

University of Miskolc
Faculty of Earth Science and Engineering
MS in Hydrogeology engineering program

- Programme title: Hydrogeology **Engineering masters program (MSc)**
- Degree awarded: Hydrogeologist **Engineer**
- Number of semesters: 4; number of contact hours: 1305; required number of credits to be completed: 120
- Field practice: Minimum 4 weeks internship at a mining company, research institute or competent authority.

Semester	Course name	Course code	lect	pract	ECTS	assignment	Course leader	Required base
1	Numerical methods and optimization	GEMAK712M	1	1	2	g	Dr. Mészáros Józsefné	no
1	Soil mechanics	MFKHT710003	2	1	4	v	Dr. Szabó Imre	MFKHT6504SI or MFKHT6612SI
1	Environmental geology	MFFAT710003	2	1	4	v	Dr. Mádai Viktor	MFFTT600120
1	Mineralogy - geochemistry	MFFAT710001	2	1	4	v	Dr. Szakáll Sándor	MFFAT6101
1	Geodesy and spatial informatics	MFGGT710003	2	1	4	v	Dr. Bartha Gábor	no
1	Computer science for engineers	GEMAK713M	0	2	2	g	Dr. Mészáros Józsefné	no
1	Fluid mechanics	MFKGT710001	2	1	3	v	Dr. Tóth Anikó	no
1	Hydrogeology	MFKHT710004	2	2	5	v	Dr. Szűcs Péter	MFKHT6401SP vagy MFKHT6505SP
1	Graduate research seminar	MFFAT710002	0	2	2	g	Dr. Mádai Ferenc	no
2	Groundwater prospecting, water resources management	MFKHT720001	2	1	4	v	Dr. Kovács Balázs	no
2	Applied and engineering hydrology	MFKHT720002	1	1	2	v	Dr. Lénárt László	no
2	Water quality protection	MFKHT720003	1	1	3	v	Dr. Szűcs Péter	no
2	Geophysics of exploration for water	MFGFT720002	2	2	5	v	Dr. Turai Endre	no
2	Geotechnical engineering	MFKHT720004	2	1	4	v	Dr. Szabó Imre	no
2	Water chemistry	AKKEM6005	1	1	2	g	Dr. Lakatos János	no
2	Hydrogeology of Hungary	MFKHT720005	2	0	2	v	Dr. Lénárt László	no
2	Groundwater flow and contaminant transport modelling	MFKHT720006	2	2	5	v	Dr. Kovács Balázs	MFKHT710004
2	Water works, water supply	MFKHT720007	1	1	3	v	Dr. Ritter György	no
3	Quality management	GTVVE703MF	2	0	2	g	Dr. Szintay István	no
3	Legal and economic studies with reg. to mining and geology	MFFAT730004	2	0	2	v	Dr. Hámor Tamás	no
3	Drilling, deep drilling	MFKOT730001	1	1	2	g	Dr. Federer Imre	no
3	Geothermics	MFKGT730001	1	1	2	v	Dr. Tóth Anikó	no
3	Hydrogeological interpretation	MFKHT730005	1	1	2	g	Dr. Szűcs Péter	MFKHT710004
3	Water and waste water purification	MFEET730001	1	1	2	g	Dr. Takács János	AKKEM6005, MFKHT720003

Semester	Course name	Course code	lect	pract	ECTS	assignment	Course leader	Required base
3	Environmental risk assessment and remediation	MFKHT730003	2	0	3	v	Dr. Madarász Tamás	no
3	Environmental geotechnics	MFKHT730002	1	1	2	v	Dr. Szabó Imre	MFKHT710003
3	Thesis work 1.	MFKHT730006	0	2	6			
3	Elective 1.	V	2	1	3	v		
3	Elective 2.	V	1	2	3	g		
3	<i>Elect 1. Carst hydrogeology</i>	MFKHT730007	2	1	3	v	Dr. Lénárt László	no
3	<i>Elect 1. Numerical methods in geotechnics</i>	MFKHT730008	2	1	3	v	Dr. Sárközi László	no
3	<i>Elect 1. Economic geology</i>	MFFTT730001	2	1	3	v	Dr. Földessy János	MFFAT6101
3	<i>Elect 1. Geological exploration methods</i>	V	2	1	3	v	Dr. Földessy János	MFFAT6101
3	<i>Elect 2. Dewatering in engineering problems</i>	MFKHT730009	1	2	3	g	Dr. Farkas Sándorné	no
3	<i>Elect 2. Well-field and groundwater resources protection</i>	MFKHT730010	1	2	3	g	Dr. Perger László	no
3	<i>Elect 2. Remote sensing</i>	MFFTT730003	1	2	3	g	Dr. Németh Norbert	no
4	Thesis work 2.	MFKHT740001	0	14	24			
4	Strategic management	GTVVE704MF	2	0	2	v	Dr. Kunos István	GTVVE703MF
4	Safety techniques, labour safety	MFKOT740001	2	0	2	v	Dr. Szabó Tibor	no
4	Water mining	MFKHT740002	2	0	3	v	Dr. Lénárt László	no

Graduation requirements:

- Students must have completed all the core, specialization and elective course requirements.
- Students must have achieved a minimum of 120 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:

Hydrogeology; Water mining; Groundwater prospecting, water resources management; Geotechnical engineering

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

$$ZV = \frac{\frac{A1 + A2}{2} + D}{2}$$

where:

- D = the final grade of the Thesis work, defined by the examination board,
- A1 = grade of final exam on Hydrogeology and Water mining topics,
- A2 = grade of final exam on Groundwater prospecting, water resources management; Geotechnical engineering topics.

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