

## Study program: Geology

<b>Semester I</b>				
Required subject				
Code	Subject	ECTS	Hours per week	Total hours
2FI100112	Math 1	8	3+2+2	216
2FP100212	Physics 1	8	3+2+2	216
UGD101312	Computer Science	6	2+2+1	156
	Optional subject from faculty 1	4	2+1+1	120
	Optional subject from faculty 2	4	2+1+1	120
<b>Total:</b>		30	12+8+7	828

### Optional subject from faculty:

- 2FP110112 – Basics geology
- 2FP101212 – Fundamentals of programming
- 2FP100912 – Engineering graphics
- 2FP100412 - Principles of mining

<b>Semester II</b>				
Required subject				
Code	Subject	ECTS	Hours per week	Total hours
2ZF107512	General and inorganic chemistry	6	2+2+1	156
2FP101112	Physics 2	6	2+2+1	156
2FP110212	Minerology	8	3+2+2	216
	Optional subject from faculty 3	4	2+1+1	120
	Foreign language 1	6	2+2+1	156
UGD102712	Sports and Recreation		0+0+2	48
<b>Вкупно:</b>		30	11+9+8	852

### Optional subject from faculty:

- 2FI100412 - Math 2
- 2FP107812 – Mineral engineering

<b>Semester III</b>				
Required subject				
Code	Subject	ECTS	Hours per week	Total hours
2FP110312	Petrology	8	3+2+2	216
2FP110412	Geochemistry	6	2+2+1	156
2FP110512	Paleontology and Stratigraphy	8	3+2+2	216
	Optional subject from faculty 4	4	2+1+1	120
	Optional subject from faculty 5	4	2+1+1	120
<b>Total:</b>		30	12+8+7	828

**Optional subject from faculty 4:**

2FP110612 - Structural Geology

2FP110712 - Seismotectonics

**Optional subject from faculty 5:**

**Department of petrology, mineralogy and geochemistry**

2FP110812 - Systematics of silicate minerals

2FP110912 – Geochemistry of magmatic and metamorphic rocks

**Department of mineral deposits**

2FP111012 – Technogenic deposits

2FP111112 – Metals in soils

**Department of engineering geology and hydrogeology**

2FP111212 – Hydrogeology

2FP111312 – Geomechanics

**Department of geology and geophysics**

2FP111412 – Historical Geology 1

2FP111512 - Geophysical techniques 1

<b>Semester IV</b>				
Required subject				
Code	Subject	ECTS	Hours per week	Total hours
2FP111612	Genesis of ore deposits	6	2+2+1	156
2FP111712	Basics of geophysics 1	8	3+2+2	216
2FP111812	Instrumental methods	6	2+2+1	156
	Optional subject from faculty 6	4	2+1+1	120
	Optional subject from university 2	6	2+2+1	156
<b>Total:</b>		30	11+9+6	804

**Optional subject from faculty 6:****Department of petrology, mineralogy and geochemistry**

2FP111912 - Systematics of nonsilicate minerals

2FP112012 – Geochemistry of sediments and sediment basins

**Department of mineral deposits**

2FP112112 – Deep drilling

2FP112212 – Exploration of raw minerals

**Department of engineering geology and hydrogeology**

2FP112312 – Methods of engineering-geological surveys

2FP112412 – Hydrology

**Department of geology and geophysics**

2FP112512 – Geophysical techniques 2

2FP112612 - Historical Geology 2

<b>Semester V</b>				
Required subject				
Code	Subject	ECTS	Hours per week	Total hours
2FP112712	Projects and projecting	8	3+2+2	216
2FP112812	Metamorphic rock	6	2+2+1	156
2FP112912	Mineral resources	8	3+2+2	216
	Optional subject from faculty 7	4	2+1+1	120
	Optional subject from faculty 8	4	2+1+1	120
<b>Total:</b>		<b>30</b>	<b>12+9+7</b>	<b>828</b>

**Optional subject from faculty 7:**

2FP113012 - Geophysical explorations

2FP113112 - Basics of geophysics 2

**Optional subject from faculty 8:****Department of petrology, mineralogy and geochemistry**

2FP113212 - Crystallochemistry

2FP113312 – Water geochemistry

**Department of mineral deposits**

2FP113412 - Prospection of mineral raws

2FP113512 – Geology of coal

**Department of engineering geology and hydrogeology**

2FP113612 - Hydrogeology deposits of mineral resources

2FP113712 – Water mineral

**Department of geology and geophysics**

2FP113812 - Geology of Quaternary

2FP113912 - Computer simulation of geoprocesses

<b>Semester VI</b>				
Required subject				
Code	Subject	ECTS	Hours per week	Total hours
2FP114012	Engineering geology and hydrogeology	8	3+2+2	216
2FP114112	Geochemistry of fluids	6	2+2+1	156
2FP114212	Geological mapping	6	2+2+1	156
	Optional subject from faculty 9	4	2+1+1	120
	Optional subject from university 3	6	2+2+1	156
<b>Total:</b>		30	11+9+6	804

**Optional subject from faculty 9:**

**Department of petrology, mineralogy and geochemistry**

2FP114312 - Engineering petrology

2FP114412 - Crystallography

**Department of mineral deposits**

2FP114512 - Mineral resources 2

2FP114612 - Applicative software packages

**Department of engineering geology and hydrogeology**

2FP114712 - Fundamentals of hydrogeology

2FP114812 – Fundamentals of construction and foundation

**Department of geology and geophysics**

2FP114912 – Digital data processing

2FP115012 - Methods of remote detection

**DEPARTMENT OF PETROLOGY, MINERALOGY AND GEOCHEMISTRY**

<b>Semester VII</b>				
Required subject				
Code	Subject	ECTS	Hours per week	Total hours
2FP115112	Sedimentology	8	3+2+2	216
2FP115212	Industrial mineralogy	8	3+2+2	216
2FP115312	Applied geochemistry	6	2+2+1	156
	Optional subject from faculty 10	4	2+1+1	120
	Optional subject from faculty 11	4	2+1+1	120
<b>Total:</b>		30	12+8+7	828

**Optional subject from faculty**

2FP115412 – Mineralogy of clay

2FP115512 - Organic geochemistry

2FP115612 – Petrotectonics

2FP115712 - Methods of petrological investigations

<b>Semester VIII</b>				
Required subject				
Code	Subject	ECTS	Hours per week	Total hours
2FP117812	Applied mineralogy	6	2+2+1	156
2FP117912	Stone exploration	6	2+2+1	156
	Optional subject from faculty 12	4	2+1+1	120
	Optional subject from university 4	6	2+2+1	156
2FP118012	Diploma	8	0+0+8	192
<b>Total:</b>		30	8+7+12	780

2FP118112 - Mineralogy and environmental protection  
 2FP118212 - Rocks , minerals, and cultural historical monuments

### DEPARTMENT OF MINERAL DEPOSITS

<b>Semester VII</b>				
Required subject				
Code	Subject	ECTS	Hours per week	Total hours
2FP115812	Management in geology	8	3+2+2	216
2FP115912	Metallogenetic prognosis	8	3+2+2	216
2FP116012	Deposits of rare and disseminated elements	6	2+2+1	156
	Optional subject from faculty 10	4	2+1+1	120
	Optional subject from faculty 11	4	2+1+1	120
<b>Total:</b>		30	12+8+7	828

#### Optional subject from faculty

2FP116112 – Economics of mineral resources  
 2FP116212 – Mining geology  
 2FP116312 - GIS in mineral resources  
 2FP116412 - Geochemistry environment

<b>Semester VIII</b>				
Required subject				
Code	Subject	ECTS	Hours per week	Total hours
2FP118312	Energy resources	6	2+2+1	156
2FP118412	Alterations and mineral parageneses	6	2+2+1	156
	Optional subject from faculty 12	4	2+1+1	120
	Optional subject from university 4	6	2+2+1	156
2FP118012	Diploma	8	0+0+8	192
<b>Вкупно:</b>		30	8+7+12	780

#### Optional subject from faculty

2FP118512 – Hydro geochemistry  
 2FP118612 - Geology of geothermal deposits

## DEPARTMENT OF GEOLOGY AND GEOPHYSICS

<b>Semester VII</b>				
Required subject				
Code	Subject	ECTS	Hours per week	Total hours
2FP116512	Engineering geophysics	8	3+2+2	216
2FP116612	Geology of Macedonia	8	3+2+2	216
2FP116712	Measurement technique	6	2+2+1	156
	Optional subject from faculty 10	4	2+1+1	120
	Optional subject from faculty 11	4	2+1+1	120
<b>Total:</b>		<b>30</b>	<b>12+8+7</b>	<b>828</b>

### Optional subject from faculty

2FP116812 - Mathematical methods in geology and geophysics

2FP111312 - Geomechanics

2FP117012 – Paleomagnetism

2FP117112 -

<b>Semester VIII</b>				
Required subject				
Code	Subject	ECTS	Hours per week	Total hours
2FP118712	Geotectonic	6	2+2+1	156
2FP118812	Interpretation and modeling	6	2+2+1	156
	Optional subject from faculty 12	4	2+1+1	120
	Optional subject from university 4	6	2+2+1	156
2FP118012	Diploma	8	0+0+8	192
<b>Total:</b>		<b>30</b>	<b>8+7+12</b>	<b>780</b>

### Optional subject from faculty

2FP117712 - GIS

2FP118912 - Geothermal energy

## DEPARTMENT OF ENGINEERING GEOLOGY AND HYDROGEOLOGY

<b>Semester VII</b>				
Required subject				
Code	Subject	ECTS	Hours per week	Total hours
2FP117212	Hydrodynamics in real environments	8	3+2+2	216
2FP116512	Engineering geophysics	6	2+2+1	156
2FP117412	Protection of groundwater	8	3+2+2	216
	Optional subject from faculty 10	4	2+1+1	120
	Optional subject from faculty 11	4	2+1+1	120
<b>Total:</b>		30	12+8+7	828

### Optional subject from faculty

2FP117512 – Projecting engineering geological investigation  
 2FP117612 - Geotectonic  
 2FP117712 - GIS  
 2FP117112 - Investigative drilling

<b>Semester VIII</b>				
Required subject				
Code	Subject	ECTS	Hours per week	Total hours
2FP129012	Hydrogeological research methods	6	2+2+1	156
2FP129112	Geotechnical models of the middle	6	2+2+1	156
	Optional subject from faculty 12	4	2+1+1	120
	Optional subject from university 4	6	2+2+1	156
2FP118012	Diploma	8	0+0+8	192
<b>Total:</b>		30	8+7+12	780

### Optional subject from faculty

2FP129212 - Projecting hydrogeological investigations  
 2FP118912 - Geothermal energy