Bachelor’s Educational Program “Maritime Navigation”

Batumi Navigation Teaching University-Programme name: Marine Navigation -1

Track: Inter-track fields or specialties- 11 -Specialty: Nautical Sciences – 1110-Qualification to be conferred: Bachelor of Nautical Sciences-Profession: Ship’s Navigator Higher education stage: I Stage, Bachelor's programme-Teaching language: Georgian-Program volume by credits: 240 ECTS
Higher education stage I Stage (Bachelor's programme) Teaching language English-Sector standards Sector Benchmarks of the Higher Education “Marine Navigation” (Georgia) International Convention on Standards of Training, Certification and Watchkeeping for Seafarers,1978/95, as amended in 2010 (A-II/1; A-II/2; A-II/3 Tables)

Qualification to be awarded
Bachelor of Nautical Science Qualification code 1041
National Qualification Framework: 1041 - Transport Services (1041.1.1 / Nautical Science) ISCED-F-13 1041
Profession Ship’s Navigator ISCO-08 3152
Programme scope 240 ECTS. Academic year is composed of 2 semesters and includes 60 ECTS credits (30 credits in semester). Taking into account of specificity of student’ individualized study programme, it is allowed to determine annual workload of a student as less or more than 60 credits but no more than 75 credits (in BNTU 1 credit= 26 hours). Programme

Duration - 8 semesters.
Conferring of Bachelor’s academic degree provided for by this programme is made on the basis of fulfillment of programme requirements, with the collection of no less than 240 credits.
Programme approval act Decisions of Academic Council: Programme approval (Protocol №6(07.09.2020)

Additional Information
1. This programme is the analogous to the Georgian-language accredited Bachelor’s educational programme “Marine Navigation” currently delivered in BNTU (№195 Resolution of Higher Educational Programme Accreditation Council, as of 07. 12. 2018)
2. Sectorial basis of this programme: IMO International Convention on Standards of Training, Certification and Watchkeeping for Seafarers, 1978/95, as amended in 2010; STCW Code, A-II/1; A-II/2; A-II/3); Law of Georgia on Training and Certification of Mariners; Higher education sector benchmark” “Marine Navigation”;
3. Compliance of the programme/programme resources with International Sectoral Standards (External Audit of BNTU by International Maritime Authority - Panama Maritime Authority (05.09.2016-07.09.2016), Honduras Maritime Authority (29.11.2016 - 01.12.2016; „Russian Register westgeorgia, LTD ” – ISO 9001:2008, ISO 9001:2015 Certification (audit once a year); BNTU passes audit of Maritime Transport Agency of Georgia once a year, EMSA audit once every 3rd year).

Admission to Programme
In accordance with the effective Law of Georgia, complete general education is a precondition for admission to the programme. Enrollment is made on the basis of Unified National Exams (ranking document) (A necessary condition in case of passing English as a compulsory subject in national exams is overcoming the 50% threshold). Except for the cases provided for by the Law of Georgia On Higher Education (enrollment without Unified National Exams shall be made in special cases, specified in accordance with the rules, specified under the Law); additional requirement - command of English at minimum B2 level (Confirmation of knowledge of the language at required level is carried out by means of internal examination in BNTU(Prerequisite is to cross the 65% threshold) , or by submission of certifying document – document (diploma/certificate) certifying English-language

education obtained abroad/in Georgia, relevant information containing supplement of diploma/certificate etc. issued by foreign country/Georgian higher education institution, certificate, etc. issued by authorized organization/representation, international certificates (TOEFL (TOEFL PBT), TOEFL (TOEFL IBT), English language exams of British Council and Cambridge University (IELTS), English language exams of British Council and Cambridge University (Cambridge Exam), Cambridge University (Cambridge ESOL Examination) and/or other).Continuation of study by this Bachelor's program (hereinafter referred to as the – Program) in accordance with the effective Law of Georgia is possible by mobility for BNTU and other higher educational institution students of the same higher education stage educational programmes (Compatibility of study outcomes already achieved by the students with this programme shall be established in compliance with the regulations, relating to the recognition of education (credits), effective in BNTU in accordance with the Law of Georgia). WhatsApp; Viber; Telegram; WeChat; Signal; Facebook Messenger; Instagram; LinkedIn are available.

Bachelor's Educational Program "Maritime Navigation" 2

As well as, in accordance with the Law of Georgia and statutory documents of International Maritime Organization (International Convention on Standards of Training, Certification and Watch keeping for Seafarers, 1978/95, as amended in 2010), corresponding health condition is a prerequisite for admission to this programme, which is necessary for study of specific programme components and achievement of planned learning outcomes. State of health shall be indicated in corresponding medical certificate, which is issued by medical institution approved by the Agency (see, list of medical institutions at Agency's website www.mta.gov.ge). Programme Structure .The programme is composed of academic components, and its structure (within 240 credits) implies free component (compulsory and elective study courses) and the component aimed at development of subject-specific competences (compulsory study courses, internship, Bachelor' s thesis and elective study courses). Order of study of programme components (study courses, internships etc. provided for by the curriculum) provides transfer of knowledge in accordance with the principle: "From general to particular, from simple to difficult", and step-by-step development of already acquired knowledge and skills.

Program Applicability and Reason of Its Offering

Based on increasing requirements of marine industry in global economy, it is necessary to offer educational programmes of maritime field that provide training of highly skilled marine field experts, including Ship's Navigators, able to fulfill liabilities and obligations in accordance with corresponding regulations of International Convention on Standards of Training, Certification and Watchkeeping for Seafarers, 1978/95, as amended in 2010 (hereinafter referred to as - STCW Convention). The basis of this programme is IMO International Convention on Standards of Training, Certification and Watchkeeping for Seafarers, 1978/95, as amended in 2010, Law of Georgia on Training and Certification of Mariners, Law of Georgia On Higher Education, subordinate acts, higher education sector benchmark

„Marine Navigation». Program Objective

Training of highly skilled, fieldwork-oriented marine field expert (Ship's Navigator) with the competences corresponding to the requirements of international education and labor markets and established by TCW Convention regulations, who: 1) has theoretical knowledge, required for the professional activity in compliance with the requirements of STCW Convention regulations and practical skills to fulfill obligations and liabilities of Ship's Navigator, understand peculiarities of profession and obligations to be fulfilled, evaluate and analyze problem and make proper decisions within the scope of his competence, act promptly and in accordance with effective standards/rules, as well as take responsibility for the fulfillment of duties and people onboard; 2) is able to evaluate and analyze situation/information/data using corresponding methods with the high level of independence, identify causes and cause-effect links of technical, professional, social and ethical problems and possible risks, evaluate and analyze complex, difficult/unforeseen problems, select and justify proper solution ways, work in team, select proper model of communication and behavior, select and use technical/ technological resources for the performance of work, including IT and communication technologies and specific software; 3) has motivation for personal and professional development; 4) able to understand and protect ethical peculiarities of maritime field and multicultural team; 5) is able to continue study at next level of higher education (Master's degree program), realize his abilities in public or

professional activity and gradually obtain next rank of Ship’s Navigator of commanding staff of ocean-going and trade ship on the basis of recognized term of service on a ship and corresponding training and hold the position from captain's mate through shipmaster. Learning Outcomes (Field and General Competencies of Alumnus)
Graduate has deep knowledge of study and activity area (Ship’s Navigator) (STCW Code A-II/1; A-II/2; A-II/3 Tables), on the basis of which he/she carries out examination, explanation, critical evaluation,

Interrelation of complex matters (1. Navigation provision; 2.

Cargo handling and storage; 3.

Handling of ship operation and care of persons onboard) and their adaption to the existing / created situation / problem and the work to be performed. In particular:
 Voyage planning and implementation, location determination - Features of the use of celestial bodies to determine the location of the ship in navigation by land and coastal orientation, rules for determining the location of the ship using electronic navigation systems in different meteorological conditions; Possibilities of using electronic navigation systems in different meteorological conditions by land and coastal navigation, including electronic navigation systems for determining the location of a ship, determining the errors of magnetic and gyro compasses and taking into account these errors; Rules for operation of tools and proper use of information. Rules for operation and use of speed and distance travelled determination tools, operating and technical parameters of autopilot operating mode and control elements, principle of operation; Rules for the use and decryption of information obtained from ships' meteorological equipment; Ability to use the available meteorological system, knowledge of the characteristics of different weather systems, including tropical cyclones, and avoid their center and dangerous squares; Ocean currents. . Calculation of tidal conditions. Use of any appropriate navigation publications on tides and currents; Voyage planning and navigation in any conditions by corresponding methods of ocean route plotting – Restricted waters. Meteorological conditions. Ices. Low visibility. Traffic separation schemes. Vessel traffic service regions. High tide zones.

 Responding to emergency signals, coordinating search and rescue operations - International Aeronautical and Maritime Search and Rescue Standard (IAMSAR) – Procedures provided for by International
Aeronautical and Maritime Search and Rescue Standard (IAMSAR) and their application rules; Ensuring and organizing safe navigation and its procedures, including navigation main principles of navigation watch keeping. Application of movement routes in accordance with general provisions on ship routing. Usage of information obtained from navigation equipment for the purpose of safe navigation watch-keeping. Methods of ship handling in low visibility conditions. Application of notification transmission system using general principles of ship notification systems and VTS procedures; Principles of resources management on navigation bridge, distribution of resources, distribution of liabilities and their grouping as a matter of priority, establishment of effective communication/relationship, leadership, receipt of information about situations, consideration of team experience;
 Ensure safe navigation using information from radar, ARPA systems and navigation devices - Radar and Automatic Radar Plotting Aid (ARPA). Possibility of application of radar, deciphering and analysis of received information, rules of application of radio beacons and SART, usage of International Regulations for Preventing Collisions at Sea as of 1972 and corresponding amendments; methods of radar plotting and concept of corresponding and true motion; parallel indexation. Main types of ARPA, characteristics of their displaying, operational standards and risks relating to the over-trust of ARPA. Possibility of ARPA application and deciphering and analysis of information received form ARPA. System errors and operational aspects of navigation systems. Methods of ship handling in low visibility conditions. Evaluation of navigation information, received from any sources, including radars and ARPA, for the purpose of decision making and fulfillment of commands regarding prevention of collision and safe navigation. Interrelation of any types of navigation tools and optimum usage of data for the purpose of navigation;
 Usage of ECDIS for safe navigation - Possibilities and limitation of ECDIS works; ECDIS functions, established in accordance with effective operational standards. Possibilities of ECDIS operation, processing and analysis of received information; confirmation of ship positions by alternative means; effective usage of parameters for the purpose of compliance with operational procedures, completeness and accuracy of chart data and chart updating in case of navigational threat and approaching special regions, as well as backup

measures; adjustment of parameters and values for the purpose of compliance with current conditions; availability of information about situation, including usage of ECDIS, approaching of safe waters and fixed and drifting hazards, selection of chart data and scales, effectiveness of rout, identification and handling of objects, as well as integration of transmitters;

 Weather and oceanographic conditions forecast - Weather charts, weather forecasting within navigation region, receipt of information about local meteorological conditions via facsimile communication - Knowledge of characteristics of various weather systems;

 Respond to emergency situations arising during navigation and take appropriate action - Safety measures for the purpose of provision of safety and protection of passengers in emergency situations. Initial measures in case of collision or vessel aground, initial evaluation and control of damage. Proper understanding of procedures to be fulfilled during rescue of people, provision of assistance to vessel in emergency situation, during accidents identified in port. Safety measures in case of vessel aground. Emergency steering. Emergency towing device, towing procedures;

 Ship maneuvering and handling in any conditions - Maneuvering of ship during receipt and drop of pilot, handling of ship during navigation in rivers, gullets and restricted waters, taking into account of effect of current, wind and restricted waters on handling; ship berthing and un-berthing in various wind, tidal and current conditions, with or without tow; interaction of vessel and tow; usage of actuating device and maneuvering system; selection of anchor dropping place, ride to one or two anchors in limited anchorage places, determination of range of cable; raise of anchor; ship handling and maneuvering in heavy climatic conditions; safety measures during maneuvering for the purpose of sending of rescue boats or collective rescue equipment in bad weather conditions; picking up of rescued persons onboard from rescue boats and collective rescue equipment; possibility of determination of maneuvering and actuating device characteristics of ordinary type vessels; practical measures to be taken during navigation in or near ice waters, or vessel icing;

 Receiving and transmitting information through visual and radio communication signals - International Code of Signals. Rule of transmission and receipt of visual, single-letter signals. Peculiarities of frequency ranges of low-frequency and satellite radar-navigation systems, GMDSS, allocated in accordance with the Regulations of international radio communication, peculiarities of radio wave propagation, classes of radio-wave emission, sea regions of used Maritime radio communication GMDSS system. Minimum composition of radio equipment in GMDSS system according to sea regions and their description, individual and distress messages, confirmation, call, rebroadcasting. Call of vessels (Distress, Urgency, Safety), collective call (Urgency, Safety, Routine), individual call (Urgency, Safety, Routine), International Space System for Tracking Ships and Aircraft in Distress - COSPAS-SARSAT, emergency radio beacons and their types - EPIRB, ELT and PLB, transmission and receipt of digital and sound signals of NAVTEX system;

 Use of International Maritime Organization (IMO) Standard Maritime Phrases in English in Written and Oral form - English language and Standard Maritime Communication Phrases of International Maritime Organization (IMO) (IMO SMCP); Operation of remote control systems and services for propulsion systems and engine-room systems - Operational principles of sea-power units. Ship auxiliary mechanisms and their operational principles.

Technical maritime terms;

 Planning of cargo safely loading, maintenance, monitoring, stowage, fixing, planning and taking proper precautions during the flight and unloading - Rules of safe stowage and fixing of cargo, their impact on

human life and vessel safety. Establishment and maintenance of effective communication during cargo loading and unloading. International rules, codes and standards relating to the safe handling, stowage, fixing and transportation of cargo. Usage of stability and different schemes and device, calculating load on hull, including database-based automated device. Loading and unloading operations, cargo transportation,

code on safe practice of placement and fixing of cargo in cargo compartments. Oil-carrying ships and operations. Rules of application of onboard data relating to the cargo loading, handling and unloading. Determination of procedures for safe handling of cargo in accordance with provisions specified in corresponding documents, such as IMDG Code, IMSBC Code, Annexes III and V of MARPOL 73/78, and other corresponding information.

 Inspection and reporting of defects and damage to the cargo compartment, hatch lid and ballast tanks - Identification of damage and losses, establishment of causes – Loading and unloading operations. Corrosion. Unfavorable climatic conditions. Inspection procedures. Avoidance of negative impact caused by incorrect cargo handling;

 Ensuring the transportation of dangerous goods - International regulations, standards, codes and recommendations on transportation of dangerous cargo – including International Maritime Dangerous Goods
Code (IMDG) and International Maritime Solid Bulk Cargoes Code (IMSBC). Transportation of dangerous and hazardous substances; taking corresponding safety measures and monitoring during voyage and loading and unloading operations; Manage and maintain a ship 's maritime suitability, stability, attachment, stability and hull tension - Receipt of information about ship stability, ship securing and loading schedules, schemes, and on hull load calculation devices. Measures to be taken during partial loss of possibility of navigation in undamaged state. Understanding basics of water-tightness; Ship structure - Names of ship’s main structural elements and various parts. Main principles of factors affecting ship structure, securing and stability and of provision of ship securing and stability. Effect of results of any damage of cabin on ship securing and stability, and preventive measures. Recommendations of International Maritime Organization (IMO) regarding ship stability;
 Ensuring of the compliance with pollution prevention requirements - Measures to be taken for sea pollution prevention. Pollution prevention measures and related equipment. Significance of sea pollution prevention measures; Monitoring and control of measures to meet legal requirements and ensure the safety of human life at sea, the protection of the marine environment - Corresponding conventions of International Maritime Organization (IMO) on Safety of Life at Sea and Protection of Maritime Environment; matters of International Maritime Law provided for by international agreements and conventions. Obligations provided for by the requirements of International Convention for the Safety of Life at Sea (1974) and its amendments. Obligations provided for by the requirements of International Convention for the Prevention of Pollution from Ships and its amendments. Maritime declaration of health and requirements of International Sanitary Regulation. Obligations determined by international documents having an effect on the safety of ships,

Passengers, crew and cargo. Methods and measures for the prevention of pollution from ships. National legislation related to the performance of international agreements and conventions;
 Ensuring, managing and controlling the operation of the ship on fire prevention, firefighting, crew and passenger safety, as well as rescue equipment, firefighting systems and other safety systems; developing emergency and damage management plans in an emergency situations - Fire-fighting and fire-extinguishing means - Specificity of fire-fighting measures. Types and chemical characteristics of fire. Fire extinguishing system. Measures to be taken in case of fire, including fire in fuel systems; Salvage of life - abandon ship organization. Rescue boats and crafts, their launching devices and facilities, their equipment,
including radio installations, satellite EPIRB, search and rescue transponders of rescue means, survival suits and heat-protective means. Self-rescue facilities. Fire prevention, firefighting and fire extinguishing methods. Methods of basic first medical aid. Personal safety and public liabilities. Regulations relating to the rescue facilities (International Convention for Safety of Life at Sea). Fire-fighting and organization of ship abandon. Rescue means and equipment, provision of serviceability of fire-fighting and other safety systems. Measures to be taken for safety of persons onboard in case of emergency situation. Measures for
Minimization of ship damage due to fire, explosion, collision or vessel grounding and for rescue. Development of action plans for the purpose of response to emergency situations. Ship structure, including damage control. Fire prevention, detection and extinguishing methods and means. Function and usage of rescue facilities;
 Skills of leader, supervisor, team working - Aspects of on-board personnel management and training; Corresponding international maritime conventions and recommendations, as well as requirements of national legislation - Management methods of tasks and workload, including: planning and coordination; appointment of corresponding personnel; shortage of time and resources; determination of priorities. Methods of effective management of resources, establishment of effective communication onboard and onshore, peculiarities of individual and team-working, formation of corporate culture, interpersonal communication, making of decisions taking into consideration of team-working experience; self-confidence, leadership, motivation; delivery of information about existing situation, decision-making methods and possibility of decision-making: evaluation of situations and risks; determination and review of examined choices; selection of operative directions; evaluation of effectiveness of outcomes. Elaboration, implementation and monitoring of standard operating procedures;

 Usage of medical supplies on board, giving medical help - Application of medical manuals and medical consultations via radio, taking relevant measures during accidents or diseases specific in ship conditions. International medical manual for vessels and corresponding national publications. Medical part of International Signal Code. Manual for the provision of first medical aid in emergency situations relating to the transportation of dangerous cargo.

2. Graduate has practical skills established under STCW Code (A-II/1; A-II/2; A-II/3 Tables) and fulfills corresponding liabilities and obligations
(1. Navigation provision; 2. Cargo handling and stowage; 3. Handling of ship operation and care of persons onboard), independently selects proper way for the solution of complex, difficult/unforeseen problems, takes responsibility for the performance of duties, persons subordinated to him and being onboard, acts promptly on accordance with established standards/rules. Namely:
 Voyage planning and implementation, location determination - Measurement of apparent altitude and azimuths of celestial bodies, identification of celestial bodies using celestial navigation aids; determination of latitude on the basis of measurement of meridian altitude os the Sun and/or altitude of polar star; determination of compass adjustment in sun rising and setting moment; fixing of location using Saint-Hillarie method by plotting of location lines on multipurpose plotting board; Application of autopilot; usage of configuration and functional scheme of the tool; usage of international requirements connected with the
exploitation of the autopilot; switching-over from manual to automatic control in case of the presumable maneuvering necessity considering meteorological conditions; Usage of a ship’s barometer, anemometer, facsimile charts and weather forecasting for the purpose of safe navigation; long-term weather forecast by using satellite and terrestrial (NAVTEX) systems for the purpose of keeping apart from a stormy zone; Voyage planning and navigation in any conditions by corresponding methods of ocean route plotting-planning of navigation transition/voyage; plotting of navigation routs on digital and paper charts; provision of safe navigation in accordance with effective international requirements; application of procedures of vessel traffic service (VTS) during navigation on restricted routes and in confined waters. Fixing of ship’s position using symbols of nautical chart; by visual methods located on shore, radar-location methods, satellite methods; in various meteorological conditions using electronic navigation systems – Orientation according to latitude and longitude of the position at nautical chart ; determination of effect of wind, sea current and other acts of nature on ship's course; determination of tidal parameters using tables for the purpose of navigation safety; understanding and usage of navigation hindering symbols marked at nautical charts for the purpose of provision of safe navigation; Magnetic compass and gyrocompass - Usage of the operation principle of the devices and formulae of the basic state for the operation of devices; determination of principal constraints and errors of the compass; application of sounding devices and speed logs;
 responding to emergency signals, coordinating search and rescue operations - Usage of search and rescue operation plans and rescue operation methods; provision of radio communication.
 Ensure safe navigation using information from radar, ARPA systems and navigation devices - Watch-keeping - Usage of the International Regulations of Convention (COLREG) of 1972 for Preventing Collisions at Sea; effective usage of parameters obtained by the electronic integrated system in the process of watch-keeping for the purpose of safe navigation; Effective usage of the team work principles in order to provide safe navigation; Effective usage of meeting ship parameters by means of radars and Automatic Radar Plotting Aid (ARPA) for the purpose of safe maneuvering; systematic testing of radar and elimination of identified defects taking into account of bad weather conditions; correct reading of radar image for the purpose of avoidance of false echoes; processing of initial radar information, detection and identification of objects and targets; usage of radar cursor or parallel indexation during navigation transition for the purpose of evaluation of accuracy of location; usage of relative and true motion modes for the purpose of evaluation of maneuver simulation and accuracy;
 Usage of ECDIS to ensure safe purpose navigation - Usage of ECDIS standards, determination of official e-charts; verification of data accuracy of ENC charts represented in standard format for the purpose of determination of accurate data; inspection of ENC format; determination of parameters of ECDIS safety provision and monitoring; entering of safe depth contours and safe depth in e-chart in accordance with ship’s existing parameters and requirements; fixation of low water contours by means of ECDIS for the purpose of provision of safety; creation of safety frame and monitoring for the purpose of provision of safety; Weather and oceanographic conditions forecast - Reading of weather charts, receipt and analysis of weather forecast; identification of tropical cyclones and storms and making calculations regarding maneuverings for the purpose of keeping apart from them. Determination of tidal parameters by means of maritime publications and digital information data; Respond to emergency situations arising during navigation and take appropriate action – Defining and appraisal of an emergency situation type and scale; defining of methods of eradication of emergency situations and planning liquidation measures; classification of methods of fighting against emergency situations and taking adequate measures;

 Ship maneuvering and handling in any conditions - Ship maneuvering and handling, including: effective usage of ship’s maneuvering characteristics and their parameters; ship’s maneuvering taking into account

Bachelor’s Educational Program “Maritime Navigation” 5

the pilot’s advice; practical usage of COLREG rules in ship’s maneuvering under different conditions, actions with tugs, procedures of anchoring and weighing;
 Receiving and transmitting information through visual and radio communication signals – Transmission and receipt of emergency flashing signal using SOS Morse alphabet in accordance with Annex 4 of COLREG and Annex 1 of International Code of Signals; transmission and receipt of visual, single-letter signals; knowledge and application of GMDSS apparatus in case of distress; usage of satellite system of Maritime communication; service and monitoring of main and emergency power supply of GMDSS; COSPAS-SARSAT system, transmission and receipt of sound and digital signals of NAVTEX system of EPIRB system;
 Use of International Maritime Organization (IMO) Standard Maritime Phrases in English in Written and Oral Form – English language - Usage of English maps and other navigation publications; understanding of meteorological information and messages connected with ship’s safety and exploitation; establishing contacts with other ships, coastal stations and VTS centers; on performing duties establishing written and verbal communications using Standard Maritime Communication Phrases of International Maritime Organization (IMO SMCP);
 Operation of remote control systems and services for propulsion systems and engine-room systems - Consideration of operating principles and operating standards of ship’s power units and equipment;
 Planning of cargo safely loading, maintenance, monitoring, stowage, fixing, planning and taking proper precautions during the flight and unloading - Cargo handling, stowage and fixing - Classification of ships according to their sizes, design features and cargo to be shipped (bulker, tanker, container carrier, RO-RO and etc.); classification of kinds of cargo; technology of safe sea shipping of cargo considering international and national norms; drawing up a cargo plan by using the cargo program; calculation of cargo quantity; solution of tasks connected with ship stability; establishing of communication between the ship and the terminal staff;
 Inspection and reporting of defects and damage to the cargo compartment, hatch lid and ballast tanks - Observance of work safety at covers of the cargo compartments; inspection methods of water permeability of the covers, revealing of damages and defects and eradication them;
 Ensuring the transportation of dangerous goods - International regulations, standards, codes and recommendations on transportation of dangerous cargo - Application of international requirements during transportation of dangerous cargo;
 Manage and maintain a ship 's maritime suitability, stability, attachment, stability and hull tension - Preparation of the report on ship stability in compliance with the criteria stated by IMO; Classification of ships according to their structures; description and defining of main components of the ship structure and their purposes, component parts of ship’s systems, conditions of the ship stability and the strength of the ship hull; Ensuring of the compliance with pollution prevention requirements - Sea pollution prevention, antipollution procedures- Carrying out procedures of environment protection pursuant to the international
Requirements and norms; during the performance of duties on the ship usage of main requirements to prevention of sea pollution;
 Monitoring and control of measures to meet legal requirements and ensure the safety of human life at sea, the protection of the marine environment -Matters of International Maritime Law provided for by international agreements and conventions – proper knowledge, understanding and application of International Maritime Organization conventions;
 Ensuring, managing and controlling the operation of the ship on fire prevention, firefighting, crew and passenger safety, as well as rescue equipment, firefighting systems and other safety systems; developing emergency and damage management plans in an emergency situations - Fire prevention and fire-fighting; determination of fire category and usage of corresponding fire-fighting equipment; Usage of individual and collective rescue equipment onboard;
 Skills of leader, supervisor, team working - Aspects of staff management and training onboard; corresponding international maritime conventions and recommendations, as well as requirements of national legislation - Consideration of complex issues relating to the staff motivation, individual behavior, team-work, formation of corporate culture, interpersonal communication, application of leadership and managerial skills.

 Usage of medical supplies on board, giving medical help - Organization of first medical aid onboard and taking of relevant measures.

3 Graduate analyzes and evaluates information/data/situation by means of consolidation of theoretical and practical aspects, determines causes and cause-effect links of technical/professional etc. problems, Identifies and evaluates expected outcomes and possible risks, forms and justifies conclusion, selects the best ways for problem solution, determines stages and resources for work to be done, takes responsibility for decision made, performed work, including activities of persons under his supervision (team/crew members) and results thereof. In particular:
 Collects, groups, studies and analyzes data and information using standard and some distinctive methods to ensure safe navigation and control of the situation, forms a reasoned conclusion regarding the provision of safety; Evaluates the physical-geographical conditions of sea routes and economic-geographical factors of maritime transport in order to organize commercial management; evaluate contract/agreement, analyzes data, information and documentation to select a port to reduce bunkerage costs; calculates voyage time; make calculations during lay days according to charter; calculates ship’s stock; calculate voyage stock; Analysis of the obtained data, forms a substantiated conclusion regarding the determination of the amount of cargo, the calculation of the lay time, the determination of income, the calculation of profitability, the calculation of the time chart equivalent;
 Evaluates the impact factors in various (including emergency) situations (including the characteristics of physical and chemical processes and factors affecting mechanical and thermal processes), analyzes the situation, predicts possible developments of events, identifies existing and possible risks, evaluates safety measures effectiveness, formulates and substantiates the conclusion;
 Identifies the possibility of a problem arising, identifies and evaluates the expected results and possible risks, develops reasoned prevention measures;
 Evaluates the existing practical problem, analyzes its specifics, causes and current processes, establishes the cause-effect relationship of various factors and evaluates their importance, predicts the consequences and evaluates the possible risks, identifies the ways to eliminate / solve the problems, the stages and the necessary resources, formulates a reasoned conclusion;
 Evaluates the specifics of various practical and theoretical tasks, collects, processes and analyzes information / data, selects and uses the appropriate mathematical apparatus for the given task, drawings, diagrams, graphs, etc., instructions, specialized programs and systems;
 Determines the optimal ways and resources for problem solving / job performance, determines the stages and resources of the work to be performed, makes reasoned decisions within its competence, takes responsibility for the decision made, including the activities of its subordinates (team / crew members), and the work done.

Bachelor’s Educational Program “Maritime Navigation” 6

4 Graduate forms and justifies own view/position, transfers and explains information/data, establishes written and verbal communication, uses standard communication phrases of International Maritime
Organization (IMO) and those relating to the fulfillment of duties of Ship’s Navigator properly uses English and Russian language grammatical and lexical constructions, legal and maritime terms. In particular: Establishes written and oral communication, receives, transmits, explains and summarizes information / data, formulates, substantiates and explains his / her opinions by using correct grammatical and lexical constructions of English (level C1.2) and Russian (level A2), correct use of maritime and legal terminology;
 Establishes oral and written communication using the International Maritime Organization (IMO) phrases related to ship's navigator duties; Writes documents, reads specialized literature, instructions, documents, orders, guiding, recommendations, etc. Understands correctly, interprets, clarifies, communicates with the ship's crew, makes contact and conversations over the radio during search and rescue operations, describes facts, events and situations, receives, transmits and explains data / information problems, problems Forms suggestions, opinions, expresses his / her attitude, gives arguments against or supports different views, establishes communication with the ship's crew, transmits information to both marine specialists and non-specialists.

5Graduate uses IT and communication technologies, software, including industry-specific software and systems for the purpose of performance of duties of Ship's Navigator provided for by STCW Code. Namely:
 Uses specialized software and systems to perform the functions required for a ship navigator under the STCW Code;
 Uses information and communication technologies for communication, information retrieval, processing, reception and transmission;
 Uses computer programs to perform work and solve a specific task, processes information, builds graphic images and provides graphical work, prepares reports, works with electronic documents, spreadsheets and databases, provides data protection at the elementary level.

6Graduate establishes needs for personal and professional development, selects and uses methods of improvement of achieved competencies with the high level of independence. namely: Recognizes the need to consider innovation, renewal of knowledge and continuous development of professional competencies for successful professional (ship navigator) activities and career advancement;
 Conducts self-assessment, identifies the need, directions and ways of personal and professional development and further learning;
 Seeks and uses various resources (information sources, field / special literature, etc.) for self-development.
7Graduate considers industry-related legislative and ethical norms, understands importance of carrying out of activity, responsibility, mutual respect, mutual support and team-work taking into account of social, cultural, ethnic etc. peculiarities of work environment. Namely:
 Has knowledge of legal, ethical and professional norms and traditions in the maritime field;
 Has the ability to work in a team and collaborate, compares and contrasts different opinions, sees differences and similarities, takes into account the individual motivation, personal qualities and relationships formed in the work environment;
 Identifies social, professional or /and ethical problems, identifies and analyzes the causes of crisis, conflict situations, facts / events;
 Peculiarities of different social groups, different ethnic, cultural, social, etc. Values;
 Takes into account the aspects of interpersonal relationships, chooses and uses adequate methods and strategies for the right behavior of the relationship to solve problems / conflict resolution / crisis situations and different social, cultural, ethnic, etc. In order to adapt to the environment;
 Realizes the different ethnic, cultural, social, etc. differences of the multicultural team / crew in professional activities. The need to take into account values and peculiarities, the importance of adhering to ethical

General Rule Of Student Evaluation

Level of achievement of learning outcomes by a student is evaluated by 100-points (max 100 points) system. Bachelor's educational program is composed of academic components and their evaluation includes two forms – interim evaluation (max 60 points) and final evaluation (max 40 points); minimum competency limit is fixed for both forms (stated in program component syllabuses). Assignment of credit in educational component using only one form of evaluation (interim or final) shall not be allowed. Final evaluation (grade point) of program component is a sum of grade points received in interim and final forms of evaluation (Grade point obtained as a broken number is rounded up to whole number in accordance with the rounding rule: 4 and less - and less – rounded down, 5 and more – rounded up). In accordance with the effective Law of Georgia, 100-points system of evaluation of students in BNTU allows 5 good and 2 bad evaluation marks. Programme components max 100 points Evaluation forms Evaluation system max 100 points

Academic components:

Academic courses Internship

Bachelor's thesis 100 (60 Interim evaluation and 40 final evaluation Good grades=1 Excellent A 91 and more points ,**--**2 Very good B 81-90 points ---3 Good C 71-80 points--4 Sufficient D 61-70 points---5 Insufficient E 51-60 points---Failing grades---1 Did not pass FX 41-50 points--2 Fail F 40 and less/ Fx grade means that student needs more work and he/she is allowed to pass the additional exam once again within the same semester by individual work; in case of Fx grade, additional exam is scheduled no later than within 5 calendar days after announcement of final exam results. Grade, received at additional exam is a conclusive evaluation and set forth in final evolution.

Bachelor’s Educational Program “Maritime Navigation” 7

In case of 0-50 points in final evaluation of program component, taking into consideration of points of additional exam, F grade (0 points) is assigned to a student. “F” grade means, that work done by a student is not sufficient and he/she shall restudy program component. Credit may be received only in case of one of the good grades in accordance with the Law.

PROGRAMME MATERIAL RESOURCES

Provision of the programme with resources established in accordance with Maritime Navigation sector benchmark:
BNTU owned material and technical resources corresponding to ISO 9001:2015 International Standard, including the following:
 Class rooms, computer classes, language, navigation, logistics etc. rooms;
 Library (book (printed and on electronic media), video- and audio - collections, visual materials, International Witherbys Library (e-library);
 Laboratories:
o chemistry;-- o physics;-- o high-voltage laboratory.
1. Simulators:
o Navi-Trainer RADAR/ARPA/ECDIS/Ship Handling Simulator Pro 5000;
o Navi-Trainer Pro 5000 / ECDIS Navi Sailor 4000;
o RADAR/ARPA Module Simulator;
o Liquid Cargo Handling Simulator (LCHS 4000/5000);
o Global Maritime Distress and Safety Systems (GMDSS) Simulator TGS 5000;
o Use of electronic chart display and informational Systems
o Ship handling and maneuvering laboratory;
o Lifeboat Simulator;
o Fire-Fighting Training Facility.
2. Rooms for the following courses:
o Elementary First Aid;
o Oil and Chemical Tanker;
o Fire prevention and Fire Fighting;
o Personal Safety and social responsibilities;
o Personal Survival Techniques;
o Tanker familiarization;
o ISPS Code;
o Dangerous goods;
o Ship Handling Simulator and Bridge Team and Resource Management;
o ECDIS;
o Global Maritime Distress and Safety Systems (GMDSS);
o RADAR Navigation, Radar Plotting, use of ARPA.
3. Training ship Elite.
4. Students take internship provided for by the programme on training vessel Elite, and at ocean-going vessels with the assistance of navigation and crewing comp