



PHYSICAL GEOLOGY

MSc in Earth Science Engineering
2020/21/I. semester

MFFTT710001

COURSE COMMUNICATION FOLDER

**University of Miskolc
Faculty of Earth Science and Engineering
Institute of Mineralogy and Geology**

Datasheet of the course

Course title: Physical Geology Teacher: Dr. Hartai Éva, honorary professor, PhD	Code of the course: MFFTT710001 Responsible institute: Institute of Mineralogy and Geology Type of course: C
Recommended semester: 1	Pre-requisites: -
No. of contact hours/week (sem.+lab.): 2+1	Type of assessment (exam/pr. mark/other): exam
Credit points: 4	Course: full-time
Competencies to evolve: Knowledge: T1, T2, T3, T7, T8, T9 Ability: K1, K2, K3, K5, K6, K7, K9, K11, K12, K13 Attitude: Autonomy and responsibility: F1, F2, F3, F4, F5	
Thematic description of the course: Acquired store of learning: <u>Study goals:</u> Deepening the students' abilities for geological interpretation, reconstruction of rock-forming processes. <u>Course content:</u> The formation and the inner structure of the Earth. Plate tectonic background of the geological processes. The role of physical geology in the geological exploration. Methodology of fieldwork, interpretation of the magmatic, sedimentary and metamorphic rock forming processes on field. Principles of stratigraphy, stratigraphic nomenclature. Stratotype, lito-, bio- and chronostratigraphy. Modern stratigraphic methods: magneto-, chemo-, seismic, sequence, and cycle stratigraphy. Reconstruction of paleo-environments by the investigation of sedimentary sequences. Identification of rock-forming processes and tectonic events, defining their succession. <u>Education method:</u> Obligatory attendance of the lectures and the two fieldtrips. Students present the results of one fieldtrip in ppt, and submit written report on the other fieldtrip.	
Type of Assessment (exam. / pr. mark. / other): exam During the semester the following tasks should be completed: students have to complete two field programme: 1) studying sedimentary rocks, reporting in ppt presentations (15%), 2) studying magmatic rocks, written report (15%). Exam: 70%. . Grading limits: >80%: excellent, 70-79%: good, 60-69%: medium, 50-59%: satisfactory, <50%: unsatisfactory.	
The 3-5 most important compulsory, or recommended literature (textbook, book) resources: <ul style="list-style-type: none"> • Sam J. Boggs: Principles of Sedimentology and Stratigraphy, Prentice Hall Publishing, 2011 • Angela L. Coe: Field techniques. Wiley-Blackwell 2010 • Gary Nichols: Sedimentology and Stratigraphy. Wiley-Blackwell, 2009 	

Themes of the lectures, 2019/20 fall semester

Lectures: Wednesday, 14-16, Room LFFT.

Practical exercises: Wednesday, 16-17, Room LFFT.

2020-09-16	The formation and the inner structure of the Earth
2020-09-23	Plate tectonic background of the geological processes
2020-09-30	The role of physical geology in the geological exploration- Magmatic processes, their interpretation on field
2020-10-07	Fieldtrip to the Tokaj Mountains, studying magmatic rocks
2020-10-14	Fieldtrip to the Bükk Mountains, studying sedimentary rocks
2020-10-21	Sedimentary processes, their interpretation on field
2020-10-28	Metamorphic processes, their interpretation on field
2020-11-04	Principles of stratigraphy, stratigraphic nomenclature
2020-11-11	Stratotype, lito-, bio- and chronostratigraphy
2020-11-18	Magneto-, chemo-, seismic, sequence, and cycle stratigraphy
2020-11-25	Reconstruction of continental sedimentary environments
2020-12-02	Reconstruction of marine sedimentary environments
2020-12-09	Defining the succession of rock-forming processes and tectonic events

5. Name the structural/textural features related to the pictures below, explain their formation, name the rock:



6. Name the textural types of carbonates in Dunham's (1962) classification, give a short characterisation for each group:

7. Lows of stratigraphy, short characterisations:

8. Explain by illustrations how we can identify overturned layers:

9. Principles of sequence stratigraphy, orders of sequence units:

Miskolc, 07.09.2020

Dr. Éva Hartai
Honorary Professor