

Faculty of Civil Engineering / Civil Engineering (2017) / Geology

Prerequisites	None.
Aims	This Subject enables acquisition of basic information in fields of geology and hydrogeology
Lecturer / Teaching assistant	Prof. dr Milan Radulović - lecturer
Method	Lectures, exercises, consultations, homeworks, etc.
Week 1, lectures	Introduction. Origin and structure of the Earth. Global tectonics of plates.
Week 1, exercises	Graphic layout of the Earth structure and crust. Homework.
Week 2, lectures	Foundations of mineralogy. Systematics of minerals.
Week 2, exercises	Macroscopic examination of minerals. Homework.
Week 3, lectures	Rocks of Earth crust: magma and igneous rocks.
Week 3, exercises	Macroscopic examination of minerals and magmas. Homework.
Week 4, lectures	Sedimentary rocks.
Week 4, exercises	Macroscopic examination of minerals and rocks
Week 5, lectures	Metamorphic rocks
Week 5, exercises	Macroscopic examination of rocks.
Week 6, lectures	Geological chronology. Tectonics. Folds, faults, overthrust nappes. Dip and strike.
Week 6, exercises	Macroscopic examination of rocks
Week 7, lectures	I TEST, I COLLOQUIUM
Week 7, exercises	I TEST, I COLLOQUIUM
Week 8, lectures	Geological, engineering-geological (EG) and hydrogeological (HG) maps.
Week 8, exercises	Interpretation of geological maps. Measurement of fall elements by a compass.
Week 9, lectures	Rock mass properties. Field investigation methods for construction of structures.
Week 9, exercises	Geological and EG maps. Preparation of design for EG investigations.
Week 10, lectures	Foundations of hydrogeology. Groundwater.
Week 10, exercises	Hydrogeological maps, revision.
Week 11, lectures	Hydrogeological functions of rock masses. Aquifers.
Week 11, exercises	Types of aquifer. Elements of intergranular aquifer- scheme.
Week 12, lectures	Watersheds. Hydrogeological phenomena. Groundwater flow.
Week 12, exercises	Type of water-intake structures. Determination of HG parameters (Kf, T)
Week 13, lectures	Methodics of HG investigations. Foundations of geodynamics.
Week 13, exercises	Preparation of design for HG investigations. Revision.
Week 14, lectures	Repetition of lessons.
Week 14, exercises	Repetition of lessons.
Week 15, lectures	II TEST, II COLLOQUIUM
Week 15, exercises	II TEST, II COLLOQUIUM
Student obligations	Attendance, preparation of graphical papers, taking the tests.
Consultations	Monday 11.00-13.00
Workload	Weekly 3.5 credits x 40/30 = 4 hours 40 min Total workload for the Subject 3.5x30 = 105 hours
Literature	Waltham T. (2009) Foundations of Engineering Geology. Routledge, London
Examination methods	- Attendance to lectures and exercises: max 5 pt; - Homeworks: max 5 pt;

	<ul style="list-style-type: none"> - Tests: max 20 pt; - Colloquiums: max 40 pt; - Final exam: max 30 pt; - Pass requires minimum 50 pt.
Special remarks	Lectures are intended for a group of 90 students, and exercises for a group of 30 students.
Comment	Further information about the Subject can be required from the lecturer, assistant, head of the study program and vice dean of academic affairs.
Learning outcomes	<p>After having passed the exam, students will be able to:</p> <ol style="list-style-type: none"> 1. Describe and distinguish igneous, sedimentary and metamorphic rocks; 2. Assess physical-mechanical and structural properties of rocks for purposes of geotechnical foundation; 3. Use geological, hydrogeological and engineering-geological maps which represent the basis for the civil engineering design of structures.