

## 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

(BASIC COURSES IN NATURAL SCIENCES - NS; ECONOMIC AND HUMAN COURSES - EH; DRILLING TECHNOLOGY COURSES - DT; PETROLEUM PRODUCTION COURSES - PP; RESERVOIR MECHANICS COURSES - RM; PETROLEUM TRANSPORTATION COURSES -PT; ELECTIVE COURSES - EL)

Sem.	course	type	Course code	lect	pract	ECT S	Assig n	Course leader	Required base
1	Numerical methods and optimization	NS	GEMAK712MA	1	1	2	P	Dr. Házy Attila	no
1	Applied geology	NS	MFFTT710003	2	1	3	E	Dr. Velledits Felicitász	no
1	Computer applications II.	NS	MFKOT720021	0	3	3	P	Dr. Turzó Zoltán	no
1	Applied geophysics	NS	MFFGT7100051	2	1	3	E	Dr. Pethő Gábor	no
1	Oilfield chemistry	NS	MFKOT720011	2	1	3	E	Dr. Lakatos István	MFKOT710004
1	Geothermal energy	NS	MFKGT740011	2	0	3	P	Dr. Tóth Anikó	no
1	Petroleum economics	EH	MFKOT720012	2	0	2	E	Dr. Komlósi Zsolt	no
1	HSE in petroleum engineering	EH	MFKOT71011	2	0	3	E	Dr. Al-Nezari Dhorgham Skban Ibrahim	no
1	<i>Compulsory electives I.</i>	EL		2	0	2	E		<i>no</i>
	Gas Processing		MFKOT77003					Dr. Turzó Zoltán	
	Well tests		MFKOT77002					Dr. Turzó Zoltán	
	Basic concepts of Geology		MFFFT250					Dr. Hartai Éva	
1	<i>Compulsory electives II.</i>	EL		2	0	2	E		<i>no</i>
	Hydrogeology		MFKHT730017					Dr. Szűcs Péter	
	Geothermal well drilling		MFKOT730025					Dr. Federer Imre	
	Gas Processing		MFKOT77003					Dr. Turzó Zoltán	
1	<i>Free electives</i>	EL		2	0	2	E		
	Process Simulation using ASPEN HYSYS		MFKOT710021					Dr. Turzó Zoltán	
	Basic concepts of Geology		MFFFT250					Dr. Hartai Éva	
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2	Computer applications I.	NS	MFKOT10019	0	3	3	P	Dr. Turzó Zoltán	no
2	Graduate research seminar	EH	MFFAT720006	0	1	2	P	Dr. Máдай Ferenc	no
2	Drilling engineering I.	DT	MFKOT720022	2	2	6	E	Dr. Kovácsné Federer Gabriella	no
2	Well control lab.	DT	MFKOT730014	0	3	3	P	Dr. Kovácsné Federer Gabriella	no
2	Production engineering fundamentals	PP	MFKOT720025	2	2	6	E	Dr. Takács Gábor	no
2	Reservoir engineering fundamentals	RM	MFKOT720024	2	2	6	E	Kovácsné Dr. Federer Gabriella	no
2	Fluid mechanics	PT	MFKGT710005	3	0	3	K	Dr. Tóth Anikó	no
2	Transport of hydrocarbons	PT	MFKOT730036	2	0	2	P	Dr. Turzó Zoltán	no

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3	Drilling engineering II.	DT	MFKOT730033	2	2	5	E	Kovácsné Dr. Federer Gabriella	MFKOT720022	
3	Artificial lifting I.	PP	MFKOT720017	3	0	3	E	Dr. Takács Gábor	no	
3	Flow in porous media	RM	MFKOT730035	0	3	3	P	Dr. Turzó Zoltán	MFKOT720024	
3	Material balance	RM	MFKOT730026	2	1	3	E	Kovácsné Dr. Federer Gabriella	MFKOT720024	
3	Thesis work I.		MFKOT730030	0	13	13	R			
								30		
4	Well completion design	DT	MFKOT720014	2	1	3	E	Dr. Federer Imre	MFKOT720022	
4	NODAL analysis applications	PP	MFKOT730016	0	2	2	P	Dr. Al-Nezari Dhorgham Skban Ibrahim	MFKOT720025	
	Artificial lifting II.	PP	MFKOT730031	2	2	6	E	Dr. Takács Gábor	no	
4	Reservoir management simulation lab.	RM	MFKOT730015	0	3	3	P	Dr. Turzó Zoltán	MFKOT730035	
4	EOR methods	RM	MFKOT740013	2	1	3	E	Dr. Turzó Zoltán	MFKOT730035	
4	Thesis work 2.		MFKOT7400021	0	17	17	R		MFKOT730020	
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#### Graduation requirements:

- Students must have completed all the core, 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:

$$ZV = \frac{\frac{A1 + A2 + A3}{3} + D}{2}$$

where:

- D = the final grade of the Thesis work, defined by the examination board,
- A1 = grade of final exam on Drilling engineering and well completion topics,
- A2 = grade of final exam on Reservoir mechanics topics,
- A3 = 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