other than standard radio communication expressions (SMCP) and to provide students with sufficient knowledge, understanding and proficiency in the use of maritime English as specified in the Seafarer Training, Certification, and Watchkeeping (JRAB) Code, and develop lifelong learning skills to further develop English language skills at sea.

The description of the study module was prepared in accordance with the model course “Maritime English 3.17” of the International Maritime Organization (IMO), the model course of the International Maritime Organization for electro-mechanics 7.08 “Electro-technical officer”.

The study module is taught for four semesters. Settlement of module subjects by differentiated credit or examination. A cumulative evaluation system is applied.

Basic Seamanship

4 ECTS

To acquaint students with the maritime sector and its surrounding environment. To provide knowledge about types of transportation, marine engineering units, the structure of ships and their crews, types of ships, ship equipment and types of power plants and engines, port and coastal infrastructure and specific information according to the needs of the study program. The aim of the study subject is realized through both theoretical and practical lectures, visiting ships and engaging in other related practical activities. The aim of the subject is focused on the development of the student's logical thinking, information analysis, perception and systematization, oratorical abilities and independent work, skills and the formation of a socially responsible person.

The description of the study subject was prepared in accordance with the International Maritime Organization training course (English Model Course) for mechanics no. 7.02 “Chief engineer officer and second engineer officer”, 7.04 “Officer in charge of an engineering watch”. The cumulative evaluation system is applied, and the final evaluation is the evaluation of the student's independent work and project.

Construction of Marine Internal Combustion Engines

5 ECTS

The goals of the subject are to provide basic knowledge and practical skills by analyzing and professionally mastering the structure and operation of internal combustion engines and their pump systems for various purposes, evaluating the disadvantages and advantages, understanding, comparing and evaluating the thermal processes taking place in various internal combustion engines of ships. During practical and laboratory work with working engines and electronic simulators, the design of engines and their systems, sequence of preparation for start-up, power plant management, maintenance, control and regulation of parameters, fault finding, and their elimination are mastered. The goals of the subject are focused on the improvement of the student's personal qualities, achieved by developing and deepening the following general abilities: engineering thinking, analytical thinking, the ability to make decisions independently, and forming lifelong learning skills. The form of settlement is an exam, the cumulative assessment system is applied. The description of the study subject was prepared in accordance with the Model Course of the International Maritime Organization (English Model Course) no. 7.02 “Chief engineer officer and second engineer officer”, 7.04 “Officer in charge of an engineering watch”.

Maritime English: Ship propulsion terminology and language practice
3 ECTS
<p>The aim of the study module is to develop students' ability to use maritime English in order to facilitate communication in accordance with their duties and responsibilities, using maritime terms rather than regulatory radio expressions and to ensure that students have sufficient knowledge, understanding and proficiency in using marine English, Certification and Watchkeeping (STCW) Code, and to develop lifelong learning skills, providing an opportunity to further develop English language skills at sea.</p> <p>The description of the study module is prepared in accordance with the International Maritime Organisation's Model Course "Maritime English 3.17"</p> <p>The study module is taught for four semesters. Assessment for module subjects - differentiated credit or exam, final assessment for module - exam with commission. A cumulative valuation system is in place.</p>

Basics of power electronics
3 ECTS
<p>The aims of the subject are to form and consolidate students' knowledge of the main individual components of power electronics, principles of operation of devices and equipment containing semiconductor elements, their main characteristics and parameters and their modification according to the technical task, operating conditions and applications in different marine electrical systems. The description of the study subject has been prepared in accordance with the International Maritime Organization exemplary training course for electromechanics 7.08 "Electro-technical officer". Final evaluation - enter what. A cumulative valuation system is in place.</p>

Ship Auxiliary Machinery
5 ECTS
<p>The aims of the subject are to provide knowledge about the constructions, purposes, working principles, operating conditions, starting and stopping sequences, maintenance systems and procedures of ship auxiliary mechanisms, to form the first work skills within the ship power plant service. The aims of the subject are focused on the development of the student's personal qualities, achieved by developing and deepening the following general skills: engineering thinking - examining the construction of pumps and other mechanisms, analytical thinking - laboratory work on a pump test bench, ability to make decisions independently, form lifelong learning skills, practical tasks with computer training programs. Final assessment - exam. A cumulative valuation system is in place.</p> <p>The description of the study subject has been prepared in accordance with the International Maritime Organization Model Course for mechanics No. 7.02 "Chief engineer officer and second engineer officer, 7.04 "Officer in charge of an engineering watch".</p>

Fundamentals Engineering Science
4 ECTS
<p>Understand the laws of physics in engineering sciences. To be able to describe, relate and interpret physical quantities and their measurement units in different measurement systems and use them freely. Be able to predict the results of solving engineering tasks and analyze and evaluate the obtained results. To be able to recognize the laws of mechanics, energy, heat, fluids and electrical engineering, choose them and apply them in solving engineering problems. The description of the study subject was prepared in accordance with the Model Course of the International Maritime Organization (English Model Course) no. 7.02 "Chief engineer officer and second engineer officer", 7.04 "Officer in charge of an engineering watch". The duration of teaching the subject is one semester, the final assessment is an exam, the cumulative evaluation system is applied.</p>

Ship's Auxiliary Machinery Engineering Systems

4 ECTS

To provide knowledge about the structures of ships' auxiliary mechanisms, their purpose, working principles, operating conditions, starting and stopping action sequences, technical service systems and procedures, to form the first work skills in the service department of the ship's power plant. The goals of the subject are focused on the improvement of the student's personal qualities, achieved by developing and deepening the following general abilities: engineering thinking - when examining the constructions of pumps and other mechanisms, analytical thinking - performing laboratory and practical work at the pump test bench, the ability to make independent decisions, form lifelong learning skills, performing practical tasks with computer training programs. The final assessment is an exam. A cumulative evaluation system is applied. The description of the study subject was prepared in accordance with the International Maritime Organization model training course for electromechanics 7.08 "Electro-technical officer".

Ship's Electrical and Power Transmission Equipment

3 ECTS

To explain the conditions and processes of the ship's electrical and power transmission devices, enumerating the main elements, to define the purpose of power transmission switchboards and their maintenance. To analyze the impact of the marine environment on the wear of electrical devices and insulation, their service time and modes of operation. To be able to rate electrical equipment practically in electrical calculations and connections of circuits. To evaluate the states of electrical systems, to take appropriate decisions in connecting electrical circuits during the laboratory works.

The description of the study subject is prepared with reference to the International Maritime Organisation Model Course 7.08 "Electro-technical Officer". Form of final assessment – examination; cumulative evaluation system is applied.

PORT AND SHIPPING MANAGEMENT**History of seaports and shipping (Development of Ports and Navigation)**

5 ECTS

To analyze the development of ports and shipping in the Baltic and North Sea regions, to compare the characteristics of the maritime sector in different countries and periods. Students will be able to analyze and understand the historical circumstances that led to the emergence and development of certain means of navigation and will be able to compare their significance in the history of the development of the region. Will learn the traditions of shipping (or those influenced by it) that have left traces in the culture and landscape of the region in question (eg maritime architecture, port and city infrastructure). A cumulative evaluation system is applied. The form of settlement is an exam.

Maritime business management and organizational communication

5 ECTS

To provide practical professional English communication skills through communication with customers and within the company in writing and orally in the maritime business organisation; be able to use professional terms related to cargo documentation, business organisation and management, write business letters, improve lexical and grammatical language structures, listening, comprehension and spoken communication skills. The cumulative assessment system is applied. Final assessment: examination.

Fundamentals of Data Analysis

5 ECTS

The students will know the main data analysis methods applicable in the research of the market of the maritime transport sector and the business enterprise of the maritime transport sector, will be able to apply them in the preparation of market research reports of the maritime transport sector, evaluation of the performance of the business enterprise of the maritime transport sector, taking into account the nature of the activity and changes in the business environment. Will be able to compare the performance indicators of a business enterprise of the maritime transport sector with the summarised indicators at sectoral or national level based on the calculated indicators. Will be able to use forecasting methods in solving the problems of implementation of activity management innovations and situation modelling and testing analytical models by application of analytical approach.

The cumulative assessment system is applied. The final assessment for the study subject is differentiated assessment.

Economy Theory

5 ECTS

Analyse and justify the main phenomena of microeconomics and macroeconomics, trends of change based on the concept of market economy, develop economic thinking and literacy. Analyse and evaluate the modern economic system of Lithuania, its prospects, predict economic events and the impact of maritime business on the economy of Lithuania by applying economic theory. Communicate and discuss the relevant issues of national and global economy, assess the situation of maritime business, collect and evaluate the latest economic information. The subject is taught in one semester. The final assessment is an examination. Cumulative assessment system is applied.

Personnel Management and Career projection

5 ECTS

Analyse career management theories, shape personal career and manage career in an organization. Plan and conduct human resource diagnostics of the organisation, mobilise employees in effort to achieve the goals of the company, design and implement organisational strategy. Apply effective management methods for the analysis of the needs of the personnel of maritime business enterprises and effective management principles. Plan and manage changes in the company. Design and manage personal career through deeper self-knowledge, revealing individual potential powers and be able to adapt in a constantly changing labour market. Develop entrepreneurial behaviour skills during practical and independent studies. Model and evaluate the human resources of a maritime business enterprise during workshops. The final assessment is an examination. Cumulative assessment system is applied.

MARITIME TRANSPORT LOGISTICS TECHNOLOGIES

Fundamentals of logistics
3 ECTS
Introduction to transport logistics
3 ECTS
Seaport terminals and operations
4 ECTS
<p>To define the basic concepts of logistics and supply chain, the location of the seaport and port terminals in the process of cargo transportation, the main functions of the seaport and terminals, to explain the complexity of the activities of the maritime sector, to introduce the latest technologies applied in the maritime sector.</p> <p>To explain, analyze and evaluate the role of logistics in the maritime business sector at the level of the Fundamentals of logistics, to acquire knowledge of the terminology of basic logistics concepts, to divide and analyze logistics functions in the port, to analyze and apply the principles and rules of creating logistics chains, technological innovations in logistics.</p> <p>At the level of Introduction to transport logistics, which is taught in English, have a basic knowledge of the elements of the supply chain related to the delivery of goods/cargo, warehousing, vehicles. Be able to explain in English the basic concepts, the functions of transport logistics, the purpose of the supply chain and the elements that make it up, know the cargo transportation documents.</p> <p>At the level of Seaport terminals and operations, analyze the specialization, functions, technical structure, operational technological processes and applied typical and latest technologies of ports and terminals.</p> <p>After completing the course, students will understand the functions of logistics, distinguishing the role of transport logistics, the functions of the seaport and port terminals in the cargo transportation process, will be able to explain the complexity of the activities of the maritime sector, will acquire an English dictionary of essential logistics concepts, will improve grammar and speaking skills on the topic of logistics.</p> <p>The module is taught for one semester. A cumulative evaluation system is applied. The form of settlement for the study subjects “Fundamentals of Logistics”, “Introduction to Transport Logistics” is a differentiated credit, the final form of settlement for the subject “Seaport Terminals and Operations” is an exam.</p>
Programming fundamental
5 ECTS
<p>To provide knowledge about IT, logistics information systems and the latest information search and communication tools and to be able to apply modern means of preparing text documents and calculators in the professional activity of a maritime transport logistician by using their functionality, to automate the technical stages of document preparation, to form complex computer literacy skills that allow critical assessment, select and effectively apply the functions of logistics information systems in professional activities.</p> <p>At the level of the Programming fundamental, to provide knowledge of the application, modification and correction of programming lexicon, data structures, syntactic constructions and complex sets of them, thanks to which the student will be able to independently compile the algorithms necessary for solving tasks and problems of maritime transport logistics technologies, effectively find and correct errors arising from their preparation and operation years. Be able to compile and apply the constructions of programming languages used in marine technologies, use standard and third-party libraries and modules. By means of decomposition, analyze system processes taking into account time and resource limitation factors by creating and executing simulation models in order to achieve optimization goals of existing or projected systems.</p> <p>After studying the subjects of the module, students will be able to create simulation models of discrete events of logistics processes and their systems, taking into account the optimization goals of existing or projected systems, graphically display the obtained data and results. Final evaluation - differentiated credit. A cumulative evaluation system is applied.</p>

Linear algebra
3 ECTS
Mathematical analysis
3 ECTS
Mathematical modelling
4 ECTS
<p>To provide basic knowledge about the basics of linear algebra, mathematical analysis, mathematical modelling, to acquire advanced mathematical knowledge and practical skills, to be able to apply linear algebra, mathematical analysis, statistics, mathematical modelling and optimization methods in researching and analyzing the application of maritime transport logistics technologies in cargo transportation logistics chains. After completing the course, students will have theoretical knowledge of basic mathematical methods (matrices, determinants, differential and integral calculus, events and probabilities, random variables, their distributions), will be able to apply algorithms in solving technological tasks of maritime transport logistics. They will acquire skills and practical competences for processing data sets required during experiments and technological monitoring, including their preparation for numerical processing, selecting methods for constructing a mathematical model of logistical technological processes and applying algorithms for solving the optimization tasks of maritime transport logistics technologies, forming and managing an optimal logistical technological chain of cargo transportation , to foster maritime technological culture and erudition. Based on the obtained solutions, you will be able to justify optimal solutions for the optimization of technological operations. Presenting research and project reports will demonstrate general mathematical literacy skills. A cumulative evaluation system is applied. The final form of module settlement is an exam.</p>

Stevedoring technologies and mechanisation
2 ECTS
General cargo logistics technologies
3 ECTS
Bulk cargo logistics technologies
3 ECTS
Dangerous goods logistics technologies
2 ECTS
<p>Describe marine freight logistics technologies, select appropriate and safe technology for bulk, liquid, general and hazardous cargoes, taking into account cargo flow trends, forecasts, cargo characteristics and batch size. After assessing the specificity of the logistics operations taking place in seaport terminals, be able to plan and organize the transportation of various types of marine cargo through seaport terminals, analyse the compatibility of the terminal, the form of cargo presentation and vehicle parameters, and evaluate the results of the technological process of marine cargo taking place in the seaport terminal.</p> <p>Know and be able to apply CTU Code, International Maritime Dangerous Goods Code (IMDG Code), International Seaborne Solid Bulk Cargo Code (IMSBC Code), International Convention on Safe Containers (CSC), "Code of Good Practice work safety and health in the port", planning and organizing cargo logistics technological solutions, directly carrying out cargo logistics procedures.</p> <p>The subjects are taught for one semester. The form of settlement is differentiated credit, the cumulative assessment system is applied. The final form of payment for the module is the coursework defence.</p>

Maritime English

5 ECTS

Be able to explain the concept of a port in English, distinguishing the types of ports and their organizational structures, the division of ports according to their activities; to analyze the importance of the port for the country's economy and business; to acquaint with the structure of the ship, the distribution of the ship's crew; different types of ships and their classification characteristics; to present the main types of cargo, cargo handling equipment, cargo handling procedures and types of cargo; explain the need for occupational safety, indicate possible health effects and safety measures; be able to read and understand professional literature, communicate on maritime business topics in writing and orally, using professional terminology. To expand the vocabulary of essential maritime English concepts, to improve grammar and speaking skills. The subject is taught for one semester. A cumulative valuation system is in place. Form of assessment - exam.

GENERAL COURSE**Applied Mathematics**

4 ECTS

To provide the basic knowledge of higher mathematics and the practical skills of basic mathematical methods, necessary for studying the subjects of the specialty, for understanding the fundamentals of the operation of ship mechanisms and devices, and for solving the problems of ships' energy devices. To form a system of skills and abilities for applying mathematical knowledge in practice. Develop the ability to identify and classify technical problems in interaction with the environment, model situations of mathematical content with algebraic phenomena, functions, equations, inequalities, and systems of equations and inequalities, predict their solution method and justify the results obtained; solving various tasks in the field of ship energy equipment operation and preparing projects to solve the problem.

Labour Safety, Civil Safety and Environmental Protection

5 ECTS

To provide basic knowledge of occupational safety in maritime freight transport technologies. During lectures and practical classes, skills to use relevant literature and computer programs are developed. During the work with the textbook and scientific literature, the ability to search for solutions, to identify the main elements on which the safety of stevedoring, safe transportation of cargo and their maintenance on board is developed.

After completing this subject, the student will be able to independently perform loading work safely, control the progress of cargo securing, safely transport various cargo by sea and supervise them.

The aims of the subject are focused on the improvement of the student's personal qualities, achieved by developing and deepening the following general skills: logical, engineering thinking, the ability to work safely individually and in a team, in a multicultural environment, to make decisions independently.

Civil protection - to acquire the basic theoretical knowledge and practical skills of civil protection in order to assess and forecast possible threats in the state of Lithuania, as well as the impact of these consequences on the security of the population and the environment. Be able to make decisions in accordance with the international and Lithuanian legal documents of the civil protection and rescue system.

Environmental safety - to provide theoretical and practical knowledge about the impact of the Maritime Transport Complex on the environment in the context of global environmental problems, international and national requirements for environmental protection on board ships, environmental protection technologies and equipment on board ships.

The subject is taught for one semester. The final assessment is the weighted average of the differentiated credits for labour, civil and environmental safety subjects.

Applied Mathematics and Programming

5 ECTS

To provide basic knowledge of linear algebra and mathematical analysis and introduce the basics of programming in the R environment. Develop the ability to analyze, model and evaluate social and economic phenomena by applying the laws of mathematical analysis and linear algebra. Develop logical thinking and mathematical literacy. The form of settlement is an exam. A cumulative evaluation system is applied.

Philosophy and Ethics

5 ECTS

Applying erudition to be able to think universally and critically, to evaluate and predict the development of the relationship between science, technology and culture, to formulate issues relevant to professional life at the personal and social level. A cumulative valuation system is in place.

Transport Engineering and Information Technologies

5 ECTS

To provide knowledge about IT, transport IS and online services in order to form complex computer literacy skills, which allow to critically evaluate, select and effectively manage IS functions in professional activities. Use the latest information retrieval and communication tools. To apply modern means of preparation of text documents and spreadsheets in professional activities and to utilize their functionality.

To provide theoretical knowledge and practical skills about the preparation and management of technical documentation, applying the requirements of Lithuanian and European standards for the performance and execution of drawings. Be able to understand the drawings of the ship's construction documentation. To develop skills in using computer graphics AutoCAD design possibilities, methodology of working with it and creation of graphic documents - drawings by computer. Acquired theoretical knowledge and practical skills of drawing and analysis of drawings, applied in the study of specialty subjects, preparation of term papers, diploma theses, as well as in further work activities.

Final assessment - exam. A cumulative valuation system is in place.