Faculty of Earth Science and Engineering

MSc Programmes
- Environmental Engineering
- Hydrogeological Engineering
- Petroleum Engineering
- Petroleum Geoengineering

Student Manual
2017/18
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Greetings from the dean

The earth sciences play a major role in satisfying the ever growing demand of the global population for mineral raw materials, energy and water, and in dealing with environmental problems. Due to this, the Faculty of Earth Science and Engineering at the University of Miskolc has optimistic plans for its future in both academic and research activities. This optimism has its foundation in the historical past and professional traditions that the Faculty possesses. The Faculty, whose history goes back to 1735, can be considered one of the world's oldest institutions in the area of higher education in mining and earth sciences.

The Faculty has had to redesign itself several times in its history of nearly 300 years due to changing circumstances. The Faculty of Earth Science and Engineering is currently facing important changes in its possibilities for financing. We would like to keep our prominent place among the Central European institutions of mining and engineering earth sciences, and thus we are broadening the range of programs offered in English and increasing our participation in various international research projects.

Research grants won in recent years have resulted in the further strengthening of the Center of Excellence of Sustainable Resource Management, which cooperates with the Faculty to cover many of its research topics (in the areas of mineral raw materials, energy sources, exploration and utilization of groundwater, geological research, environmental protection, waste management, and the processing of geoinformation). As a result of these developments and investments, an integrated system of laboratories notable even by international standards now assists in high-level research activities and practice-oriented teaching.

These are reasons why coming to the University of Miskolc and joining the Faculty of Earth Science and Engineering to study or carry out research is worthwhile. We look forward to welcoming a growing number of international students as they join students from Hungary on the Miskolc campus, which offers lecture halls, laboratories, a central library, student dormitories, a cafeteria, shopping and sports facilities within the surroundings of a beautiful park. The student traditions of Selmec combine with these other factors to create unforgettable experiences for all those who study and work here.

Prof. Péter Szűcs
dean
The Faculty of Earth Science and Engineering's history and operation has roots that lead back to 1735, when the first mining school (Bergschule) was established in Selmecbánya (known as Schemnitz at the time, and now Banská Štiavnica). With this an imperial institution for training leading technical and legal experts in mining and metallurgy took form in the territory of the Hungarian Kingdom. Its first teacher was Sámuel Mikoviny, the greatest engineer and polyhistor of his time.

On October 22, 1762, Maria Theresa decreed the advancement of the institution to the status of an academy. In 1763 the Department of Mineralogical, Chemical and Metallurgical Studies was formed under the leadership of Nikolaus Joseph Jacquin. The structure and operation of the Mining Academy (Academia Montanistica, Bergakademie) was approved by Maria Theresa herself. The three-year course was taught in German.

After 1770 the Selmec academy became one of the European centers of mining and metallurgical sciences. Numerous experts and young people wishing to study sought out the academy from other nations, and spent various periods of time at the institution, attending lectures and working in the laboratories. In 1808 a forestry school was formed in Selmecbánya, led by Heinrich David Wilckens, which merged with the Mining Academy in 1846, leading to the new name of Mining and Forestry Academy (K. K. Berg- und Forstakademie). Hungarian was gradually introduced as the language of instruction between 1868 and 1872.

Up to 1872 the 'mining' course - in the professional language of the time this covered mining, metallurgy and minting equally - was uniform, but in that year it was divided into four branches: mining, ferrous metallurgy, non-ferrous metallurgy, and machinery and civil engineering. Training in forestry included two branches: general forestry and forest engineering. From 1904 the academy operated under the name of the College of Mining and Forestry (Bányaészeti és Erdészeti Főiskola).

In 1919, after Selmecbánya became part of the newly formed Czechoslovakia, the College moved its equipment, staff and students to Sopron, led by the rector, the mining Professor Géza Réz. In 1922 the name became the College of Mining Engineering and Forest Engineering (Bánamérnöki és Erdőmérnöki Főiskola).

The college lost its independence in 1934, joining the newly organized national József Nádor University of Engineering and Economics as its Faculty of Mining, Metallurgical and Forestry Engineering, with 27 departments. In 1949 a new faculty of mechanical engineering was founded in Miskolc, together with the Mining and Metallurgy faculties in Sopron, to establish the Technical University for Heavy Industry (Nehézipari Műszaki Egyetem). Until 1959 the first two years were taught in Miskolc, while the upper years received their training in Sopron. Due to the changing needs in mining, the unified mining course was divided in 1948 into programs of mining, fluids mining, mine exploration (geology/geophysics) engineering, and later mine equipment engineering, while a survey engineering program also existed for a short time.

With the ongoing technical and economic changes and yielding to professional and academic friction in the faculty, a revised curriculum was established in 1992, with new programs in environmental engineering, process engineering, and hydrogeology. Reflecting the transformation in its areas of teaching and research, the name of the faculty became the Faculty of Earth Science and Engineering (Műszaki Földtudományi Kar) from January 1, 2000.
Administrative units of the Faculty

Dean's Office:
A/4 bld. 136-137. tel: (46) 565-051
Web page: http://mfk.uni-miskolc.hu

Dean:
Dr. Péter SZŰCS, Professor, Doctor of Hungarian Academy of Sciences
Deputy Deans:
Dr. Ákos DEBRECZENI, Associate Professor, financial affairs
Dr. Ferenc MÁDAI, Associate Professor, education affairs
Dr. Gábor MUCSI, Associate Professor, scientific affairs

Éva HUDÁK – office headmaster
Emília Gaszner – education affairs (A/1 bld. 224)
Ágnes MILE – scientific and international affairs
Andrea KOLESZÁR – general administration

Institute of Mining and Geotechnical Engineering
A/4 bld. 2nd floor
Web page: http://bgi.uni-miskolc.hu

Director of Institute: Dr. József MOLNÁR, Associate Professor
Administration: Lilla Szegediné Körmöndi
Departments:
Department of Mining and Geotechnical Engineering,
Head of Dep’t.: Dr. Ákos DEBRECZENI, Associate Professor
Department of Geotechnical Equipment,
Head of Dep’t.: Dr. Gábor LADÁNYI, Associate Professor

Staff:
DR. Ákos DEBRECZENI - Associate Professor
DR. Ferenc KOVÁCS - Professor Emeritus technical assistant
DR. József MOLNÁR - Associate Professor
DR. Gábor LADÁNYI - Associate Professor
DR. Zoltán István VIRÁG - Associate Professor
DR. Zsolt SOMOSVÁRI – Professor Emeritus
DR. Géza BOHUS – honorary professor
DR. László BENKE – retired senior research fellow
DR. János JANOSITZ - retired senior research fellow
DR. Tamás HAVELDA TAMÁS – visiting lecturer
DR. Sztefan KAMBurov MILENOV – assistant professor
Richárd TOMPA – assistant lecturer
HOANG DINH THIEN – PhD student

Institute of Mineralogy and Geology
A/3 bld. 3rd floor
Web page: http://geology.uni-miskolc.hu

Director of Institute: Dr. Ferenc MÁDAI, Associate Professor
Administration: Katalin Szászné Kovács
Departments:
Department of Mineralogy and Petrography,
Head of Department: Dr. Sándor SZAKÁLL, Professor
Department of Geology and Mineral Resources,
Head of Department: Dr. György LESS, Professor

staff:
Dr. Sándor SZAKÁLL - professor
DR. Ferenc MÁDAI - Associate Professor
DR. Viktor MÁDAI - Associate Professor
DR. Norbert ZAJZON - Associate Professor
DR. Ferenc KRISTÁLY – senior research fellow
DR. György LESS – professor
DR. János FOLDESSY – Professor Emeritus
DR. Éva HARTAI – honorary professor
DR. Norbert NÉMET – Associate Professor
DR. Felicitász VELLEDITS – Associate Professor
Attila HORVÁTH – PhD student's
Richárd PAPP – PhD student
Kornél BULÁTKÓ – PhD student
Gábor KATONA - PhD student
Máté LESKÓ – assistant research fellow

Institute of Geophysics and Geoinformatics
A/2 bld. 2nd floor
Web page: http://geophysics-geoinformatics.uni-miskolc.hu

Director of Institute: Dr. Endre TURAI, Associate Professor
Administration: Sándorné KISFALUSI
Departments:
Department of Geophysics,
Head of Dep’t.: Dr. Endre TURAI, Associate Professor
Department of Geodesy and Mine Surveying,
Head of Dep’t.: Dr. István HAVASI, Associate Professor

Staff:
DR. Mihály DOBRÓKA – professor
DR. Endre TURAI - Associate Professor
DR. Norbert Péter SZABÓ – Associate Professor
DR. Péter Tamás VASS – Associate Professor
DR. Gábor PETHŐ – private professor
DR. Ákos GYULAI - Professor Emeritus
DR. Tamás ORMOS – private professor
DR. István HAVASI - Associate Professor
DR. Gábor BARTHA - Professor Emeritus
Marcell SZILVÁSI – assistant lecturer
Mijic NIKOLINA – PhD student
Anett KISS - assistant lecturer
Endre NÁDASI – PhD student
Armand ABORDÁN – PhD student
Nuamah Daniel Oduru Boatey – PhD student
Bence Ádám BRAUN – PhD student

Institute of Petroleum and Natural Gas Engineering
A/2 bld. ground floor and base floor
Web page: http://www.kfgi.uni-miskolc.hu

Director of Institute: Dr. Zoltán TURZÓ, Associate Professor
Administration: Éva Szarka Galvácné
Departments:
Department of Petroleum Engineering,
Head of Dep’t.: Dr. Zoltán TURZÓ, Associate Professor
Department of Natural Gas Engineering,
Head of Dep’t.: Dr. István SZUNYOG, Associate Professor
Department of MOL (in cooperation with Hungarian Oil and Gas Company),
Head of Dept.: Dr. János ZSUGA, Honorary University Professor
Research Institute of Applied Earth Sciences in partnership with the Institute,
Head of Dep’t.: Dr. Anita JOBBIK, Senior Research Fellow

Staff:
DR. Zoltán TURZÓ - Associate Professor
DR. Imre FEDERER – honorary associate professor
DR. József SZEPESI – private professor
DR. Tibor SZABÓ - Associate Professor
DR. Gábor TAKÁCS GÁBOR – professor
DR. Elemér BOBOK - Professor Emeritus
DR. István SZUNYOG - Associate Professor
Beáta HORÁNSZKY BEÁTA – assistant lecturer
DR. László TIHANYI LÁSZLÓ - Professor Emeritus
DR. Anikó Nóra TÓTH - Associate Professor
Gabriella Federer Kovácsné – junior research fellow
László KIS LÁSZLÓ – assistant lecturer
Ádám KONCZ – assistant lecturer
Szilvia VARGA-RÁTKAI – technical assistant
Ahmad KHABAT MOHAMMED – PhD student
Ádám Viktor PÁSZTOR – PhD student
Tamás LENGYEL – PhD student
Anna Bella GALYAS – PhD student
Zsuzsanna SZOLYÁK – PhD student
Marianna MAJOR - laborant

A/4 bld. 3rd floor
Web page: http://foldrajz.uni-miskolc.hu

Director of Institute: Dr. Károly KOCSIS, Professor
Administration: Éva GYOPÁR OROSNÉ
Departments:
Department of Physical Geography and Environmental Sciences,
Head of Dept.: Dr. Endre DOBOS, Associate Professor
Department of Human Geography,
Head of Dept.: Dr. Beáta SISKÁNÉ SZILASI, Associate Professor

Staff:
DR. Endre DOBOS - Associate Professor
DR. Attila HEVESI - Prof. Emeritus
DR. András HEGEDŰS – Associate Professor
DR. János VÁGÓ – Associate Professor
DR. Károly KOCSIS KÁROYL – professor
Dr. Beáta SISKÁNÉ SZILASI - Associate Professor
DR. Tibor ELEKES - Associate Professor
Dr. Lajos SZALONTAI - senior lecturer
Zoltán TÉCSY – technical assistant
Péter VADNAI – assistant research fellow
Károly KOVÁCS – assistant research fellow
Lajos GÁL-SZABÓ – assistant research fellow

Institute of Environmental Management

A/4 bld. Base floor
Web page: http://kgi.uni-miskolc.hu
Director of Institute: Dr. Tamás MADARÁSZ, Associate Professor
Administration: Péterné SZEMÁN

Departments:
Department of Hydrogeology and Engineering Geology,
Head of Dept.: Dr. Péter SZŰCS, Professor
Department of Environmental Engineering,
Head of Dept.: Dr. Tamás MADARÁSZ, Associate Professor

Staff:
DR. Péter SZŰCS PÉTER - professor
DR. József JUHÁSZ - Professor Emeritus
DR. László LÉNÁRT – honorary Associate Professor
DR. Balázs KOVÁCS – honorary Associate Professor
DR. Imre SZABÓ - Professor Emeritus
DR. Tamás MADARÁSZ – Associate Professor
DR. Balázs ZÁKÁNYI - senior lecturer
Andrea TÓTH KOLENCSIKNÉ – assistant lecturer
DR. Viktória MIKITA – assistant lecturer
Enikő DARABOS – assistant lecturer
Tamás KÁNTOR – assistant lecturer
István SZÉKELY – assistant research fellow
Márton TÓTH – assistant lecturer
Rita Miklós – PhD student
Zsombor FEKETE – PhD student
Gábor Nyíri – PhD student

Institute of Raw Material Preparation and Environmental Processing

A/4 bld. 2nd floor
Web page: http://ejt.uni-miskolc.hu

Director of Institute: Dr. Imre GOMBKÖTŐ, Associate Professor
Administration: Kornélne TÍMÁR

Departments:
Department of Mechanical Processing,
Head of Dep’t.: Dr. Imre GOMBKÖTŐ, Associate Professor
Department of Bioprocessing and Reaction Techniques,
Head of Dep’t.: Dr. Ljudmilla BOKÁNYI, Associate Professor

Staff:
DR. Barnabás CSŐKE – Professor Emeritus
DR. József FAITLI - Associate Professor
DR. Ljudmilla BOKÁNYI – Associate Professor
DR. József BŐHM – honorary professor
DR. János TAKÁCS - honorary Associate Professor
DR. Imre GOMBKÖTŐ - Associate Professor
DR. Gábor MUCSI - Associate Professor
DR. Iván TARJÁN - Professor Emeritus
DR. Sándor NAGY – Associate Professor
DR. Lajos NAGY - honorary Associate Professor
DR. Géza FARKAS - honorary Associate Professor
DR. Ádám RÁCZ – senior lecturer
Katalin BOHÁCS – assistant research fellow
Rolan SZABÓ – PhD Student
Lilla SZUTORCSIK – PhD student
Roland Róber ROMENDA – PhD Student
## Academic Calendar for the 2017/18/1 semester

For international students starting in September 2017.

<table>
<thead>
<tr>
<th>Date</th>
<th>Event</th>
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<tbody>
<tr>
<td>4 – 8 September 2017.</td>
<td>Registration week</td>
</tr>
<tr>
<td>7 September 2017. 1-2 PM</td>
<td>Orientation meeting</td>
</tr>
<tr>
<td>7 September 2017. 2-4 PM</td>
<td>Registration of international students</td>
</tr>
<tr>
<td>8 September 2017. 8:30 AM</td>
<td>Opening ceremony of the Academic year</td>
</tr>
<tr>
<td>11 September – 15 December 2017.</td>
<td>Education period (14 weeks)</td>
</tr>
<tr>
<td>20 September 2017. (WE)</td>
<td>University Sports Day (no education)</td>
</tr>
<tr>
<td>29 September 2017. (FA)</td>
<td>European Researcher's Night</td>
</tr>
<tr>
<td>23 October 2017. (MO)</td>
<td>National Holiday (no education)</td>
</tr>
<tr>
<td>1 November 2017. (WE)</td>
<td>National Holiday (no education)</td>
</tr>
<tr>
<td>30 October – 3 November 2017. (MO-FA)</td>
<td>Autumn break (no education)</td>
</tr>
<tr>
<td>4 – 18 December 2017.</td>
<td>Exam registration period</td>
</tr>
<tr>
<td>11 – 15 December 2017. (MO - FA)</td>
<td>Pre-exam session</td>
</tr>
<tr>
<td>18 – 22 December 2017.; 2 January – 2 February 2018.</td>
<td>Exam session (6 weeks)</td>
</tr>
<tr>
<td>25 December 2017. - 1 January 2018.</td>
<td>Christmas holiday (university buildings are closed except dormitories)</td>
</tr>
</tbody>
</table>
Offices for student administration

**Stipendium Hungaricum Office**
A/4 bld. Second floor, Room 111  
Faculty administrator: **Anett Dudás**  
hkanett@uni-miskolc.hu

**Dean’s Office**
Faculty administrator: **Emilia Gaszner**  
mfkto@uni-miskolc.hu  
A/1 bld. 2Nd floor, room 224.

- Neptun administration
- management of applications (course registration issues, exam registration issues, issue of certification of attendance)
The procedures and rules regarding the education, teaching and examinations are registered in the Requirements for Students (volume III. of the Organizational and Operational Regulations of the University of Miskolc). The Requirements for Students contains a general part which is applicable to all students of the University. Implementing Regulations (IR) include specific rules for the MFK Programmes.


Application forms used at the Faculty can be downloaded from http://mfk.uni-miskolc.hu/wp/en/?page_id=730.

**ELECTRONIC ADMINISTRATION**

At the University of Miskolc, the dominant part of the student administration is completed through the NEPTUN student information system. It allows you to complete the registration for a semester, courses and exams as well as to submit applications and manage financial duties.

The NEPTUN 3R site of the university is available through the central homepage (www.uni-miskolc.hu), or directly at the https://neptun31.uni-miskolc.hu/hallgato/Login.aspx?timeout= address. A detailed user guide can be reached from that homepage.

Grades of exams and practical marks are also recorded in the neptun. Main rules for exams are as follows:

The student may take the exam only after registration validated in the NEPTUN system.

Identity of the student shall be approved at the start of the exam by showing a valid document of identification containing a picture (identity card, student card, passport, etc.).

When giving an assessment of an oral examination, the examiner will put into the examination record sheet the grade and will sign the examination record sheet, and in case the student requests so, the examiner also puts the grade into the printout of completed records supplied by the student together with his/her signature. On the basis of the examination records sheet, the examiner shall enter the examination grade in the Neptun system on the day of the examination. The examination record sheets shall be kept in the department/institute for five years.

In the case of written examinations, the examiner shall mark the exam and write the grade on the examination paper as well as the examination record sheet, which is to be printed out from the Neptun system beforehand, and shall sign both. On the basis of the examination record sheet, the examiner shall enter the grade in the Neptun system within two days at the latest. Examination papers shall be kept in the given department/institute for one year.

Students may file an objection regarding wrong assessment data appearing in the Neptun system within fourteen days, as a term of preclusion, following the end of the examination period. For decision making regarding the objection, the document of primary relevance and orientation will be the examination record sheet signed by the examiner, which is kept by the department/institute administration as opposed to the data in the Neptun system. In case the assessment in the examination record sheet and the completion sheet or the registration course book are different from each other, those in the registration course book or the completion sheet shall be considered valid.

In the case of end-of-term grades (practical marks), the course leader makes a written record of the grades on a print-out of the student list from the Neptun system, which he/she will duly sign to certify, and then on the basis, of this he/she will enter the grade in the Neptun system. The paper-based record shall be kept by the departmental/institute administration for five years.
**MSc in Environmental Engineering**

**Programme title:** Environmental Engineering master program (MSc)

**Degree awarded:** Environmental Engineer

**Number of semesters:** 4; number of contact hours: 1081 / 1065 depending on specialisation;

**Specialisations:** Remediation and environmental geotechnics; Waste management

**Required number of credits to be completed:** 120

**Field practice:** Minimum 4 weeks internship at a company, research institute or competent authority.

### Programme overview

<table>
<thead>
<tr>
<th>Basic courses in natural sciences - NS</th>
<th>Economic and human courses - EH</th>
<th>Basic professional courses - PC</th>
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<tbody>
<tr>
<td><strong>Sem. course</strong></td>
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<tr>
<td>1</td>
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<tr>
<td>Mineralogy - geochemistry</td>
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<td>MFFAT710001A</td>
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<tr>
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<td>NS</td>
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<td>Basics of environmental processing</td>
<td>NS</td>
<td>MFEET710005</td>
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<tr>
<td>Ecology and nature protection</td>
<td>NS</td>
<td>MFKHT710009</td>
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<tr>
<td>Soil chemistry</td>
<td>NS</td>
<td>AKKEM6007M</td>
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<tr>
<td>Computer science for engineers</td>
<td>NS</td>
<td>GEMAK713M</td>
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<tr>
<td>Numerical methods and optimization</td>
<td>NS</td>
<td>GEMAK712M</td>
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<tr>
<td>Environmental and waste management law</td>
<td>EH</td>
<td>AJAMU04MF1N</td>
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<tr>
<td>Basics of waste management</td>
<td>PC</td>
<td>MFETT710010</td>
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<tr>
<td>Applied physical chemistry</td>
<td>NS</td>
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<td>Water chemistry</td>
<td>NS</td>
<td>AKKEM6005</td>
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<td>Environmental economics</td>
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<td>Waste disposal, landfill operation and reclamation</td>
<td>PC</td>
<td>MFKHT720040</td>
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<td>Environmental and engineering geophysics</td>
<td>PC</td>
<td>MFGFT720018</td>
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<tr>
<td>Water quality protection</td>
<td>PC</td>
<td>MFKHT720023</td>
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<tr>
<td>Methods of environmental assessment</td>
<td>EH</td>
<td>MFKHT730013</td>
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<tr>
<td>Quality management</td>
<td>EH</td>
<td>GTVVE7002MA</td>
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<tr>
<td>Waste incineration and air quality protection</td>
<td>PS</td>
<td>MFKHT730018</td>
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<tr>
<td>Water and wastewater treatment</td>
<td>PC</td>
<td>MFETT730001A</td>
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<td>Thesis work 1</td>
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<tr>
<td>Occupational health and safety</td>
<td>EH</td>
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<td>Elective course 2</td>
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<tr>
<td>Thesis work 2</td>
<td>MFKHT740035</td>
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## Remediation and environmental geotechnics specialisation (Differentiated professional unit - DP)

<table>
<thead>
<tr>
<th></th>
<th>Course</th>
<th>Code</th>
<th>ECTS</th>
<th>Course Type</th>
<th>Faculty</th>
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<tbody>
<tr>
<td>1</td>
<td>Hydrogeology</td>
<td>MFKHT710017</td>
<td>2  2  5</td>
<td>DP</td>
<td>Dr. Péter Szűcs</td>
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<tr>
<td>2</td>
<td>Groundwater flow and contaminant transport modelling</td>
<td>MFKHT7200061</td>
<td>2  2  5</td>
<td>DP</td>
<td>Dr. Balázs Kovács</td>
</tr>
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<td>2</td>
<td>Geotechnical engineering</td>
<td>MFKHT7200025</td>
<td>2  1  4</td>
<td>DP</td>
<td>Dr. Tamás Madarász</td>
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<tr>
<td>2</td>
<td>Contaminated site remediation</td>
<td>MFKHT7200030</td>
<td>2  1  4</td>
<td>DP</td>
<td>Dr. Tamás Madarász</td>
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<tr>
<td>3</td>
<td>Environmental geotechnics</td>
<td>MFKHT730030</td>
<td>1  1  2</td>
<td>DP</td>
<td>Dr. Andrea Tóth Kolencsikné</td>
</tr>
<tr>
<td>3</td>
<td>Chemical technologies in environmental protection</td>
<td>MFEET730016</td>
<td>1  1  2</td>
<td>DP</td>
<td>Dr. Ljudmilla Bokányi</td>
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<tr>
<td>3</td>
<td>Environmental risk assessment and remediation</td>
<td>MFKHT730026</td>
<td>2  0  3</td>
<td>DP</td>
<td>Dr. Tamás Madarász</td>
</tr>
<tr>
<td>3</td>
<td>Geographical information system</td>
<td>MFKFT730012</td>
<td>2  1  2</td>
<td>DP</td>
<td>Dr. János Vágó</td>
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## Waste management specialisation (Differentiated professional unit - DP)

<table>
<thead>
<tr>
<th></th>
<th>Course</th>
<th>Code</th>
<th>ECTS</th>
<th>Course Type</th>
<th>Faculty</th>
</tr>
</thead>
<tbody>
<tr>
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<td>Handling of processing and biodegradable wastes</td>
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**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 following topics:
On the ‘Remediation and environmental geotechnics’ specialisation:

<table>
<thead>
<tr>
<th>Topic 1</th>
<th>Waste management, waste incineration</th>
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<tbody>
<tr>
<td>Topic 2</td>
<td>Remediation of contamination (Water chemistry, Soil treatment, Remediation, Risk assessment)</td>
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On the ‘Waste management’ specialisation:

<table>
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<tr>
<td>Topic 2</td>
<td>Environmental processing: Process engineering, Design of waste processing technologies</td>
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The overall result of the final examination (ZV) is calculated as:

\[
ZV = \frac{(A_1 + A_2 + 2D)}{6}
\]

where:
- \( D \) = the final grade of the Thesis work, defined by the examination board,
- \( A_1, A_2 \) = 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.
**MSc 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.

### Programme overview

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### Graduation requirements:

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- 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 defense of the Thesis Work and passing final exams.

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

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

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

\[
ZV = \frac{A1 + A2 + D}{2},
\]

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.
MSc in Petroleum Engineering program

- Programme title: **MSc in Petroleum Engineering**
- Degree awarded: Petroleum Engineer
- Number of semesters: 4; number of contact hours: 1051; 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**

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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 following topics:

**Drilling engineering and well completion; Reservoir mechanics; Petroleum production technology**

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

\[
ZV = \frac{A_1 + A_2 + A_3}{2} + D
\]

where:

- \(D\) = the final grade of the Thesis work, defined by the examination board,
- \(A_1\) = grade of final exam on Drilling engineering and well completion topics,
- \(A_2\) = grade of final exam on Reservoir mechanics topics,
- \(A_3\) = grade of final exam on Petroleum production 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.
MSc in Petroleum Geoengineering program

- Programme title: Petroleum Geoengineering masters course (MSc)
- Degree awarded: Petroleum Geoengineer
- Number of semesters: 4; number of contact hours: 1148; 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

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**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 following topics: Integration of geophysical and geological methods in exploration; Implementation of exploration projects; Integration of geosciences and engineering.

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

\[
ZV = \frac{A_1 + A_2 + A_3 + D}{2}
\]

where:

- \(D\) = the final grade of the Thesis work, defined by the examination board,
- \(A_1\) = grade of final exam on Integration of geophysical and geological methods in exploration topics,
- \(A_2\) = grade of final exam on Implementation of exploration projects topics,
- \(A_3\) = grade of final exam on Integration of geosciences and 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.
Dear Freshman Students!

First of all let me welcome you in the name of the Students’ Union of the University of Miskolc, Faculty of Earth Science and Engineering, and let me congratulate you for your successful admission!

These couple of lines were made for your sakes, to help you get a brighter picture about the operating organizations in the University of Miskolc.

Advocacy is provided by the Students’ Union of the University of Miskolc (ME-HÖK). The Students’ Union as a part of the University’s council provides students their subjective rights. Everyone who is studying in the University of Miskolc is part of the Students’ Union. Thanks to that, this organization is trying to protect every student's collective and personal rights. Their role is to contact the leaders of the University, HÖK and HÖOK.

Students of the Faculty of Earth Science and Engineering choose certain people from each year and department to represent them in:

- Faculty Council,
- Committee of Studies,
- Disciplinary Committee,
- controls the scholarship cases,
- proposes ideas about the curriculum,
- Admissions Committee,
- reviews the teachers.

One of the Students’ Union committee is the Students Scholarship Committee (DÖB). This committee is in control of the social supports, single supports and emphasized scholarships.

Another committee is the Committee of the Dormitories (KB). Affairs that affect the University itself each faculty gets to send 3 person and each faculty's Students' Union presidents decides about the case. Their job is:

- They choose the president of the Students’ Union,
- control student's advocacy,
- take part in the University Council,
- take part in cultural and sport activities,
- take part in national and international studies.

Best of luck to your studies!

With best regards:

Emánuel Zoltán Kovács
MFK-HÖK president
Location of important places

- C/2 building: Environmental Eng., Hydrogeology
- A/3 building: Geology
- A/1 building: Classrooms
- A/2 building: Petroleum Eng., Geophysics
- A/4 building: Central administration, Hydrogeology, Environmental eng.
- Central library
- Dormitories