**General Information:**

**Name of Course: Geology**

**Course Code:** PMTSTNB032CA

**Semester: 2**nd

**Number of Credits:** 3

**Allotment of Hours per Week:** 2 lectures, 2 practical class /2 Weeks

**Evaluation:** Exam and Midterm Homework (semester mark)

**Prerequisites: None**

**Instructor: Dr. Istvan SZUCS PhD; Dr. Vendel JOZSA PhD**

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**Introduction, General Course Description:**

This course aims at teaching the basics of Geology connecting to the civil engineering and covers the following topics: The role of geology in geosciences and in civil engineering; Cosmological background of the Earth; Earth’s systems and plate tectonics; Lithosphere: minerals, rock groups (igneous, sedimentary and metamorphic); Main geologic hazards and damage protection: earthquakes, volcanoes, landslides; Geosciences in mining and environmental protection: case studies;

This subject intends to provide students with knowledge in the basics of main areas, methods and tools of geosciences. An additional objective is to prepare students with a basic knowledge for practical aspects and applications of geology in civil engineering.

**Learning Objectives:**

Students will gain from this course:

* Knowledge of main practical areas of geosciences,
* Practical knowledge of applied geology in civil engineering,
* Understanding of environmental and protection aspects of geologic hazards.

**Methodology:**

* **Lectures**: will give the basis of the role of geology and geosciences in civil engineering, highlighted with case studies.
* **Practical class:** will give the basis
* **Exam:** Accumulated knowledge is tested in one test-exam: final exam.

**Schedule (Lectures):**

|  |  |
| --- | --- |
| **Week** | **Topic of lecture** |
| Week 1 |  |
| Week 2 | Course description. Orientation. Basic aspects of geosciences |
| Week 3 |  |
| Week 4 | Cosmological background of the Earth; Earth’s systems and plate tectonics |
| Week 5 |  |
| Week 6 | Lithosphere: minerals, rock groups (igneous, sedimentary and metamorphic) |
| Week 7 |  |
| Week 8 | Main geologic hazards and damage protection: earthquakes, volcanoes, landslides; |
| Week 9 |  |
| Week 10 | Geosciences in mining and environmental protection: case studies (uranium, coal ind.). |
| Week 11 |  |
| Week 12 | **Test-exam** |
| Week 13 |  |
| Week 14 | **Second test-exam** (only if required). |
| Week 15 |  |

**Schedule (Practical class):**

|  |  |
| --- | --- |
| **Week** | **Topic of lecture** |
| Week 1 |  |
| Week 2 | Course description. Orientation. Basic aspects of geology |
| Week 3 |  |
| Week 4 | Geological maps, editing, home work |
| Week 5 |  |
| Week 6 | Home work, geological map editing |
| Week 7 |  |
| Week 8 | Structural geology, effects of faults |
| Week 9 |  |
| Week 10 | Folds, dams, tunnels |
| Week 11 |  |
| Week 12 |  |
| Week 13 | Home work submission, **exam** |
| Week 14 |  |
| Week 15 | Introduction to engineering geology |

**Attendance:**

Attending is required all classes, and will impact the grade (max. 10%). Unexcused absences will adversely affect the grade, and in case of absence from more than 30% of the total number of lesson will be grounds for failing the class. To be in class at the beginning time and stay until the scheduled end of the lesson is required, tardiness of more than 20 minutes will be counted as an absence. In the case of an illness or family emergency, the student must present a valid excuse, such as a doctor's note.

**Grading (A: Topic of lecture):**

50% - Test-exam (min. 25%)

**Grading (B: Topic of practical class):**

5% - Attendance

20% - Homework (min. 10%)

25% - Final Exam (min. 13%)

**Grading (A+B):**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Grade (A+B) | 5 | 4 | 3 | 2 | 1 |
| Evaluation in percents: | 85%-100% | 74%-84% | 63%-73% | 51%-62% | 0-50% |

**Students with Special Needs:**

Students with a disability and needs to request special accommodations, please, notify the Deans Office. Proper documentation of disability will be required. All attempts to provide an equal learning environment for all will be made.

**Readings and Reference Materials:**

*Topic of lecture:*

* **PPT slides of the lectures*;***
* **A .C. McLean C. D. Gribble: Geology for Civil Engineers; ISBN 0-203-37473-8 (Adobe e-Reader Format)**

*Topic of practical class:*

* **PPT slides*;***