Study programme

Major: Mechanical Engineering

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General characteristics of the major

Basic information

Faculty name:	Faculty of Mechanical Engineering and Robotics
Major name:	Mechanical Engineering
Level:	First-cycle (engineer) programme
Profile:	General academic
Form:	Full-time studies
ISCED classification:	0715
Number of ECTS credits necessary to complete studies at a given level:	210
Professional title awarded to graduates:	inżynier
Cycle start date:	2023/2024, winter semester
Duration of studies (number of semesters):	7

Field of science to which the major is assigned:

Field engineering and technical sciences

Discipline of science to which the major is assigned:

Discipline	Percentage	ECTS
Mechanical engineering	94%	198
Automation, electronics and electrical engineering	4%	8
Material Engineering	2%	4

Relationship between the major and the AGH UST development strategy and the AGH UST mission

In accordance with the adopted strategy of AGH, the authorities and employees of the Faculty of Mechanical Engineering and Robotics make every effort to develop in all areas of activity, i.e. in the area of - education and research, as well as in organizational activities and efficient management. The priority of the Faculty strategy in the field of education is the high quality of the education process and the development of the best possible position in the emerging European Higher Education Area, including the internationalization of education. The most important goals of the Faculty of Mechanical Engineering and Robotics in the field of education:
- educating students with high professional, mobile and entrepreneurial qualifications, both during their studies and at work, as well as shaping their civic responsibility,
- preparing graduates for the lifelong learning process, in conditions strong professional competitiveness,
- active co-creation and development of the European Higher Education Area,
- education for the constantly changing labour market,
- further development of quality at all three levels of education.

The field of study Mechanical Engineering has been carrying out this mission of AGH for many years. The main areas of education in the field of Mechanical Engineering, i.e. design, production and operation of devices and systems, are consistent with the intensively conducted research works in the discipline of Mechanical Engineering. The education system adopted at AGH aims to shape students' skills of logical, constructive and forward-thinking thinking, making rational decisions as well as quick and accurate conclusions, it is completely consistent with the educational objectives adopted for the course, and this is reflected in the skills and social competences assumed as goals of the direction. Another point of convergence of the university's mission and education at Mechanical Engineering is cooperation with national and foreign educational centres, research and industrial units.

Information on taking into account the socio-economic demand while creating the study programme and indication of the assumed learning outcomes matching the identified demand

In the national economy of Poland, more and more emphasis is placed on the development of the high-technology industry. In the country, and especially in the Małopolska and Śląskie regions, branches of the world's most significant concerns are being established. There are also domestic enterprises that are established and operated, in which there is a great demand for engineering staff with knowledge and skills in the field of modern design of new products, knowledge of modern manufacturing technologies and information and physical flow control (lean), as well as the use of production equipment and systems in accordance with modern prediction and prevention requirements (TPM, PPM). The study program - apart from the necessary, solid foundations of broadly understood mechanical engineering, includes all possible trends taking into account both the needs of the third industrial revolution (automation and robotization) and the requirements of the fourth revolution - Industry 4.0, i.e. creating cyber-physical systems.

Learning paths - scope in Polish and in English

Diploma paths - scope in Polish and in English

The names of the specialties in Polish and in English

Name [pl]	Name [en]

General information about the study programme

Major: Mechanical Engineering

General information related to the study program (general learning objectives and employment opportunities, typical jobs and opportunities for graduate continuing education)

The field of study of Mechanical Engineering has been in the educational offer of the university and the faculty for many years. Teaching at the Mechanical Engineering course is carried out in accordance with the principles of the Bologna Process and PRK by two-level studies (level 6 inżynierski course and level 7 magisterski inżynierski course), introducing the ECTS points system for accounting for student progress, introducing a system based on learning outcomes, international student exchange. The Mechanical Engineering teaching in English is a modern field of study responding to the current challenges arising from the economy. Graduates of the field of study are prepared to solve engineering problems in a team based on knowledge and skills. They also have the competencies necessary to function in modern technical and sociological systems. The faculty constantly improves the quality of education through substantive activities (conducting research, developing the laboratory base, implementing national and international didactic projects, and supporting the student scientific movement). A very large number of production and design companies concentrated in the Śląsk and Małopolska agglomeration is a very absorbent labour market in which Mechanical Engineering graduates are doing excellently. This is particularly visible in the employment of Mechanical Engineering graduates in renowned corporations in the automotive industry (Valeo, Delphi, BWI, Nidec, Teamtechnik), as well as other well-known companies: ABB, Viessman, Tauron, KGHM Polska Miedź, Sandvik, PZL. According to the Career Center research, annually, over 91% of graduates find employment just a few months after graduation. The high level of education in the field of Mechanical Engineering is evidenced by the fact that in the prestigious PERSPEKTYWY ranking, this field has been the best field of study in Poland for five years (since 2014).

Information on the study programme including the conclusions from the students and graduates careers monitoring

As part of the Career Center, there is the Professional Staff Monitoring Center, whose task is to analyze the labour market on an ongoing basis, including the monitoring of the professional fate of AGH UST graduates. AGH UST graduates are surveyed several times after graduation. From these studies, reports are prepared to contain such information as the distribution of employment of graduates, strengths and weaknesses of graduates, and the respondents' comments on the suggested changes in the programs of study programs. These reports are then analyzed annually in the departmental education and quality committees. On the basis of these analyzes, changes to the programs of particular fields of study or modules are proposed.

Information on the study programme taking into account the requirements and recommendations of the accreditation committees, in particular the Polish Accreditation Committee and industry accreditation committees

The accreditation committee (2022) did not make any comments on the study program. On the other hand, the AGH Audit Committee recommended, among other things, increasing the participation of students in the evaluation of study plans, as well as the electiveness of modules. At the request of the Faculty Council of the Student Government, a comprehensive "package" of changes was introduced, mainly related to changes in the sequence of modules. The current program, especially in the second-cycle studies, increases the electiveness of the modules.

Information on including examples of good practice in the study program

For several years, good practices implemented in the field of Mechanical Engineering include: organising study trips in production plants, workshops for engineers conducted by specialists from companies, and the annual Competition for the Best Diploma Theses of the faculty. The laureates (and their guardians) are honoured with diplomas during a ceremonial meeting of the Faculty Council.

Information on cooperation in the preparation of the study programme with external stakeholders, in particular associations, professional and social organizations

Within the Faculty of Mechanical Engineering and Robotics, there is a Social Board, which gathers several dozens

representatives of the management staff of enterprises associated with AGH. Board members are annually surveyed for the needs and requirements of graduates of Mechanical Engineering. The results of these surveys are then analyzed and taken into account in the creation and modification of study programs.

Duration, rules and form of the apprenticeship

As part of the studies, the student is required to complete a 4-week professional apprenticeship, during the summer break in the sixth semester of study. Each student implements the apprenticeship individually in a company of his choice, which activity is related to mechanical engineering. The most important companies
with which the department cooperates include Valeo, Delphi, BWI, Nidec, Teamtechnik, ABB, Vissman, Tauron, KGHM Polska Miedź, Sandvik, PZL. KIRCHHOFF Polska Sp. z o.o.

Admission criteria, rules and policies

Major: Mechanical Engineering

Description of competences expected from the candidate applying for admission to studies

Graduation from high school, passing the matra exam. Good knowledge of mathematics, physics and English.

Recruitment conditions, including the winners and finalists of the central level high school scientific Olympics, as well as winners of international and national contests

Recruitment is conducted in accordance with the annual Resolution of the Senate.

The expected limit of admissions to studies along with an indication of the minimum number of admitted candidates required to successfully launch a study cycle

Minimum number of students: 26
Maximum number of students: 52

Learning outcomes

Major : Mechanical Engineering

Knowledge

KEU symbol	Directional learning outcomes	CEU symbol
MBMEN1A_W01	A student knows analytical mechanics and vibrations of physical systems	P6S_WG_A
MBMEN1A_W02	A student has knowledge of engineering software	P6S_WG_A
MBMEN1A_W03	A student knows optimization methods	P6S_WG_A
MBMEN1A_W04	A student knows modelling methods supporting machine design, creating a multi-mass model of a mechanical system, formulating and solving dynamics tasks	P6S_WG_A
MBMEN1A_W05	A student has knowledge of formulating model equations and knows the methods of solving them, identifying and verifying the parameters of a system	P6S_WG_A
MBMEN1A_W06	A student knows measurement data analysis and signal processing	P6S_WG_A
MBMEN1A_W07	A student knows how to shape machine elements based on strength criteria	P6S_WG_A
MBMEN1A_W08	A student has knowledge of elasticity, plasticity and fatigue strength	P6S_WG_A
MBMEN1A_W09	A student has knowledge of modern engineering materials, shaping their structure and properties, rules for the selection of engineering materials for application as elements of machines and tools	P6S_WG_A, P6S_WG_A_Inz
MBMEN1A_W10	A student knows Computer Aided Materials Design (CAMD) and Computer Aided Materials Selection (CAMS)	P6S_WG_A, P6S_WG_A_Inz
MBMEN1A_W11	A student knows Computer Aided Engineering (CAE)	P6S_WG_A, P6S_WG_A_Inz
MBMEN1A_W12	A student knows Computer Aided Design (CAD) and Computer Aided Manufacturing (CAM)	P6S_WG_A, P6S_WG_A_Inz
MBMEN1A_W13	A student knows the structure of the production system, including logistic and IT and has knowledge of process management and business operations	P6S_WG_A, P6S_WG_A_Inz
MBMEN1A_W14	A student knows pro-ecological technologies and integrated environmental management systems	P6S_WG_A, P6S_WG_A_Inz
MBMEN1A_W15	A student has knowledge of safety and quality in manufacturing processes and risk analysis and knows and understands the principles of intellectual property protection, copyright law and patents	P6S_WG_A, P6S_WG_A_Inz
MBMEN1A_W16	A student knows ergonomics, reliability and maintenance of mechanical devices	P6S_WG_A, P6S_WG_A_Inz
MBMEN1A_W17	A student has specialist knowledge of designing, manufacturing and operating selected machines, mechanical devices, technological processes and manufacturing systems	P6S_WK_A_Inz, P6S_WK_A
MBMEN1A_W18		P6S_WK_A_Inz, P6S_WK_A
MBMEN1A_W19		P6S_WK_A_Inz, P6S_WK_A

Skills

KEU symbol	Directional learning outcomes	CEU symbol
MBMEN1A_U01	A student has the ability to use advanced knowledge in the field of fundamental sciences useful for the design, manufacture and operation of machines and production systems	P6S_UW_A, P6S_UW_A_Inz_01
MBMEN1A_U02	A student has the ability to use advanced knowledge in the field of mechanics, design, manufacture and operation of machines and production systems	P6S_UW_A, P6S_UW_A_Inz_01
MBMEN1A_U03	A student has the knowledge to model and calculate complex mechanical systems using numerical methods	P6S_UW_A, P6S_UW_A_Inz_01
MBMEN1A_U04	A student understands the basic concepts and principles of intellectual property and copyright law and the need to manage intellectual property resources and knows how to use patent information resources	P6S_UW_A, P6S_UW_A_Inz_01
MBMEN1A_U05	A student knows how to use the basic methods, techniques, tools and materials to solve complex engineering tasks related to the studied discipline	P6S_UW_A, P6S_UW_A_Inz_01
MBMEN1A_U06	A student has social, economic, law skills and other non-technical determinants of engineering activities and is able to take them into account in engineering practice	P6S_UW_A, P6S_UW_A_Inz_01
MBMEN1A_U07	A student has management skills, including quality management, and knows the basic principles of running a business	P6S_UW_A, P6S_UW_A_Inz_01, P6S_UO_A
MBMEN1A_U08	A student knows how to present their own ideas using modern multimedia techniques	P6S_UK_A
MBMEN1A_U09	A student can use internet technologies efficiently	P6S_UW_A
MBMEN1A_U10	A student is able to plan and carry out laboratory experiments and computer simulations, interpret the obtained results and formulate conclusions	P6S_UW_A, P6S_UW_A_Inz_01
MBMEN1A_U11	A student can analyze, interpret data, and prepare raports, including knowing the elementary principles of signal analysis	P6S_UW_A_Inz_01
MBMEN1A_U12	A student can formulate and test hypotheses related to engineering problems	P6S_UW_A_Inz_02
MBMEN1A_U13	A student is able to integrate knowledge from various technical and non-technical fields and disciplines and apply a systemic approach to solve problems	P6S_UW_A_Inz_01
MBMEN1A_U14	A student is able to evaluate the usefulness and the possibility of using new achievements (techniques and technologies) in the studied engineering discipline	P6S_UW_A
MBMEN1A_U15	A student is prepared to work in an industrial environment and knows the safety rules related to this work	P6S_UW_A
MBMEN1A_U16	A student can critically analyse the functioning and evaluate devices, objects, systems, processes, services, etc	P6S_UW_A
MBMEN1A_U17	A student is able to identify and formulate the problem and solve complex engineering tasks characteristic for the studied engineering discipline, including non-standard tasks, taking into account their non-technical aspects	P6S_UW_A_Inz_01, P6S_UU_A
MBMEN1A_U18	A student has the ability to model and calculate complex mechanical systems using numerical methods	P6S_UW_A
MBMEN1A_U19	A student is able to design and develop a simple device, object, system or process, typical for the studied engineering discipline, using appropriate methods, techniques and tools	P6S_UW_A

KEU symbol	Directional learning outcomes	CEU symbol
MBMEN1A_U20	A student can assess the usefulness of methods and tools for solving an engineering task	P6S_UW_A_Inz_01
MBMEN1A_U21	student is able to solve complex engineering tasks characteristic of the studied engineering discipline, including non-standard tasks	P6S_UK_A
MBMEN1A_U22	A student has language skills in the field of the studied discipline in accordance with the requirements specified for level B2+ of the Common European Framework of Reference for Languages	P6S_UW_A_Inz_02
MBMEN1A_U23	A student has the ability to increase the efficiency of production systems through integration activities and the ability to use IT tools supporting production	P6S_UW_A
MBMEN1A_U24	A student has the ability to prepare a master's thesis and present it	P6S_UW_A_Inz_01
MBMEN1A_U25	A student is prepared for creative activity in the field of designing the production and operation of machines and production systems, managing and developing production, and managing technological processes	P6S_UW_A
MBMEN1A_U26	A student is prepared to conduct independent research in research institutes; manage design offices in the field of machine construction and technological processes; make creative initiatives and decisions	P6S_UW_A_Inz_02
MBMEN1A_U27	A student is prepared to run a business and undertake third-cycle (doctoral) studies	P6S_UW_A_Inz_02
MBMEN1A_U28		P6S_UW_A_Inz_02
MBMEN1A_U29		P6S_UW_A_Inz_02

Social competence

KEU symbol	Directional learning outcomes	CEU symbol
MBMEN1A_K01	A student is prepared for creative activity in the field of designing the production and operation of machines and production systems as well as managing, developing production and management in design, construction and technological enterprises and related industries, research institutes and research and development centres	P6S_KK_A
MBMEN1A_K02	A student has a need for continuous training and improvement of professional and personal competences	P6S_KK_A, P6S_KO_A
MBMEN1A_K03	A student is able to properly define the priorities of tasks, correctly identifies and resolves dilemmas related to the performance of the profession	P6S_KR_A
MBMEN1A_K04	A student knows the general principles of creating and developing forms of individual entrepreneurship, using knowledge from the studied discipline, can think and act in an entrepreneurial manner	P6S_KK_A
MBMEN1A_K05	A student makes efforts to convey information about the role of technology and the threats resulting from it and opinions in an understandable way using the mass media	P6S_KO_A
MBMEN1A_K06	A student has mastered the skills of working with people, managing teams and managing industrial and research institutes	P6S_KO_A
MBMEN1A_K07	A student is prepared to conduct research independently or in a team in research institutes, managing design offices, institutes dealing with consulting and disseminating knowledge in the field of machine construction and technological processes, and taking creative initiatives and decisions	P6S_KR_A

Compliance table of engineering competence (Inz) with directional learning outcomes (KEU)

Major : Mechanical Engineering

Knowledge

CEU symbol	Learning outcomes for qualifications including engineering competence	KEU references
P6S_WG_A_Inz	knowledge of basic processes taking place in the life cycle of technical devices, facilities and systems	MBMEN1A_W09, MBMEN1A_W10, MBMEN1A_W11, MBMEN1A_W12, MBMEN1A_W13, MBMEN1A_W14, MBMEN1A_W15, MBMEN1A_W16
P6S_WK_A_Inz	knowledge of basic principles of creating and developing various forms of individual entrepreneurship	MBMEN1A_W17, MBMEN1A_W18, MBMEN1A_W19

Skills

CEU symbol	Learning outcomes for qualifications including engineering competence	KEU references
P6S_UW_A_Inz_01	ability to plan and carry out experiments, including measurements and computer simulations as well as to interpret the obtained results and draw conclusions out of them. When identifying and formulating the specification of engineering problems and solving them, being able to: - use analytical, simulation and experimental methods; - recognize their systemic and non-technical aspects, including ethical connotations; - conduct a preliminary economic assessment of the proposed solutions and planned engineering activities; - perform a critical analysis of the functioning of existing technical solutions to further evaluate them;	MBMEN1A_U01, MBMEN1A_U02, MBMEN1A_U03, MBMEN1A_U04, MBMEN1A_U05, MBMEN1A_U06, MBMEN1A_U07, MBMEN1A_U10, MBMEN1A_U11, MBMEN1A_U13, MBMEN1A_U17, MBMEN1A_U20, MBMEN1A_U24
P6S_UW_A_Inz_02	ability to design solutions in compliance with the given specification as well as being able to: create simple devices, facilities and systems typical for the study major or implement processes using skillfully chosen methods, techniques, tools and materials	MBMEN1A_U12, MBMEN1A_U22, MBMEN1A_U26, MBMEN1A_U27, MBMEN1A_U28, MBMEN1A_U29

Directional outcomes coverage matrix

Major: Mechanical Engineering

2023/2024/S/Ii/IMiR/MBMEN/all

Subject	Code	Semestr	MBMEN1A_W01	MBMEN1A_W02	MBMEN1A_W03	MBMEN1A_W04	MBMEN1A_W05	MBMEN1A_W06	MBMEN1A_W07	MBMEN1A_W08	MBMEN1A_W09	MBMEN1A_W10	MBMEN1A_W11	MBMEN1A_W12	MBMEN1A_W13	MBMEN1A_W14	MBMEN1A_W15	MBMEN1A_W16	MBMEN1A_W17	MBMEN1A_W18	MBMEN1A_W19	MBMEN1A_U01	MBMEN1A_U02	MBMEN1A_U03	MBMEN1A_U04	MBMEN1A_U05	MBMEN1A_U06	MBMEN1A_U07	MBMEN1A_U08	MBMEN1A_U09	MBMEN1A_U10	MBMEN1A_U11	MBMEN1A_U12	MBMEN1A_U13	MBMEN1A_U14	MBMEN1A_U15	MBMEN1A_U16	MBMEN1A_U17	MBMEN1A_U18	MBMEN1A_U19	MBMEN1A_U20	MBMEN1A_U21	MBMEN1A_U22	MBMEN1A_U23	MBMEN1A_U24	MBMEN1A_U25	MBMEN1A_U26	MBMEN1A_U27	MBMEN1A_U28	MBMEN1A_U29	MBMEN1A_K01	MBMEN1A_K02	MBMEN1A_K03	MBMEN1A_K04	MBMEN1A_K05	MBMEN1A_K06	MBMEN1A_K07
Manufacturing processes	RMBMENS.Ii1O.92da88cba784cbe17e9f29c6c03c75d8.23	1									x								x			x	x											x																x	x				
Business Process Reengineering	RMBMENS.Ii1HS.60363e6aa8c81.23	1				x									x											x	x	x		x	x	x		x	x		x														x	x		x		
Design Thinking	RMBMENS.Ii1HS.b06eb39d291149317bb6532ff384236b.23	1													x	x		x	x							x	x	x	x			x		x	x		x														x	x		x		
Fundamentals of Information Technology	RMBMENS.Ii1O.636cb024e0381.23	1	x				x									x						x		x				x			x																				x			x		x	
Physics 1	RMBMENS.Ii1P.6a57bdba13a275784da9318b77db98f1.23	1	x				x															x	x			x																												x				x	
Chemistry	RMBMENS.Ii1P.b35af661086a998d405fdf0c666cf74f.23	1			x								x									x				x					x			x		x																x		x			x
Mathematics 1	RMBMENS.Ii1P.17936b14eb48662d3be98d580b3d60f6.23	1	x																			x		x	x																												x			x	x		
Fundamentals of Mechanical Engineering	RMBMENS.Ii1K.636cb0262ef34.23	1					x				x		x		x	x	x					x						x		x	x						x							x	x								x	x			x
Mechanics 1	RMBMENS.Ii2O.6e6f759c0a971d68d2499ec2af5cc76d.23	2				x																														x																					x			
English B2 course – compulsory course of 135 hours for students of FIRST-CYCLE studies – semester 1/3 (STUDY PROGRAMME IN ENGLISH)	RMBMENS.Ii2JO.636cd3c304d19.23	2																											x																												
Mathematics 2	RMBMENS.Ii2P.d2486ebab86e7b981a660c4d0e0b19ec.23	2	x																			x		x																														x	x				
Electrical Engineering and Electronics	RMBMENS.Ii2O.636cd38d0cff0.23	2	x	x			x	x														x				x					x				x																							x	
German B2 course – compulsory course of 135 hours for students of FIRST-CYCLE studies – semester 1/3 (STUDY PROGRAMME IN ENGLISH)	RMBMENS.Ii2JO.636cd3e60b5b3.23	2																											x																												

Subject	Code	Semestr	MBMEN1A_W01	MBMEN1A_W02	MBMEN1A_W03	MBMEN1A_W04	MBMEN1A_W05	MBMEN1A_W06	MBMEN1A_W07	MBMEN1A_W08	MBMEN1A_W09	MBMEN1A_W10	MBMEN1A_W11	MBMEN1A_W12	MBMEN1A_W13	MBMEN1A_W14	MBMEN1A_W15	MBMEN1A_W16	MBMEN1A_W17	MBMEN1A_W18	MBMEN1A_W19	MBMEN1A_U01	MBMEN1A_U02	MBMEN1A_U03	MBMEN1A_U04	MBMEN1A_U05	MBMEN1A_U06	MBMEN1A_U07	MBMEN1A_U08	MBMEN1A_U09	MBMEN1A_U10	MBMEN1A_U11	MBMEN1A_U12	MBMEN1A_U13	MBMEN1A_U14	MBMEN1A_U15	MBMEN1A_U16	MBMEN1A_U17	MBMEN1A_U18	MBMEN1A_U19	MBMEN1A_U20	MBMEN1A_U21	MBMEN1A_U22	MBMEN1A_U23	MBMEN1A_U24	MBMEN1A_U25	MBMEN1A_U26	MBMEN1A_U27	MBMEN1A_U28	MBMEN1A_U29	MBMEN1A_K01	MBMEN1A_K02	MBMEN1A_K03	MBMEN1A_K04	MBMEN1A_K05	MBMEN1A_K06	MBMEN1A_K07
Russian B2 course – compulsory course of 135 hours for students of FIRST-CYCLE studies – semester 1/3 (STUDY PROGRAMME IN ENGLISH)	RMBMENS.li2JO.636cd3f63a033.23	2																										x																												
French B2 course – compulsory course of 135 hours for students of FIRST-CYCLE studies – semester 1/3 (STUDY PROGRAMME IN ENGLISH)	RMBMENS.li2JO.636cd408c8b9d.23	2																										x																												
Spanish B2 course – compulsory course of 135 hours for students of FIRST-CYCLE studies – semester 1/3 (STUDY PROGRAMME IN ENGLISH)	RMBMENS.li2JO.636cd41b74214.23	2																										x																												
Engineering Drawing and Sketching 1	RMBMENS.li2O.636cb02a07d2f.23	2									x		x	x									x			x															x	x									x	x				
Fundamentals of Materials Science	RMBMENS.li2O.636cb02abdac3.23	2		x	x						x											x	x										x	x											x						x	x				
Physics 2	RMBMENS.li2P.e4f6c7a276d8f7720505264b04b5bc2a.23	2	x				x															x	x			x																											x				x	
Mechanics 2	RMBMENS.li4O.b790ebd95113bbc2e7ca7a5b6c965ed9.23	3				x																															x															x					
English B2 course – compulsory course of 135 hours for students of FIRST-CYCLE studies – semester 2/3 (STUDY PROGRAMME IN ENGLISH)	RMBMENS.li4JO.636cd47be2227.23	3																										x																												
Thermodynamics	RMBMENS.li4O.ab37779356b9c0fb8010660efdb46cab.23	3		x	x				x		x	x							x			x	x	x				x	x	x		x			x		x														x	x		x	x	

Subject	Code	Semestr	MBMEN1A_W01	MBMEN1A_W02	MBMEN1A_W03	MBMEN1A_W04	MBMEN1A_W05	MBMEN1A_W06	MBMEN1A_W07	MBMEN1A_W08	MBMEN1A_W09	MBMEN1A_W10	MBMEN1A_W11	MBMEN1A_W12	MBMEN1A_W13	MBMEN1A_W14	MBMEN1A_W15	MBMEN1A_W16	MBMEN1A_W17	MBMEN1A_W18	MBMEN1A_W19	MBMEN1A_U01	MBMEN1A_U02	MBMEN1A_U03	MBMEN1A_U04	MBMEN1A_U05	MBMEN1A_U06	MBMEN1A_U07	MBMEN1A_U08	MBMEN1A_U09	MBMEN1A_U10	MBMEN1A_U11	MBMEN1A_U12	MBMEN1A_U13	MBMEN1A_U14	MBMEN1A_U15	MBMEN1A_U16	MBMEN1A_U17	MBMEN1A_U18	MBMEN1A_U19	MBMEN1A_U20	MBMEN1A_U21	MBMEN1A_U22	MBMEN1A_U23	MBMEN1A_U24	MBMEN1A_U25	MBMEN1A_U26	MBMEN1A_U27	MBMEN1A_U28	MBMEN1A_U29	MBMEN1A_K01	MBMEN1A_K02	MBMEN1A_K03	MBMEN1A_K04	MBMEN1A_K05	MBMEN1A_K06	MBMEN1A_K07
German B2 course – compulsory course of 135 hours for students of FIRST-CYCLE studies – semester 2/3 (STUDY PROGRAMME IN ENGLISH)	RMBMENS.li4JO.636cd48831189.23	3																										x																												
Russian B2 course – compulsory course of 135 hours for students of FIRST-CYCLE studies – semester 2/3 (STUDY PROGRAMME IN ENGLISH)	RMBMENS.li4JO.636cd534d3513.23	3																										x																												
French B2 course – compulsory course of 135 hours for students of FIRST-CYCLE studies – semester 2/3 (STUDY PROGRAMME IN ENGLISH)	RMBMENS.li4JO.636cd571887a1.23	3																										x																												
Spanish B2 course – compulsory course of 135 hours for students of FIRST-CYCLE studies – semester 2/3 (STUDY PROGRAMME IN ENGLISH)	RMBMENS.li4JO.636cd57d44a46.23	3																										x																												
Engineering Drawing and Sketching 2	RMBMENS.li4O.636cb02ddb75f.23	3									x		x	x									x			x															x	x									x	x				
Manufacturing Processes - Machining	RMBMENS.li4O.636cb02e9b4e0.23	3		x									x	x																													x			x									x		
Machine Drives	RMBMENS.li4O.636cb02f6c60a.23	3				x	x		x			x			x					x		x		x				x				x								x													x		
Manufacturing Processes - Forming	RMBMENS.li4O.636cb0302ad7c.23	3										x	x	x	x	x	x																											x		x	x	x	x		x			x		
Strength of Materials Fundamentals	RMBMENS.li4O.636cb030de5df.23	3				x					x							x															x	x									x	x	x		x					x	x	x	
Fundamentals of Machine Design 1	RMBMENS.li8K.636cb033b5736.23	4				x					x			x		x	x					x		x					x	x	x	x										x	x			x				x			x		

Subject	Code	Semestr	MBMEN1A_W01	MBMEN1A_W02	MBMEN1A_W03	MBMEN1A_W04	MBMEN1A_W05	MBMEN1A_W06	MBMEN1A_W07	MBMEN1A_W08	MBMEN1A_W09	MBMEN1A_W10	MBMEN1A_W11	MBMEN1A_W12	MBMEN1A_W13	MBMEN1A_W14	MBMEN1A_W15	MBMEN1A_W16	MBMEN1A_W17	MBMEN1A_W18	MBMEN1A_W19	MBMEN1A_U01	MBMEN1A_U02	MBMEN1A_U03	MBMEN1A_U04	MBMEN1A_U05	MBMEN1A_U06	MBMEN1A_U07	MBMEN1A_U08	MBMEN1A_U09	MBMEN1A_U10	MBMEN1A_U11	MBMEN1A_U12	MBMEN1A_U13	MBMEN1A_U14	MBMEN1A_U15	MBMEN1A_U16	MBMEN1A_U17	MBMEN1A_U18	MBMEN1A_U19	MBMEN1A_U20	MBMEN1A_U21	MBMEN1A_U22	MBMEN1A_U23	MBMEN1A_U24	MBMEN1A_U25	MBMEN1A_U26	MBMEN1A_U27	MBMEN1A_U28	MBMEN1A_U29	MBMEN1A_K01	MBMEN1A_K02	MBMEN1A_K03	MBMEN1A_K04	MBMEN1A_K05	MBMEN1A_K06	MBMEN1A_K07
English B2 course – compulsory course of 135 hours for students of FIRST-CYCLE studies – semester 3/3 (STUDY PROGRAMME IN ENGLISH)	RMBMENS.li8JO.636cd5bd1ef8a.23	4																										x																													
German B2 course – compulsory course of 135 hours for students of FIRST-CYCLE studies – semester 3/3 (STUDY PROGRAMME IN ENGLISH)	RMBMENS.li8JO.636cd5c7be041.23	4																										x																													
Russian B2 course – compulsory course of 135 hours for students of FIRST-CYCLE studies – semester 3/3 (STUDY PROGRAMME IN ENGLISH)	RMBMENS.li8JO.636cd5d2db111.23	4																										x																													
French B2 course – compulsory course of 135 hours for students of FIRST-CYCLE studies – semester 3/3 (STUDY PROGRAMME IN ENGLISH)	RMBMENS.li8JO.636cd5dca7e43.23	4																										x																													
Spanish B2 course – compulsory course of 135 hours for students of FIRST-CYCLE studies – semester 3/3 (STUDY PROGRAMME IN ENGLISH)	RMBMENS.li8JO.636cd5e674aa5.23	4																										x																													
Operational and Exploitation Testing	RMBMENS.li8K.636cb037db71b.23	4	x				x				x		x		x		x	x	x			x	x	x		x	x	x								x	x					x	x	x		x			x			x			
Non Destructive Testing	RMBMENS.li8K.636cb0389c52e.23	4		x				x										x	x				x											x																				x				

Subject	Code	Semestr	MBMEN1A_W01	MBMEN1A_W02	MBMEN1A_W03	MBMEN1A_W04	MBMEN1A_W05	MBMEN1A_W06	MBMEN1A_W07	MBMEN1A_W08	MBMEN1A_W09	MBMEN1A_W10	MBMEN1A_W11	MBMEN1A_W12	MBMEN1A_W13	MBMEN1A_W14	MBMEN1A_W15	MBMEN1A_W16	MBMEN1A_W17	MBMEN1A_W18	MBMEN1A_W19
Advanced Strength of Materials	RMBMENS.Ii8O.636cb03474fc8.23	4									x	x	x								
Introduction to Control Engineering	RMBMENS.Ii8K.636cb035352d0.23	4	x	x		x	x	x										x			
Theory of Machines and Mechanisms	RMBMENS.Ii8K.636cb035ebf17.23	4				x															
Metrology 2	RMBMENS.Ii10K.636cd6012f728.23	5						x													
Fundamentals of Machine Design 2	RMBMENS.Ii10K.636cb03b1c6f5.23	5											x			x					
Machines and Mechanical Devices Engineering	RMBMENS.Ii10K.636cb03fbd695.23	5		x		x		x			x		x	x				x			
Dynamics of Machines	RMBMENS.Ii10K.636cb03e37874.23	5				x	x					x						x			
Statistics for engineers	RMBMENS.Ii10K.78e574d13d695d5f489abfdcecdbdd21.23	5	x				x					x						x			
Computational Methods and Design of Experiment	RMBMENS.Ii10O.636cb03bd0fc1.23	5	x	x			x									x		x			
Innovative Machines for Raw Explatation	RMBMENS.Ii10K.636cb0407de82.23	5													x				x		
Engineering CAD Software	RMBMENS.Ii10O.636cb03c9381d.23	5					x									x		x			
Fluid Mechanics	RMBMENS.Ii10K.727f61b9be4013bb5e2b5ed96c8e77b5.23	5	x	x		x			x	x	x			x	x		x	x		x	
Metrology 1	RMBMENS.Ii10K.636cd62db2b27.23	5									x		x			x					
Modern Ropeway Transport Systems	RMBMENS.Ii20K.636cb046a33f0.23	6										x	x		x	x	x				
Earthmoving Equipment and Heavy-duty Transportation Machinery	RMBMENS.Ii20K.636cb0476585c.23	6				x						x	x	x				x			x
IT Tools in Machine Design and Mechanics	RMBMENS.Ii20K.636cb04827774.23	6		x		x							x								
Energy technologies	RMBMENS.Ii20K.377f671ad84530fb480b658c06e9c920.23	6	x	x					x		x			x	x						
Operational Research and Modernisation of Machines and Vehicles	RMBMENS.Ii20K.636cb048edfbe.23	6					x	x								x	x	x	x		
Advanced Design Methods	RMBMENS.Ii20K.636cb049b0d51.23	6		x											x	x		x			

Subject	MBMEN1A_U01	MBMEN1A_U02	MBMEN1A_U03	MBMEN1A_U04	MBMEN1A_U05	MBMEN1A_U06	MBMEN1A_U07	MBMEN1A_U08	MBMEN1A_U09	MBMEN1A_U10	MBMEN1A_U11	MBMEN1A_U12	MBMEN1A_U13	MBMEN1A_U14	MBMEN1A_U15	MBMEN1A_U16	MBMEN1A_U17	MBMEN1A_U18	MBMEN1A_U19	MBMEN1A_U20	MBMEN1A_U21	MBMEN1A_U22	MBMEN1A_U23	MBMEN1A_U24	MBMEN1A_U25	MBMEN1A_U26	MBMEN1A_U27	MBMEN1A_U28	MBMEN1A_U29
Advanced Strength of Materials																								x	x				
Introduction to Control Engineering	x	x	x						x	x	x			x				x				x							
Theory of Machines and Mechanisms	x																												
Metrology 2				x							x																		
Fundamentals of Machine Design 2	x		x							x		x										x	x		x	x	x		
Machines and Mechanical Devices Engineering	x		x							x	x				x							x	x			x			
Dynamics of Machines			x							x					x							x							
Statistics for engineers	x			x							x										x								
Computational Methods and Design of Experiment	x	x	x	x			x			x	x												x						
Innovative Machines for Raw Explatation	x											x									x		x		x				
Engineering CAD Software										x																x	x	x	
Fluid Mechanics	x	x	x	x	x			x	x	x																			
Metrology 1	x	x	x	x			x			x	x			x						x		x							
Modern Ropeway Transport Systems											x	x		x									x						
Earthmoving Equipment and Heavy-duty Transportation Machinery	x	x	x							x		x		x							x	x							
IT Tools in Machine Design and Mechanics			x		x																								
Energy technologies	x						x	x	x	x						x						x							x
Operational Research and Modernisation of Machines and Vehicles	x	x		x	x	x		x	x	x	x					x	x		x		x				x				
Advanced Design Methods	x	x	x		x																								

Subject	MBMEN1A_K01	MBMEN1A_K02	MBMEN1A_K03	MBMEN1A_K04	MBMEN1A_K05	MBMEN1A_K06	MBMEN1A_K07
Advanced Strength of Materials		x					
Introduction to Control Engineering	x	x	x	x		x	
Theory of Machines and Mechanisms	x						
Metrology 2				x			
Fundamentals of Machine Design 2	x						
Machines and Mechanical Devices Engineering	x						
Dynamics of Machines							
Statistics for engineers		x		x			
Computational Methods and Design of Experiment	x		x	x	x		
Innovative Machines for Raw Explatation	x	x				x	
Engineering CAD Software	x	x					
Fluid Mechanics	x	x	x	x	x	x	x
Metrology 1			x	x			
Modern Ropeway Transport Systems	x		x	x		x	
Earthmoving Equipment and Heavy-duty Transportation Machinery	x			x			
IT Tools in Machine Design and Mechanics		x		x			
Energy technologies	x	x	x			x	
Operational Research and Modernisation of Machines and Vehicles	x	x			x	x	x
Advanced Design Methods	x		x				x

Subject	Code	Semestr	MBMEN1A_W01	MBMEN1A_W02	MBMEN1A_W03	MBMEN1A_W04	MBMEN1A_W05	MBMEN1A_W06	MBMEN1A_W07	MBMEN1A_W08	MBMEN1A_W09	MBMEN1A_W10	MBMEN1A_W11	MBMEN1A_W12	MBMEN1A_W13	MBMEN1A_W14	MBMEN1A_W15	MBMEN1A_W16	MBMEN1A_W17	MBMEN1A_W18	MBMEN1A_W19	MBMEN1A_U01	MBMEN1A_U02	MBMEN1A_U03	MBMEN1A_U04	MBMEN1A_U05	MBMEN1A_U06	MBMEN1A_U07	MBMEN1A_U08	MBMEN1A_U09	MBMEN1A_U10	MBMEN1A_U11	MBMEN1A_U12	MBMEN1A_U13	MBMEN1A_U14	MBMEN1A_U15	MBMEN1A_U16	MBMEN1A_U17	MBMEN1A_U18	MBMEN1A_U19	MBMEN1A_U20	MBMEN1A_U21	MBMEN1A_U22	MBMEN1A_U23	MBMEN1A_U24	MBMEN1A_U25	MBMEN1A_U26	MBMEN1A_U27	MBMEN1A_U28	MBMEN1A_U29	MBMEN1A_K01	MBMEN1A_K02	MBMEN1A_K03	MBMEN1A_K04	MBMEN1A_K05	MBMEN1A_K06	MBMEN1A_K07
Exploitation of Useful Mineral Resources	RMBMENS.Ii20K.636cb04a7276e.23	6								x			x	x				x				x								x												x				x	x			x	x			x			
Manufacturing Process Engineering	RMBMENS.Ii20K.636cb04b33b5a.23	6						x			x		x	x	x			x													x	x											x	x	x		x	x			x						
Ecological Systems Engineering and Eco-energy	RMBMENS.Ii20K.636cb04be9c3a.23	6												x	x	x			x			x	x								x	x											x					x			x	x					
Vibro-Acoustics	RMBMENS.Ii20K.636cb04d72a33.23	6	x	x			x				x												x	x																	x											x		x			
Technological Machines and Equipment	RMBMENS.Ii20K.636cb0506a58d.23	6		x										x	x							x	x									x															x				x			x			
Internship	RMBMENS.Ii20K.636cb042e3dca.23	6								x												x	x								x																						x	x			
Steel Structures	RMBMENS.Ii20K.636cb04e34629.23	6	x	x		x																x	x		x																										x	x	x	x			
Power Generating Equipment	RMBMENS.Ii20K.636cb0512ac68.23	6	x	x	x	x		x	x		x	x		x	x	x		x	x			x		x		x		x		x													x	x	x	x	x	x			x	x	x	x	x	x	x
Machine Maintenance	RMBMENS.Ii20K.636cb04ee9bee.23	6															x	x	x			x	x			x		x	x				x	x			x	x		x		x				x					x	x				x	x
Modern technologies of construction materials manufacturing	RMBMENS.Ii20K.637e1c0b68511.23	6				x																	x																							x					x						
Transport Machinery and Devices	RMBMENS.Ii20K.636cb043a3edb.23	6				x					x	x	x									x													x												x	x				x		x	x		
Machine Design	RMBMENS.Ii20K.636cb04467882.23	6								x			x	x	x							x								x			x			x										x					x						
Progress Evaluation and Interim Assignments	RMBMENS.Ii20K.636cb0452991d.23	6				x	x				x	x	x									x		x												x							x	x	x	x	x				x					x	
Conveyors	RMBMENS.Ii40PJO.d94d72533ed538507ee4f76b749ed265.23	7				x					x	x	x	x	x	x						x					x		x				x													x		x								x	
Tunnelling machines	RMBMENS.Ii40PJO.781eb1a27f5a4db5acef9361609a01ba.23	7		x	x										x				x				x	x		x			x		x										x			x		x						x			x		x
Kinematic and dynamic simulation of mechanical systems	RMBMENS.Ii40PJO.b5a23abac6442d78cc09e690106a39e2.23	7		x		x					x					x		x				x	x								x	x				x															x						
Soft Computing in Modeling and Control	RMBMENS.Ii40PJO.11f0580adea4062fc7483b5beb4f7928.23	7		x	x			x																					x					x					x		x	x										x					
Dedusting Devices	RMBMENS.Ii40K.636cd7fc48fb2.23	7									x		x															x																			x					x		x			
Additive Manufacturing Technologies	RMBMENS.Ii40K.636cd82bd8f0b.23	7											x	x	x	x												x		x	x	x						x													x		x	x			
Basics of marketing	RMBMENS.Ii40HS.df0d0e69162cc55c76c49848847b3619.23	7													x	x												x								x																				x	
Macroeconomy 2	RMBMENS.Ii40HS.636cb054f2771.23	7																	x	x		x																														x			x		

Subject	Code	Semestr	MBMEN1A_W01	MBMEN1A_W02	MBMEN1A_W03	MBMEN1A_W04	MBMEN1A_W05	MBMEN1A_W06	MBMEN1A_W07	MBMEN1A_W08	MBMEN1A_W09	MBMEN1A_W10	MBMEN1A_W11	MBMEN1A_W12	MBMEN1A_W13	MBMEN1A_W14	MBMEN1A_W15	MBMEN1A_W16	MBMEN1A_W17	MBMEN1A_W18	MBMEN1A_W19
Man and a Technical Environment	RMBMENS.li40HS.636cb055b6160.23	7															x		x		
Programmable Logic Controllers	RMBMENS.li40K.636cd7538a8a8.23	7						x		x											
Safety in Technology and Standardization	RMBMENS.li40HS.636cb0576fdbd.23	7																			x
Basics of mechatronics	RMBMENS.li40K.f55f0dd2700ba182721e9faf8ef30029.23	7	x												x			x			
Environmental protection	RMBMENS.li40K.7f1a544d1fb89a7c14c1fa9e0a0d1569.23	7																	x	x	
Welding Technology	RMBMENS.li40K.636cb05a04248.23	7						x			x		x		x	x		x			
Management engineering	RMBMENS.li40HS.5da9fa5ac8549dbf93b8729412ac132b.23	7																	x	x	
Machine Technology	RMBMENS.li40K.636cb05abd3d4.23	7									x	x	x	x	x	x					
Diploma Seminar	RMBMENS.li40K.8bad3d3ca415c13dc674fbf432fb3e9a.23	7		x				x							x		x		x		
Diploma Thesis	RMBMENS.li40K.e53bc1ffec52171870fc55d1cec2fa6a.23	7									x					x		x			x
Sum (obligatory):			9	8	3	10	10	4	3	3	14	6	12	7	6	9	5	6	3	2	1
Sum (elective):			7	12	3	10	5	8	2	2	11	7	12	11	18	12	5	16	13	3	2
Sum:			16	20	6	20	15	12	5	5	25	13	24	18	24	21	10	22	16	5	3

Subject	MBMEN1A_U01	MBMEN1A_U02	MBMEN1A_U03	MBMEN1A_U04	MBMEN1A_U05	MBMEN1A_U06	MBMEN1A_U07	MBMEN1A_U08	MBMEN1A_U09	MBMEN1A_U10	MBMEN1A_U11	MBMEN1A_U12	MBMEN1A_U13	MBMEN1A_U14	MBMEN1A_U15	MBMEN1A_U16	MBMEN1A_U17	MBMEN1A_U18	MBMEN1A_U19	MBMEN1A_U20	MBMEN1A_U21	MBMEN1A_U22	MBMEN1A_U23	MBMEN1A_U24	MBMEN1A_U25	MBMEN1A_U26	MBMEN1A_U27	MBMEN1A_U28	MBMEN1A_U29
Man and a Technical Environment	x									x							x												
Programmable Logic Controllers																			x					x					
Safety in Technology and Standardization							x			x											x								x
Basics of mechatronics			x						x	x	x																		
Environmental protection	x					x	x																						
Welding Technology		x										x										x		x					
Management engineering							x													x	x								
Machine Technology																						x			x	x		x	x
Diploma Seminar	x	x						x																x	x	x			
Diploma Thesis			x	x	x			x	x	x	x	x					x	x	x	x	x	x							
Sum (obligatory):	24	13	13	6	8	0	6	4	7	13	8	6	3	5	7	1	2	3	3	4	2	8	7	6	7	7	5	2	0
Sum (elective):	19	14	10	3	9	6	12	22	7	14	12	6	4	5	4	6	5	1	3	4	9	10	7	5	9	8	4	1	4
Sum:	43	27	23	9	17	6	18	26	14	27	20	12	7	10	11	7	7	4	6	8	11	18	14	11	16	15	9	3	4

Subject	MBMEN1A_K01	MBMEN1A_K02	MBMEN1A_K03	MBMEN1A_K04	MBMEN1A_K05	MBMEN1A_K06	MBMEN1A_K07
Man and a Technical Environment	x	x		x			
Programmable Logic Controllers							
Safety in Technology and Standardization		x					
Basics of mechatronics							
Environmental protection	x	x					
Welding Technology	x	x	x				
Management engineering	x			x			
Machine Technology	x						
Diploma Seminar			x			x	x
Diploma Thesis	x	x	x	x		x	
Sum (obligatory):	20	16	10	18	5	9	4
Sum (elective):	23	21	9	14	4	10	5
Sum:	43	37	19	32	9	19	9

Characteristics matrix of learning outcomes in relation to modules

Major: Mechanical Engineering

2023/2024/S/Ii/IMiR/MBMEN/all

Subject	Code	Semestr	P6S_WG_A	P6S_WG_A_Inz	P6S_WK_A_Inz	P6S_WK_A	P6S_UW_A	P6S_UW_A_Inz_01	P6S_UO_A	P6S_UK_A	P6S_UW_A_Inz_02	P6S_UU_A	P6S_KK_A	P6S_KO_A	P6S_KR_A
Manufacturing processes	RMBMENS.Ii1O.92da88cba784cbe17e9f29c6c03c75d8.23	1	x	x	x	x	x	x					x	x	
Business Process Reengineering	RMBMENS.Ii1HS.60363e6aa8c81.23	1	x	x			x	x	x				x	x	x
Design Thinking	RMBMENS.Ii1HS.b06eb39d291149317bb6532ff384236b.23	1	x	x	x	x	x	x	x	x			x	x	x
Fundamentals of Information Technology	RMBMENS.Ii1O.636cb024e0381.23	1	x	x			x	x	x				x	x	
Physics 1	RMBMENS.Ii1P.6a57bdba13a275784da9318b77db98f1.23	1	x				x	x					x	x	
Chemistry	RMBMENS.Ii1P.b35af661086a998d405fdf0c666cf74f.23	1	x	x			x	x					x	x	x
Mathematics 1	RMBMENS.Ii1P.17936b14eb48662d3be98d580b3d60f6.23	1	x				x	x					x		x
Fundamentals of Mechanical Engineering	RMBMENS.Ii1K.636cb0262ef34.23	1	x	x			x	x	x		x	x	x		x
Mechanics 1	RMBMENS.Ii2O.6e6f759c0a971d68d2499ec2af5cc76d.23	2	x				x						x		
English B2 course – compulsory course of 135 hours for students of FIRST-CYCLE studies – semester 1/3 (STUDY PROGRAMME IN ENGLISH)	RMBMENS.Ii2JO.636cd3c304d19.23	2								x					
Mathematics 2	RMBMENS.Ii2P.d2486ebab86e7b981a660c4d0e0b19ec.23	2	x				x	x					x	x	
Electrical Engineering and Electronics	RMBMENS.Ii2O.636cd38d0cff0.23	2	x				x	x						x	

Subject	Code	Semestr	P6S_WG_A	P6S_WG_A_Inz	P6S_WK_A_Inz	P6S_WK_A	P6S_UW_A	P6S_UW_A_Inz_01	P6S_UO_A	P6S_UK_A	P6S_UW_A_Inz_02	P6S_UU_A	P6S_KK_A	P6S_KO_A	P6S_KR_A
German B2 course – compulsory course of 135 hours for students of FIRST-CYCLE studies – semester 1/3 (STUDY PROGRAMME IN ENGLISH)	RMBMENS.Ii2JO.636cd3e60b5b3.23	2								x					
Russian B2 course – compulsory course of 135 hours for students of FIRST-CYCLE studies – semester 1/3 (STUDY PROGRAMME IN ENGLISH)	RMBMENS.Ii2JO.636cd3f63a033.23	2								x					
French B2 course – compulsory course of 135 hours for students of FIRST-CYCLE studies – semester 1/3 (STUDY PROGRAMME IN ENGLISH)	RMBMENS.Ii2JO.636cd408c8b9d.23	2								x					
Spanish B2 course – compulsory course of 135 hours for students of FIRST-CYCLE studies – semester 1/3 (STUDY PROGRAMME IN ENGLISH)	RMBMENS.Ii2JO.636cd41b74214.23	2								x					
Engineering Drawing and Sketching 1	RMBMENS.Ii2O.636cb02a07d2f.23	2	x	x			x	x					x	x	
Fundamentals of Materials Science	RMBMENS.Ii2O.636cb02abdac3.23	2	x	x			x	x			x		x	x	
Physics 2	RMBMENS.Ii2P.e4f6c7a276d8f7720505264b04b5bc2a.23	2	x				x	x					x	x	
Mechanics 2	RMBMENS.Ii4O.b790ebd95113bbc2e7ca7a5b6c965ed9.23	3	x				x						x		
English B2 course – compulsory course of 135 hours for students of FIRST-CYCLE studies – semester 2/3 (STUDY PROGRAMME IN ENGLISH)	RMBMENS.Ii4JO.636cd47be2227.23	3								x					
Thermodynamics	RMBMENS.Ii4O.ab37779356b9c0fb8010660efdb46cab.23	3	x	x	x	x	x	x	x	x			x	x	
German B2 course – compulsory course of 135 hours for students of FIRST-CYCLE studies – semester 2/3 (STUDY PROGRAMME IN ENGLISH)	RMBMENS.Ii4JO.636cd48831189.23	3								x					

Subject	Code	Semestr	P6S_WG_A	P6S_WG_A_Inz	P6S_WK_A_Inz	P6S_WK_A	P6S_UW_A	P6S_UW_A_Inz_01	P6S_UO_A	P6S_UK_A	P6S_UW_A_Inz_02	P6S_UU_A	P6S_KK_A	P6S_KO_A	P6S_KR_A
Russian B2 course – compulsory course of 135 hours for students of FIRST-CYCLE studies – semester 2/3 (STUDY PROGRAMME IN ENGLISH)	RMBMENS.Ii4JO.636cd534d3513.23	3								x					
French B2 course – compulsory course of 135 hours for students of FIRST-CYCLE studies – semester 2/3 (STUDY PROGRAMME IN ENGLISH)	RMBMENS.Ii4JO.636cd571887a1.23	3								x					
Spanish B2 course – compulsory course of 135 hours for students of FIRST-CYCLE studies – semester 2/3 (STUDY PROGRAMME IN ENGLISH)	RMBMENS.Ii4JO.636cd57d44a46.23	3								x					
Engineering Drawing and Sketching 2	RMBMENS.Ii4O.636cb02ddb75f.23	3	x	x			x	x					x	x	
Manufacturing Processes - Machining	RMBMENS.Ii4O.636cb02e9b4e0.23	3	x	x				x		x				x	
Machine Drives	RMBMENS.Ii4O.636cb02f6c60a.23	3	x	x	x	x	x	x	x				x		
Manufacturing Processes - Forming	RMBMENS.Ii4O.636cb0302ad7c.23	3	x	x			x				x		x		
Strength of Materials Fundamentals	RMBMENS.Ii4O.636cb030de5df.23	3	x	x			x	x			x		x	x	x
Fundamentals of Machine Design 1	RMBMENS.Ii8K.636cb033b5736.23	4	x	x			x	x			x		x		
English B2 course – compulsory course of 135 hours for students of FIRST-CYCLE studies – semester 3/3 (STUDY PROGRAMME IN ENGLISH)	RMBMENS.Ii8JO.636cd5bd1ef8a.23	4								x					
German B2 course – compulsory course of 135 hours for students of FIRST-CYCLE studies – semester 3/3 (STUDY PROGRAMME IN ENGLISH)	RMBMENS.Ii8JO.636cd5c7be041.23	4								x					
Russian B2 course – compulsory course of 135 hours for students of FIRST-CYCLE studies – semester 3/3 (STUDY PROGRAMME IN ENGLISH)	RMBMENS.Ii8JO.636cd5d2db111.23	4								x					

Subject	Code	Semestr	P6S_WG_A	P6S_WG_A_Inz	P6S_WK_A_Inz	P6S_WK_A	P6S_UW_A	P6S_UW_A_Inz_01	P6S_UO_A	P6S_UK_A	P6S_UW_A_Inz_02	P6S_UU_A	P6S_KK_A	P6S_KO_A	P6S_KR_A
French B2 course – compulsory course of 135 hours for students of FIRST-CYCLE studies – semester 3/3 (STUDY PROGRAMME IN ENGLISH)	RMBMENS.Ii8JO.636cd5dca7e43.23	4								x					
Spanish B2 course – compulsory course of 135 hours for students of FIRST-CYCLE studies – semester 3/3 (STUDY PROGRAMME IN ENGLISH)	RMBMENS.Ii8JO.636cd5e674aa5.23	4								x					
Operational and Exploitation Testing	RMBMENS.Ii8K.636cb037db71b.23	4	x	x	x	x	x	x	x		x	x	x		
Non Destructive Testing	RMBMENS.Ii8K.636cb0389c52e.23	4	x	x	x	x	x	x					x	x	
Advanced Strength of Materials	RMBMENS.Ii8O.636cb03474fc8.23	4	x	x			x	x					x	x	
Introduction to Control Engineering	RMBMENS.Ii8K.636cb035352d0.23	4	x	x			x	x			x		x	x	x
Theory of Machines and Mechanisms	RMBMENS.Ii8K.636cb035ebf17.23	4	x				x	x					x		
Metrology 2	RMBMENS.Ii10K.636cd6012f728.23	5	x				x	x					x		
Fundamentals of Machine Design 2	RMBMENS.Ii10K.636cb03b1c6f5.23	5	x	x			x	x			x		x		
Machines and Mechanical Devices Engineering	RMBMENS.Ii10K.636cb03fbd695.23	5	x	x			x	x			x		x		
Dynamics of Machines	RMBMENS.Ii10K.636cb03e37874.23	5	x	x			x	x			x				
Statistics for engineers	RMBMENS.Ii10K.78e574d13d695d5f489abfdcecdbdd21.23	5	x	x			x	x		x			x	x	
Computational Methods and Design of Experiment	RMBMENS.Ii10O.636cb03bd0fc1.23	5	x	x			x	x	x				x	x	x
Innovative Machines for Raw Explatation	RMBMENS.Ii10K.636cb0407de82.23	5	x	x	x	x	x	x		x	x		x	x	
Engineering CAD Software	RMBMENS.Ii10O.636cb03c9381d.23	5	x	x			x	x			x		x	x	
Fluid Mechanics	RMBMENS.Ii10K.727f61b9be4013bb5e2b5ed96c8e77b5.23	5	x	x	x	x	x	x		x			x	x	x

Subject	Code	Semestr	P6S_WG_A	P6S_WG_A_Inz	P6S_WK_A_Inz	P6S_WK_A	P6S_UW_A	P6S_UW_A_Inz_01	P6S_UO_A	P6S_UK_A	P6S_UW_A_Inz_02	P6S_UU_A	P6S_KK_A	P6S_KO_A	P6S_KR_A
Metrology 1	RMBMENS.Ii10K.636cd62db2b27.23	5	x	x			x	x	x		x		x		x
Modern Ropeway Transport Systems	RMBMENS.Ii20K.636cb046a33f0.23	6	x	x			x	x			x		x	x	x
Earthmoving Equipment and Heavy-duty Transportation Machinery	RMBMENS.Ii20K.636cb0476585c.23	6	x	x	x	x	x	x		x	x		x		
IT Tools in Machine Design and Mechanics	RMBMENS.Ii20K.636cb04827774.23	6	x	x			x	x					x	x	
Energy technologies	RMBMENS.Ii20K.377f671ad84530fb480b658c06e9c920.23	6	x	x			x	x	x	x	x		x	x	x
Operational Research and Modernisation of Machines and Vehicles	RMBMENS.Ii20K.636cb048edfbe.23	6	x	x	x	x	x	x		x		x	x	x	x
Advanced Design Methods	RMBMENS.Ii20K.636cb049b0d51.23	6	x	x			x	x					x		x
Exploitation of Useful Mineral Resources	RMBMENS.Ii20K.636cb04a7276e.23	6	x	x			x	x		x	x		x		
Manufacturing Process Engineering	RMBMENS.Ii20K.636cb04b33b5a.23	6	x	x			x	x			x		x		
Ecological Systems Engineering and Eco-energy	RMBMENS.Ii20K.636cb04be9c3a.23	6	x	x	x	x	x	x			x		x	x	
Vibro-Acoustics	RMBMENS.Ii20K.636cb04d72a33.23	6	x	x			x	x					x	x	
Technological Machines and Equipment	RMBMENS.Ii20K.636cb0506a58d.23	6	x	x			x	x			x		x		
Internship	RMBMENS.Ii20K.636cb042e3dca.23	6	x				x	x					x		x
Steel Structures	RMBMENS.Ii20K.636cb04e34629.23	6	x				x	x					x	x	x
Power Generating Equipment	RMBMENS.Ii20K.636cb0512ac68.23	6	x	x	x	x	x	x	x		x		x	x	x
Machine Maintenance	RMBMENS.Ii20K.636cb04ee9bee.23	6	x	x	x	x	x	x	x	x	x	x	x	x	x

Subject	Code	Semestr	P6S_WG_A	P6S_WG_A_Inz	P6S_WK_A_Inz	P6S_WK_A	P6S_UW_A	P6S_UW_A_Inz_01	P6S_UO_A	P6S_UK_A	P6S_UW_A_Inz_02	P6S_UU_A	P6S_KK_A	P6S_KO_A	P6S_KR_A
Modern technologies of construction materials manufacturing	RMBMENS.Ii20K.637e1c0b68511.23	6	x				x	x					x		
Transport Machinery and Devices	RMBMENS.Ii20K.636cb043a3edb.23	6	x	x			x	x			x		x	x	
Machine Design	RMBMENS.Ii20K.636cb04467882.23	6	x	x			x	x			x		x		
Progress Evaluation and Interim Assignments	RMBMENS.Ii20K.636cb0452991d.23	6	x	x			x	x			x		x	x	
Conveyors	RMBMENS.Ii40PJO.d94d72533ed538507ee4f76b749ed265.23	7	x	x			x	x		x	x			x	
Tunnelling machines	RMBMENS.Ii40PJO.781eb1a27f5a4db5acef9361609a01ba.23	7	x	x	x	x	x	x		x			x	x	x
Kinematic and dynamic simulation of mechanical systems	RMBMENS.Ii40PJO.b5a23abac6442d78cc09e690106a39e2.23	7	x	x			x	x					x		
Soft Computing in Modeling and Control	RMBMENS.Ii40PJO.11f0580adea4062fc7483b5beb4f7928.23	7	x				x	x		x			x	x	
Dedusting Devices	RMBMENS.Ii40K.636cd7fc48fb2.23	7	x	x			x	x	x		x		x	x	
Additive Manufacturing Technologies	RMBMENS.Ii40K.636cd82bd8f0b.23	7	x	x			x	x	x			x	x		x
Basics of marketing	RMBMENS.Ii40HS.df0d0e69162cc55c76c49848847b3619.23	7	x	x			x	x	x					x	
Macroeconomy 2	RMBMENS.Ii40HS.636cb054f2771.23	7			x	x	x	x					x	x	
Man and a Technical Environment	RMBMENS.Ii40HS.636cb055b6160.23	7	x	x	x	x	x	x				x	x	x	
Programmable Logic Controllers	RMBMENS.Ii40K.636cd7538a8a8.23	7	x				x	x							
Safety in Technology and Standardization	RMBMENS.Ii40HS.636cb0576fdbd.23	7			x	x	x	x	x	x	x		x	x	
Basics of mechatronics	RMBMENS.Ii40K.f55f0dd2700ba182721e9faf8ef30029.23	7	x	x			x	x							
Environmental protection	RMBMENS.Ii40K.7f1a544d1fb89a7c14c1fa9e0a0d1569.23	7			x	x	x	x	x				x	x	

Subject	Code	Semestr	P6S_WG_A	P6S_WG_A_Inz	P6S_WK_A_Inz	P6S_WK_A	P6S_UW_A	P6S_UW_A_Inz_01	P6S_UO_A	P6S_UK_A	P6S_UW_A_Inz_02	P6S_UU_A	P6S_KK_A	P6S_KO_A	P6S_KR_A
Welding Technology	RMBMENS.Ii40K.636cb05a04248.23	7	x	x			x	x			x		x	x	x
Management engineering	RMBMENS.Ii40HS.5da9fa5ac8549dbf93b8729412ac132b.23	7			x	x	x	x	x	x			x		
Machine Technology	RMBMENS.Ii40K.636cb05abd3d4.23	7	x	x			x				x		x		
Diploma Seminar	RMBMENS.Ii40K.8bad3d3ca415c13dc674fbf432fb3e9a.23	7	x	x	x	x	x	x		x	x			x	x
Diploma Thesis	RMBMENS.Ii40K.e53bc1ffec52171870fc55d1cec2fa6a.23	7	x	x	x	x	x	x		x	x	x	x	x	x
Sum (obligatory):			35	25	6	6	34	32	6	5	14	2	32	22	11
Sum (elective):			35	31	15	15	39	38	12	28	18	5	34	24	12
Sum:			70	56	21	21	73	70	18	33	32	7	66	46	23

Matrix of directional learning outcomes with related forms of classes and the method of testing

Major: Mechanical Engineering

2023/2024/S/Ii/IMiR/MBMEN/all

Name of the module	Activity	Method of verification and assessment of learning outcomes achieved by the student in individual forms of classes and activities for the entire module	KEU references
Manufacturing processes	Lecture, Auditorium classes	Activity during classes, Participation in a discussion, Execution of exercises, Test, Activity during classes, Participation in a discussion, Execution of exercises, Test	MBMEN1A_W09, MBMEN1A_W17, MBMEN1A_U01, MBMEN1A_U02, MBMEN1A_U14, MBMEN1A_K01, MBMEN1A_K02
Business Process Reengineering	Seminars, Laboratory classes	Test, Report	MBMEN1A_W13, MBMEN1A_W04, MBMEN1A_U05, MBMEN1A_U06, MBMEN1A_U07, MBMEN1A_U16, MBMEN1A_U09, MBMEN1A_U10, MBMEN1A_U11, MBMEN1A_U13, MBMEN1A_U14, MBMEN1A_K02, MBMEN1A_K03, MBMEN1A_K06
Design Thinking	Seminars, Project classes	Test, Project	MBMEN1A_W13, MBMEN1A_W17, MBMEN1A_W14, MBMEN1A_W16, MBMEN1A_U05, MBMEN1A_U06, MBMEN1A_U07, MBMEN1A_U16, MBMEN1A_U08, MBMEN1A_U11, MBMEN1A_U13, MBMEN1A_U14, MBMEN1A_K02, MBMEN1A_K03, MBMEN1A_K06
Fundamentals of Information Technology	Lecture, Laboratory classes	Test results, Completion of laboratory classes, Execution of a project	MBMEN1A_W01, MBMEN1A_W05, MBMEN1A_W14, MBMEN1A_U01, MBMEN1A_U03, MBMEN1A_U07, MBMEN1A_U10, MBMEN1A_K01, MBMEN1A_K04, MBMEN1A_K06
Physics 1	Lecture, Auditorium classes	Activity during classes, Participation in a discussion, Test, Activity during classes, Participation in a discussion, Test, Involvement in teamwork	MBMEN1A_W01, MBMEN1A_W05, MBMEN1A_U01, MBMEN1A_U02, MBMEN1A_U05, MBMEN1A_K06, MBMEN1A_K02
Chemistry	Lecture, Laboratory classes	Examination, Test, Report on completion of a practical placement, Preparation and conduct of scientific research	MBMEN1A_W03, MBMEN1A_W11, MBMEN1A_U01, MBMEN1A_U05, MBMEN1A_U10, MBMEN1A_U13, MBMEN1A_U15, MBMEN1A_K02, MBMEN1A_K04, MBMEN1A_K07
Mathematics 1	Lecture, Auditorium classes	Examination, Activity during classes, Test	MBMEN1A_W01, MBMEN1A_U03, MBMEN1A_U01, MBMEN1A_U04, MBMEN1A_K01, MBMEN1A_K03, MBMEN1A_K04

Name of the module	Activity	Method of verification and assessment of learning outcomes achieved by the student in individual forms of classes and activities for the entire module	KEU references
Fundamentals of Mechanical Engineering	Lecture, Seminars	Test, Activity during classes, Participation in a discussion, Execution of exercises, Presentation	MBMEN1A_W11, MBMEN1A_W09, MBMEN1A_W13, MBMEN1A_W14, MBMEN1A_W15, MBMEN1A_W05, MBMEN1A_U01, MBMEN1A_U09, MBMEN1A_U07, MBMEN1A_U17, MBMEN1A_U22, MBMEN1A_U23, MBMEN1A_U10, MBMEN1A_U25, MBMEN1A_K03, MBMEN1A_K07, MBMEN1A_K04
Mechanics 1	Lecture, Auditorium classes	Execution of exercises, Test results, Execution of exercises, Test results	MBMEN1A_W04, MBMEN1A_U15, MBMEN1A_K04
English B2 course – compulsory course of 135 hours for students of FIRST-CYCLE studies – semester 1/3 (STUDY PROGRAMME IN ENGLISH)	Foreign language classes	Activity during classes, Participation in a discussion, Execution of exercises, Test, Examination, Test results, Essays written during classes, Presentation	MBMEN1A_U08
Mathematics 2	Lecture, Auditorium classes	Examination, Activity during classes, Test	MBMEN1A_W01, MBMEN1A_U03, MBMEN1A_U01, MBMEN1A_K01, MBMEN1A_K02
Electrical Engineering and Electronics	Lecture, Laboratory classes	Activity during classes, Participation in a discussion, Test, Test results, Activity during classes, Execution of exercises, Execution of laboratory classes, Report, Involvement in teamwork, Completion of laboratory classes	MBMEN1A_W01, MBMEN1A_W02, MBMEN1A_W05, MBMEN1A_W06, MBMEN1A_U01, MBMEN1A_U05, MBMEN1A_U10, MBMEN1A_U15, MBMEN1A_K06
German B2 course – compulsory course of 135 hours for students of FIRST-CYCLE studies – semester 1/3 (STUDY PROGRAMME IN ENGLISH)	Foreign language classes	Activity during classes, Participation in a discussion, Execution of exercises, Test, Examination, Test results, Essays written during classes, Presentation	MBMEN1A_U08
Russian B2 course – compulsory course of 135 hours for students of FIRST-CYCLE studies – semester 1/3 (STUDY PROGRAMME IN ENGLISH)	Foreign language classes	Activity during classes, Participation in a discussion, Execution of exercises, Test, Examination, Test results, Essays written during classes, Presentation	MBMEN1A_U08

Name of the module	Activity	Method of verification and assessment of learning outcomes achieved by the student in individual forms of classes and activities for the entire module	KEU references
French B2 course – compulsory course of 135 hours for students of FIRST-CYCLE studies – semester 1/3 (STUDY PROGRAMME IN ENGLISH)	Foreign language classes	Activity during classes, Participation in a discussion, Execution of exercises, Test, Examination, Test results, Essays written during classes, Presentation	MBMEN1A_U08
Spanish B2 course – compulsory course of 135 hours for students of FIRST-CYCLE studies – semester 1/3 (STUDY PROGRAMME IN ENGLISH)	Foreign language classes	Activity during classes, Participation in a discussion, Execution of exercises, Test, Examination, Test results, Essays written during classes, Presentation	MBMEN1A_U08
Engineering Drawing and Sketching 1	Lecture, Project classes	Activity during classes, Activity during classes, Participation in a discussion, Execution of exercises, Engineering project, Involvement in teamwork, Test results	MBMEN1A_W09, MBMEN1A_W12, MBMEN1A_W11, MBMEN1A_U02, MBMEN1A_U05, MBMEN1A_U19, MBMEN1A_U20, MBMEN1A_K01, MBMEN1A_K02
Fundamentals of Materials Science	Lecture, Laboratory classes	Activity during classes, Participation in a discussion, Examination, Activity during classes, Execution of laboratory classes, Examination, Completion of laboratory classes	MBMEN1A_W02, MBMEN1A_W03, MBMEN1A_W09, MBMEN1A_U01, MBMEN1A_U12, MBMEN1A_U24, MBMEN1A_U02, MBMEN1A_U13, MBMEN1A_K01, MBMEN1A_K02
Physics 2	Lecture, Auditorium classes	Activity during classes, Participation in a discussion, Test, Activity during classes, Participation in a discussion, Test, Involvement in teamwork	MBMEN1A_W01, MBMEN1A_W05, MBMEN1A_U01, MBMEN1A_U02, MBMEN1A_U05, MBMEN1A_K06, MBMEN1A_K02
Mechanics 2	Lecture, Auditorium classes	Participation in a discussion, Examination, Participation in a discussion, Examination	MBMEN1A_W04, MBMEN1A_U15, MBMEN1A_K01
English B2 course – compulsory course of 135 hours for students of FIRST-CYCLE studies – semester 2/3 (STUDY PROGRAMME IN ENGLISH)	Foreign language classes	Activity during classes, Participation in a discussion, Execution of exercises, Test, Examination, Test results, Essays written during classes, Presentation	MBMEN1A_U08

Name of the module	Activity	Method of verification and assessment of learning outcomes achieved by the student in individual forms of classes and activities for the entire module	KEU references
Thermodynamics	Lecture, Auditorium classes, Laboratory classes	Test, Examination, Activity during classes, Participation in a discussion, Execution of exercises, Test, Examination, Execution of laboratory classes, Test, Examination, Report on completion of a practical placement, Completion of laboratory classes	MBMEN1A_W02, MBMEN1A_W03, MBMEN1A_W07, MBMEN1A_W10, MBMEN1A_W17, MBMEN1A_W09, MBMEN1A_U01, MBMEN1A_U02, MBMEN1A_U03, MBMEN1A_U07, MBMEN1A_U09, MBMEN1A_U11, MBMEN1A_U16, MBMEN1A_U08, MBMEN1A_U14, MBMEN1A_K01, MBMEN1A_K02, MBMEN1A_K04, MBMEN1A_K05
German B2 course – compulsory course of 135 hours for students of FIRST-CYCLE studies – semester 2/3 (STUDY PROGRAMME IN ENGLISH)	Foreign language classes	Activity during classes, Participation in a discussion, Execution of exercises, Test, Examination, Test results, Essays written during classes, Presentation	MBMEN1A_U08
Russian B2 course – compulsory course of 135 hours for students of FIRST-CYCLE studies – semester 2/3 (STUDY PROGRAMME IN ENGLISH)	Foreign language classes	Activity during classes, Participation in a discussion, Execution of exercises, Test, Examination, Test results, Essays written during classes, Presentation	MBMEN1A_U08
French B2 course – compulsory course of 135 hours for students of FIRST-CYCLE studies – semester 2/3 (STUDY PROGRAMME IN ENGLISH)	Foreign language classes	Activity during classes, Participation in a discussion, Execution of exercises, Test, Examination, Test results, Essays written during classes, Presentation	MBMEN1A_U08
Spanish B2 course – compulsory course of 135 hours for students of FIRST-CYCLE studies – semester 2/3 (STUDY PROGRAMME IN ENGLISH)	Foreign language classes	Activity during classes, Participation in a discussion, Execution of exercises, Test, Examination, Test results, Essays written during classes, Presentation	MBMEN1A_U08
Engineering Drawing and Sketching 2	Project classes	Activity during classes, Participation in a discussion, Engineering project	MBMEN1A_W09, MBMEN1A_W11, MBMEN1A_W12, MBMEN1A_U02, MBMEN1A_U05, MBMEN1A_U19, MBMEN1A_U20, MBMEN1A_K01, MBMEN1A_K02

Name of the module	Activity	Method of verification and assessment of learning outcomes achieved by the student in individual forms of classes and activities for the entire module	KEU references
Manufacturing Processes - Machining	Lecture, Auditorium classes, Laboratory classes	Examination, Test results, Activity during classes, Participation in a discussion, Test, Involvement in teamwork, Test results, Activity during classes, Execution of laboratory classes, Test, Involvement in teamwork, Test results, Completion of laboratory classes	MBMEN1A_W02, MBMEN1A_W11, MBMEN1A_W12, MBMEN1A_U24, MBMEN1A_U21, MBMEN1A_K05
Machine Drives	Lecture, Auditorium classes, Laboratory classes	Test, Test, Confirmation of completion of practical placement programme, Test, Confirmation of completion of practical placement programme	MBMEN1A_W07, MBMEN1A_W04, MBMEN1A_W05, MBMEN1A_W18, MBMEN1A_W10, MBMEN1A_W13, MBMEN1A_U07, MBMEN1A_U11, MBMEN1A_U18, MBMEN1A_U01, MBMEN1A_U03, MBMEN1A_K04
Manufacturing Processes - Forming	Lecture, Auditorium classes, Laboratory classes	Examination, Activity during classes, Test, Essay, Activity during classes, Test, Project, Essay, Report on completion of a practical placement	MBMEN1A_W10, MBMEN1A_W11, MBMEN1A_W13, MBMEN1A_W14, MBMEN1A_W12, MBMEN1A_W15, MBMEN1A_U23, MBMEN1A_U25, MBMEN1A_U26, MBMEN1A_U27, MBMEN1A_U28, MBMEN1A_K01, MBMEN1A_K04
Strength of Materials Fundamentals	Lecture, Auditorium classes	Participation in a discussion, Activity during classes, Participation in a discussion, Test, Oral answer	MBMEN1A_W04, MBMEN1A_W16, MBMEN1A_W09, MBMEN1A_U15, MBMEN1A_U22, MBMEN1A_U26, MBMEN1A_U12, MBMEN1A_U13, MBMEN1A_U23, MBMEN1A_U24, MBMEN1A_K02, MBMEN1A_K03, MBMEN1A_K04
Fundamentals of Machine Design 1	Lecture, Laboratory classes, Project classes	Activity during classes, Execution of a project, Execution of laboratory classes, Test, Activity during classes, Execution of a project, Execution of laboratory classes, Test, Activity during classes, Execution of a project, Test	MBMEN1A_W04, MBMEN1A_W09, MBMEN1A_W14, MBMEN1A_W15, MBMEN1A_W12, MBMEN1A_U01, MBMEN1A_U03, MBMEN1A_U10, MBMEN1A_U11, MBMEN1A_U12, MBMEN1A_U09, MBMEN1A_U22, MBMEN1A_U23, MBMEN1A_U27, MBMEN1A_K01, MBMEN1A_K04
English B2 course – compulsory course of 135 hours for students of FIRST-CYCLE studies – semester 3/3 (STUDY PROGRAMME IN ENGLISH)	Foreign language classes	Activity during classes, Participation in a discussion, Execution of exercises, Test, Examination, Test results, Essays written during classes, Presentation	MBMEN1A_U08

Name of the module	Activity	Method of verification and assessment of learning outcomes achieved by the student in individual forms of classes and activities for the entire module	KEU references
German B2 course – compulsory course of 135 hours for students of FIRST-CYCLE studies – semester 3/3 (STUDY PROGRAMME IN ENGLISH)	Foreign language classes	Activity during classes, Participation in a discussion, Execution of exercises, Test, Examination, Test results, Essays written during classes, Presentation	MBMEN1A_U08
Russian B2 course – compulsory course of 135 hours for students of FIRST-CYCLE studies – semester 3/3 (STUDY PROGRAMME IN ENGLISH)	Foreign language classes	Activity during classes, Participation in a discussion, Execution of exercises, Test, Examination, Test results, Essays written during classes, Presentation	MBMEN1A_U08
French B2 course – compulsory course of 135 hours for students of FIRST-CYCLE studies – semester 3/3 (STUDY PROGRAMME IN ENGLISH)	Foreign language classes	Activity during classes, Participation in a discussion, Execution of exercises, Test, Examination, Test results, Essays written during classes, Presentation	MBMEN1A_U08
Spanish B2 course – compulsory course of 135 hours for students of FIRST-CYCLE studies – semester 3/3 (STUDY PROGRAMME IN ENGLISH)	Foreign language classes	Activity during classes, Participation in a discussion, Execution of exercises, Test, Examination, Test results, Essays written during classes, Presentation	MBMEN1A_U08
Operational and Exploitation Testing	Lecture, Project classes	Activity during classes, Participation in a discussion, Project, Presentation, Participation in a discussion, Test, Project, Presentation	MBMEN1A_W01, MBMEN1A_W16, MBMEN1A_W17, MBMEN1A_W05, MBMEN1A_W09, MBMEN1A_W11, MBMEN1A_W15, MBMEN1A_W13, MBMEN1A_U16, MBMEN1A_U05, MBMEN1A_U17, MBMEN1A_U23, MBMEN1A_U26, MBMEN1A_U03, MBMEN1A_U22, MBMEN1A_U01, MBMEN1A_U02, MBMEN1A_U06, MBMEN1A_U07, MBMEN1A_U24, MBMEN1A_K01, MBMEN1A_K04
Non Destructive Testing	Lecture, Project classes	Activity during classes, Participation in scientific research, conferences, additional internships and training courses, Participation in a discussion, Project, Presentation, Confirmation of completion of practical placement programme	MBMEN1A_W02, MBMEN1A_W06, MBMEN1A_W16, MBMEN1A_W17, MBMEN1A_U02, MBMEN1A_U14, MBMEN1A_K02

Name of the module	Activity	Method of verification and assessment of learning outcomes achieved by the student in individual forms of classes and activities for the entire module	KEU references
Advanced Strength of Materials	Lecture, Auditorium classes, Laboratory classes	Examination, Oral answer, Activity during classes, Test, Oral answer, Test, Oral answer, Completion of laboratory classes	MBMEN1A_W09, MBMEN1A_W10, MBMEN1A_W11, MBMEN1A_U24, MBMEN1A_U25, MBMEN1A_K02
Introduction to Control Engineering	Lecture, Auditorium classes, Laboratory classes	Activity during classes, Participation in a discussion, Execution of exercises, Execution of a project, Project, Examination, Report, Case study, Completion of laboratory classes, Activity during classes, Participation in a discussion, Execution of exercises, Execution of laboratory classes, Project, Report, Activity during classes, Participation in a discussion, Execution of exercises, Execution of laboratory classes, Project	MBMEN1A_W01, MBMEN1A_W02, MBMEN1A_W04, MBMEN1A_W06, MBMEN1A_W16, MBMEN1A_W05, MBMEN1A_U01, MBMEN1A_U03, MBMEN1A_U10, MBMEN1A_U22, MBMEN1A_U02, MBMEN1A_U11, MBMEN1A_U14, MBMEN1A_U09, MBMEN1A_U18, MBMEN1A_K02, MBMEN1A_K04, MBMEN1A_K03, MBMEN1A_K06, MBMEN1A_K01
Theory of Machines and Mechanisms	Lecture, Auditorium classes, Laboratory classes	Activity during classes, Execution of laboratory classes, Examination, Activity during classes, Execution of laboratory classes, Test, Examination, Activity during classes, Execution of laboratory classes, Test, Examination	MBMEN1A_W04, MBMEN1A_U01, MBMEN1A_K01
Metrology 2	Lecture, Laboratory classes	Test, Execution of laboratory classes, Test results	MBMEN1A_W06, MBMEN1A_U11, MBMEN1A_U04, MBMEN1A_K04
Fundamentals of Machine Design 2	Lecture, Project classes	Activity during classes, Execution of a project, Test, Examination, Activity during classes, Execution of a project, Test, Examination	MBMEN1A_W11, MBMEN1A_W14, MBMEN1A_U01, MBMEN1A_U22, MBMEN1A_U23, MBMEN1A_U25, MBMEN1A_U03, MBMEN1A_U10, MBMEN1A_U12, MBMEN1A_U27, MBMEN1A_U26, MBMEN1A_K01
Machines and Mechanical Devices Engineering	Lecture, Auditorium classes, Laboratory classes	Activity during classes, Participation in a discussion, Test, Activity during classes, Participation in a discussion, Execution of exercises, Test, Report, Activity during classes, Participation in a discussion, Execution of laboratory classes, Test, Report	MBMEN1A_W06, MBMEN1A_W09, MBMEN1A_W12, MBMEN1A_W02, MBMEN1A_W04, MBMEN1A_W16, MBMEN1A_W11, MBMEN1A_U01, MBMEN1A_U22, MBMEN1A_U23, MBMEN1A_U03, MBMEN1A_U15, MBMEN1A_U26, MBMEN1A_U10, MBMEN1A_U11, MBMEN1A_K01
Dynamics of Machines	Lecture, Auditorium classes, Laboratory classes	Activity during classes, Participation in a discussion, Test, Oral answer, Execution of laboratory classes, Report, Presentation	MBMEN1A_W04, MBMEN1A_W05, MBMEN1A_W10, MBMEN1A_W16, MBMEN1A_U03, MBMEN1A_U10, MBMEN1A_U15, MBMEN1A_U22

Name of the module	Activity	Method of verification and assessment of learning outcomes achieved by the student in individual forms of classes and activities for the entire module	KEU references
Statistics for engineers	Lecture, Laboratory classes	Completion of laboratory classes, Activity during classes, Execution of laboratory classes, Test results	MBMEN1A_W01, MBMEN1A_W05, MBMEN1A_W16, MBMEN1A_W10, MBMEN1A_U01, MBMEN1A_U04, MBMEN1A_U11, MBMEN1A_U21, MBMEN1A_K02, MBMEN1A_K04
Computational Methods and Design of Experiment	Lecture, Auditorium classes, Laboratory classes, Project classes	Activity during classes, Execution of exercises, Execution of laboratory classes, Project, Examination, Activity during classes, Execution of exercises, Test, Examination, Execution of exercises, Execution of laboratory classes, Test, Examination, Activity during classes, Project	MBMEN1A_W01, MBMEN1A_W05, MBMEN1A_W02, MBMEN1A_W16, MBMEN1A_W14, MBMEN1A_U01, MBMEN1A_U02, MBMEN1A_U03, MBMEN1A_U07, MBMEN1A_U10, MBMEN1A_U23, MBMEN1A_U04, MBMEN1A_U11, MBMEN1A_K01, MBMEN1A_K03, MBMEN1A_K04, MBMEN1A_K05
Innovative Machines for Raw Explatation	Lecture, Project classes, Seminars	Participation in a discussion, Project, Case study, Presentation, Project, Presentation, Completion of laboratory classes, Project, Report	MBMEN1A_W17, MBMEN1A_W13, MBMEN1A_U01, MBMEN1A_U23, MBMEN1A_U12, MBMEN1A_U21, MBMEN1A_U25, MBMEN1A_K01, MBMEN1A_K06, MBMEN1A_K02
Engineering CAD Software	Lecture, Laboratory classes	Activity during classes, Participation in a discussion, Completion of laboratory classes, Activity during classes, Participation in a discussion, Completion of laboratory classes	MBMEN1A_W14, MBMEN1A_W16, MBMEN1A_W05, MBMEN1A_U10, MBMEN1A_U26, MBMEN1A_U27, MBMEN1A_U28, MBMEN1A_K01, MBMEN1A_K02
Fluid Mechanics	Lecture, Auditorium classes, Laboratory classes	Test, Execution of exercises, Test results, Execution of laboratory classes, Test results	MBMEN1A_W01, MBMEN1A_W02, MBMEN1A_W04, MBMEN1A_W07, MBMEN1A_W08, MBMEN1A_W12, MBMEN1A_W13, MBMEN1A_W15, MBMEN1A_W16, MBMEN1A_W18, MBMEN1A_W09, MBMEN1A_U01, MBMEN1A_U02, MBMEN1A_U03, MBMEN1A_U04, MBMEN1A_U05, MBMEN1A_U08, MBMEN1A_U09, MBMEN1A_U10, MBMEN1A_K01, MBMEN1A_K03, MBMEN1A_K06, MBMEN1A_K07, MBMEN1A_K04, MBMEN1A_K05, MBMEN1A_K02
Metrology 1	Lecture, Auditorium classes, Laboratory classes	Activity during classes, Test, Project, Test, Report	MBMEN1A_W11, MBMEN1A_W14, MBMEN1A_W09, MBMEN1A_U01, MBMEN1A_U03, MBMEN1A_U07, MBMEN1A_U22, MBMEN1A_U04, MBMEN1A_U11, MBMEN1A_U14, MBMEN1A_U02, MBMEN1A_U10, MBMEN1A_U20, MBMEN1A_K03, MBMEN1A_K04

Name of the module	Activity	Method of verification and assessment of learning outcomes achieved by the student in individual forms of classes and activities for the entire module	KEU references
Modern Ropeway Transport Systems	Lecture, Laboratory classes, Project classes	Activity during classes, Activity during classes, Participation in a discussion, Test results, Preparation and conduct of scientific research, Activity during classes, Participation in a discussion, Presentation, Completion of laboratory classes	MBMEN1A_W13, MBMEN1A_W14, MBMEN1A_W11, MBMEN1A_W15, MBMEN1A_W10, MBMEN1A_U11, MBMEN1A_U12, MBMEN1A_U14, MBMEN1A_U23, MBMEN1A_K01, MBMEN1A_K03, MBMEN1A_K04, MBMEN1A_K06
Earthmoving Equipment and Heavy-duty Transportation Machinery	Lecture, Laboratory classes, Project classes	Participation in a discussion, Examination, Execution of laboratory classes, Oral answer, Completion of laboratory classes, Activity during classes, Execution of a project, Test results	MBMEN1A_W04, MBMEN1A_W11, MBMEN1A_W12, MBMEN1A_W16, MBMEN1A_W10, MBMEN1A_W19, MBMEN1A_U01, MBMEN1A_U12, MBMEN1A_U21, MBMEN1A_U22, MBMEN1A_U02, MBMEN1A_U03, MBMEN1A_U10, MBMEN1A_U14, MBMEN1A_K01, MBMEN1A_K04
IT Tools in Machine Design and Mechanics	Lecture, Laboratory classes, Project classes	Execution of exercises, Execution of laboratory classes, Examination, Execution of a project, Execution of laboratory classes, Examination, Report, Execution of a project, Execution of laboratory classes, Report	MBMEN1A_W02, MBMEN1A_W04, MBMEN1A_W11, MBMEN1A_U03, MBMEN1A_U05, MBMEN1A_K04, MBMEN1A_K02
Energy technologies	Lecture, Laboratory classes, Project classes	Participation in a discussion, Test, Activity during classes, Execution of laboratory classes, Report, Completion of laboratory classes, Activity during classes, Execution of a project, Report	MBMEN1A_W01, MBMEN1A_W02, MBMEN1A_W07, MBMEN1A_W09, MBMEN1A_W12, MBMEN1A_W13, MBMEN1A_U01, MBMEN1A_U07, MBMEN1A_U08, MBMEN1A_U09, MBMEN1A_U10, MBMEN1A_U16, MBMEN1A_U22, MBMEN1A_U29, MBMEN1A_K01, MBMEN1A_K02, MBMEN1A_K03, MBMEN1A_K06
Operational Research and Modernisation of Machines and Vehicles	Lecture, Laboratory classes, Project classes	Activity during classes, Participation in a discussion, Test, Project, Examination, Presentation, Activity during classes, Project, Examination, Report, Completion of laboratory classes, Activity during classes, Participation in a discussion, Project, Examination, Presentation	MBMEN1A_W05, MBMEN1A_W14, MBMEN1A_W15, MBMEN1A_W16, MBMEN1A_W17, MBMEN1A_W06, MBMEN1A_U04, MBMEN1A_U05, MBMEN1A_U06, MBMEN1A_U16, MBMEN1A_U17, MBMEN1A_U19, MBMEN1A_U21, MBMEN1A_U25, MBMEN1A_U08, MBMEN1A_U09, MBMEN1A_U01, MBMEN1A_U02, MBMEN1A_U10, MBMEN1A_U11, MBMEN1A_K05, MBMEN1A_K06, MBMEN1A_K07, MBMEN1A_K01, MBMEN1A_K02
Advanced Design Methods	Lecture, Laboratory classes, Project classes	Activity during classes, Examination, Activity during classes, Project, Activity during classes, Test, Project	MBMEN1A_W02, MBMEN1A_W14, MBMEN1A_W16, MBMEN1A_W13, MBMEN1A_U01, MBMEN1A_U02, MBMEN1A_U03, MBMEN1A_U05, MBMEN1A_K07, MBMEN1A_K01, MBMEN1A_K03

Name of the module	Activity	Method of verification and assessment of learning outcomes achieved by the student in individual forms of classes and activities for the entire module	KEU references
Exploitation of Useful Mineral Resources	Lecture, Laboratory classes, Project classes	Participation in a discussion, Execution of a project, Test, Examination, Confirmation of completion of practical placement programme, Participation in a discussion, Execution of exercises, Test, Report on completion of a practical placement, Confirmation of completion of practical placement programme, Activity during classes, Participation in a discussion, Execution of a project, Presentation	MBMEN1A_W08, MBMEN1A_W16, MBMEN1A_W11, MBMEN1A_W12, MBMEN1A_U01, MBMEN1A_U09, MBMEN1A_U21, MBMEN1A_U25, MBMEN1A_U26, MBMEN1A_U29, MBMEN1A_K01, MBMEN1A_K04
Manufacturing Process Engineering	Lecture, Laboratory classes, Project classes	Activity during classes, Participation in a discussion, Examination, Project, Examination, Report, Activity during classes, Participation in a discussion, Project	MBMEN1A_W11, MBMEN1A_W12, MBMEN1A_W13, MBMEN1A_W16, MBMEN1A_W06, MBMEN1A_W09, MBMEN1A_U24, MBMEN1A_U26, MBMEN1A_U27, MBMEN1A_U10, MBMEN1A_U11, MBMEN1A_U23, MBMEN1A_U22, MBMEN1A_K01
Ecological Systems Engineering and Eco-energy	Lecture, Laboratory classes, Project classes	Activity during classes, Participation in a discussion, Examination, Activity during classes, Participation in a discussion, Examination, Completion of laboratory classes, Activity during classes, Participation in a discussion, Project, Examination	MBMEN1A_W12, MBMEN1A_W13, MBMEN1A_W14, MBMEN1A_W17, MBMEN1A_U01, MBMEN1A_U02, MBMEN1A_U10, MBMEN1A_U11, MBMEN1A_U22, MBMEN1A_U27, MBMEN1A_K01, MBMEN1A_K02
Vibro-Acoustics	Lecture, Laboratory classes	Test, Confirmation of completion of practical placement programme	MBMEN1A_W01, MBMEN1A_W02, MBMEN1A_W05, MBMEN1A_W09, MBMEN1A_U02, MBMEN1A_U03, MBMEN1A_U20, MBMEN1A_K02, MBMEN1A_K04
Technological Machines and Equipment	Lecture, Laboratory classes	Test results, Completion of laboratory classes, Activity during classes, Test results, Completion of laboratory classes	MBMEN1A_W02, MBMEN1A_W12, MBMEN1A_W13, MBMEN1A_U01, MBMEN1A_U02, MBMEN1A_U11, MBMEN1A_U26, MBMEN1A_K01, MBMEN1A_K04
Internship	Practical placement	Report on completion of a practical placement	MBMEN1A_W08, MBMEN1A_U01, MBMEN1A_U02, MBMEN1A_U10, MBMEN1A_K03, MBMEN1A_K04
Steel Structures	Lecture, Project classes	Activity during classes, Activity during classes, Execution of laboratory classes, Test, Project	MBMEN1A_W01, MBMEN1A_W02, MBMEN1A_W04, MBMEN1A_U01, MBMEN1A_U02, MBMEN1A_U04, MBMEN1A_K01, MBMEN1A_K02, MBMEN1A_K03, MBMEN1A_K04

Name of the module	Activity	Method of verification and assessment of learning outcomes achieved by the student in individual forms of classes and activities for the entire module	KEU references
Power Generating Equipment	Lecture, Laboratory classes	Test, Execution of laboratory classes, Test results	MBMEN1A_W03, MBMEN1A_W06, MBMEN1A_W09, MBMEN1A_W13, MBMEN1A_W10, MBMEN1A_W12, MBMEN1A_W14, MBMEN1A_W01, MBMEN1A_W02, MBMEN1A_W04, MBMEN1A_W07, MBMEN1A_W16, MBMEN1A_W17, MBMEN1A_U01, MBMEN1A_U03, MBMEN1A_U05, MBMEN1A_U07, MBMEN1A_U24, MBMEN1A_U25, MBMEN1A_U26, MBMEN1A_U27, MBMEN1A_U22, MBMEN1A_U23, MBMEN1A_U09, MBMEN1A_K01, MBMEN1A_K05, MBMEN1A_K06, MBMEN1A_K07, MBMEN1A_K02, MBMEN1A_K03, MBMEN1A_K04
Machine Maintenance	Lecture, Seminars	Activity during classes, Participation in a discussion, Test, Presentation, Oral answer, Activity during classes, Participation in a discussion, Test, Presentation, Oral answer	MBMEN1A_W16, MBMEN1A_W17, MBMEN1A_W15, MBMEN1A_U02, MBMEN1A_U05, MBMEN1A_U08, MBMEN1A_U12, MBMEN1A_U16, MBMEN1A_U13, MBMEN1A_U17, MBMEN1A_U19, MBMEN1A_U01, MBMEN1A_U25, MBMEN1A_U07, MBMEN1A_U21, MBMEN1A_K01, MBMEN1A_K02, MBMEN1A_K06, MBMEN1A_K07
Modern technologies of construction materials manufacturing	Lecture, Project classes	Test, Project	MBMEN1A_W04, MBMEN1A_U25, MBMEN1A_U02, MBMEN1A_K01
Transport Machinery and Devices	Lecture, Laboratory classes, Project classes	Participation in a discussion, Examination, Execution of laboratory classes, Completion of laboratory classes, Activity during classes, Execution of a project	MBMEN1A_W10, MBMEN1A_W11, MBMEN1A_W04, MBMEN1A_W09, MBMEN1A_U01, MBMEN1A_U14, MBMEN1A_U26, MBMEN1A_U27, MBMEN1A_K04, MBMEN1A_K05, MBMEN1A_K02
Machine Design	Lecture, Project classes	Activity during classes, Execution of a project, Test, Examination, Activity during classes, Execution of a project, Test, Examination	MBMEN1A_W08, MBMEN1A_W13, MBMEN1A_W11, MBMEN1A_W12, MBMEN1A_U01, MBMEN1A_U09, MBMEN1A_U25, MBMEN1A_U12, MBMEN1A_U15, MBMEN1A_K01
Progress Evaluation and Interim Assignments	Progress evaluation and interim assignments	Engineering project	MBMEN1A_W04, MBMEN1A_W05, MBMEN1A_W09, MBMEN1A_W10, MBMEN1A_W11, MBMEN1A_U01, MBMEN1A_U22, MBMEN1A_U24, MBMEN1A_U25, MBMEN1A_U26, MBMEN1A_U03, MBMEN1A_U15, MBMEN1A_U23, MBMEN1A_K01, MBMEN1A_K06

Name of the module	Activity	Method of verification and assessment of learning outcomes achieved by the student in individual forms of classes and activities for the entire module	KEU references
Conveyors	Lecture, Seminars	Activity during classes, Participation in a discussion, Presentation, Oral answer, Activity during classes, Participation in a discussion, Presentation, Oral answer	MBMEN1A_W04, MBMEN1A_W10, MBMEN1A_W09, MBMEN1A_W11, MBMEN1A_W12, MBMEN1A_W13, MBMEN1A_W14, MBMEN1A_U12, MBMEN1A_U25, MBMEN1A_U27, MBMEN1A_U01, MBMEN1A_U06, MBMEN1A_U08, MBMEN1A_K06
Tunnelling machines	Lecture, Seminars	Activity during classes, Participation in a discussion, Project, Involvement in teamwork, Presentation, Activity during classes, Participation in a discussion, Execution of laboratory classes, Project, Involvement in teamwork, Presentation	MBMEN1A_W02, MBMEN1A_W03, MBMEN1A_W17, MBMEN1A_W13, MBMEN1A_U03, MBMEN1A_U23, MBMEN1A_U02, MBMEN1A_U05, MBMEN1A_U20, MBMEN1A_U08, MBMEN1A_U10, MBMEN1A_U25, MBMEN1A_K02, MBMEN1A_K05, MBMEN1A_K07
Kinematic and dynamic simulation of mechanical systems	Lecture, Seminars	Activity during classes, Presentation, Activity during classes, Participation in a discussion, Presentation	MBMEN1A_W02, MBMEN1A_W04, MBMEN1A_W09, MBMEN1A_W14, MBMEN1A_W16, MBMEN1A_U01, MBMEN1A_U02, MBMEN1A_U10, MBMEN1A_U11, MBMEN1A_U15, MBMEN1A_K01
Soft Computing in Modeling and Control	Lecture, Seminars	Activity during classes, Participation in a discussion, Activity during classes, Participation in a discussion, Presentation	MBMEN1A_W02, MBMEN1A_W03, MBMEN1A_W06, MBMEN1A_U08, MBMEN1A_U13, MBMEN1A_U18, MBMEN1A_U20, MBMEN1A_U21, MBMEN1A_K02
Dedusting Devices	Lecture, Laboratory classes, Project classes	Activity during classes, Execution of a project, Execution of laboratory classes, Test, Project, Activity during classes, Execution of a project, Execution of laboratory classes, Test, Project, Completion of laboratory classes, Activity during classes, Execution of a project, Execution of laboratory classes, Test, Project	MBMEN1A_W09, MBMEN1A_W11, MBMEN1A_U07, MBMEN1A_U26, MBMEN1A_K02, MBMEN1A_K04
Additive Manufacturing Technologies	Lecture, Laboratory classes	Execution of laboratory classes, Activity during classes, Execution of laboratory classes, Report, Involvement in teamwork, Test results	MBMEN1A_W11, MBMEN1A_W12, MBMEN1A_W13, MBMEN1A_W14, MBMEN1A_U09, MBMEN1A_U10, MBMEN1A_U17, MBMEN1A_U07, MBMEN1A_U11, MBMEN1A_K01, MBMEN1A_K03, MBMEN1A_K04
Basics of marketing	Lecture, Seminars	Test, Execution of exercises, Project, Case study, Essays written during classes, Presentation	MBMEN1A_W13, MBMEN1A_W14, MBMEN1A_U15, MBMEN1A_U07, MBMEN1A_K06
Macroeconomy 2	Lecture, Seminars	Test, Test results, Activity during classes, Execution of exercises, Presentation, Oral answer	MBMEN1A_W17, MBMEN1A_W18, MBMEN1A_U01, MBMEN1A_K05, MBMEN1A_K02

Name of the module	Activity	Method of verification and assessment of learning outcomes achieved by the student in individual forms of classes and activities for the entire module	KEU references
Man and a Technical Environment	Lecture, Seminars	Activity during classes, Participation in a discussion, Activity during classes, Participation in a discussion, Involvement in teamwork, Presentation	MBMEN1A_W15, MBMEN1A_W17, MBMEN1A_U01, MBMEN1A_U10, MBMEN1A_U17, MBMEN1A_K02, MBMEN1A_K04, MBMEN1A_K01
Programmable Logic Controllers	Lecture, Project classes	Activity during classes, Test, Execution of exercises, Test	MBMEN1A_W06, MBMEN1A_W08, MBMEN1A_U24, MBMEN1A_U19
Safety in Technology and Standardization	Lecture, Seminars	Activity during classes, Participation in a discussion, Activity during classes, Participation in a discussion, Presentation	MBMEN1A_W19, MBMEN1A_U07, MBMEN1A_U21, MBMEN1A_U29, MBMEN1A_U10, MBMEN1A_K02
Basics of mechatronics	Lecture, Project classes	Confirmation of completion of practical placement programme, Report on completion of a practical placement	MBMEN1A_W01, MBMEN1A_W13, MBMEN1A_W16, MBMEN1A_U03, MBMEN1A_U09, MBMEN1A_U10, MBMEN1A_U11
Environmental protection	Lecture, Seminars	Activity during classes, Participation in a discussion, Activity during classes, Participation in a discussion, Test, Presentation	MBMEN1A_W17, MBMEN1A_W18, MBMEN1A_U01, MBMEN1A_U06, MBMEN1A_U07, MBMEN1A_K01, MBMEN1A_K02
Welding Technology	Lecture, Laboratory classes	Activity during classes, Participation in a discussion, Activity during classes, Participation in a discussion, Test, Report	MBMEN1A_W11, MBMEN1A_W13, MBMEN1A_W14, MBMEN1A_W16, MBMEN1A_W06, MBMEN1A_W09, MBMEN1A_U12, MBMEN1A_U24, MBMEN1A_U02, MBMEN1A_U22, MBMEN1A_K01, MBMEN1A_K02, MBMEN1A_K03
Management engineering	Lecture, Seminars	Test	MBMEN1A_W17, MBMEN1A_W18, MBMEN1A_U07, MBMEN1A_U20, MBMEN1A_U21, MBMEN1A_K04, MBMEN1A_K01
Machine Technology	Lecture, Laboratory classes	Activity during classes, Participation in a discussion, Test, Report, Activity during classes, Participation in a discussion, Test, Report	MBMEN1A_W11, MBMEN1A_W12, MBMEN1A_W13, MBMEN1A_W09, MBMEN1A_W10, MBMEN1A_W14, MBMEN1A_U22, MBMEN1A_U25, MBMEN1A_U26, MBMEN1A_U28, MBMEN1A_U29, MBMEN1A_K01
Diploma Seminar	Seminars	Participation in a discussion, Project, Diploma thesis preparation, Presentation	MBMEN1A_W02, MBMEN1A_W13, MBMEN1A_W15, MBMEN1A_W17, MBMEN1A_W06, MBMEN1A_U01, MBMEN1A_U02, MBMEN1A_U08, MBMEN1A_U24, MBMEN1A_U25, MBMEN1A_U26, MBMEN1A_K03, MBMEN1A_K06, MBMEN1A_K07

Name of the module	Activity	Method of verification and assessment of learning outcomes achieved by the student in individual forms of classes and activities for the entire module	KEU references
Diploma Thesis	Diploma Thesis	Engineering project, Review of a thesis, Diploma thesis preparation, Presentation	MBMEN1A_W09, MBMEN1A_W14, MBMEN1A_W16, MBMEN1A_W19, MBMEN1A_U03, MBMEN1A_U04, MBMEN1A_U05, MBMEN1A_U08, MBMEN1A_U09, MBMEN1A_U10, MBMEN1A_U11, MBMEN1A_U12, MBMEN1A_U17, MBMEN1A_U18, MBMEN1A_U19, MBMEN1A_U20, MBMEN1A_U21, MBMEN1A_U22, MBMEN1A_K01, MBMEN1A_K02, MBMEN1A_K03, MBMEN1A_K04, MBMEN1A_K06

ECTS credits calculations

Major: Mechanical Engineering

The total number of ECTS credits the student needs to obtain in the form of:

classes conducted with the direct participation of academic teachers or other persons conducting classes	105
core science classes relevant to a given major	38
practical classes, developing practical skills, including laboratory, design, practical and workshop classes	82
classes subject to choice by the student (in the amount of not less than 30% of the number of ECTS points necessary to obtain qualifications corresponding to the level of education)	64
classes in the field of humanities or social sciences - in the case of fields of study assigned to disciplines within fields other than humanities or social sciences, respectively	6
foreign language classes	5
apprenticeships	4
classes related to the academic activity conducted at the University in the discipline or disciplines to which the field of study is assigned, in the amount greater than 50% of the number of ECTS points required to complete studies at a given level, taking into account the participation of students in classes preparing to conduct scientific activity or participate in this activity (applies only to studies with a general academic profile)	161
classes shaping practical skills in the amount greater than 50% of the number of ECTS points required to complete studies at a given level (applies only to studies with a practical profile)	0

Detailed rules of the implementation of the study programme estabilished by the Dean of the Faculty (the so-called Study Rules)

Major: Mechanical Engineering

Enrollment rules for the next semester

The rules of registration for the semester are specified in paragraph 17 of the AGH UST Study Regulations.

Enrollment rules for the next semester as a part of the so-called ECTS credits debt ceiling

The allowed deficiency of ECTS is:
When entering the 2nd semester – 7 ECTS
When entering the 3rd semester – 9 ECTS
When entering the semester 4th and 5th – 15 ECTS
When entering the 6th semester – 9 ECTS
When entering the 7th semester – 0 ECTS

ECTS credits debt ceiling

9

Organization of classes within the so-called blocks of classes (i.e. such organization of subjects or individual forms of classes that creates exceptions to the cyclical nature of classes in particular weeks of a given semester of studies)

In the first-cycle studies of Mechanical Engineering, there are no blocks.

Monitoring semesters

3, 6

Study rules in case of the individual organization of studies approved for a specific student

Individual studies are conducted under the scientific supervision of an academic teacher with a Prof. title. Possibility to start the studies from the 3rd semester. The required average grade from the completed semesters at least 4.0, it is advisable to have additional achievements (publications, work in a research club, social activities, awards, distinctions). An individual study program may consist of modules included in approved study plans and individual unapproved modules. The study program is approved by the Dean.

Implementation of apprenticeships including monitoring system and completion rules

In order to complete the apprenticeship, a student should prepare the following:

- letter of recommendation,
- draft of the Agreement on the apprenticeship or draft of the Agreement on the unpaid apprenticeship.

All necessary documents are confirmed by the Dean's Representative for student apprenticeships.
Passing the apprenticeship is carried out by the program or profile tutor or his / her attorney for apprenticeships on the basis of a certificate of attendance and a report on the apprenticeship.

Rules of elective modules taking

The principles of the election of the subjects are defined in the Syllabus of the Mechanical Engineering program.

Rules of study paths, diploma paths, specialty choice/eligibility

In the first-cycle studies of Mechatronic engineering, there are no paths, profiles and specialties.

Rules related to the preparation of diploma projects and theses as well as the implementation of the degree granting

The final thesis preparation and graduating diploma process is carried out in accordance with the paragraphs 25, 26 and 27 of the AGH UST Study Regulations.

Principles for determining the overall evaluation of graduation (the final grade)

The general result of graduation is calculated as the sum of:
0.6 * the average of grades obtained during studies + 0.3 * final grade of the diploma thesis + 0.1 * grade of the diploma exam.

Other requirements related to the implementation of the study programme resulting from the AGH UST Study Regulations or other regulations in force at the University