

University of Miskolc
Faculty of Earth Science and Engineering
MS in Environmental Engineering

- Programme title: Environmental **Engineering masters program (MSc)**
- Degree awarded: Environmental **Engineer**
- Number of semesters: 4; number of contact hours: 1320; required number of credits to be completed: 120
- Field practice: Minimum 4 weeks internship at a mining company, research institute or competent authority.

Programme overview

General courses (Basic subjects form natural sciences - NS; Economic and human subjects - EH; Basic professional subjects - PS)

fél év	tárgy	type	Course code	lect	pract	ECTS	Assig n	Course leader	Required base
1	Mine waste geochemistry and characterization	NS		1	1	2	v	Dr. Mádai Ferenc	MFFAT6101
1	Contaminated soil characterization and treatment	PS		2	0	2	v	Dr. Bokányi Ljudmilla	no
1	Environmental geology	NS	MFFAT710003	2	1	4	v	Dr. Mádai Viktor	MFFTT600120
1	Tailings management	PS		2	0	2	v	Dr. Fajtli József	no
1	Mineral processing basics	PS		1	1	2	v	Dr. Gombkötő Imre	
1	Computer science for engineers	NS	GEMAK713M	0	2	2	g	Dr. Mészáros Józsefné	no
1	Ecology and nature conservation	NS	MFKHT720008	1	2	3	g	Dr. Lénárt László	no
1	Soil chemistry	NS	AKKEM6007M	2	1	3	g	Dr. Lakatos János	AKKEM6003
1	Elective 1.: Geothermal energy			2	1	4	g	Helmut Wolff	
2	Applied physical chemistry	NS	AKKEM6006M	2	1	3	v	Némethné Dr. Sóvágó Judit	AKKEM6003
2	Sustainable development, environmental policy	EH	MFKHT740003	0	2	2	v	Szegediné Darabos Enikő	no
2	Waste management I.	PS	MFEET720010	2	2	5	v	Dr. Csőke Barnabás	MFEET710004
2	Engineering and mining geophysics	PS		2	1	3	v	Dr. Szabó Norbert	MFGFT6001T
2	Water chemistry	NS	AKKEM6005	1	1	2	g	Dr. Lakatos János	AKKEM6003
2	Water quality protection	PS	MFKHT720003	1	1	3	v	Dr. Szűcs Péter	no
3	Impact assessment, review	EH	MFKHT720018	0	2	2	g	Zákányi Balázs	no
3	Waste incineration, air quality control	PS	MAKETT3MFK	2	1	4	v	Dr. Szűcs István	no
3	Environmental biology, toxicology	NS	MFKHT710005	2	1	3	v	Dr. Felszeghy Sára	MFBGT6402 or MFKFT6204
3	Environmental economics	EH	GTERG204MKM	2	0	2	v	Dr. Tóthné Dr. Szita Klára	no
3	Numerical methods and optimization	NS	GEMAK712M	1	1	2	g	Dr. Mészáros Józsefné	no
3	Thesis work 1	D	MFKHT730012	0	1	2	b		
4	Safety techniques and labour safety	EH	MFKOT740001	2	0	2	v	Dr. Szabó Tibor	no
4	Strategic management	EH	GTVVE704MF	2	0	2	v	Dr. Marcziniák Róbert	GTVVE703MF
4	Elective 2.: Economic geology, reporting of mineral reserves			1	2	3	g	Dr. Földessy János	

4	Thesis work 2	D	MFKHT740010	0	2	23	b		
Geotechnical and mining environmental module (Differentiated professional unit - DP)									
1	Geohydrology and environmental risk assessment	DP		2	2	5	v	Dr. Tamás Madarász	MFKHT6505SP or MFKHT6401SP
2	Groundwater flow and contaminant transport modeling	DP	MFKHT720006	2	2	5	v	Dr. Kovács Balázs	MFKHT710004
2	Geotechnical engineering	DP	MFKHT720004	2	1	4	v	Dr. Szabó Imre	no
2	Contaminated site remediation	DP	MFKHT720010	2	1	3	v	Dr. Madarász Tamás	no
3	Waste management II.	DP	MFKHT730001	2	2	4	v	Dr. Szabó Imre	no
3	Environmental geotechnics	DP	MFKHT730002	1	1	2	v	Dr. Szabó Imre	MFKHT6504SI or MFKHT6612SI
3	Hydrogeology	DP		2	0	3	v	Dr. Szűcs Péter	no
3	Data acquisition in geology and exploration methodologies, resource modeling and definition	DP		1	2	3	g	Dr. Németh Norbert	
3	Underground waste management	DP		2	1	4	v	Helmut Wolff	

Graduation requirements:

- Students must have completed all the core, specialization and elective course requirements.
- Students must have achieved a minimum of 180 credits.
- Students will have successfully completed the mandatory internship.
- Students will have submitted a Thesis Work.
- Students will have fulfilled all administrative and financial requirements towards the university.

Graduation comprises two parts: the defend of the Thesis Work and passing final exams.

The final exam is an oral exam, discussing the the following topics:

•

Topic 1	Waste management: Waste management, Underground waste management, Mine waste characterization and treatment, Environmental geotechnics,
Topic 2	Remediation of contamination: Water chemistry, Soil treatment, Remediation, Risk assessment, Hydrogeology

The overall result of the final examination (ZV) is calculated as:

$$ZV=(A1+A2+2\times D) / 6$$

where:

- D = the final grade of the Thesis work, defined by the examination board,
- A1, A2 = grades of the three exams.
- **Grades are integer numbers and given on a scale from 5 (the highest grade) to 1 the lowest grade). The lowest passing grade is 2.**