

Zarządzenie nr 125

Rektora Zachodniopomorskiego Uniwersytetu Technologicznego w Szczecinie

z dnia 30 października 2023 r.

**w sprawie opisów efektów uczenia się w tłumaczeniu na język angielski
dla kierunków studiów prowadzonych na Wydziale Techniki Morskiej i Transportu**

Na podstawie art. 23 ustawy z dnia 20 lipca 2018 r. Prawo o szkolnictwie wyższym i nauce (tekst jedn. Dz. U. z 2023 r. poz. 742, z późn. zm.) w związku z § 3 ust. 7 zarządzenia nr 64 Rektora ZUT z dnia 1 października 2019 r. w sprawie zasad sporządzania i wydawania dyplomów ukończenia studiów i suplementów do dyplomu (z późn. zm.) zarządza się, co następuje:

§ 1.

1. W celu wydania na wniosek absolwenta odpisu suplementu do dyplomu w tłumaczeniu na język angielski wprowadza się – uchwalone przez Senat – opisy efektów uczenia się w tłumaczeniu na język angielski dla kierunków studiów prowadzonych na Wydziale Techniki Morskiej i Transportu.
2. Opis efektów uczenia się w tłumaczeniu na język angielski dla poszczególnych kierunków studiów stanowi integralną część odpisu suplementu do dyplomu.

§ 2.

Opisy efektów w tłumaczeniu na język angielski w wydawanych odpisach suplementów do dyplomu dla kierunków studiów rozpoczynających się:

- 1) od roku akademickiego 2019/2020:
 - a) budowa jachtów, studia pierwszego stopnia – stanowi załącznik nr 1,
 - b) chłodnictwo i klimatyzacja, studia pierwszego stopnia – stanowi załącznik nr 2,
 - c) inżynieria bezpieczeństwa, studia pierwszego stopnia – stanowi załącznik nr 3,
 - d) logistyka, studia pierwszego stopnia – stanowi załącznik nr 4,
 - e) oceanotechnika, studia pierwszego stopnia – stanowi załącznik nr 5,
 - f) oceanotechnika, studia drugiego stopnia – stanowi załącznik nr 6,
 - g) transport, studia pierwszego stopnia – stanowi załącznik nr 7,
 - h) transport, studia drugiego stopnia – stanowi załącznik nr 8,
- 2) od roku akademickiego 2020/2021 – logistyka, studia drugiego stopnia – stanowi załącznik nr 9,
- 3) od roku akademickiego 2022/2023 – bezpieczeństwo techniczne, studia pierwszego stopnia – stanowi załącznik nr 10.

§ 3.

W zarządzeniu nr 94 Rektora Zachodniopomorskiego Uniwersytetu Technologicznego w Szczecinie z dnia 6 listopada 2019 r. w sprawie opisu efektów uczenia się w tłumaczeniu na język angielski dla poszczególnych kierunków studiów prowadzonych w ZUT (z późn. zm.) uchyla się § 1 pkt 9 oraz załącznik nr 9 – Kierunki Wydziału Techniki Morskiej i Transportu.

§ 4.

Zarządzenie wchodzi w życie z dniem podpisania.

W zastępstwie Rektora

prof. dr hab. inż. Jacek Przepiórski

prorektor ds. nauki

Programme of studies: *yacht building*

Level of qualification: first cycle studies

Educational profile: general academic

Fields of science: Engineering and technology

Discipline of science: mechanical engineering (89%), materials engineering (11%)

Name of qualification (Title conferred): inżynier

Description of the planned educational effects

Code	Learning outcome for programme of studies
Knowledge	
BJ_1A_W01	Has knowledge within the scope of mathematics encompassing algebra, geometry, analysis, probability theory, and elements of discrete and applied mathematics, including mathematical methods and numerical methods necessary for: <ol style="list-style-type: none"> 1) formulating and solving simple tasks within the scope of yacht building, 2) mathematical description of phenomena within the scope of aero- and hydrodynamics, 3) description of physical quantities that are random variables, 4) probabilistic inference and design
BJ_1A_W02	Has knowledge within the scope of physics encompassing mechanics, thermodynamics, optics, electricity and magnetism, nuclear physics and solid-state physics, necessary for: <ol style="list-style-type: none"> 1) measurement and specification of physical quantities, 2) understanding basic physical phenomena and processes occurring in nature, 3) application of nature laws in technology and in daily life, 4) Understanding the dynamics of the surrounding world
BJ_1A_W03	Has basic knowledge within the scope of chemistry encompassing general chemistry, necessary for understanding the basic phenomena and chemical processes occurring in nature and preventing undesirable effects of chemical processes.
BJ_1A_W04	Has elementary knowledge within the scope of system architecture, computer networks and operating systems necessary for using computer networks and network applications, using computer-assisted design and production, using computer assistance in order to solve technical tasks.
BJ_1A_W05	Has knowledge within the scope of engineering graphics necessary for using and reading technical drawings, diagrams and designing machinery and watercrafts.
BJ_1A_W06	Has knowledge within the scope of mechanics necessary for description of mechanical systems in static and dynamic state. Knows oscillation theory and programmes, as well as numerical methods for examination of designs for applications in yachts.

Code	Learning outcome for programme of studies
BJ_1A_W07	Has knowledge of strength of metal and non-metal materials, including experimental methods for specification of mechanical characteristics, necessary for the evaluation of safety and reliability of structures.
B1_A_W08	Has general engineering knowledge within the scope of material science, mechanical technologies, fundamentals of machine design, and quality engineering within the scope useful in yacht building and operation.
BJ_1A_W09	Has general knowledge of thermodynamics, electrotechnology, electronic engineering and automation within the scope useful in yacht building and operation.
BJ_1A_W10	Knows the regulations and norms of Poland, EU, and classification societies, as well as of other maritime institutions within the scope of watercraft building
BJ_1A_W11	Has general knowledge of ocean technology and the phenomena occurring in the seas and the oceans
BJ_1A_W12	Has basic knowledge of design, properties, equipment, drive, construction and technology of watercraft building.
BJ_1A_W13	Has basic knowledge of construction and auxiliary materials, protective and anti-corrosive coatings used in watercraft building
BJ_1A_W14	Has knowledge of resins and laminates used in yacht building, as well as the conditions and technology of their application. is familiar with the principles of selection and of preparation for use of such materials in yacht building.
BJ_1A_W15	Knows the methods for processing, recycling, and disposal of materials used in yacht building and repairs
BJ_1A_W16	Knows the basic characteristics of sailing yachts and small motor vessels. Knows the methods for their design, construction, and building technology
BJ_1A_W17	Has basic knowledge within the scope of aero- and hydrodynamics and is familiar with the computational methods used in yacht design.
BJ_1A_W18	Knows the computational methods and the computer software used in design and construction of sailing and motor yachts
BJ_1A_W19	Has basic knowledge of computer modelling and simulation, as well as optimisation within the scope useful in yacht design and construction
BJ_1A_W20	Has basic knowledge within the scope of fluid mechanics and numerical methods within the scope useful in watercraft design
BJ_1A_W21	Has knowledge within the scope of ergonomics and physiology in occupational health and safety and, in particular, in application of polyester resins and laminates.
BJ_1A_W22	Knows and understands the basic concepts and principles within the scope of industrial and intellectual property protection. Can use patent information resources.
BJ_1A_W23	Has basic knowledge of economics and management, including quality management and the laws applicable to business operations. Knows the general principles of creation and development of the forms of individual enterprise.
BJ_1A_W24	Has basic knowledge necessary for understanding social, economic, legal and other non-technical determinants of engineering practices.
BJ_1A_W25	Has knowledge within the scope of the impact of various types of hazards on human health and natural environment in yacht building.

Code	Learning outcome for programme of studies
Skills	
BJ_1A_U01	Can obtain information from literature, databases, and other appropriately selected sources, also in English or in another foreign language considered as a language of international communication within the scope of yacht building. Can integrate and interpret the acquired information, formulate and justify opinions, as well as formulate conclusions.
BJ_1A_U02	Can use English (or another contemporary international language) at a level sufficient for communication, as well as reading with comprehension of data sheets, summaries and reference descriptions of technical devices and installations, user manuals, descriptions and diagrams devices and equipment used in watercraft building.
BJ_1A_U03	Can prepare in Polish, as well as in an abbreviated form in a foreign language considered as the basic language of the area of technical sciences and scientific disciplines related to yacht building, documentation and present a description and a solution of a simple engineering task, draw and present conclusions and guidelines for the user or the intended recipient.
BJ_1A_U04	Can prepare and present in Polish and a foreign language a presentation of specific topics within the scope of yacht building
BJ_1A_U05	Can self-educate, among others, for the purpose of improvement of own professional competences
BJ_1A_U06	Has language skills within the scope of the area of technical sciences, in particular of technical science disciplines and the fields of study related to yacht building, in accordance with the requirements of B2 Level of Common European Framework of Reference for Languages.
BJ_1A_U07	Can communicate by means of a variety of techniques in the professional environment and in other settings. Can use the information-communication techniques suitable for execution of tasks typical for engineering practices.
BJ_1A_U08	Can plan and carry out experiments including measurements and computer simulations. Can use analytical, simulation and experimental methods to formulate and solve engineering tasks. Can interpret obtained results and formulate conclusions about the characteristics of designed watercrafts.
BJ_1A_U09	Can identify and formulate practically-oriented engineering tasks useful in yacht design, construction and building
BJ_1A_U10	Can critically evaluate the suitability of available design and technological methods and devices used in yacht building and choose and apply the correct methods and tool.
BJ_1A_U11	Can, when formulating and solving engineering tasks, identify their systemic and non-technical aspects, including the various aspects related to yacht building technology and operation, as well as their impact on human health and natural environment.
BJ_1A_U12	Has completed the required preparation for work in the industrial environment. Knows the typical factors and types of hazards occurring in this environment and knows the relevant principles of occupational health and safety and the general principles of reducing exposure and hazard factors in work environment.
BJ_1A_U13	Can perform a preliminary economic analysis and assess the economic impact of undertaken engineering tasks within the scope of design and yacht building
BJ_1A_U14	Can select suitable materials and apply a suitable technology to yacht building, can interpret information concerning the basic characteristics of the materials used in yacht building and use them as the basis for determination of the potential types of hazards that may occur in relation to their application.
BJ_1A_U15	Enforces the principles of occupational health and safety and ergonomics.
BJ_1A_U16	Can work independently and in a team. Can assess the time required for completion of a task. Can create and adhere to a schedule ensuring completion of a task within the deadline.

Code	Learning outcome for programme of studies
BJ_1A_U17	Can use specialised software in yacht design and yacht building, for selection of suitable equipment, including sails or a mechanical propulsion system. with the help of software can specify the operation properties of a yacht.
BJ_1A_U18	Can develop a yacht design and determine its characteristics for given objectives and specifications. Can design a yacht in accordance with a specific construction technology.
BJ_1A_U19	Can prepare materials (resins, glass fibres, etc.), use specialised tools and build the hull in accordance with the selected technology
BJ_1A_U20	Can develop an execution technology, execute components and assemble the hull, as well as equip the yacht and carry out the required tests in accordance with applicable norms and regulations.
Social competences	
BJ_1A_K01	Understands the need for and is aware of the opportunities for continuing education (second and third-degree studies, post-graduate studies, courses), and improvement of own professional, personal, and social competences.
BJ_1A_K02	Is aware of the importance of and understands the non-technical aspects and consequences of engineering practices, including their environmental impact and the resulting liability for own decisions.
BJ_1A_K03	Is aware of the importance of engaging in a proper professional conduct, abides by professional ethics, and respects the diversity of outlooks and cultures.
BJ_1A_K04	Is aware of the responsibility for own work and is ready to comply with the principles of team work and to be held responsible for completion of joint tasks.
BJ_1A_K05	Can think and act in an entrepreneurial way.
BJ_1A_K06	Is aware of the social role of a technical university graduate, and in particular understands the need for formulation and dissemination , by means of mass media among others, information and opinions concerning the accomplishments within the scope of yacht building and construction of other watercrafts, as well as other aspects of engineering practices. Undertakes efforts in order to disseminate such information and opinions in a generally comprehensible way.
BJ_1A_K07	Is mindful of the potential safety hazards occurring in yacht building and is aware of the related risks. Can carry out a critical evaluation and formulate and communicate opinions about safety topics in yacht building.
BJ_1A_K08	Understands the social aspects of the practical application of the acquired knowledge and skills and the resulting liability.

Programme of studies: *refrigeration and air conditioning*

Level of qualification: first cycle studies

Educational profile: general academic

Fields of science: Engineering and technology

Discipline of science: mechanical engineering (55%), environmental engineering, mining and energy (35%), civil engineering and transport (10%)

Name of qualification (Title conferred): inżynier

Description of the planned educational effects

Code	Learning outcome for programme of studies
Knowledge	
CK_1A_W01	Has knowledge within the scope of higher mathematics (encompassing algebra, geometry, analysis, probability theory and elements of discrete and applied mathematics) within the scope necessary required for formulation and solving of problems and description of physical phenomena related to the field of refrigeration and air-conditioning.
CK_1A_W02	Has knowledge within the scope of physics (encompassing mechanics, thermodynamics, optics, electricity and magnetism, nuclear physics and solid-state physics) necessary for understanding basic physical phenomena occurring in nature and their application in heat and cool generation.
CK_1A_W03	Has elementary knowledge within the scope of system architecture, computer networks, operating systems, and programming necessary for using computer networks, network applications, and computer assisted solutions to technical and organisational problems occurring in refrigeration and air-conditioning.
CK_1A_W04	Has in-depth knowledge within the scope of the life cycle of technical devices, structures, and systems and within the scope of material science, manufacturing techniques and anti-corrosion protections.
CK_1A_W05	Has in-depth knowledge of the principles and the fundamentals of machine design and the methods for graphic presentation of basic engineering structures and specialised refrigeration and air-conditioning structures.
CK_1A_W06	Has organised knowledge within the scope of mechanics, electrotechnology, electronic engineering and automation.
CK_1A_W07	Has in-depth knowledge of production and conversion of energy for refrigeration and air-conditioning purposes.
CK_1A_W08	Has basic knowledge necessary for understanding the social, economic, legal and other non-technical determinants of engineering practices.
CK_1A_W09	Has knowledge within the scope of Climatology and Meteorology.
CK_1A_W10	Has in-depth organised and theoretically well-founded knowledge within the scope of the principles of operation and construction of flow machines and displacement machines.
CK_1A_W11	Has organised knowledge within the scope of refrigeration, ventilation, heating and air-conditioning.
CK_1A_W12	Has organised knowledge of operation of logistics and transportation refrigeration systems.

Code	Learning outcome for programme of studies
CK_1A_W13	Has organised knowledge of the construction and operation of refrigeration and air-conditioning systems and knows the measurement methods used in the thermal power sector.
CK_1A_W14	Has in-depth knowledge necessary for understanding the problems of environmental protection, ecology, noise protection, as well as within the scope of the safe operation of refrigeration systems.
CK_1A_W15	Has in-depth general knowledge of the principles of design and operation of ventilation, refrigeration and air-conditioning systems and of conducting research in the area of related topics.
CK_1A_W16	Knows the general principles of creation and development of the forms of individual enterprise.
CK_1A_W17	Has specific knowledge of selected topics within the area of low temperature techniques.
CK_1A_W18	Knows and understands the basic concepts and principles of intellectual property, including patent protection.
CK_1A_W19	Has in-depth knowledge within the scope of refrigeration factors, energy efficiency of devices and evaluation indicators (such as COP, EER, ODP, GWP, TEWI).
Skills	
CK_1A_U01	Can search for, comprehend, analyse, and apply required information. Can analyse and interpret the acquired information, formulate conclusions, as well as formulate and justify opinions related to engineering practices.
CK_1A_U02	Can use a foreign language at a level sufficient for communication and reading with comprehension of scientific publications within the scope of refrigeration and air-conditioning, technological and technical documentation, and similar documents used in operation of refrigeration and air-conditioning devices.
CK_1A_U03	Can prepare documentation of execution of an engineering task and a written summary of obtained results, as well as present them orally in Polish, English or another language.
CK_1A_U04	Can work independently and in a team. Can estimate the time required for completion of a given task, can develop and adhere to a task execution schedule.
CK_1A_U05	Can correctly apply basic information technologies required in professional work.
CK_1A_U06	Has language skills within the scope of science and scientific disciplines and required for the selected field of study, corresponding to B2 Level of Common European Framework of Reference for Languages.
CK_1A_U07	Can plan research, carry out measurements, interpret obtained results and formulate conclusions within the scope of topics related to refrigeration and air-conditioning.
CK_1A_U08	Can perform calculations, plan and carry out computer simulations, as well as use specialised software within the scope of ventilation, refrigeration, air-conditioning and heat pumps.
CK_1A_U09	Has completed the required preparation for work in the industrial environment and in the refrigeration sector, as well as knows the relevant principles of occupational health and safety.
CK_1A_U10	When formulating and solving technological problems, can identify the relevant non-technical, environmental, economic, and legal aspects at the local and national scale. Enforces the principles of occupational health and safety.
CK_1A_U11	Can perform a critical analysis of the form of operation, as well as evaluate the existing technical solutions used in refrigeration and air-conditioning.
CK_1A_U12	Can identify and specify practically-oriented simple engineering tasks related to the operation of refrigeration and air-conditioning devices.

Code	Learning outcome for programme of studies
CK_1A_U13	Can use patent information resources and evaluate the potential for protection of intellectual property.
CK_1A_U14	Can design, in accordance with specifications , a simple device, object or system typical for refrigeration and air-conditioning.
CK_1A_U15	Understands the need for and can pursue self-education.
Social competences	
CK_1A_K01	Is aware of own knowledge and skills. Understands the need for and is aware of the existing opportunities for continuing education and self-improvement. Sets the directions for own development and education (second- and third-degree studies, post-graduate studies, courses).
CK_1A_K02	Is aware of the importance of engaging in a proper professional conduct, abiding by professional ethics, and respect for the diversity of opinions.
CK_1A_K03	Is aware of the responsibility for own work and is ready to comply with the principles of team work and to be held responsible for completion of joint tasks.
CK_1A_K04	Is aware of the risk and can evaluate the environmental impact of own activities within the scope of operation of refrigeration and air-conditioning systems.
CK_1A_K05	Is aware of the social role of a technical university graduate and in particular understands the need for popularization of the acquired knowledge.
CK_1A_K06	Can think and act in an entrepreneurial way.
CK_1A_K07	Can appropriately set the priorities as regards the completion of own tasks and those of other group members.

Programme of studies: *safety engineering*

Level of qualification: first cycle studies

Educational profile: general academic

Fields of science: Engineering and technology

Discipline of science: mechanical engineering (90%), environmental engineering, mining and energy (5%), civil engineering and transport (5%)

Name of qualification (Title conferred): inżynier

Description of the planned educational effects

Code	Learning outcome for programme of studies
Knowledge	
IB1A_W01	Has knowledge within the scope of mathematics encompassing algebra, geometry, analysis, probability theory and elements of discrete and applied mathematics, including mathematical methods and numerical methods necessary for: <ol style="list-style-type: none"> 1) formulating and solving simple tasks within the scope of safety engineering, 2) mathematical description phenomena and processes within the scope of safety engineering, 3) description of physical quantities that are random variables, 4) probabilistic inference and design.
IB1A_W02	Has knowledge within the scope of physics encompassing mechanics, thermodynamics, optics, electricity and magnetism, nuclear physics and solid-state physics, necessary for: <ol style="list-style-type: none"> 1) measurement and specification of physical quantities, 2) understanding basic physical phenomena and processes occurring in nature, 3) application of nature laws in technology and in daily life, 4) understanding the dynamics of the surrounding world.
IB1A_W03	Has basic knowledge within the scope of chemistry encompassing general chemistry, physical chemistry, elements of chemical analysis, elements of organic and inorganic chemistry, and elements of electrochemistry necessary for understanding the basic phenomena and the chemical processes occurring in nature and ensuring protection from the undesirable effects of chemical processes.
IB1A_W04	Has elementary knowledge within the scope of system architecture, computer networks and operating systems necessary for the operation of computer networks and network applications, computer assisted solutions within the scope of safety management, as well as computer assisted solutions within the scope of technical tasks.
IB1A_W05	Has knowledge within the scope of engineering graphics necessary for using and reading technical drawings and diagrams, as well as designing structures and machines.

Code	Learning outcome for programme of studies
IB1A_W06	Has knowledge within the scope of mechanics necessary for description of mechanical systems in static and dynamic state.
IB1A_W07	Has knowledge of strength of materials, including experimental methods for specification of mechanical characteristics, necessary for the evaluation of safety and reliability of structures
IB1A_W08	Has knowledge within the scope of risk analysis including the use of statistical and computational methods.
IB1A_W09	Knows and understands the mechanisms of human functioning in difficult situations and social processes in the context of the place and the role of the individual in the social structure.
IB1A_W10	Has knowledge within the scope of the national and the international law necessary for interpretation and application of law in professional activities.
IB1A_W11	Knows and understands the principles of materials management and logistic planning in accordance with the basic principles of economics as regards the efficiency of reduction and prevention of hazards and of emergency response.
IB1A_W12	Knows and understands the organisation and operation of safety systems.
IB1A_W13	Knows and understands the principles of operation of emergency response services and systems.
IB1A_W14	Has organised knowledge within the scope of hazard identification and specification and evaluation of hazard consequences.
IB1A_W15	Knows the quantitative and qualitative risk assessment methods. Is familiar with the methods for evaluation of the reliability of safety system components.
IB1A_W16	Knows the techniques and the tools for hazard detection, identification, and measurement.
IB1A_W17	Has knowledge within the scope of modelling hazard proliferation and understands natural laws from the deterministic and the probabilistic perspective.
IB1A_W18	Knows the principles of the analysis of the quality of system operations. Is familiar with the methods and the techniques for improving of the quality of technical system operations.
IB1A_W19	Has organised knowledge within the scope of control and audit.
IB1A_W20	Knows and understands the basic topics within the scope of technical security. Understands the impact of safety engineering on the development and the directions of technical progress.
IB1A_W21	Has knowledge within the scope of the application of technical security measures in critical structures, areas and infrastructure.
IB1A_W22	Knows security measures and individual and collective protection measures, as well as the criteria for their selection.
IB1A_W23	Knows the various types of social communication, the principles for preparation of effective anti-crisis communication, as well as the tools and the means suitable for the communication process.
IB1A_W24	Has basic knowledge within the scope of information security and the selection of information security and protection measures.
IB1A_W25	Knows the principles of selection of engineering materials used in technical applications. Knows the material identification methods used in structures from the perspective of security.
IB1A_W26	Has knowledge of the construction and the principles of manufacturing and operation of machines.
IB1A_W27	Has knowledge within the scope of selection of engineering materials and technical security measures, the application of the principles of safe operation, the selection of individual protection measures with advanced details concerning a specific technology, sector of industry, group of structures or systems.
IB1A_W28	Has knowledge within the scope of thermodynamics necessary for safety analysis.

Code	Learning outcome for programme of studies
IB1A_W29	Has knowledge within the scope of fluid mechanics necessary for safety analysis.
IB1A_W30	Has knowledge within the scope of ergonomics and physiology in occupational health and safety.
IB1A_W31	Knows and understands the basic concepts and principles within the scope of industrial property protection and copyright. Can use patent information resources.
IB1A_W32	Has basic knowledge of management, including quality and business operations management.
IB1A_W33	Knows general principles of creation and development of the forms of individual enterprise.
IB1A_W34	Knows the typical engineering technologies within the scope of safety engineering.
IB1A_W35	Has knowledge within the scope of the impact of various types of hazards on human health and natural environment.
Skills	
IB1A_U01	Can obtain information from literature, databases, and other properly selected sources, also in English or in another language of international communication, within the scope of safety engineering. Can integrate and interpret obtained information, as well as formulate conclusions, formulate opinions and provide satisfactory justification.
IB1A_U02	Can use English (or another contemporary international language) at a level sufficient for communication, as well as reading with comprehension of data sheets and safety manuals, application notes, summaries and reference descriptions of technical devices and installations, user manuals and descriptions of device diagrams, safety data sheets of hazardous substances and materials, safety warnings, etc.
IB1A_U03	Can communicate by means of a variety of techniques in the professional environment and in other settings, particularly within the scope of technical topics within the area of safety engineering. Can pass on information concerning hazards and dangers in a comprehensible way not only to the higher and the middle management level, but also to individuals who do not possess technical competences or qualifications.
IB1A_U04	Can prepare in Polish, as well as in an abbreviated form in a foreign language considered as the basic language of the area of technical sciences and scientific disciplines related to safety engineering, a well-documented a study of problems within the scope of safety engineering. Can create documentation and present a description and a solution of a simple engineering task, draw and present conclusions and guidelines for the user or the intended recipient.
IB1A_U05	Can prepare and present in Polish and a foreign language a presentation of specific topics within the scope of safety engineering.
IB1A_U06	Can self-educate, among others, for the purpose of improvement of own professional competences and learning about new types of hazards and safety measures.
IB1A_U07	Has language skills within the scope of the area of technical sciences, in particular technical sciences disciplines and the fields of study related to safety engineering, and more generally within the scope of the terminology and concepts typical for safety engineering, in accordance with the requirements specified for level B2 Level of Common European Framework of Reference for Languages.
IB1A_U08	Can use the information-communication techniques suitable for execution of tasks typical for engineering practices.
IB1A_U09	Can plan and carry out experiments including measurements and computer simulations, interpret obtained results and formulate conclusions.
IB1A_U10	Can use analytical, simulation, and experimental methods to formulate and solve engineering tasks. Can develop simple models of processes and systems with a limited number of risk factors, create simple computer simulations or experiments, and interpret obtained results and formulate conclusions as regards risk assessment and the selection of safety measures.

Code	Learning outcome for programme of studies
IB1A_U11	When formulating and solving engineering tasks, can identify their systemic and non-technical aspects including the various aspects of unfavourable and hazardous impact of technical structures and technological processes on human health and natural environment.
IB1A_U12	Is prepared for work in the industrial environment. Knows the typical factors and the types of hazards occurring in the industrial environment, as well as the applicable occupational health and safety principles and the general principles of reducing exposure and hazard factors in the work environment
IB1A_U13	Can carry out a critical analysis of the forms of functioning and evaluate the existing technical solutions, devices, objects, systems, basic technological and manufacturing systems, methods of operation, and various types of services, especially in connection with the criteria applicable in safety engineering.
IB1A_U14	Can carry out a preliminary economic analysis and assess the economic impact of the undertaken engineering tasks, safety measures, technical solutions, and the implemented risk reduction measures.
IB1A_U15	Can identify and formulate specifications of simple practically-oriented engineering tasks characteristic for safety engineering.
IB1A_U16	Can evaluate the suitability of the routine methods and tools used for solving a simple practically-oriented engineering task within the area of safety engineering, as well as choose and apply the correct method and tools towards this end.
IB1A_U17	Can design and build a simple device, object, installation, system or process typical for safety engineering and in accordance with specifications by using the correct materials, methods, techniques and tools.
IB1A_U18	Can interpret information about the basic characteristics of substances or materials and use it as the basis for determination of the potential types of hazards that may occur in relation to their application.
IB1A_U19	Can find the sources of information about hazardous substances, materials or processes, interpret and apply it in hazard assessment
IB1A_U20	Understands the legal basis and can carry out a preliminary assessment of the legal aspects of simple tasks within the scope of engineering practices.
IB1A_U21	Enforces the principles of occupational health and safety and ergonomics.
IB1A_U22	Can work independently and in a team. Can assess the time required for completion of a task. Can create and adhere to a schedule ensuring completion of a task within the deadline.
Social competences	
IB1A_K01	Understands the need for and is aware of the opportunities for continuing education (second and third-degree studies, post-graduate studies, courses) and improvement of own professional, personal and social competences.
IB1A_K02	Is aware of the importance of and understands the non-technical aspects and consequences of engineering practices, including their environmental impact and the resulting liability for own decisions
IB1A_K03	Is aware of the importance of engaging in a proper professional conduct, abides by professional ethics, and respects the diversity of outlooks and cultures.
IB1A_K04	Is aware of the responsibility for own work and is ready to comply with the principles of team work and to be held responsible for completion of joint tasks.
IB1A_K05	Can think and act in an entrepreneurial way.
IB1A_K06	Is aware of the social role of a technical university graduate, and in particular understands the need for formulation and dissemination , by means of mass media among others, information and opinions concerning the accomplishments of safety engineering, as well as other aspects of engineering practices. Undertakes efforts in order to disseminate such information and opinions in a generally comprehensible way.

Code	Learning outcome for programme of studies
IB1A_K07	Is mindful of the potential safety hazards aware of related risks. Can carry out a critical evaluation and formulate and communicate opinions about safety topics.
IB1A_K08	Understands the social aspects of the practical application of the acquired knowledge and skills and the resulting liability.

Programme of studies: *logistics*

Level of qualification: first cycle studies

Educational profile: general academic

Fields of science: Engineering and technology, Social sciences

Discipline of science: civil engineering and transport (80%), mechanical engineering (3%), management and quality studies (10%), economics and finance (7%)

Name of qualification (Title conferred): inżynier

Description of the planned educational effects

Code	Learning outcome for programme of studies
Knowledge	
LO_1A_W01	Has knowledge of higher mathematics and statistics within the scope necessary for formulation and solution of problems and description of logistical processes.
LO_1A_W02	Has knowledge within the scope of physics necessary for understanding basic physical phenomena.
LO_1A_W03	Has knowledge within the scope of basic processes occurring in the life cycle of technical devices, structures, and systems, as well as within the scope of metrology.
LO_1A_W04	Has knowledge of the principles and fundamentals of machine construction and the methods for graphic representation of basic engineering structures.
LO_1A_W05	Has knowledge within the scope of automation and control, necessary for understanding the phenomena occurring in logistics.
LO_1A_W06	Has in-depth knowledge of logistic infrastructure, including warehousing, transport and information infrastructure.
LO_1A_W07	Has knowledge within the scope of information technology and tools assisting decision-making in logistics and relying on IT systems.
LO_1A_W08	Has in-depth knowledge within the scope of the modern technologies used in logistics, including transportation, warehousing, and information and communication technologies.
LO_1A_W09	Has in-depth knowledge within the scope of system engineering and system analysis necessary for designing and modelling of logistical processes, including transportation and manufacturing processes.
LO_1A_W10	Has in-depth knowledge within the scope of forwarding and supply chain management, including management of fleet for transportation of various types of consignments.
LO_1A_W11	Has in-depth knowledge within the scope of commodities, building structures and facilities used for storing consignments, including logistic centres and container terminals.
LO_1A_W12	Has knowledge necessary for understanding environmental protection problems and sustainable transport and eco-logistics guidelines.
LO_1A_W13	Has in-depth knowledge within the scope of functioning of transportation systems, including City Logistics.
LO_1A_W14	Has knowledge within the scope of the methods and tools ensuring security in Logistics, in particular within the scope of risk analysis in supply chain.

Code	Learning outcome for programme of studies
LO_1A_W15	Has in-depth knowledge within the scope of management and organisation of logistical processes, including the logistics of procurement, manufacturing, distribution, and normalization and quality control in Logistics.
LO_1A_W16	Has basic knowledge necessary for understanding the social, economic, legal, and other non-technical aspects of engineer's activity necessary for the performance of tasks within the area of logistics, as well as understands how this knowledge relates to other scientific disciplines.
LO_1A_W17	Has knowledge necessary for initiation, preparation, and conducting scientific research within the area associated with Logistics.
LO_1A_W18	Has knowledge within the scope of the principles of creation and development of various forms of individual enterprise.
LO_1A_W19	Has knowledge of the principles of protection of intellectual property rights, including patents and copyright, as well occupational health and safety.
LO_1A_W20	Knows and understands the principles of human functioning in social structures, including professional structures, as well as the role of man as the creator of culture, community and social groups.
Skills	
LO_1A_U01	Possesses the skill of searching for, understanding, analysing, and utilizing required information. Can analyse, evaluate, interpret, and synthesise obtained information, formulate conclusions, and formulate and justify opinions related to engineering practices in the area of Logistics.
LO_1A_U02	Has a competence in a foreign language in accordance with the requirements specified for B2 level of The Common European Framework for Reference for Languages, which is sufficient for communication, as well as reading with full comprehension of scientific publications within the scope of Logistics, logistics documentation and similar documents used in operations of logistics companies.
LO_1A_U03	Can prepare documentation pertaining to execution of engineering tasks with respect to logistics issues, as well as prepare a report on the results of completion of such tasks and deliver it in a form of an oral presentation in Polish, English or in another foreign language.
LO_1A_U04	Can work independently and in a team, estimate the time required for completion of a task, as well as create and adhere to a schedule of independent and joint tasks.
LO_1A_U05	Can select and correctly apply methods and tools, including basic information technologies, required at work.
LO_1A_U06	Can carry out a preliminary economic analysis of proposed solutions and undertaken engineering practices.
LO_1A_U07	Can plan research and experiments, carry out measurements and simulations, interpret obtained results and formulate conclusions within the area of transport, logistics and forwarding.
LO_1A_U08	Can perform calculations, plan and carry out computer simulations and use specialized software within the scope of transport, logistics and forwarding.
LO_1A_U09	When formulating and solving technological problems, can discern non-technical aspects, including environmental, economic, and legal within local and regional context. Complies with the occupational health and safety principles and Has the preparation required for work in an industrial environment.
LO_1A_U10	Can carry out a critical analysis of current operations and evaluate existing technical solutions used in transport, logistics, and forwarding.
LO_1A_U11	Can identify and specify simple engineering tasks of practical character involving logistics infrastructure and the means of transport.
LO_1A_U12	Can, in accordance with specifications, design a simple device, structure or system typical for logistics problems, using suitable methods, techniques, tools, and materials.
LO_1A_U13	Can identify and interpret basic social phenomena and processes, using knowledge of logistics.
LO_1A_U14	Can use normative systems, patent information resources, as well as can carry out an analysis of the capabilities of protection of intellectual property rights.

Code	Learning outcome for programme of studies
LO_1A_U15	Understands the need and possesses the ability to self-educate and pursue lifelong self-education.
LO_1A_U16	Can analyse and forecast social processes and phenomena using standard methods and tools, including statistics.
Social competences	
LO_1A_K01	Is aware of own knowledge and competences necessary for solving cognitive and practical problems emerging at work, as well as understands the need for and knows about continuous learning and self-improvement opportunities.
LO_1A_K02	Can critically assess own knowledge and set suitable priorities necessary for completion of a task specified by him/herself or others.
LO_1A_K03	Is aware of the social role of a graduate and, in particular, understands the need for popularisation of the acquired knowledge, initiation and co-organisation of activities for the benefit of social environment and public interest.
LO_1A_K04	Can think and act in an entrepreneurial way.
LO_1A_K05	Is aware of the importance of engaging in a proper professional conduct, abiding by professional ethics and demanding the same from others, as well of fostering the accomplishments and the traditions of the profession.
LO_1A_K06	Is aware of the responsibility for own work and is ready to comply with the principles of team work and to be held responsible for completion of joint tasks.

Programme of studies: *ocean technology*

Level of qualification: first cycle studies

Educational profile: general academic

Fields of science: Engineering and technology

Discipline of science: mechanical engineering (85%), civil engineering and transport (15%)

Name of qualification (Title conferred): inżynier

Description of the planned educational effects

Code	Learning outcome for programme of studies
Knowledge	
O_1A_W01	Knows and understands basic concepts and principles within the scope of industrial property and copyright protection. Can use patent information resources.
O_1A_W02	Has basic knowledge of management, including quality and business operations management.
O_1A_W03	Knows general principles of creation and development of the forms of individual enterprise.
O_1A_W04	Has knowledge within the scope of mathematics encompassing algebra, geometry, analysis, probability theory and elements of discrete and applied mathematics, including mathematical methods and numerical methods necessary for: <ol style="list-style-type: none"> 1) description of physical quantities that are random variables, probabilistic inference and design, 2) mathematical description and solution of phenomena and processes within the scope of ocean technology.
O_1A_W05	Has knowledge within the scope of physics encompassing mechanics, thermodynamics, optics, electricity and magnetism, nuclear physics and solid-state physics, necessary for: <ol style="list-style-type: none"> 1) measurement and specification of physical quantities, 2) understanding basic physical phenomena and processes occurring in nature, 3) application of nature laws in technology and in daily life, 4) understanding the dynamics of the surrounding world.
O_1A_W06	Has basic knowledge within the scope of chemistry encompassing general chemistry, physical chemistry, elements of chemical analysis, elements of organic and inorganic chemistry, elements of electrochemistry necessary for understanding of basic phenomena and chemical processes occurring in nature and preventing undesirable effects of chemical processes.
O_1A_W07	Has knowledge within the scope of general mechanics including statics, kinematics, dynamics, theory of oscillations and fluid mechanics.
O_1A_W08	Has knowledge within the scope of technical thermodynamics. Is familiar with the various sources of energy and their technological applications.
O_1A_W09	Has knowledge within the scope of technical drawing, dimensioning, projections, and cross sections and knows the applicable norms and standards.

Code	Learning outcome for programme of studies
O_1A_W10	Has knowledge within the scope of methods and tools for measurement of parameters of technical structures in laboratory and industrial settings. Knows the principles of determination of manufacturing tolerances. Knows the methods and regulations within the scope of dimensional quality control in manufacturing processes.
O_1A_W11	Has knowledge of the various types of manufacturing techniques, the scope of their application, the organisation in manufacturing processes, the related human health and environmental hazards, and the current directions of development.
O_1A_W12	Has knowledge within the scope of the basic principles of machine design, including design and of selection of the typical components of mechanisms and machines, their fitting, bearing, transmission, etc.
O_1A_W13	Has knowledge within the scope of construction materials of technical structures, their strength, technological, vibroacoustic, fire-fighting properties, as well as the impact of a given material on human health and their waste disposal and recycling properties.
O_1A_W14	Has knowledge within the scope of the types, construction, and functions of offshore structures and related design and operation problems.
O_1A_W15	Has knowledge within the scope of the aquatic environment on offshore structures. Knows the basic concepts of the movement of such structures in the water and their protection against the destructive impact of the aquatic environment.
O_1A_W16	Has knowledge within the scope of the various types of propulsion systems of offshore structures, the power train, and the construction of ship engine rooms.
O_1A_W17	Has knowledge within the scope of equipping offshore structures with devices, installations, and safety systems, including on-board devices, cargo and ballast installations, marine resources extraction equipment, sanitary appliances, as well as air-conditioning, ventilation and heating systems, etc.
O_1A_W18	Has knowledge within the scope of construction of offshore structures, the methods of selection and optimisation of construction components and analysis of their strength.
O_1A_W19	Has knowledge within the scope of technology of construction and renovation and repair of offshore structures, planning and organisation of manufacturing processes, procurement, technological aspects of the product, operations of manufacturing enterprises from the marine sector, including shipyards and their suppliers.
O_1A_W20	Has knowledge within the scope of forecasting and analysis of reliability and safety of offshore structures.
O_1A_W21	Has knowledge within the scope of the life cycle, logistics, and diagnostics of offshore systems.
O_1A_W22	Has knowledge within the scope of modelling and optimisation of offshore systems and technological processes.
Skills	
O_1A_U01	Can use English (or another language of international communication within the scope of ocean technology) at a level sufficient for communication, as well as reading with comprehension of documentation of technical structures, safety manuals, and user manuals of devices. Has language skills that meet the requirements of B2 Level of Common European Framework of Reference for Languages
O_1A_U02	Can obtain information from literature, databases, and other correctly selected sources. Can integrate and interpret obtained information, as well as formulate conclusions, formulate opinions, and provide satisfactory justification. Enforces the principles of intellectual property protection.
O_1A_U03	Can self-educate among others for the purpose of improvement of own professional competences and of learning about new methods for design and construction of offshore devices.

Code	Learning outcome for programme of studies
O_1A_U04	Can create documentation in the form of drawings and description of designed and inventoried technical structures with the help of a computer assisted design and manufacturing tool.
O_1A_U05	Can communicate by means of a variety of ICT techniques in the professional environment and in other settings, particularly within the scope of the technical topics typical for ocean technology. Can pass technical information in a comprehensible way not only on to the higher and the middle management level, but also to individuals who do not possess technical competences or qualifications.
O_1A_U06	Can plan and carry out experiments including measurements and computer simulations, interpret obtained results and formulate conclusions.
O_1A_U07	Can undertake an inventory and carry out critical analysis of the form of operation of the existing technical solutions, devices, structures, systems, manufacturing processes and methods of operation.
O_1A_U08	Is prepared for work in the industrial sector. Knows the risk factors and the types of hazards existing in the industrial sector. Knows the principles of occupational health and safety and ergonomics.
O_1A_U09	Can identify the systemic and the non-technical aspects of engineering solutions including the factors that adversely impact human health and natural environment.
O_1A_U10	Can carry out a preliminary economic analysis and assess the economic impact of undertaken engineering tasks including the cost of manufacturing and operation of technical structures. Can include the economic criterion in a design.
O_1A_U11	Can interpret information about the basic characteristics of substances and materials and identify their potential applications.
O_1A_U12	Can select method and tools for solving engineering tasks characteristic for ocean technology and in particular apply computer tools in modelling and calculations, technical structures designs and technological processes control.
O_1A_U13	Can design a device, a structure, an installation, a system or a process typical for ocean technology in accordance with given specifications, taking into account the requirements of classification societies, norms, regulations, and the principles of good engineering practices.
O_1A_U14	Can perform a preliminary evaluation of the legal aspects of simple engineering tasks.
O_1A_U15	Can work in a team. Can assess the time required for completion of a task. Can create a team work schedule and ensure that its adhered to.
Social competences	
O_1A_K01	Understands the need for and is aware of the opportunities for continuing education (second and third-degree studies, post-graduate studies, courses) and for improving own professional, personal and social competences.
O_1A_K02	Is aware of the importance of and understands the non-technical aspects and consequences of engineering practices, including their environmental impact and the resulting liability for own decisions.
O_1A_K03	Is aware of the importance of engaging in a proper professional conduct, abides by professional ethics, and respects the diversity of outlooks and cultures.
O_1A_K04	Is aware of the responsibility for own work and is willing to comply with the principles of team work and to be held responsible for completion of joint tasks.
O_1A_K05	Can think and act in an entrepreneurial way.

Code	Learning outcome for programme of studies
O_1A_K06	Is aware of the social role of a technical university graduate, and in particular understands the need for formulation and dissemination , by means of mass media among others, information and opinions concerning the accomplishments of ocean technology as well as other aspects of engineering practices. Undertakes efforts in order to disseminate such information and opinions in a generally comprehensible way.
O_1A_K07	Is mindful of the potential safety hazards occurring in ocean technology and is aware of the related risks. Can carry out a critical evaluation and formulate and communicate opinions about the topics of ocean technology safety.
O_1A_K08	Understands the social aspects of the practical application of the acquired knowledge and skills and the resulting liability.

Programme of studies: *ocean technology*

Level of qualification: second cycle studies

Educational profile: general academic

Fields of science: Engineering and technology

Discipline of science: mechanical engineering (82%), civil engineering and transport (18%)

Name of qualification (Title conferred): magister inżynier

Description of the planned educational effects

Code	Learning outcome for programme of studies
Knowledge	
O_2A_W01	Has advanced and in-depth knowledge within the scope of some branches of mathematics encompassing the elements of: statistics, stochastics, theory of probability, mathematical programming, mathematical and numerical methods necessary for: <ol style="list-style-type: none"> 1) formulating and solving complex tasks within the scope of ocean technology, 2) modelling and analysis of complex phenomena and processes within the scope of ocean technology, 3) probabilistic inference and design, 4) optimal design of offshore structures, 5) application of numerical methods in ocean technology.
O_2A_W02	Has advanced and in-depth knowledge within the scope of selected branches of physics encompassing: technical mechanics, fluid mechanics and thermodynamics, necessary for understanding complex physical phenomena and processes in the area of ocean technology.
O_2A_W03	Has organised and in-depth knowledge within the scope of construction and application of machinery and devices, as well as installations and systems incorporated in offshore structures.
O_2A_W04	Knows and understands the principles of the mutual impact of aquatic environment and offshore structures, as well as the aspects of environmental protection
O_2A_W05	Has basic knowledge of operation of technical machinery, structures and systems, as well as understands the impact of the proper operation on extension of their life cycle
O_2A_W06	Knows and understands the foundations of the theory of reliability and safety of technical machinery, structures, and systems utilised in offshore structures.
O_2A_W07	Knows and understands the impact of legal, economic and social aspects on the process of design, manufacture, and operation of offshore machinery, systems and structures.
O_2A_W08	Has basic knowledge of organisation, marketing, and management including quality management necessary for formulation of company's market orientation and operation of business within the scope pertinent to ocean technology.

Code	Learning outcome for programme of studies
O_2A_W09	Has basic knowledge within the scope of protection of intellectual property. If familiar with the legal acts that protect intellectual accomplishments. Knows and understand the significance of protection of intellectual and industrial property and copyrights, as well as the legal aspects of ensuring protection of inventions and utility models, as well as third party and legal liability for infringement of such rights.
O_2A_W10	Knows and understands selected algorithms, mathematical models, and advanced IT methods utilized in engineering calculations. Has organised and in-depth knowledge within the scope of design of machinery, structures, and systems used in ocean technology, Knows computer tools for design, modelling and simulation of systems in ocean technology.
O_2A_W11	Has knowledge of development trends and the most significant of recent technological accomplishments within the scope of broadly understood ocean technology and related fields, among others materials engineering, energetics or mechanics and mechanical engineering.
O_2A_W12	Has knowledge within the scope of occupational health and safety and organisation of own work
O_2A_W13	Has organised and in-depth knowledge within the scope of design and operation of vessels and offshore structures
O_2A_W14	Knows and understands the organisation of manufacturing processes and the impact of computer assisted solutions on the process of construction of offshore structures.
O_2A_W15	Has organised and in-depth knowledge within the scope of structural engineering and the offshore structures building technology
O_2A_W16	Has organised and in-depth knowledge within the scope of operation of power devices and systems of offshore structures, based on theoretical knowledge in the area of thermodynamics and heat exchange.
O_2A_W17	Has organised and well-founded knowledge within the scope of operation of refrigeration and air-conditioning devices and installations utilised in offshore structures.
O_2A_W18	Has organised and well-founded knowledge within the scope of operation of offshore structures security devices and systems.
Skills	
O_2A_U01	Can obtain information from literature, databases, regulations, norms, and other properly selected sources, also in English and another language of international communication, within the scope of ocean technology. Can integrate, interpret, and critically evaluate obtained information, as well as formulate conclusions, formulate opinions and provide satisfactory justification.
O_2A_U02	Can work independently and in a team. Can assess the labour intensity of a task and ensure its timely completion. Can communicate in the professional environment and in other settings by means of a variety of techniques.
O_2A_U03	Can prepare a scientific study in English or another language of international communication within the scope of ocean technology, that presents the results of own research compiled in the diploma thesis.
O_2A_U04	Can prepare and deliver a presentation concerning the completion of a project or research task and lead the ensuing discussion
O_2A_U05	Can prepare detailed documentation of results of a completed experiment and a project or research task, as well as a study with their discussion
O_2A_U06	Can use English at B2+ Level of Common European Framework of Reference for Languages within the scope of ocean technology, taking into account reading with comprehension of specialised literature, as well as of preparation and delivery of a short presentation on execution of a project or research task.
O_2A_U07	Can understand the need for and define the directions of continuing education, as well as complete the process of self-education

Code	Learning outcome for programme of studies
O_2A_U08	Can prepare project specifications of a component, a circuit, a system, a process, a machine or an offshore structure taking into account all and any non-technical aspects such as environmental impact, compliance with regulations or return on investment.
O_2A_U09	Can use familiar mathematical methods and models, taking into account their modifications, in modelling and design of components, circuits, systems, processes, machines or offshore structures with the help of relevant tools.
O_2A_U10	When formulating and solving engineering tasks and simple research problems, can carry out an assessment and apply the proper analytical, simulation, and experimental methods with the use of the systemic approach, as well as formulate and test hypotheses related, among others, with modelling and design of components, circuits, systems, processes, machines or offshore structures.
O_2A_U11	When formulating and solving engineering tasks and simple research problems, can use and integrate knowledge from multiple sources, both within the scope of ocean technology and of other branches of science and technology, taking into account the non-technical aspects (legal or economic).
O_2A_U12	Can assess the cost of the process of design, manufacturing, operation or repairs of offshore structure and their components, as well as the cost of investment
O_2A_U13	Can analyse the construction and operation of existing technical solutions in offshore structures and their components, as well as suggest possibilities of their improvement or modification.
O_2A_U14	Can evaluate the suitability and the potential application of new scientific and technological accomplishments for the purpose of solving a given engineering problem within the area of ocean technology and taking into account the systemic approach.
O_2A_U15	Can evaluate the suitability of and the potential application of proper computer methods, tools, and software used for solving a given engineering problem within the area of ocean technology and recognizing its limitations.
O_2A_U16	Can organise own work, which is necessary for the purpose of undertaking work in the industrial environment, as well as adequately apply the basic principles of occupational health and safety.
O_2A_U17	Can define the performance parameters of watercrafts and evaluate the performance of floating structures under specific external conditions such as the impact of the environment of offshore structures.
O_2A_U18	Can design manufacturing and technological processes of offshore structures, taking into account the non-technical aspects
O_2A_U19	Can perform the strength calculations of construction components of offshore structures in accordance with regulations and calculation procedures.
O_2A_U20	Can formulate and explain the performance principles of power devices and systems utilised in offshore structures.
O_2A_U21	Can formulate and explain the performance principles of refrigeration and air-conditioning devices and installations utilised in offshore structures, taking into account non-technical aspects.
O_2A_U22	Can formulate and explain the performance principles of safety devices and systems utilised in offshore structures.
O_2A_U23	Can assess the impact of the proper operation of technical systems and structures on their reliability and extended life cycle, as well as their safe operation
O_2A_U24	Can formulate and explain the principles of carrying out thermodynamic analysis in thermal processes.
O_2A_U25	Can design a complex component, circuit, system, process, device or offshore structure, taking into account given specifications and non-technical aspects, as well as complete this project in an accessible way, at least partially, using the proper methods, techniques, and tools, as well as adopting existing tools or developing new tools towards this end.

Code	Learning outcome for programme of studies
Social competences	
O_2A_K01	Is aware of the need to continue education throughout life, as well as can select the proper educational methods for him/herself and for others
O_2A_K02	Is aware of the impact of engineering practices on one's surroundings and natural environment, as well as understand the responsibility for own decisions, in particular within the context of own safety and that of others and environmental protection.
O_2A_K03	Can cooperate and execute tasks in a team and is aware of the need for the proper division of responsibilities
O_2A_K04	Understands the need for team activities and assumes responsibility for results of joint efforts
O_2A_K05	Can analyse tasks allocated for execution, setting appropriate priorities that ensure effective execution of such tasks
O_2A_K06	Is aware of the importance of engaging in a proper professional conduct in performance of professional responsibilities and of showing respect for professional ethics.
O_2A_K07	Demonstrates entrepreneurship and ingenuity in professional activities.
O_2A_K08	Is aware of the social role of a technical university graduate, in particular understands the need to formulate and disseminate, by mass media among others, credible information and opinions regarding the current technological accomplishments within the area of ocean technology, as well as other technological aspects related to engineering practices, and to communicate such information and opinions in a generally understandable way, presenting different points of view

Programme of studies: *transport***Level of qualification:** first cycle studies**Educational profile:** general academic**Fields of science:** Engineering and technology, Social sciences**Discipline of science:** civil engineering and transport (90%), mechanical engineering (7%), management and quality studies (3%)**Name of qualification (Title conferred):** inżynier**Description of the planned educational effects**

Code	Learning outcome for programme of studies
Knowledge	
TR_1A_W01	Has knowledge within the scope of mathematics and operational research encompassing algebra, mathematical analysis, probability theory, as well as elements of discrete and applied mathematics necessary for: 1) formulation and solution of simple tasks within the scope of transport; 2) mathematical description of phenomena and processes within the scope of transport; 3) description of physical quantities that constitute random variables; 4) making optimal decisions.
TR_1A_W02	Has knowledge within the scope of physics encompassing mechanics, thermodynamics, optics, electricity and magnetism, nuclear physics and solid-state physics, including knowledge necessary for: 1) measurement of basic physical quantities; 2) understanding basic physical phenomena occurring in nature; 3) analysis of technical problems on the basis of the laws of physics.
TR_1A_W03	Has fundamental knowledge within the scope of computer systems and architecture, as well as operating systems and programming techniques necessary for use of computer networks and network applications, computer assistance in solving technical tasks and in transport management; knows the principles of electronic information security.
TR_1A_W04	Has organized knowledge within the scope of construction and general repair technology of technical structures and engineering materials applied in transport, taking into account strength considerations.
TR_1A_W05	Has fundamental knowledge necessary for understanding the legal and the economic aspects of engineering practices in the area of transport.
TR_1A_W06	Has organized knowledge of functioning of transportation and logistic systems; Knows and understands the principles of their design and analysis, as well as knows and understands the principles of materials management.
TR_1A_W07	Has knowledge of construction and application of means of transportation and their subsystems; Knows the principles of their design and development trends.

TR_1A_W08	Has knowledge of functioning and application of transport infrastructure and knows the methods for its development.
TR_1A_W09	Has fundamental knowledge of construction, application, and the principles of selection of essential machine components. Has knowledge within the scope of mapping and sizing machine components necessary for reading and creating technical drawings and sizing structures on the basis of strength criteria.
TR_1A_W10	Has knowledge of the fundamentals of operation of technical machinery, appliances, facilities, and systems used in transport, as well as understands the impact of their proper operation on extension of their life cycle.
TR_1A_W11	Has fundamental knowledge of selected technical sciences including metrology, electronics and electrotechnology, as well as automation necessary for completion of tasks typical for transport.
TR_1A_W12	Has organized knowledge within the scope of organization and management in transport; Knows and understands the factors determining transport processes, as well as the traffic control and organization principles.
TR_1A_W13	Has knowledge of basic topics within the scope of cargo management; knows the methods and the forms of securing cargo in transport.
TR_1A_W14	Has fundamental knowledge necessary for understanding social, environmental, and other non-technical aspects of the engineering practice.
TR_1A_W15	Has fundamental knowledge of how to run business operations, as well as knows the general principles of creation and development of different forms of individual enterprise.
TR_1A_W16	Has fundamental knowledge of reliability and safety of machinery and appliances, technical structures and systems utilized in transport, as well as knowledge within the scope of occupational health and safety in the industrial environment.
TR_1A_W17	Knows and understands the basic concepts and principles within the scope of industrial property protection and copyright.
Skills	
TR_1A_U01	Can obtain information from literature, data bases and other correctly selected sources, also in English or in another international language within the scope of transport; Can integrate and interpret obtained information, as well as formulate conclusions and formulate and justify opinions.
TR_1A_U02	Can use English (or another contemporary international language) at a level sufficient for communication, as well as reading with comprehension of data sheets and user's manuals for operation of IT equipment and tools, application notes, summaries and descriptions of technical appliances and installations and similar documents.
TR_1A_U03	Can communicate by means of a variety of communication techniques and relay technical information regarding transport in a comprehensible way both for recipients from the professional environment and other backgrounds.
TR_1A_U04	Can prepare a well-documented a study of problems within the scope of technical sciences and scientific disciplines characteristic for transport in Polish and in another foreign language.
TR_1A_U05	Can prepare and deliver an oral presentation of detailed topics within the scope of transport.
TR_1A_U06	Has the ability to self-educate, among others, for the purpose of advancing own professional competences and for learning innovative transportation techniques and technologies.
TR_1A_U07	Has language the skills within the area of science and the scientific disciplines relevant to transport equal to B2 level of The Common European Framework for Reference for Languages.
TR_1A_U08	Can use the information-communication techniques suitable for execution of tasks typical for engineering practices.
TR_1A_U09	Can plan and carry out experiments, including computer measurements and simulations, as well as interpret obtained results and formulate conclusions.

TR_1A_U10	Can use analytical, simulation, and experimental methods to formulate and solve engineering tasks.
TR_1A_U11	When formulating and solving engineering problems, can identify the relevant system and non-technical aspects, including, environmental, economic and legal aspects.
TR_1A_U12	Can assess the time required for completion of a task. Can create and adhere to a schedule ensuring completion of a task within the deadline.
TR_1A_U13	Can carry out a critical analysis of the form of operation and evaluate, especially in relation to transport, the existing technical solutions: equipment, facilities, systems, processes and services.
TR_1A_U14	Can apply economic calculations in transport. Can carry out a preliminary analysis and assessment of economic impact of undertaken engineering activities.
TR_1A_U15	Can identify and formulate a specification of simple, practically-oriented engineering tasks characteristic for transport.
TR_1A_U16	Can evaluate the suitability of routine methods and tools used in solving simple engineering tasks characteristic for transport as well as select and apply the correct methods and tools.
TR_1A_U17	Can design and build a device, a structure, a system or a process typical for transport in accordance with given specifications.
TR_1A_U18	Understands the legal basis and can carry out a preliminary assessment of the legal aspects of simple tasks within the scope of engineering practices.
TR_1A_U19	Enforces the principles of occupational health and safety in the industrial environment..
TR_1A_U20	Can use patent information resources and evaluate the potential for protection of intellectual property.
Social competences	
TR_1A_K01	Understands the need to continue education throughout life; Is aware of the opportunities for continuing education (graduate and doctorate studies, post-graduate studies, courses), as well as for improving own professional, personal, and social competences.
TR_1A_K02	Is aware of the significance of and understands the non-technical aspects of consequences of engineering practices, including their impact on natural environment and the related responsibility for own decisions.
TR_1A_K03	Is aware of the importance of engaging in a proper professional conduct, abiding by professional ethics, and showing respect for the diversity of outlooks and cultures.
TR_1A_K04	Can cooperate and work in a team. Is aware of the responsibility for own work and is ready to comply with the principles of team work and to be held responsible for completion of joint tasks.
TR_1A_K05	Can think and act in a creative and an entrepreneurial way.
TR_1A_K06	Is aware of the social role of a technical university graduate, and in particular understands the need to formulate and disseminate, by mass media among others, information and opinions regarding the accomplishments within the area of transport and other aspects of engineering practices; Undertakes efforts to communicate such information and opinions in a generally understandable way.
TR_1A_K07	Understands the social aspects of practical application of acquired knowledge and skills and the resulting responsibility.
TR_1A_K08	Is mindful of the potential safety hazards occurring in the transport sector and is aware of the related risks and consequences.

Programme of studies: *transport*

Level of qualification: second cycle studies

Educational profile: general academic

Fields of science: Engineering and technology, Social sciences

Discipline of science: civil engineering and transport (90%), mechanical engineering (3%), management and quality studies (7%)

Name of qualification (Title conferred): magister inżynier

Description of the planned educational effects

Code	Learning outcome for programme of studies
Knowledge	
TR_2A_W01	Has advanced and in-depth knowledge within the scope of selected areas of mathematics, necessary for description of transport problems.
TR_2A_W02	Has advanced and in-depth knowledge within the scope of selected areas of physics, encompassing applied mechanics, useful in formulation and solving complex tasks and understanding phenomena and processes within the area of transport.
TR_2A_W03	Has organized and in-depth knowledge within the scope of design, construction, and application of machinery, equipment, installations and other technical solutions and structures, as well as systems used in transport.
TR_2A_W04	Has organized and theoretically-founded knowledge within the scope of operation of machinery, facilities, and technical systems utilized in transport, as well as understands the impact of their operation on life cycle.
TR_2A_W05	Has knowledge of developmental trends and the most significant of recent achievements within the scope of the areas of science and the scientific disciplines related to transport and associated field of study.
TR_2A_W06	Has organized knowledge of foreign trade and transport policy, including knowledge of relevant tools, directions, determinants, and regulations.
TR_2A_W07	Has detailed knowledge of logistic processes and services. Knows and understands the principles of design of logistic networks and supply chain management.
TR_2A_W08	Has organized and theoretically-funded knowledge of organization and implementation of transport processes, including of their modelling.
TR_2A_W09	Has organized knowledge within the scope of management in transport, including quality management.
TR_2A_W10	Has fundamental knowledge necessary for understanding social, economic, legal, environmental, and other non-technical aspects of engineering practice and of how to take them into account in engineering practice.
TR_2A_W11	Has organized knowledge of the problems related to reliability and safety of machinery and technical facilities and systems in transport.
TR_2A_W12	Knows and understands the basic concepts and principles within the scope of industrial property protection and copyright, as well as the need to manage intellectual property resources.
TR_2A_W13	Has organized knowledge of selected areas of cargo management, including of cargo properties, storage techniques and transport.
TR_2A_W14	Has knowledge within the scope of occupational health and safety and the correct organization of research and project work.

Code	Learning outcome for programme of studies
Skills	
TR_2A_U01	Can obtain information from literature, data bases, and other correctly selected sources, also in English or in another international language within the scope of transport; Can integrate and interpret obtained information, as well as formulate conclusions and formulate and exhaustively justify opinions.
TR_2A_U02	Can use English (or another contemporary international language) at a level sufficient for communication, as well as reading with comprehension of data sheets and user's manuals for operation of IT equipment and tools, application notes, summaries and descriptions of technical appliances and installations and similar documents.
TR_2A_U03	Can communicate by means of a variety of communication techniques and relay technical information regarding transport in a comprehensible way both for recipients from the professional environment and other backgrounds.
TR_2A_U04	Can prepare in Polish a well-documented a study of problems within the scope of technical sciences and scientific disciplines characteristic for transport, as well as a brief scientific report in a foreign language presenting own scientific research.
TR_2A_U05	Can prepare and deliver an oral presentation of detailed topics within the scope of transport.
TR_2A_U06	Has the ability to self-educate, among others, for the purpose of advancing own professional competences and for learning innovative transportation techniques and technologies.
TR_2A_U07	Has language the skills within the area of science and the scientific disciplines relevant to transport equal to B2+ level of The Common European Framework for Reference for Languages
TR_2A_U08	Can use the information-communication techniques suitable for execution of tasks typical for engineering practices.
TR_2A_U09	Can plan and carry out experiments, including computer measurements and simulations, as well as interpret obtained results and formulate conclusions.
TR_2A_U10	Can use analytical, simulation, and experimental methods to formulate and solve engineering tasks, as well as formulate and test hypotheses related to engineering and research problems.
TR_2A_U11	When formulating and solving engineering problems, can integrate knowledge within the scope of scientific areas and disciplines characteristic for transport and apply a systemic approach, taking into account also non-technical aspects, including environmental, economic, and legal.
TR_2A_U12	Can assess the time required for completion of a task. Can create and adhere to a schedule ensuring completion of a task within the deadline.
TR_2A_U13	Can carry out a critical analysis of the form of operation and evaluate, especially in relation to transport, the existing technical solutions: equipment, facilities, systems, processes, and services
TR_2A_U14	Can apply economic calculations in transport. Can carry out a preliminary analysis and assessment of economic impact of undertaken engineering activities.
TR_2A_U15	Can identify and formulate a specification of complex, practically-oriented engineering tasks characteristic for transport, taking into account their non-technical aspects.
TR_2A_U16	Can evaluate the suitability of routine methods and tools used in solving engineering tasks characteristic for transport, as well as select and apply the correct methods and tools recognizing their limitations.
TR_2A_U17	Can design and build, at least partially, a complex device, a structure, a system or a process typical for transport in accordance with given specifications.
TR_2A_U18	Understands the legal basis and can carry out a preliminary assessment of the legal aspects of simple tasks within the scope of engineering practices.
TR_2A_U19	Enforces the principles of occupational health and safety in the industrial environment..

Code	Learning outcome for programme of studies
TR_2A_U20	Can use patent information resources and evaluate the potential for protection of intellectual property.
TR_2A_U21	Can evaluate the suitability and the applicability of new achievements of science and technology in solving engineering problems within the scope of transport.
TR_2A_U22	Can suggest possible improvements or modifications of existing technical solutions, devices, facilities, and transport systems and processes.
Social competences	
TR_2A_K01	Understands the need to continue education throughout life; Is aware of the opportunities for continuing education (pursuing education within other fields of study and doctorate studies, post-graduate studies, courses), as well as for improving own professional, personal, and social competences; Can select the proper educational methods for him/herself and for others.
TR_2A_K02	Is aware of the significance of and understands the non-technical aspects of consequences of engineering practices, including their impact on natural environment and the related responsibility for own decisions.
TR_2A_K03	Is aware of the importance of engaging in a proper professional conduct, abiding by professional ethics and showing respect for the diversity of outlooks and cultures
TR_2A_K04	Can cooperate and work in a team. Is aware of the responsibility for own work and is ready to comply with the principles of team work and to be held responsible for completion of joint tasks
TR_2A_K05	Can think and act in a creative and an entrepreneurial way.
TR_2A_K06	Is aware of the social role of a technical university graduate, and in particular understands the need to formulate and disseminate, by mass media among others, information and opinions regarding the accomplishments within the area of transport and other aspects of engineering practices; Undertakes efforts to communicate such information and opinions in a generally understandable way.
TR_2A_K07	Understands the social aspects of practical application of acquired knowledge and skills and the resulting responsibility; Can disseminate information and opinions regarding this subject taking into account different points of view.
TR_2A_K08	Is mindful of the potential safety hazards occurring in the transport sector and is aware of the related risks and consequences.

Programme of studies: *logistics*

Level of qualification: second cycle studies

Educational profile: general academic

Fields of science: Engineering and technology, Social sciences

Discipline of science: civil engineering and transport (76%), mechanical engineering (11%), management and quality studies (13%)

Name of qualification (Title conferred): magister inżynier

Description of the planned educational effects

Code	Learning outcome for programme of studies
Knowledge	
LO_2A_W01	He/she has advanced knowledge in the technical aspects of supply chain operations, the conditions for conducting service activities in logistics on both local and global scales.
LO_2A_W02	He/she possesses expanded and in-depth knowledge in the field of computer science and tools aiding decision-making in logistics, including complex information systems that enhance the operations of logistics enterprises
LO_2A_W03	Has a well-organized and in-depth knowledge in the field of design: logistics processes and systems, objects, devices, and other technical-technological solutions applied in logistics
LO_2A_W04	Has well-structured, theoretically grounded knowledge in the field of machinery and equipment operation, as well as objects and technical systems used in logistics. Also understands the impact of operation on their lifecycle.
LO_2A_W05	Has in-depth knowledge in the field of methods and tools for ensuring safety in logistics, including risk management in supply chains
LO_2A_W06	Has well-organized knowledge in the field of operations research, including computational and optimization models applied in logistics.
LO_2A_W07	Has expanded knowledge regarding the robotization and automation of processes, utilizing complex technical devices
LO_2A_W08	Has organized knowledge in the field of warehouse management and e-commerce
LO_2A_W09	Has extensive knowledge in logistics management, including strategic management and quality management.
LO_2A_W10	Has knowledge in the field of directions and trends in logistics development, as well as major achievements in scientific disciplines related to logistics operations.
LO_2A_W11	Has the knowledge necessary for initiating, preparing, and conducting scientific research, ensuring proper organization of research or project work in the area related to logistics issues
LO_2A_W12	Understands the principles of human functioning in social structures, including professional contexts, as well as their role as creators of culture, communities, and social groups. Is familiar with the fundamental dilemmas of contemporary civilization

LO_2A_W13	Has the knowledge necessary for understanding the social, economic, legal, environmental, ethical, and other non-technical factors influencing engineering activities and their incorporation into engineering practices
LO_2A_W14	Has knowledge in the principles of creating and developing individual entrepreneurship forms."
Skills	
LO_2A_U01	The ability to gather information from literature, databases, and other appropriately selected sources, and to understand and utilize the necessary information; the capacity to analyze and evaluate the gathered information, to synthesize, creatively interpret, draw conclusions, and formulate and comprehensively justify opinions, and to present this information effectively
LO_2A_U02	The ability to select and apply appropriate methods and tools, including advanced information and communication technologies, assess the usefulness and limitations of routine methods and tools used to solve engineering tasks.
LO_2A_U03	Can utilize analytical, simulation, and experimental methods for formulating and solving engineering tasks. Capable of formulating and testing hypotheses related to simple research problems.
LO_2A_U04	Can plan and conduct research and experiments in the field of logistics, perform measurements and computer simulations, interpret the obtained results, and draw conclusions.
LO_2A_U05	Can interpret economic calculations in logistics, conduct preliminary economic assessments, and estimate the economic effects of proposed solutions and engineering activities.
LO_2A_U06	Can recognize non-technical aspects, including environmental, economic, legal, and ethical aspects, when formulating and solving engineering tasks. Can systematize acquired knowledge, apply occupational health and safety principles, and has the necessary preparation for working in an industrial environment.
LO_2A_U07	Can critically analyze the functioning of systems and assess existing technical solutions used in logistics.
LO_2A_U08	Can formulate and creatively solve complex and atypical problems, adapt existing methods, or propose new ones for their resolution. Capable of innovatively performing tasks in changing conditions.
LO_2A_U09	Can design a simple device, object, system, or implement processes typical for logistics issues, in accordance with given specifications. Utilizes appropriate methods, techniques, tools, and materials.
LO_2A_U10	Can identify and interpret basic social phenomena and processes using knowledge from the field of logistics.
LO_2A_U11	Can use normative systems, access patent information resources, and assess the possibility of intellectual property protection.
LO_2A_U12	Can identify and specify simple practical engineering tasks related to issues of logistics techniques and technologies.
LO_2A_U13	Is proficient in a foreign language at the B2 level of the Common European Framework of Reference for Languages, sufficient for communication as well as for reading and understanding publications and scientific papers in the field of logistics, logistics documentation, and other documents used in logistics companies' activities.
LO_2A_U14	Can communicate effectively with both professionals and non-professionals, disseminate knowledge, participate in and lead discussions, comprehend and create scientific reports, including verbal presentations, in Polish, English, or other foreign languages.
LO_2A_U15	Can work independently and collaborate effectively in a team. Capable of planning individual and team work, developing and implementing work schedules, estimating the time required for planned tasks, leading a team's work, and taking a leading role in teams.

Social competences	
LO_2A_K01	Can critically assess existing knowledge, acquired information, and the directions of actions taken in the field of logistics.
LO_2A_K02	Recognizes the importance of knowledge in solving logistics problems, is aware of the need for continuous self-improvement and further education, and understands the value of seeking opinions from experts.
LO_2A_K03	Is aware of the social role of a graduate from a technical university, understands the need to disseminate information and opinions about achievements in the field of logistics, and is capable of initiating, inspiring, and organizing activities for the benefit of the social environment and public interest.
LO_2A_K04	Can think and act in a creative and entrepreneurial manner.
LO_2A_K05	Is aware of the responsibility for individual and team work, the decisions made, and the tasks carried out collaboratively.
LO_2A_K06	He/She is prepared for professional conduct, understands the importance of professional development and building professional expertise, as well as adhering to professional ethics, upholding the professional ethos, and considering changing societal needs.

Programme of studies: *technical Safety*

Level of qualification: first cycle studies

Educational profile: general academic

Fields of science: Engineering and technology

Discipline of science: civil engineering and transport (10%), mechanical engineering (90%)

Name of qualification (Title conferred): inżynier

Description of the planned educational effects

Code	Learning outcome for programme of studies
Knowledge	
BTE_1A_W01	has knowledge of higher mathematics necessary to formulate and solve technical problems
BTE_1A_W02	has knowledge of physics necessary to understand basic physical phenomena and to formulate and solve simple problems concerning technical safety
BTE_1A_W03	has knowledge of processes taking place in the lives of devices, objects, and technical systems, and knowledge of metrology
BTE_1A_W04	has knowledge of principles and basics of machine construction and the methods of graphic representation of basic engineering structures
BTE_1A_W05	has knowledge necessary to understand problems of environmental protection and principles of sustainable development
BTE_1A_W06	has basic knowledge necessary to understand social, economic, and other non-technological circumstances of engineering activities useful in performing tasks in the field of technical safety, and understands relations of the knowledge to other sciences
BTE_1A_W07	has knowledge on the principles of intellectual property protection, including patents and copyright, as well as industrial safety
BTE_1A_W08	knows and understands the principles of human functioning in social structures, including professional structures, and their role as a creator of culture, community, and social groups
BTE_1A_W09	has basic knowledge of material science and chemistry necessary to understand basic chemical phenomena and processes occurring in nature, and to prevent undesirable effects of chemical processes
BTE_1A_W10	has elementary knowledge necessary to use computer networks and network applications, and concerning computer support in solving technical and organizational problems occurring in the field of technical safety
BTE_1A_W11	has basic knowledge of mechanics, fluid mechanics, heating technology, electrical engineering, electronics, automatics, and strength of materials
BTE_1A_W12	has basic knowledge of safe use of technical systems and devices
BTE_1A_W13	has organised knowledge on obtaining energy from various sources and ensuring energy safety of a recipient
BTE_1A_W14	has knowledge on threats occurring in technical facilities, can prevent them or minimize their negative impact on humans and structures using technical and organisational tools
BTE_1A_W15	has knowledge on communicating in crisis

Code	Learning outcome for programme of studies
BTE_1A_W16	knows and understands functioning of rescue services and systems
BTE_1A_W17	has organised knowledge on identifying threats, methods of determining and assessing the effects of threats
BTE_1A_W18	has knowledge on ergonomics and physiology in industrial safety, knows individual and collective means of safety and protection, and the criteria of selecting them
BTE_1A_W19	has knowledge on information safety, selecting means of information safety and protection
BTE_1A_W20	knows methods of risk assessment and methods of analysing the reliability of safety systems elements
BTE_1A_W21	has knowledge of thread proliferation modelling
BTE_1A_W22	has basic knowledge concerning management, including quality management, and self-employment
BTE_1A_W23	has in-depth knowledge concerning the principles of system functioning quality analysis, knows methods and techniques of improving technical systems use quality
BTE_1A_W24	has knowledge of technical and organisational methods of flooding and environmental protection
BTE_1A_W25	has in-depth knowledge of threats occurring in work environment and methods of their prevention
Skills	
BTE_1A_U01	has skills of searching, understanding, analysing, and using required information; can analyse and assess, interpret, synthesise the obtained information, draw conclusions, formulate and justify opinions concerning engineering practice in respect of technical safety
BTE_1A_U02	uses a foreign language in accordance with the requirements for level B2 of Common European Framework for Languages in a degree sufficient to communicate and to read and understand publications and documentations concerning technical safety
BTE_1A_U03	can prepare documentation concerning the execution of an engineering task and prepare a text containing the task results analysis, and prepare it in an oral manner (presentation) in Polish, English, or another foreign language
BTE_1A_U04	can work individually and in a team, can estimate time needed for a task, can prepare and execute a work schedule
BTE_1A_U05	can properly use basis information technologies necessary in professional work
BTE_1A_U06	has skills and competences concerning facilities and systems management in respect of improving the level of their functioning safety level and the state security
BTE_1A_U07	can determine principles of safe use of technical devices in accordance with the requirements of environmental protection and industrial safety
BTE_1A_U08	understands the need and has skills of self-education
BTE_1A_U09	can make measurements, interpret obtained results, and draw conclusions concerning safe use of technical devices
BTE_1A_U10	can analyse and predict social processes and phenomena using standard methods and tools, including statistics
BTE_1A_U11	can make use of normative systems, use patent information resources, can assess the possibilities of intellectual property protection
BTE_1A_U12	can communicate in an effective way, in particular in a crisis situation, using tools adjusted to a recipient.
BTE_1A_U13	can determine threats and their effects, and assess the risk of threats, as well as select appropriate organisational and technical means in order to prevent or reduce them.

Code	Learning outcome for programme of studies
BTE_1A_U14	can solve engineering problems using analytical, simulation, and experimental methods.
Social competences	
BTE_1A_K01	is aware of his/her knowledge and skills necessary to solve cognitive and practical problems arising in professional work, understands the need and knows the opportunities of long-life learning and self-improvement.
BTE_1A_K02	is aware of the significance and understands non-technical aspects of engineering work and effects of engineering activities, including the influence on social and economic natural environment, and related responsibility for making decisions
BTE_1A_K03	is aware of the significance of professional behaviour, observing the principles of professional ethics, and respect for variety of views and cultures
BTE_1A_K04	is aware of the social role of a university graduate, in particular understands the need to popularise the acquired knowledge, initiating and co-organising activities for social environment and public interest
BTE_1A_K05	can think and act in an entrepreneurial way
BTE_1A_K06	is aware of the responsibility for their own work and the readiness to keep the rules of a teamwork, and bearing responsibility for collective execution of tasks
BTE_1A_K07	is aware of risks and can assess environmental effects of their activities in respect of using technical systems