

**AGH**AGH UNIVERSITY OF SCIENCE
AND TECHNOLOGY

Module name: Computer modelling

Academic year: 2018/2019 Code: BGG-2-202-EG-s ECTS credits: 4

Faculty of: Geology, Geophysics and Environmental Protection

Field of study: Mining and Geology Specialty: Economic Geology

Study level: Second-cycle studies Form and type of study: Full-time studies

Lecture language: English Profile of education: Academic (A) Semester: 2

Course homepage: —

Responsible teacher: mgr inż. Zygo Władysław (wzygo@geol.agh.edu.pl)

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Module summary

This course provide advance knowledge about building an geological models.

Description of learning outcomes for module

MLO code	Student after module completion has the knowledge/ knows how to/is able to	Connections with FLO	Method of learning outcomes verification (form of completion)
Skills			
M_U001	Student is able to gain geological information from various data bases and other sources, interpretate and draw conclusions.	GG2A_U01	Project
M_U002	Student is able to design mining works for ore deposit using advanced computer software.	GG2A_U08, GG2A_U14, GG2A_U18	Test, Project
Knowledge			
M_W001	Student have necessary knowledge needed for performing advanced calculations for deposit modeling.	GG2A_W02	Test
M_W002	Student have a knowledge of using advanced computer software used in earth sciences.	GG2A_W03	Test, Project

FLO matrix in relation to forms of classes

MLO code	Student after module completion has the knowledge/ knows how to/is able to	Form of classes										
		Lectures	Auditorium classes	Laboratory classes	Project classes	Conversation seminar	Seminar classes	Practical classes	Fieldwork classes	Workshops	Others	E-learning
Skills												
M_U001	Student is able to gain geological information from various data bases and other sources, interpretate and draw conclusions.	-	-	+	-	-	-	-	-	-	-	-
M_U002	Student is able to design mining works for ore deposit using advanced computer software.	-	-	+	-	-	-	-	-	-	-	-
Knowledge												
M_W001	Student have necessary knowledge needed for performing advanced calculations for deposit modeling.	+	-	+	-	-	-	-	-	-	-	-
M_W002	Student have a knowledge of using advanced computer software used in earth sciences.	+	-	+	-	-	-	-	-	-	-	-

Module content

Lectures

Presentation of software used in geology 2D- 3D- 4D modelling. Problems and purpose of using, construction of data base.

Introduction to construction of deposit model. Preparing data base, handling data.

Laboratory classes

Using MineScope software for deposit modelling. Importing data, handling data, creating post maps, cross-sections, grid maps, bulding stratygraphy model and block model, resources evaluating.

Method of calculating the final grade

The final grade: = 0,6 • test + 0,4 • project

Prerequisites and additional requirements

Student should already have a knowledge on geology and basic statistic/geostatistic, computer science course passed

Recommended literature and teaching resources

M. E. Rossi, C. V. Deutsch – Mineral Resource Estimation Springer 2014

Technical reports from different projects available in internet

Scientific publications of module course instructors related to the topic of the module

W. ZYGO, T. ÓWIERTNIA, A. GADEK – Modelling of the Kupferschiefer type deposit – the influence of cell size in model effectivity / In: Mineral resources to discover SGA biennial meeting : August 20–23 2017, Québec City, Canada: Society for Geology Applied to Mineral Deposits;

H. D. Van, C. N. Dinh and W. Zygo – 3D model of Sin Quyen iron oxide copper deposit in Lao Cai, North Vietnam, AG 2018 : 4th international conference on Applied Geophysics, Cracow, Poland, June 28-29, 2018, ISSN 2267-1242. — 2018 vol. 66 art. no. 01013, s. 1-10;

Additional information

If student is absent on test or received grade 2.0 then another date for test should be establish with the teacher.

Student workload (ECTS credits balance)

Student activity form	Student workload
Participation in lectures	15 h
Participation in laboratory classes	45 h
Preparation for classes	20 h
Realization of independently performed tasks	20 h
Summary student workload	100 h
Module ECTS credits	4 ECTS