Basic information about the subject ( independent of the cycle)

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| **Module name** | **GEOLOGY AND GEOMORPHOLOGY** |
| Erasmus code |  |
| ISCED code |  |
| Language of instruction | ENGLISH |
| Website |  |
| Prerequisites | Basis knowledge of environmental processes and inorganic chemistry  |
| ECTS points hour equivalents | **Contact hours (work with an academic teacher)** - 45**Total number of hours with an academic teacher - 60****Number of ECTS points with an academic teacher** - 3 **Non-contact hours (students' own work) - 90****Total number of non-contact hours - 90****Number of ECTS points for non-contact hours - 6****Total number of ECTS points for the module - 9** |
| Educational outcomes verification methods | 1. Essay
2. Test
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| Description | The module covers the knowledge of construction of the Earth and the natural processes occurring deeply inside and on the surface of the Earth. It contains characteristics of the Earth's surface forms of various origin and educates in the ability to recognize essential minerals and rocks and geomorphological forms emerging in different climatic zones. The subject outlines the impact of human activities on the surface relief. |
| Reading list | For ex ample: 1. J. D. Morris, The geology book, Master Books, 2000
2. R. Wicander, J. S. Monroe, Historical Geology, Brooks Col, 2012
3. A. B. Roy, Fundamentals of Geology, Alpha Science Intl Ltd, 2014
4. P. R. Bierman. D. R. Montgomery, Key Concepts in Geomorphology, publ. W. H. Freeman, 2000
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| Educational outcomes | **KNOWLEDGE:**1. Student understands core areas of geology and geomorphology
2. Student has knowledge about structure of the Earth, geological processes and their consequences
3. Student understands the linkages of processes that characterize Earth systems
4. Student understands linkages and consequences of human impact of the Earth system
5. Student understands the basic principles of earth science, such as physical geology, mineralogy, sedimentation, petrology, invertebrate paleontology, geophysics, and structural geology.
6. Student has knowledge of the structural relief
7. Student has a basic understanding of the geologic time, including relative and absolute dating approaches; tectonics, the rock cycle, basic Earth structure and geologic map reading

**SKILLS:**1. Student can formulate a research problem and design a strategy to address it in a research proposal**ATTITUDES:**1. Student can critically read scientific research articles
2. Student understands basic scientific principles and practices
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| Practice |  |

Information about classes in the cycle

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| Website |  |
| Educational outcomes verification methods | Essay |
| Comments |  |
| Reading list | 1. C. A. Sorrel, G. F. Sandstrom, Rocks and Minerals: A Guide to Field Identification, Golden Guides, 2001
2. M. Fossen, Structural Geology, Cambridge University Press, 2016
3. G. M. Bennison, P. A. Olver, K. A. Moseley, An introduction to Geological Structures and Maps, Routledge, 2001
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| Educational outcomes | **KNOWLEDGE:**1. Student has knowledge about minerals, rocks and fossils and theirs origin**SKILLS**1. Student can identify and classify basic geologic materials, including minerals, rocks, structures, and landforms, and knows their basic material properties
2. Student can interpret geologic maps with standard geology symbols
3. Student can perform basic types of geologic analysis, such as stratigraphic correlation, interpretation and construction of geological map, geophysical studies, fossil identification, and cross section construction.

**ATTITUDES**1. Student can work responsibly as a member of a team
2. Student carries out responsibilities in a professional and ethical manner
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| A list of topics | The course covers the following topics:1. Structure of the Earth and the mechanisms of its development.2. Characteristics of endogenous geological processes.3. Overview of exogenous geological processes.4. Guiding features of landforms of different origin: tectonic, volcanic, gravity, deluvial, fluvial, karst, marine, glacial, aeolian and impactor.5. The conditions structural relief of the terrain.6. Direct and indirect effects of human activities and animal activities on surface relief 7. Characteristics of the morphoclimatic zones.Seminar includes the following topics:1. Geological map, its types and elements2. Parameters of layer deposition 3. Methods of saving the deposition of layers in space4. Analysis and interpretation of geological maps, geological cross-section execution.5. Discussion of the stratigraphic table6. The main elements of the relief: the ridge / plateau - slope - valley and their morphology (based on topographic maps 1:25 000)7. Relief of river valleys, loess areas, inland dunes, karst 8. Geomorphological mesoregions of the Lublin-Volynia Highlands 9. Mountain glacial relief 10. Relief of arid and semi-arid areas 14. Types of seashores (selected coasts of Europe)Laboratory includes the following topics:1. Basic concepts of mineralogy and petrography2. Characteristics, description and macroscopic identification of rock-forming minerals3. Simplified classification of rocks, characterization, description and identification of the main types of rocks: igneous, sedimentary, metamorphic.4. Determination of the origin of rocks.5. Characteristics of structural relief6. Features of young-glacial relief |
| Teaching methods | Lecture, presentation, laboratory, measurements, work on source materials and rocks and minerals, case studies |
| Assessment methods | Essay, orally presentation, elaboration of the geological exercises |