

# University of Miskolc

## Faculty of Earth Science and Engineering

### Petroleum Geoengineering masters program

- Programme title: **Petroleum Geoengineering masters course (MSc)**
- Degree awarded: **Petroleum Geoscientist (MSc)**
- Number of semesters:4; 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

Basic courses in natural sciences - NS; Economic and human courses - EH; Basic professional courses - BP, Differentiated professional courses - DP

ÁFI: Institute of Mineralogy and Geology; GF: Department of Geophysics; KFGI: Institute of Petroleum and Natural Gas; KÉM: Institute of Chemistry; KGI: Institute of Environmental Management

| semester | course   | subject group | department | Lect. | Prac. | ECTS | assignment | lecturer                 |
|----------|--|---------------|------------|-------|-------|------|------------|--------------------------|
| 1        | Structural geology   | NS            | ÁFI        | 1     | 2     | 3    | p.m.       | Dr. Németh Norbert       |
| 1        | Stratigraphy   | NS            | ÁFI        | 2     | 1     | 3    | exam       | Dr. Less György          |
| 1        | Sedimentology of carbonate reservoirs                                | NS            | ÁFI        | 2     | 1     | 3    | exam       | Dr. Velledits Felicitász |
| 1        | Introduction to applied geophysics                                   | NS            | GF         | 2     | 1     | 3    | exam       | Dr. Pethő Gábor          |
| 1        | Introduction to petrophysics   | NS            | GF         | 2     | 1     | 3    | exam       | Dr. Dobróka Mihály       |
| 1        | Applied petrology  | NS            | ÁFI        | 2     | 1     | 3    | exam       | Dr. Mádai Ferenc         |
| 1        | Wellsite geology   | BP            | ÁFI & GF   | 1     | 2     | 3    | p.m.       | Dr. Németh Norbert       |
| 1        | Geostatistics  | BP            | GF         | 2     | 1     | 3    | exam       | Dr. Szabó Norbert Péter  |
| 1        | Drilling engineering, HSE  | BP            | KFGI       | 2     | 2     | 4    | p.m.       | Dr. Szabó Tibor          |
|          | Elective course 1: Introduction to geophysical scientific literature | EH            | GF         | 0     | 2     |      |            | Dr. Szabó Norbert        |
| 1        | Elective course 1: Graduate Research Seminar                         | EH            | ÁFI        | 0     | 2     |      |            | Dr. Mádai Ferenc         |
|          |  |               |            |       |       |      |            |                          |
| 2        | Basin modeling   | BP            | ÁFI        | 2     | 2     | 4    | p.m.       | Dr. Németh Norbert       |
| 2        | Exploration seismic techniques and interpretation                    | BP            | GF         | 2     | 2     | 4    | exam       | Dr. Dobróka Mihály       |
| 2        | Petrophysics 2: wire-line logs                                       | BP            | GF         | 2     | 2     | 4    | exam       | Dr. Szabó Norbert Péter  |
| 2        | Exploration geochemistry of hydrocarbons                             | BP            | ÁFI        | 2     | 1     | 3    | exam       | Dr. Mádai Viktor         |
| 2        | Oilfield chemistry   | BP            | KÉM        | 3     | 0     | 3    | exam       | Dr. Lakatos János        |
| 2        | Estimation of resources/reserves                                     | DP            | ÁFI        | 1     | 1     | 2    | p.m.       | Dr. Bérczi István        |
| 2        | Fluid mechanics and flow in porous media, transport modeling         | DP            | KFGI       | 2     | 1     | 3    | exam       | Dr. Tóth Anikó           |
| 2        | Core analysis (both conventional and special, CCAL, SCAL)            | DP            | ÁFI & GF   | 0     | 3     | 3    | p.m.       | Dr. Velledits Felicitász |

| semester | course  | subject group | department      | Lect. | Prac. | ECTS | assignment | lecturer            |
|----------|---|---------------|-----------------|-------|-------|------|------------|---------------------|
| 2        | Sedimentology of clastic reservoirs   | DP            | ÁFI             | 2     | 1     | 3    | exam       | Dr. Hartai Éva      |
| 3        | Reservoir geology and modeling  | DP            | ÁFI             | 2     | 1     | 3    | exam       | Dr. Bérczi István   |
| 3        | In-field seismic techniques and interpretation  | DP            | GF              | 1     | 3     | 4    | p.m.       | Dr. Ormos Tamás     |
| 3        | Petroleum economics   | DP            | KFGI            | 1     | 1     | 2    | p.m.       | Dr. Komlósi Zsolt   |
| 3        | Analysis of petroleum systems, prospect evaluation  | DP            | ÁFI             | 0     | 3     | 3    | p.m.       | Dr. Mádai Ferenc    |
| 3        | Oilfield hydrogeology   | BP            | KGI             | 2     | 1     | 3    | exam       | Dr. Szűcs Péter     |
| 3        | Planning, implementing and managing E&P projects  | DP            | ÁFI             | 1     | 1     | 2    | p.m.       | Dr. Bérczi István   |
| 3        | Elective course 2: X-ray diffraction applications for petroleum geology                   | DP            | ÁFI             | 0     | 2     | 2    | p.m.       | Dr. Kristály Ferenc |
| 3        | Elective course 2: Basic data processing methods for oilfield geophysics and petrophysics | DP            | GF              | 0     | 2     |      | p.m.       | Dr. Turai Endre     |
| 3        | Reservoir and production engineering  | DP            | KFGI            | 3     | 1     | 4    | exam       | Dr. Zoltán Turzó    |
| 3        | Project work: Imperial Barrel Award type project development (8 ECTS) teamwork            | DP            | ÁFI & GF & KFGI | 0     | 8     | 8    | p.m.       | Dr. Less György     |
| 4        | Thesis work   | DP            |                 |       |       | 30   |            |                     |

### 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.