Curriculum

Field of study: Applied Geology

Specialty: Earth and extraterrestrial materials

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General characteristics of the field of study

Basic information

Faculty name:	Faculty of Geology, Geophysics and Environmental Protection
Field of study:	Applied Geology
Specialty name:	Earth and extraterrestrial materials
Level:	Second-cycle (engineer) programme
Profile:	General academic
Form:	Full-time studies
ISCED classification:	0724
Number of ECTS credits necessary to complete studies at a given level:	90
Professional title awarded to graduates:	magister inżynier
Cycle start date:	2025/2026, summer semester
Duration of studies (number of semesters):	3

Field of science to which the field of study is assigned:

Field of the exact and natural sciences

Discipline of science to which the field of study is assigned:

Discipline	Percentage	ECTS
Earth sciences and the environment	100%	90

Relationship between the field of study and the development strategy and mission of the university

The mission and the development strategy of the AGH UST in Krakow is to educate students in majors that are of key importance for the knowledge-based economy. All educational programs are in agreement with Bologna Process. Education is in the disciplines and majors that are essential for the further proper development of the country and Europe. Such majors include Applied Geology with the specialty: Earth and Extraterrestrial Materials. The major is aimed to educate graduates with high professional qualifications, ready to meet the contemporary challenges both in the region, Poland, and other countries of Europe and the world. By carrying out the AGH-UST mission, education contributes to deepening cooperation between science and industry and the development of innovation and implementation through the development of research. The education of students, with high qualifications and high mobility is included in the University's Development Strategy in the section on continuous improvement of the quality of education.

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

A modern geologist's work involves the use of a wide range of knowledge and skills that go well beyond the narrow understanding of earth sciences. Socio-economic needs resulting from limited access to certain raw materials (for example "critical elements"), environmental costs, innovations in recovery from waste and the ability to make the right technological and economic decisions, extraction of groundwater for human consumption, mineral water and thermal water play a significant role. The assumed learning outcomes are in line with the current needs of the socio-economic environment. In addition to professional knowledge and skills, the graduate will understand and be able to use professional terminology in English and will be aware of the importance of the interaction of basic and applied Earth sciences, industry, medicine, biology and the humanities, sustaining our environment for better future in a broad scope.

Education paths – scope in Polish and in English

Graduation paths – scope in Polish and in English

The names of the majors in Polish and in English

Name [pl]	Name [en]
Earth and extraterrestrial materials	Earth and extraterrestrial materials

General information about the curriculum

Field of study: Applied Geology
Specialty: Earth and extraterrestrial materials

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

The program of the Earth and Extraterrestrial Materials specialty will be implemented in a modern way to take into account the contemporary needs of graduates as well as from the range of contemporary educational directions in the world. The range of subjects and scope have been selected in terms of the graduate's vision developed through scientific international collaboration, job fairs, graduate employment offers, direct contacts with companies and government bodies, and emerging on an ongoing basis in collaboration with research and development centers, industry and scientific institutes. Job market is very broad and requires broad education. The curriculum includes topics covering practical engineering problems in geology, knowledge of modern material technologies derived from raw materials, and understanding of the laws and mechanisms that govern Nature. Geological knowledge is integrated with a broad knowledge of the environment on Earth and other planets. Graduates will understand and be able to use professional terminology in English. The thematic fragmentation of subjects is reduced, and the program emphasizes practical, field activities and student self-development. The program takes into account all individual needs of students improving equity, diversity, and inclusion in academia. Graduates will think and act creatively and in an entrepreneurial manner. Well-educated graduates of the Earth and Extraterrestrial Materials specialty will have sound fundamental knowledge and a concrete practical expertise that will allow them to join in solving the most urgent problems of the modern world.

Information on including the conclusions from the students and graduates careers monitoring in the curriculum

The Faculty of Geology, Geophysics and Environmental protection closely collaborates with the Career Office of the AGH – UST, which prepares annual reports, the conclusions of which are taken into account in the program changes. According to the reports on the fate of graduates, compiled by the AGH career office, nearly 80% of graduates in this field have found employment or are self-employed. Changes in the programs are also consulted with the faculty student self-government. Based on evaluations of the preparation for entering the job market, the share of classes of a practical nature (laboratory exercises, project exercises, practical classes, field classes), which now account for more than 50% of all classes, was significantly increased.

Information on including the requirements and recommendations of the accreditation committees, in particular the Polish Accreditation Committee and industry accreditation committees in the curriculum

The Faculty of Geology, Geophysics and Environmental Protection obtained institutional accreditation with distinction. The program and goals of education are in line with the university's strategy, fall within the discipline of Earth and environmental sciences, are closely linked to the scientific activities carried out at the department, and are oriented to the needs of the professional job market.

Information on including examples of good practice in the curriculum

The study program envisages the implementation of education modules based on certified and licensed geophysical data processing systems. Students have a unique opportunity to gain knowledge, skills and qualifications in mastering advanced computer programs used by leading geological service companies. They also have the opportunity to participate in practical presentations and training courses on economic geology, geophysics, remote sensing in exploration, and petrophysics, organized by internationally leading companies.

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

Representatives of the Faculty of Geology, Geophysics and Environmental Protection conduct monitoring of job fairs organized by AGH-UST and other universities as well as external entities. Applications regarding potential employment opportunities in enterprises seeking employees are included in the study program. Cooperation agreements with private companies (e.g., BAARS, Geod) as well as local (Limanowa, Sławków, and Olkusz Communes) and national administration agencies (Regional Water Management Authority in Kraków, Regional Directorate for Environmental Protection in Bydgoszcz) are signed. During negotiations of these agreements, the subject of

expectations of these entities as future potential employers in relation to the Faculty’s graduates is discussed. Thanks to direct contacts of Faculty employees with graduates from previous years, information, opinions, and suggestions regarding trends in the geological-resource, geotechnical and hydrogeological industry are obtained. The Department also offers employment offers for graduates or offers for paid internships for graduates and students. All requirements contained in these offers are taken into account when formulating the study program or modifying the programs of individual subjects.

Duration, rules and form of the practical placement

No compulsory apprenticeships are planned in the second-cycle studies.

Admission criteria, rules and policies

Field of study: Applied Geology
Specialty: Earth and extraterrestrial materials

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

The candidates should have general knowledge in the natural sciences and the skills to use it in their work and life with the legal and ethical principles. The candidates should understand and analyze the processes that take place in nature, and the human impact on the environment. They should know the basic technological issues relevant to geophysics and they should regard the principles of sustainable development. The candidates should have the skills that allow them active participation in the teamwork, perform the assigned tasks, and using of professional literature. They should have the ability to conduct laboratory and field work and organize safe and efficient operating positions of such work. They also should demonstrate knowledge of English at level B2 of the European Framework of Reference for Languages.

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

The rules and conditions of recruitment are set out in Resolution of the AGH UST Senate on the conditions, procedure and start and end date of recruitment for the first year of first- and second-cycle studies in the academic year 2023/2024.

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: 7
Maximum number of students: 15

Learning outcomes

Field of study: Applied Geology
Specialty: Earth and extraterrestrial materials

Knowledge

KEU symbol	Learning outcomes prescribed to a field of study	CEU symbol
GES2A_W01	has in-depth knowledge of selected branches of the Earth sciences as well as chemistry and physics necessary to describe and analyze phenomena's occurring on the surface and inside of the Earth and useful for formulating and solving complex tasks in the field of applied geology and mining	P7S_WG_A
GES2A_W02	has an ordered and theoretically founded knowledge necessary to perform specialized calculations in the field of applied geology and modelling of the geological phenomena's and processes, and development trends in this area	P7S_WG_A
GES2A_W03	knows the specialized tools and IT techniques used in the area of applied geology	P7S_WG_A
GES2A_W04	has knowledge about the principles and methods of researches designing, observations and measurements in the field of applied and mining geology, with the usage of appropriate techniques and tools	P7S_WG_A
GES2A_W05	have in-depth knowledge in the field of geological sciences, enabling the student to see relationships and dependencies in nature and application in practical activities, including research methodology, exploration and documentation of mineral deposits, and development trends in this area	P7S_WG_A
GES2A_W06	has in-depth knowledge of the possibilities of extraction, processing and using of mineral resources in technologies and devices, as well as development trends in this area	P7S_WG_A, P7S_WG_A_Inz
GES2A_W07	has an ordered and theoretically founded knowledge about the impact of geological processes and anthropopression on the environment, as well as methods and techniques to limit this impact and development trends in this area	P7S_WG_A
GES2A_W08	has in-depth knowledge of the research methods used in the field of applied geology and about development trends in this field, as well as about quality management (QA/QC)	P7S_WG_A
GES2A_W09	knows methods, techniques and systems used in solving complex tasks in the field of applied geology and basic processes occurring in the life cycle of equipment, facilities and technical systems in this field	P7S_WG_A, P7S_WG_A_Inz
GES2A_W10	knows selected economic, legal, ethical, and other humanistic and social conditions related to professional activity and the functioning of various forms of economic activity and individual entrepreneurship	P7S_WK_A, P7S_WK_A_Inz

Skills

KEU symbol	Learning outcomes prescribed to a field of study	CEU symbol
GES2A_U01	can obtain information from literature, databases and other sources while maintaining authors copyright, industrial and related rights, integrate and interpret the obtained information and make their critical assessment, as well as draw conclusions and formulate and justify opinions	P7S_UU_A, P7S_UW_A
GES2A_U02	is able to formulate hypotheses related to simple research problems in applied geology research and to test them experimentally, using advanced methods, techniques and research tools, including IT tools and techniques, such as numerical simulations, and interpret obtained results and draw conclusions	P7S_UU_A, P7S_UW_A_Inz_01, P7S_UW_A
GES2A_U03	can - in accordance with a given specification - design geological works, including cartographic works, observations and measurements carried out in typical tasks in the area of applied and mining geology and carry them out, interpret the obtained results and draw conclusions	P7S_UW_A, P7S_UW_A_Inz_02

KEU symbol	Learning outcomes prescribed to a field of study	CEU symbol
GES2A_U04	can - in accordance with the given specification - design solutions for typical tasks in applied geology and perform them, including the use of advanced techniques and IT tools	P7S_UW_A, P7S_UW_A_Inz_02
GES2A_U05	can make a critical analysis of the functioning and assess the usefulness of methods, techniques, systems and tools for solving tasks in the field of applied geology, as well as select and apply the appropriate method, technique or tools to solve the assigned task	P7S_UW_A_Inz_01 , P7S_UW_A
GES2A_U06	can adapt or improve existing processes, solutions, tools and methods for solving unusual tasks in the area of applied geology	P7S_UW_A_Inz_01 , P7S_UW_A
GES2A_U07	is able to integrate knowledge in the field of geology, environmental engineering and mining as well as apply a system approach, including non-technical aspects, when formulating and solving engineering tasks	P7S_UW_A
GES2A_U08	is able to work individually and in a team, can estimate the time needed to complete the task and manage a small team in a way that ensures timely execution of the task	P7S_UO_A, P7S_UU_A
GES2A_U09	is able to develop documentation or a report on the implementation of a project or research task along with the interpretation, discussion and presentation of results	P7S_UK_A, P7S_UO_A
GES2A_U10	is able to prepare and present a presentation containing the results of the design task or thesis resulting from the performed research and take part in the discussion, as well as discuss the results of other persons work	P7S_UK_A, P7S_UU_A
GES2A_U11	is able to use a foreign language in the field of geological sciences in accordance with the B2+ level requirements of the Common European Framework of Reference for Languages	P7S_UK_A, P7S_UU_A
GES2A_U12	can use a foreign language to communicate in professional matters, read professional literature in the area of applied geology, and prepare and present a research task	P7S_UK_A, P7S_UU_A

Social competence

KEU symbol	Learning outcomes prescribed to a field of study	CEU symbol
GES2A_K01	is ready to critically evaluate its knowledge, as well as to recognize the importance of knowledge in solving a practical problems and to consult experts in the event of difficulties in solving the problem	P7S_KK_A
GES2A_K02	is ready to think and act in a creative and enterprising way	P7S_KO_A
GES2A_K03	is ready to fulfill social obligations through the awareness of non-technical aspects of engineering activities, including its impact on the environment and related responsibilities, as well as compliance with professional ethics and its development in a changing society	P7S_KR_A, P7S_KO_A

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

Major: Applied Geology
Major: Earth and extraterrestrial materials

Knowledge

CEU symbol	Learning outcomes for qualifications including engineering competence	KEU references
P7S_WG_A_Inz	knowledge of basic processes taking place in the life cycle of technical devices, facilities and systems	GES2A_W06, GES2A_W09
P7S_WK_A_Inz	knowledge of basic principles of creating and developing various forms of individual entrepreneurship	GES2A_W10

Skills

CEU symbol	Learning outcomes for qualifications including engineering competence	KEU references
P7S_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;	GES2A_U02, GES2A_U05, GES2A_U06
P7S_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	GES2A_U03, GES2A_U04

Field of study-prescribed outcomes coverage matrix

Field of study: Applied Geology
Specialty: Earth and extraterrestrial materials

2025/2026/S/IIi/GGiOS/GES/EEM

Course	Code	Semestr	GES2A_W01	GES2A_W02	GES2A_W03	GES2A_W04	GES2A_W05	GES2A_W06	GES2A_W07	GES2A_W08	GES2A_W09	GES2A_W10	GES2A_U01	GES2A_U02	GES2A_U03	GES2A_U04	GES2A_U05	GES2A_U06	GES2A_U07	GES2A_U08	GES2A_U09	GES2A_U10	GES2A_U11	GES2A_U12	GES2A_K01	GES2A_K02	GES2A_K03
Advanced mineralogy and space material science	BGESEEMS.IIi1S.16053.25	1s	x	x			x	x	x	x	x	x	x	x		x	x	x			x	x	x	x	x	x	x
Environmental mineralogy and technologies	BGESEEMS.IIi1S.16055.25	1s	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x		x	x	x	x	x	x	x
Field course	BGESEEMS.IIi1S.16057.25	1s		x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
Petrology and tectonics of Earth and planets	BGESEEMS.IIi1S.16054.25	1s	x	x	x	x	x	x	x	x	x		x	x	x	x	x	x	x	x	x	x	x		x	x	
Raw materials on Earth and from space	BGESEEMS.IIi1S.16056.25	1s	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x		x	x	x	x	x	x	x	x	x
Career skills workshop	BGESEEMS.IIi2HS.16062.25	2s										x	x							x				x	x	x	
Experimental mineralogy and petrology	BGESEEMS.IIi2S.16058.25	2s	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
Exploration geophysics	BGESEEMS.IIi2S.16061.25	2s					x							x		x											x
Geochronology and isotope technologies	BGESEEMS.IIi2S.16059.25	2s	x	x		x	x		x	x	x	x	x	x	x		x	x	x	x	x	x	x	x	x	x	x
Mineral-based materials in technologies	BGESEEMS.IIi2S.16060.25	2s	x		x	x	x	x					x	x		x	x								x	x	
Cap stone course: from Earth's mantle to surface	BGESEEMS.IIi4S.16063.25	3s	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x		x	x	x	x
Diploma Thesis	BGESEEMS.IIi4S.01412.25	3s	x	x	x	x	x	x	x	x		x	x	x				x	x	x	x	x	x	x	x	x	x
Diploma Seminar	BGESEEMS.IIi4S.01432.25	3s										x	x								x	x	x		x	x	

Course	Code	Semestr	GES2A_W01	GES2A_W02	GES2A_W03	GES2A_W04	GES2A_W05	GES2A_W06	GES2A_W07	GES2A_W08	GES2A_W09	GES2A_W10	GES2A_U01	GES2A_U02	GES2A_U03	GES2A_U04	GES2A_U05	GES2A_U06	GES2A_U07	GES2A_U08	GES2A_U09	GES2A_U10	GES2A_U11	GES2A_U12	GES2A_K01	GES2A_K02	GES2A_K03
Greenfield exploration	BGESEEMS.IIi4S.16064.25	3s	x	x	x		x	x	x	x	x	x	x	x	x	x		x	x	x	x	x	x	x		x	x
Petrophysics	BGESEEMS.IIi4S.16130.25	3s	x	x	x	x	x	x					x	x			x	x		x	x	x	x	x	x	x	x
Sum (obligatory):			11	11	10	10	13	11	10	10	9	11	14	13	8	10	10	10	9	10	12	12	11	11	13	14	11
Sum (elective):			0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Sum:			11	11	10	10	13	11	10	10	9	11	14	13	8	10	10	10	9	10	12	12	11	11	13	14	11

Characteristics matrix of learning outcomes in relation to modules

Major: Applied Geology
Major: Earth and extraterrestrial materials

2025/2026/S/IIi/GGiOS/GES/EEM

Course	Code	Semestr	P7S_WG_A	P7S_WG_A_Inz	P7S_WK_A	P7S_WK_A_Inz	P7S_UU_A	P7S_UW_A	P7S_UW_A_Inz_01	P7S_UW_A_Inz_02	P7S_UO_A	P7S_UK_A	P7S_KK_A	P7S_KO_A	P7S_KR_A
Advanced mineralogy and space material science	BGESEEMS.IIi1S.16053.25	1s	x	x	x	x	x	x	x	x	x	x	x	x	x
Environmental mineralogy and technologies	BGESEEMS.IIi1S.16055.25	1s	x	x	x	x	x	x	x	x	x	x	x	x	x
Field course	BGESEEMS.IIi1S.16057.25	1s	x	x	x	x	x	x	x	x	x	x	x	x	x
Petrology and tectonics of Earth and planets	BGESEEMS.IIi1S.16054.25	1s	x	x			x	x	x	x	x	x	x	x	
Raw materials on Earth and from space	BGESEEMS.IIi1S.16056.25	1s	x	x	x	x	x	x	x	x	x	x	x	x	x
Career skills workshop	BGESEEMS.IIi2HS.16062.25	2s			x	x	x	x			x	x	x	x	
Experimental mineralogy and petrology	BGESEEMS.IIi2S.16058.25	2s	x	x	x	x	x	x	x	x	x	x	x	x	x
Exploration geophysics	BGESEEMS.IIi2S.16061.25	2s	x				x	x	x	x				x	x
Geochronology and isotope technologies	BGESEEMS.IIi2S.16059.25	2s	x	x	x	x	x	x	x	x	x	x	x	x	x
Mineral-based materials in technologies	BGESEEMS.IIi2S.16060.25	2s	x	x			x	x	x	x			x	x	
Cap stone course: from Earth's mantle to surface	BGESEEMS.IIi4S.16063.25	3s	x	x	x	x	x	x	x	x	x	x	x	x	x
Diploma Thesis	BGESEEMS.IIi4S.01412.25	3s	x	x	x	x	x	x	x		x	x	x	x	x
Diploma Seminar	BGESEEMS.IIi4S.01432.25	3s			x	x	x	x			x	x	x	x	
Greenfield exploration	BGESEEMS.IIi4S.16064.25	3s	x	x	x	x	x	x	x	x	x	x		x	x

Course	Code	Semestr	P7S_WG_A	P7S_WG_A_Inz	P7S_WK_A	P7S_WK_A_Inz	P7S_UU_A	P7S_UW_A	P7S_UW_A_Inz_01	P7S_UW_A_Inz_02	P7S_UO_A	P7S_UK_A	P7S_KK_A	P7S_KO_A	P7S_KR_A
Petrophysics	BGESEEMS.IIi4S.16130.25	3s	x	x			x	x	x		x	x	x	x	x
Sum (obligatory):			13	12	11	11	15	15	13	11	13	13	13	15	11
Sum (elective):			0	0	0	0	0	0	0	0	0	0	0	0	0
Sum:			13	12	11	11	15	15	13	11	13	13	13	15	11

Matrix of learning outcomes prescribed to a field of study with related forms of classes and the method of testing

Major: Applied Geology
Major: Earth and extraterrestrial materials

2025/2026/S/IIi/GGiOS/GES/EEM

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 mineralogy and space material science	Lectures, Laboratory classes, Practical classes	Examination, Participation in a discussion, Execution of a project, Execution of laboratory classes, Completion of laboratory classes, Activity during classes, Project, Report on completion of a practical placement	GES2A_W01, GES2A_W02, GES2A_W05, GES2A_W06, GES2A_W08, GES2A_W10, GES2A_W07, GES2A_W09, GES2A_U01, GES2A_U09, GES2A_U11, GES2A_U02, GES2A_U06, GES2A_U12, GES2A_U04, GES2A_U05, GES2A_U10, GES2A_K01, GES2A_K02, GES2A_K03
Environmental mineralogy and technologies	Lectures, Laboratory classes, Practical classes	Examination, Execution of laboratory classes, Test, Report, Participation in a discussion, Execution of exercises, Report	GES2A_W01, GES2A_W07, GES2A_W02, GES2A_W08, GES2A_W09, GES2A_W06, GES2A_W10, GES2A_W03, GES2A_W04, GES2A_W05, GES2A_U02, GES2A_U03, GES2A_U04, GES2A_U05, GES2A_U11, GES2A_U01, GES2A_U12, GES2A_U06, GES2A_U07, GES2A_U09, GES2A_U10, GES2A_K03, GES2A_K01, GES2A_K02
Field course	Fieldwork	Activity during classes, Report on completion of a practical placement, Confirmation of completion of practical placement programme	GES2A_W02, GES2A_W03, GES2A_W04, GES2A_W05, GES2A_W06, GES2A_W07, GES2A_W08, GES2A_W09, GES2A_W10, GES2A_U01, GES2A_U08, GES2A_U11, GES2A_U02, GES2A_U03, GES2A_U04, GES2A_U09, GES2A_U10, GES2A_U05, GES2A_U06, GES2A_U07, GES2A_U12, GES2A_K02, GES2A_K01, GES2A_K03
Petrology and tectonics of Earth and planets	Lectures, Laboratory classes, Practical classes	Examination, Activity during classes, Project, Presentation, Activity during classes, Report	GES2A_W01, GES2A_W02, GES2A_W03, GES2A_W05, GES2A_W08, GES2A_W09, GES2A_W06, GES2A_W04, GES2A_W07, GES2A_U01, GES2A_U02, GES2A_U03, GES2A_U06, GES2A_U07, GES2A_U10, GES2A_U11, GES2A_U04, GES2A_U08, GES2A_U09, GES2A_U05, GES2A_K01, GES2A_K02
Raw materials on Earth and from space	Lectures, Auditorium classes, Seminars	Examination, Activity during classes, Participation in a discussion, Report on completion of a practical placement, Completion of laboratory classes, Participation in a discussion, Case study, Essays written during classes, Oral answer	GES2A_W01, GES2A_W05, GES2A_W06, GES2A_W07, GES2A_W10, GES2A_W02, GES2A_W04, GES2A_W08, GES2A_W09, GES2A_W03, GES2A_U01, GES2A_U03, GES2A_U07, GES2A_U09, GES2A_U11, GES2A_U02, GES2A_U04, GES2A_U08, GES2A_U10, GES2A_U12, GES2A_U05, GES2A_K01, GES2A_K03, GES2A_K02
Career skills workshop	Auditorium classes	Participation in a discussion, Involvement in teamwork, Presentation	GES2A_W10, GES2A_U01, GES2A_U08, GES2A_U12, GES2A_K01, GES2A_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
Experimental mineralogy and petrology	Lectures, Laboratory classes, Practical classes	Examination, Report, Report	GES2A_W01, GES2A_W02, GES2A_W05, GES2A_W08, GES2A_W09, GES2A_W03, GES2A_W06, GES2A_W07, GES2A_W10, GES2A_W04, GES2A_U01, GES2A_U02, GES2A_U03, GES2A_U04, GES2A_U08, GES2A_U09, GES2A_U10, GES2A_U11, GES2A_U12, GES2A_U05, GES2A_U06, GES2A_U07, GES2A_K03, GES2A_K01, GES2A_K02
Exploration geophysics	Lectures, Auditorium classes	Test, Report, Presentation	GES2A_W05, GES2A_U04, GES2A_U02, GES2A_K03
Geochronology and isotope technologies	Lectures, Auditorium classes, Laboratory classes	Examination, Activity during classes, Report, Activity during classes, Execution of a project, Report, Completion of laboratory classes	GES2A_W01, GES2A_W02, GES2A_W05, GES2A_W04, GES2A_W08, GES2A_W09, GES2A_W07, GES2A_W10, GES2A_U01, GES2A_U03, GES2A_U05, GES2A_U09, GES2A_U12, GES2A_U02, GES2A_U07, GES2A_U08, GES2A_U10, GES2A_U11, GES2A_U06, GES2A_K01, GES2A_K02, GES2A_K03
Mineral-based materials in technologies	Lectures, Auditorium classes, Laboratory classes	Examination, Activity during classes, Participation in a discussion, Execution of laboratory classes, Project, Activity during classes, Project	GES2A_W01, GES2A_W04, GES2A_W06, GES2A_W03, GES2A_W05, GES2A_U01, GES2A_U02, GES2A_U04, GES2A_U05, GES2A_K01, GES2A_K02
Cap stone course: from Earth's mantle to surface	Lectures, Fieldwork	Examination, Activity during classes, Test, Report	GES2A_W01, GES2A_W02, GES2A_W03, GES2A_W04, GES2A_W05, GES2A_W06, GES2A_W07, GES2A_W08, GES2A_W09, GES2A_W10, GES2A_U01, GES2A_U02, GES2A_U03, GES2A_U04, GES2A_U05, GES2A_U06, GES2A_U07, GES2A_U08, GES2A_U09, GES2A_U10, GES2A_U12, GES2A_K01, GES2A_K02, GES2A_K03
Diploma Thesis	Diploma Thesis	Confirmation of completion of practical placement programme	GES2A_W04, GES2A_W05, GES2A_W06, GES2A_W07, GES2A_W08, GES2A_W01, GES2A_W02, GES2A_W03, GES2A_W10, GES2A_U01, GES2A_U02, GES2A_U11, GES2A_U12, GES2A_U08, GES2A_U09, GES2A_U10, GES2A_U06, GES2A_U07, GES2A_K01, GES2A_K02, GES2A_K03
Diploma Seminar	Seminars	Activity during classes, Participation in a discussion, Involvement in teamwork, Presentation	GES2A_W10, GES2A_U01, GES2A_U11, GES2A_U09, GES2A_U10, GES2A_K01, GES2A_K02
Greenfield exploration	Auditorium classes	Activity during classes, Participation in a discussion, Case study, Involvement in teamwork, Essays written during classes, Oral answer	GES2A_W01, GES2A_W02, GES2A_W05, GES2A_W06, GES2A_W07, GES2A_W03, GES2A_W08, GES2A_W09, GES2A_W10, GES2A_U01, GES2A_U02, GES2A_U03, GES2A_U04, GES2A_U09, GES2A_U12, GES2A_U06, GES2A_U07, GES2A_U08, GES2A_U10, GES2A_U11, GES2A_K02, GES2A_K03
Petrophysics	Project classes	Activity during classes, Execution of laboratory classes, Test	GES2A_W01, GES2A_W02, GES2A_W03, GES2A_W04, GES2A_W05, GES2A_W06, GES2A_U01, GES2A_U05, GES2A_U08, GES2A_U09, GES2A_U11, GES2A_U12, GES2A_U02, GES2A_U06, GES2A_U10, GES2A_K01, GES2A_K02, GES2A_K03

ECTS credits calculations

Field of study: Applied Geology
Specialty: Earth and extraterrestrial materials

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	45
core science classes relevant to a given major	38
practical classes, developing practical skills, including laboratory, design, practical and workshop classes	44
classes subject to choice by the student (in the amount of not less than 30% of the number of ECTS credits necessary to obtain qualifications corresponding to the level of education)	90
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	5
foreign language classes	2
practical placements	0
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 credits 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)	58
classes shaping practical skills in the amount greater than 50% of the number of ECTS credits required to complete studies at a given level (applies only to studies with a practical profile)	0

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

Field of study: Applied Geology
Specialty: Earth and extraterrestrial materials

Enrollment rules for the next semester

• The student receives an entry for the next semester, if he obtained the number of ECTS points assigned to this semester in the current semester (27-33).
• Passing the semester of studies and confirmation of getting an entry for the next semester of study is made in the University's ICT system no later than one week from the beginning of the next semester of study.
• The condition for passing the last semester of studies is obtaining the credit for all obligatory modules of classes included in the plan of this semester of studies, with the exception of the diploma thesis.

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

The student is registered to the next semester if his/her ECTS credit deficiency does not exceed 10 ECTS credits. In addition, a requirement for the entry for the second semester is a choosen the MS thesis.

ECTS credits debt ceiling

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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)

The electivity is carried out by selecting individual modules of classes in semesters II and III. These are modules for humanities, engineering, which allow for better adjustment of the program to the interests of students, but also allow to meet the requirements in the education of geophysical engineers.

Monitoring semesters

none

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

An individual study program, including a study plan, may be awarded to the student:
- completed at least the first semester of study and obtained an average with not less than 4.25;
- a disabled person;
- being in a difficult life situation;
- participating in sports competitions at the national or international level;
- wanting to complete part of the studies at another university;
- studying in more than one field of study;
- elected to the collegial body of the University;
- a foreigner taking a Polish language course.

Individualization of the study program, including the study plan, may consist of:
- individual selection of modules of classes, methods and forms of education. In this case, the Dean appoints a guardian (IPS) from among the Faculty employees with a doctorate degree at least.
- modification of the form of credit and exams.

Individualization of the study program, including the study plan, may relate to classes within one or several semesters or the whole course of study, but it may not lead to changes in the directional learning outcomes or to extend the date of completion of studies.

Implementation of practical placements including monitoring system and completion rules

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Rules of elective modules taking

Depending on the elective module, it is activated on the basis of the minimum number of applications allowed.

Rules of education paths, graduation paths, major choice/eligibility

During registration in the recruitment system for second-degree studies, the candidate indicates the specializations on which he would like to take up education (so-called list of preferences) from the list presented by the Dean. Specialties on this list (at least two) should be ranked by the candidate in order from the most to the least desirable. The qualification for particular specialties is based on the recruitment rate (W), which depends on the result of the entrance / directional examination and the average grade from the first-cycle studies. On this basis, ranking lists of particular specialties are created. The Dean decides on the limits of places on specialties, taking into account the possibility of diplomacy in individual cathedrals, the number of persons qualified for the second-cycle studies, declarations of candidates submitted during recruitment and the financial situation of the faculty. If, due to the lack of a sufficient number of candidates, a decision is made by the Dean not to start education in a given specialty, the candidates who indicated it in the first place will be included in the ranking lists of specializations indicated in the second place.

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

1. The condition for obtaining a diploma of completion of the second-cycle studies at full-time studies at AGH-UST, in the field of applied geophysics, is the total fulfillment of the conditions:
• passing all the modules of classes provided for in the curriculum,
• preparation of the thesis (master's thesis),
• passing the second degree (master's) diploma exam consisting of a general directional exam, presentation of the diploma thesis and discussion on it (defense of thesis),
2. The topic of the diploma thesis is selected before the end of the first semester.
The diploma thesis is evaluated by the supervisor / supervisor of the work and the reviewer, at least one of whom holds at least the postdoctoral degree.
3. A student who has completed all the study modules provided for in the curriculum
may be admitted to the general final examination.
The general second degree examination takes place in written form and includes knowledge in the field of specialization. 4 questions will be drawn from a set of 60 questions divided into 4 thematic groups (one from each group). From among randomly drawn questions, the student chooses 3 and the answers to these questions are subject to evaluation in accordance with the rules set out in the Regulations of the AGH University of Science and Technology. The exam takes place according to the schedule presented by the Dean no later than 30 days before the planned date of the exam. The schedule includes a basic deadline and one correction term. Issues and examples of questions will be made available to students no later than 30 days before the date of the general directional examination. In the case of receiving a negative assessment (the arithmetic average of the answers to questions below 50%) from the general examination at the basic and correctional dates or failing to pass this examination, the dean deletes the student from the student list.
4. Defense of diploma theses is conducted in Departments in front of committees appointed by the Faculty Dean.
Only the diploma thesis, which was positively evaluated by the supervisor and the reviewer, registered in the dean's office no later than 5 days before the planned defense, and the contractor passed the general directional examination and submitted all the required documents can be accepted for defense.
The defense consists of the overt part, during which the author presents the work and
discussion about the work and the secret part (without the participation of the student) during which the committee evaluates the presentation of the work and discussion, and then calculates the final grade of the second-degree diploma exam and places it in the diploma examination of the second degree.

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

The overall result of graduation is calculated as a weighted average:
a) average grade from studies, calculated in accordance with the Study Regulations (with a weight of 0.6);

b) the final evaluation of the diploma thesis, which is the arithmetic average of the work grades issued by the promoter and reviewer, determined in accordance with the Study Regulations (with a weight of 0.2);
c) assessment of the master thesis exam determined by the commission, which is the
arithmetic average of the general examination exam and the presentation of the master thesis and answers to questions related to the work, in accordance with the Study Regulations (with a weight of 0.2), with each of of these parts, the student must get a positive grade (at least 3.0).

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

Entry for the diploma semester is possible after completing all the modules provided for the first and second semesters, in accordance with the regulations of the AGH-UST study.