

COURSE/MODULE SYLLABUS FOR UNIVERSITY COURSES/PhD STUDIES

1.	Course/module name in Polish and English Geological mapping in mining/ Kartografia geologiczna w górnictwie
2.	Discipline Earth and Environmental Science
3.	Language of instruction English
4.	Teaching unit Faculty of Earth Science and Environmental Management, Institute of Geological Sciences
5.	Course/module code USOS
6.	Type of course/module (<i>mandatory or optional</i>) optional
7.	Field of studies (major, if applicable) Geology
8.	Level of higher education (<i>undergraduate (I cycle), Master's (II cycle), 5 year uniform Master's studies</i>) Master's (II cycle)
9.	Year of studies (<i>if applicable</i>) I/II
10.	Semester (<i>winter or summer</i>) winter/summer
11.	Form of classes and number of hours Lectures: 6 Classes: 18 Field classes: 18 Teaching methods: Multimedia lecture, mini-lecture, practical exercises, field course, individual work, group work, preparation of a report.
12.	Name, title/degree of the teacher/instructor Coordinator: dr Stanisław Burliga Lecturer: dr Stanisław Burliga Classes instructor: dr Stanisław Burliga Field classes instructor: dr Stanisław Burliga
13.	Course/module prerequisites, in terms of knowledge, skills, social competences

	Overall knowledge in geology.	
14.	<p>Course objectives</p> <p>The purpose of the lecture is to introduce in the scope and techniques of geological mapping applied in mining and mineral resource exploration.</p> <p>The purpose of the classes is to obtain practical skills in construction, analyses and interpretation of thematic geological maps and in the obtaining and preparation of geological documentation for mining.</p> <p>Field course is focused on practical skills in preparation of geological documentation for mining and exploration purposes based on geological data obtained with use of mining and drilling techniques, analyses of various geological data and thematic maps.</p>	
15.	<p>Course content</p> <p>Lecture:</p> <p>Basic concepts of surface and subsurface mapping, mining geodesy, borehole and geophysical data analysis. Review of source data types utilized in mining in mapping and documentation of mineral resources, types of maps, their features and application as well as a critical review of software used for map-related geological documentation.</p> <p>Classes:</p> <p>Construction and interpretation of borehole log. Analyses of borehole data. Construction and interpretation of map and cross-section images of mining drifts based on maps. Construction and interpretation of thickness maps, thematic maps and maps for various depth level. Interpretation of geological structures and their evolution based on borehole data and geological maps.</p> <p>Field course:</p> <p>3-day (18 hour) field course focused on practical documentation and mapping in mines and documentation of drilling cores</p>	
16.	<p>Intended learning outcomes</p> <p>W_1 Knows bases of mapping applied in mining and in borehole documentation, methods of construction of thematic maps, cross-sections, core logs. Knows the principles of analysis and interpretation of geological data, methods and tools utilized in solving geological mapping tasks and mineral resource documentation and prospection as well as understands limitations of their use.</p> <p>U_1 Obtains skills in acquisition, analysis and interpretation of geological and mining data to construct thematic maps and borehole and core logs. Uses archive mapping and borehole data and is able to document mining exposures, cores, interpret geological structures based on own observations. Uses basic tools utilized in underground mining. Is able to prepare and present a comprehensive report summing up the results of works, analyses and interpretation carried out individually and during group work.</p>	<p>Symbols of learning outcomes for particular fields of studies:</p> <p>K2_W01, K2_W04, K2_W05, K2_W06, K2_W08</p> <p>K2_U03, K2_U04, K2_U05, K2_U06, K2_U07</p>

	K_1 Realizes the need of the self-education in the area of progress in modern investigation methods and numerical techniques utilized in the area of mining mapping, borehole logging, prospection for and documentation of mineral resources. Understands the threats related to work in mines and prevents dangerous situation for health and life.	K2_K01, K2_K02, K2_K03, K2_K04, K2_K05, K2_K07
17.	<p>Required and recommended reading (<i>sources, studies, manuals, etc.</i>)</p> <p>Recommended reading</p> <p>Powell, D. 1992. Interpretation of geological structures through maps. Longman Scientific & Technical.</p> <p>Davis, G.H., Reynolds, S.J. 1996. Structural Geology of rocks and regions. John Wiley & Sons 776 s.</p>	
18.	<p>Assessment methods for the intended learning outcomes:</p> <ul style="list-style-type: none"> - current control on progress in work on class tasks: K2_U03, K2_U04, K2_U05, K2_U06, K2_U07. - final report on results of field works in a mine, carried individually and in groups, including documentation of mapping works, lithology, core logs; supplemented with text explanation to the results and graphic attachments and incorporating overall knowledge presented during lectures: K2_W01, K2_W04, K2_W05, K2_W06, K2_W08, K2_U03, K2_U04, K2_U05, K2_U06, K2_U07, K2_K01, K2_K02, K2_K03, K2_K04, K2_K05, K2_K07. 	
19.	<p>Credit requirements for individual components of the course/module:</p> <ul style="list-style-type: none"> - monitoring attendance and progress on the course subject matter, - assessed paper (final), - semester paper (individual or group), - presentation (individual or group), - preparing and implementing a project (individual or group), - writing a class report, - exam (written or oral). - lecture - incorporation of the knowledge presented during the lecture into the final report on the field course - classes- monitoring progress in work on class tasks - field course - active participation in the field course – participation is obligatory, appropriate field work documentation, final report showing the results of field works in a mine, carried individually and in groups, including graphic documentation of mapping works and core logging, supplemented with text explanation to the results and incorporation of overall knowledge obtained during lectures – positive evaluation – 50% of credit points for the completeness of components and their correctness. 	
20.	Total student effort	
	form of student activities	number of hours for the implementation of activities
	<p>classes (according to the plan of studies) with a teacher/instructor:</p> <ul style="list-style-type: none"> - lecture: 6 - classes: 18 - field course: 18 - tutorial: 8 	50
	<p>student's own work (including group-work) such as:</p> <ul style="list-style-type: none"> - forestudies to classes: 10 	50

	- work on tasks and mapping projects 20 - reading: 8 - preparing final report: 12	
	Total number of hours	100
	Number of ECTS credits	4