Annex No. 5

to Ordinance No. 21/2019

**COURSE/MODULE SYLLABUS FOR UNIVERSITY COURSES/PhD STUDIES**

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|  | Course/module name in Polish and English  Prospecting and evaluation of mineral reserves/ Poszukiwanie i dokumentowanie zasobów złóż surowców mineralnych | | |
|  | Discipline  Earth and Environmental Science | | |
|  | Language of instruction  English | | |
|  | Teaching unit  Faculty of Earth Science and Environmental Management, Institute of Geological Sciences, Department of Economic Geology | | |
|  | Course/module code  USOS | | |
|  | Type of course/module *(mandatory or optional)*  optional | | |
|  | Field of studies (major, if applicable)  Geology | | |
|  | Level of higher education *(undergraduate (I cycle), Master’s (II cycle), 5 year uniform Master’s studies)*  Master’s (II cycle) | | |
|  | Year of studies *(if applicable*)  I/II | | |
|  | Semester *(winter or summer)*  Winter or summer | | |
|  | Form of classes and number of hours  Lectures: 26  Lab classes: 34  Teaching methods:  Multimedia lecture, preparation of reports. | | |
|  | Name, title/degree of the teacher/instructor  Coordinator: prof. dr hab. Andrzej Solecki  Lecturer: prof. dr hab. Andrzej Solecki  Classes instructor: prof. dr hab. Andrzej Solecki | | |
|  | Course/module prerequisites, in terms of knowledge, skills, social competences  B.Sc level geological knowledge | | |
|  | Course objectives  Getting familiar with exploration techniques | | |
|  | Course content  Lectures:  Types of mineral resources. Geophysical and Remote Sensing Techniques. Borehole techniques of prospecting. Mining techniques of prospecting. Techniques of evaluation of mineral reserves.  Lab classes:  Individal reports on lecture topics. Calculations of reserves | | |
|  | Intended learning outcomes  W\_1 Knows the basic techniques of prospecting for various types of deposits.  U\_1 Is able to apply advanced exploration techniques.  U\_2 Can use specialist literature in English.  K\_1 Is able to identify and solve problems related to the exploration of mineral deposits. | Symbols of learning outcomes for particular fields of studies:  K2\_W08  K2\_U01  K2\_U02  K2\_K04 | |
|  | Required and recommended reading *(sources, studies, manuals, etc.)*  Required reading  Computing Reserves of Mineral Deposits: Principles and Conventional Methods,Popoff, Constantine, C., USBM Information Circular 8283, 1966.  Mineral Valuation Methodologies 1994, Australasian Institute of Mining and Metallurgy, 1994  Mining and Petroleum Valuation 1989, Australasian Institute of Mining and  Metallurgy, 1989  Mineral Resources, Economics and the Environment, Steven E. Kesler, 1994  Recommended reading  Hutchison C.S. 1983: Economic Deposits and their tectonic Setting. MacMillan Education. pp. 365  Evans A.M. 1997: An Introduction to Economic Geology and Its Environmental Impact. pp. 396.  Roberts R.G., Sheahan P.A. (1994) - Ore deposit models. Geoscience Canada.  Osika R., 1990: Geology of Poland-Mineral deposits Vol. 6. Warszawa Wydawnictwa Geologiczne. pp314  Kartsev, A.A., Tabarsaranskii, Z.A., Subbota, M.I. and Mogilevskii, G.A., 1959. Geochemical methods of prospecting and exploration for petroleum and natural gas. University of California Press, Berkely, 349 pp.  Handbook of Exploration Geochemistry, Vol. 7 (G.J.S. Govett, Editor)  1999 Elsevier Science B.V. http://www.eti-geochemistry.com/elsevier/.  Remote Sensing Tutorial http://www.fas.org/irp/imint/docs/rst/Sect1/Sect1\_1.html | | |
|  | Assessment methods for the intended learning outcomes:  - written examination: K2\_W08  - semester paper (individual or group): K2\_U01, K2\_U02, K2\_K04. | | |
|  | Credit requirements for individual components of the course/module:  - writing a class report, 50% of final grade  - exam (written), 50% of final grade | | |
|  | Total student effort | | |
| form of student activities | | number of hours for the implementation of activities |
| classes (according to the plan of studies) with a teacher/instructor:  - lectures: 26  - lab classes: 34 | | 60 |
| student's own work (including group-work) such as:  - being prepared for classes: 5  - analysis of results: 10  - reading the suggested literature: 5  - writing a class report: 10  - preparing for tests and exam: 10 | | 40 |
| Total number of hours | | 100 |
| Number of ECTS credits | | 4 |