



Planning, implementing and managing E&P projects

MFFAT730003

Szénhidrogén-kutató földtudományi mérnöki mesterszak

2023/24 I. félév

TANTÁRGYI KOMMUNIKÁCIÓS DOSSZIÉ

**Miskolci Egyetem
Műszaki Föld- és Környezettudományi Kar
Nyersanyagkutató Földtudományi Intézet**

| | |
|---|-------------------|
| Course Title: Planning, implementing and managing E&P projects | Credits: 2 |
| Type (lec. / sem. / lab. / consult.) and Number of Contact Hours per Week: lec. 1, sem. 1 | |
| Neptun code: MFFAT730005 | |
| Type of Assessment (exam. / pr. mark. / other): pr. mark | |
| Grading limits: >80%: excellent, 70-80%: good, 60-70%: medium, 50-60%: satisfactory, <50%: unsatisfactory.. | |
| Position in Curriculum (which semester): third | |
| Pre-requisites (<i>if any</i>): Core analysis. | |
| Course Description: | |
| Acquired store of learning: <u>Study goals:</u> During the semester students get global overview about value creation for the stakeholders and its processes of the hydrocarbon exploration and production activity. Students to learn the best practices and standards of the exploration and production projects planning, execution and monitoring. Get students practice the basis of the modern project management. <u>Course content:</u> The players of the global oil and gas industry. The hydrocarbon exploration and production value chain. Strategy, developing oil and gas projects. Access and lease exploration and production rights. Planning and controlling upstream projects. Legal framework, PSA, JOA, JV. Fiscal regimes, oil and gas projects economics. Risk management, managing technical, political and partner risks. Product management, sales contracts. Resources and reserves disclosure and reporting. <u>Education method:</u> Lectures, powerpoint projected slides. Microsoft Office programs are used during the practice. Competencies to evolve: T1, T2, T3, T5, T6, T10, T11, T12, K1, K2, K3, K4, K6, K7, K8, K9, K11, A2, A3, A4, A7, A8, F1, F2, F3 | |
| The 3-5 most important compulsory, or recommended literature (textbook, book) resources: | |
| <ul style="list-style-type: none"> • The Global Oil & Gas Industry; Management, Strategy and Finance Andrew Inkpen / Michael H. Moffett. • Quick Allen N. (1986): Exploration planning and analysis of exploration risk for the Hungarian National Oil and Gas Trust (course textbook) • Daniel Ph., Keen M., McPherson Ch. (2011): The taxation of petroleum and Minerals: Principles, problems and practice. Routledge • Allen & Overy (2013): Guide to extractive industries documents – Oil & Gas. World Bank • Speed Ph. E. (2000): Mineral and petroleum taxation. University of Dundee Distance learning courses | |
| Responsible Instructor (<i>name, position, scientific degree</i>): Ferenc Mádai Dr., associate professor, PhD | |
| Other Faculty Member(s) Involved in Teaching , if any (<i>name, position, scientific degree</i>): Attila Holoda (Aurora Resources Kft.) | |

Féléves órabeosztás

2020/21 1. félév

Holoda Attila óráit tömbösítve, 3 órás blokkokban tartjuk a következő menetrend szerint

| dátum | időtartam | foglalkozás témája | oktató |
|------------|-----------|---|---------------|
| 2023.09.14 | 11 - 13 | Mining law introduction | Mádai Ferenc |
| 2023.09.21 | 11 – 13 | Simon Michoux video, individual work | Mádai Ferenc |
| 2023.09.28 | 11 – 13 | international conventions | Mádai Ferenc |
| 2023.10.05 | 11 – 13 | concession and PSC regimes | Mádai Ferenc |
| 2023.10.12 | 11 – 13 | Taxation principles and models | Mádai Ferenc |
| 2023.10.19 | 11 – 13 | Fiscal system of petroleum projects | Mádai Ferenc |
| 2023.10.26 | 11 – 13 | analysis of the home country fiscal system | Mádai Ferenc |
| 2023.11.02 | 11 – 13 | Szünet | |
| 2023.11.09 | 9-12 AM | The players of the global oil and gas industry. The hydrocarbon exploration and production value chain. | Holoda Attila |
| 2023.11.09 | 1-4 PM | Strategy, developing oil and gas projects, Planning and controlling upstream projects | Holoda Attila |
| 2023.11.16 | 9-12 AM | Risk management, managing technical, political and partner risks. | Holoda Attila |
| 2023.11.16 | 1-4 PM | Product management, sales contracts | Holoda Attila |
| 2023.11.30 | 11 - 13 | individual analysis of a concession tender | Mádai Ferenc |

A tárgyhoz kapcsolódó előadás anyagok, tananyagok és a szükséges háttér információ (cikk sablon stb.) letölthető a tantárgy Moodle oldaláról:

Moodle: <http://edu.uni-miskolc.hu/edu/> Műszaki Földtudományi Kar ⇨ Ásványtani-Földtani Intézet
⇨ MFFAT730003

Félévközi beadandó feladatok:

- Find the evidence how the principle of the Security of tenure is incorporated in the national mining law of your home country
 - határidő: október 22.
- Analysis of the PSC rules of your home country (background materials: Allen @ Overy guideline, Ernst&Young Global oil and tax guideline, PSC model contracts)
 - határidő: november 19.
- Analysis of petroleum taxation models using excel sheet (CIT model, CIT+royalty model, RRT model, PSC model)
 - határidő: november 19.

Modell adótáblák

| year | explor | investm | product | product | unit price | CIT model | | | | | governr |
|-------------|--------|---------|---------|---------|------------|-----------|---------|---------|------|-----------|---------|
| | | | | | | income | depreci | pre-tax | CIT | after-tax | |
| 1 | -50.0 | | | | | | | | | | |
| 2 | -1.5 | | | | | | | | | | |
| 3 | -12.7 | | | | | | | | | | |
| 4 | -13.5 | | | | | | | | | | |
| 5 | | -46.2 | | | | | | | | -123.9 | |
| 6 | | -146.3 | | | | | | | | -146.3 | |
| 7 | | -76.4 | 11.8 | 8.2 | 8.0 | 65.6 | 43.3 | 10.5 | 5.2 | -27.8 | 5.2 |
| 8 | | | 11.8 | 16.4 | 8.0 | 131.2 | 43.3 | 76.1 | 38.0 | 81.4 | 38.0 |
| 9 | | | 11.8 | 16.4 | 8.0 | 131.2 | 43.3 | 76.1 | 38.0 | 81.4 | 38.0 |
| 10 | | | 11.8 | 16.4 | 8.0 | 131.2 | 43.3 | 76.1 | 38.0 | 81.4 | 38.0 |
| 11 | | | 11.8 | 16.4 | 8.0 | 131.2 | 43.3 | 76.1 | 38.0 | 81.4 | 38.0 |
| 12 | | | 11.8 | 14.8 | 8.0 | 118.4 | 26.0 | 80.6 | 40.3 | 66.3 | 40.3 |
| 13 | | | 11.8 | 13.3 | 8.0 | 106.4 | 26.0 | 68.6 | 34.3 | 60.3 | 34.3 |
| 14 | | | 11.8 | 12.0 | 8.0 | 96.0 | 26.0 | 58.2 | 29.1 | 55.1 | 29.1 |
| 15 | | | 11.8 | 10.8 | 8.0 | 86.4 | 26.0 | 48.6 | 24.3 | 50.3 | 24.3 |
| 16 | | | 11.8 | 9.7 | 8.0 | 77.6 | 26.0 | 39.8 | 19.9 | 45.9 | 19.9 |
| 17 | | | 11.8 | 8.7 | 8.0 | 69.6 | | 57.8 | 28.9 | 28.9 | 28.9 |
| 18 | | | 11.8 | 7.9 | 8.0 | 63.2 | | 51.4 | 25.7 | 25.7 | 25.7 |
| 19 | | | 11.8 | 7.1 | 8.0 | 56.8 | | 45.0 | 22.5 | 22.5 | 22.5 |
| 20 | | | 11.8 | 6.4 | 8.0 | 51.2 | | 39.4 | 19.7 | 19.7 | 19.7 |
| net total | | | | | | 1316.0 | | | | 402.1 | 402.1 |
| NPV (10%) | | | | | | | | | | 74.1 | 216.3 |
| company IRR | | | | | | | | | | 15.1% | |

| concession, Johnson | | | | | | | | | | | | |
|---------------------|--------|---------|---------|---------|------------|--------|---------|---------|----------|---------|--------|---------|
| year | explor | investm | product | product | unit price | income | royalty | depreci | tax base | CIT (30 | compan | governr |
| 1 | -50.0 | | | | | | | | | | | |
| 2 | -1.5 | | | | | | | | | | | |
| 3 | -12.7 | | | | | | | | | | | |
| 4 | -13.5 | | | | | | | | | | | |
| 5 | | -46.2 | | | | | | | | | | -123.9 |
| 6 | | -146.3 | | | | | | | | | | -146.3 |
| 7 | | -76.4 | 11.8 | 8.2 | 8.0 | 65.6 | 13.1 | 43.3 | -2.6 | 0.0 | -35.7 | 13.1 |
| 8 | | | 11.8 | 16.4 | 8.0 | 131.2 | 26.2 | 43.3 | 49.8 | 24.9 | 68.2 | 51.2 |
| 9 | | | 11.8 | 16.4 | 8.0 | 131.2 | 26.2 | 43.3 | 49.8 | 24.9 | 68.2 | 51.2 |
| 10 | | | 11.8 | 16.4 | 8.0 | 131.2 | 26.2 | 43.3 | 49.8 | 24.9 | 68.2 | 51.2 |
| 11 | | | 11.8 | 16.4 | 8.0 | 131.2 | 26.2 | 43.3 | 49.8 | 24.9 | 68.2 | 51.2 |
| 12 | | | 11.8 | 14.8 | 8.0 | 118.4 | 23.7 | 26.0 | 56.9 | 28.5 | 54.5 | 52.1 |
| 13 | | | 11.8 | 13.3 | 8.0 | 106.4 | 21.3 | 26.0 | 47.3 | 23.7 | 49.7 | 44.9 |
| 14 | | | 11.8 | 12.0 | 8.0 | 96.0 | 19.2 | 26.0 | 39.0 | 19.5 | 45.5 | 38.7 |
| 15 | | | 11.8 | 10.8 | 8.0 | 86.4 | 17.3 | 26.0 | 31.3 | 15.7 | 41.7 | 32.9 |
| 16 | | | 11.8 | 9.7 | 8.0 | 77.6 | 15.5 | 26.0 | 24.3 | 12.1 | 38.1 | 27.7 |
| 17 | | | 11.8 | 8.7 | 8.0 | 69.6 | 13.9 | | 43.9 | 21.9 | 21.9 | 35.9 |
| 18 | | | 11.8 | 7.9 | 8.0 | 63.2 | 12.6 | | 38.8 | 19.4 | 19.4 | 32.0 |
| 19 | | | 11.8 | 7.1 | 8.0 | 56.8 | 11.4 | | 33.6 | 16.8 | 16.8 | 28.2 |
| 20 | | | 11.8 | 6.4 | 8.0 | 51.2 | 10.2 | | 29.2 | 14.6 | 14.6 | 24.8 |
| nettó összes | | | | | | 1316.0 | | | | | 269.2 | 535.0 |
| NPV (10%) | | | | | | | | | | | 11.6 | 292.0 |
| vállalati IRR | | | | | | | | | | | 10.8% | |

| production sharing | | | | | | | | | | | | | | | |
|--------------------|--------|---------|---------|---------|------------|--------|---------|----------|------------|------------|------------|--------|------------|------------|---------|
| year | explor | investm | product | product | unit price | income | royalty | cost ref | profit oil | profit oil | profit oil | compar | profit oil | profit oil | governm |
| 1 | -50.0 | | | | | | | | | | | | | | |
| 2 | -1.5 | | | | | | | | | | | | | | |
| 3 | -12.7 | | | | | | | | | | | | | | |
| 4 | -13.5 | | | | | | | | | | | | | | |
| 5 | | -46.2 | | | | | | | | | | | -123.9 | | |
| 6 | | -146.3 | | | | | | | | | | | -146.3 | | |
| 7 | | -76.4 | 11.8 | 8.2 | 8.0 | 65.6 | 6.6 | 26.2 | 32.8 | 13.1 | 5.2 | -42.3 | 19.7 | 5.2 | 31.5 |
| 8 | | | 11.8 | 16.4 | 8.0 | 131.2 | 13.1 | 52.5 | 65.6 | 26.2 | 10.5 | 68.2 | 39.4 | 10.5 | 63.0 |
| 9 | | | 11.8 | 16.4 | 8.0 | 131.2 | 13.1 | 52.5 | 65.6 | 26.2 | 10.5 | 68.2 | 39.4 | 10.5 | 63.0 |
| 10 | | | 11.8 | 16.4 | 8.0 | 131.2 | 13.1 | 52.5 | 65.6 | 26.2 | 10.5 | 68.2 | 39.4 | 10.5 | 63.0 |
| 11 | | | 11.8 | 16.4 | 8.0 | 131.2 | 13.1 | 52.5 | 65.6 | 26.2 | 10.5 | 68.2 | 39.4 | 10.5 | 63.0 |
| 12 | | | 11.8 | 14.8 | 8.0 | 118.4 | 11.8 | 47.4 | 59.2 | 23.7 | 9.5 | 61.6 | 35.5 | 9.5 | 56.8 |
| 13 | | | 11.8 | 13.3 | 8.0 | 106.4 | 10.6 | 42.6 | 53.2 | 21.3 | 8.5 | 55.3 | 31.9 | 8.5 | 51.1 |
| 14 | | | 11.8 | 12.0 | 8.0 | 96.0 | 9.6 | 38.4 | 48.0 | 19.2 | 7.7 | 49.9 | 28.8 | 7.7 | 46.1 |
| 15 | | | 11.8 | 10.8 | 8.0 | 86.4 | 8.6 | 34.6 | 43.2 | 17.3 | 6.9 | 44.9 | 25.9 | 6.9 | 41.5 |
| 16 | | | 11.8 | 9.7 | 8.0 | 77.6 | 7.8 | 31.0 | 38.8 | 15.5 | 6.2 | 40.4 | 23.3 | 6.2 | 37.2 |
| 17 | | | 11.8 | 8.7 | 8.0 | 69.6 | 7.0 | 27.8 | 34.8 | 13.9 | 5.6 | 36.2 | 20.9 | 5.6 | 33.4 |
| 18 | | | 11.8 | 7.9 | 8.0 | 63.2 | 6.3 | 25.3 | 31.6 | 12.6 | 5.1 | 32.9 | 19.0 | 5.1 | 30.3 |
| 19 | | | 11.8 | 7.1 | 8.0 | 56.8 | 5.7 | 16.8 | 34.3 | 13.7 | 5.5 | 25.0 | 20.6 | 5.5 | 31.8 |
| 20 | | | 11.8 | 6.4 | 8.0 | 51.2 | 5.1 | 11.8 | 34.3 | 13.7 | 5.5 | 20.0 | 20.6 | 5.5 | 31.2 |
| nettó | | | | | | 1316.0 | | | | | | | 326.6 | | 642.8 |
| NPV (10%) | | | | | | | | | | | | | 26.7 | | 360.6 |
| vállalati IRR | | | | | | | | | | | | | 11.8% | | |

| RRT | | | | | | | | | | | | | | | |
|---------------|--------|---------|---------|---------|------------|--------|--------|--------|--------|--------|-----------------|--|--|--|--|
| year | explor | investm | product | product | unit price | income | compar | accumu | RRT (5 | compar | government take | | | | |
| 1 | -50.0 | | | | | | | | | | | | | | |
| 2 | -1.5 | | | | | | | | | | | | | | |
| 3 | -12.7 | | | | | | | | | | | | | | |
| 4 | -13.5 | | | | | | | | | | | | | | |
| 5 | | -46.2 | | | | | -123.9 | -123.9 | 0.0 | -123.9 | | | | | |
| 6 | | -146.3 | | | | | -146.3 | -285.1 | 0.0 | -146.3 | | | | | |
| 7 | | -76.4 | 11.8 | 8.2 | 8.0 | 65.6 | -22.6 | -341.9 | 0.0 | -22.6 | 0.0 | | | | |
| 8 | | | 11.8 | 16.4 | 8.0 | 131.2 | 119.4 | -263.5 | 0.0 | 119.4 | 0.0 | | | | |
| 9 | | | 11.8 | 16.4 | 8.0 | 131.2 | 119.4 | -175.7 | 0.0 | 119.4 | 0.0 | | | | |
| 10 | | | 11.8 | 16.4 | 8.0 | 131.2 | 119.4 | -77.4 | 0.0 | 119.4 | 0.0 | | | | |
| 11 | | | 11.8 | 16.4 | 8.0 | 131.2 | 119.4 | 32.7 | 16.4 | 103.0 | 16.4 | | | | |
| 12 | | | 11.8 | 14.8 | 8.0 | 118.4 | 106.6 | | 53.3 | 53.3 | 53.3 | | | | |
| 13 | | | 11.8 | 13.3 | 8.0 | 106.4 | 94.6 | | 47.3 | 47.3 | 47.3 | | | | |
| 14 | | | 11.8 | 12.0 | 8.0 | 96.0 | 84.2 | | 42.1 | 42.1 | 42.1 | | | | |
| 15 | | | 11.8 | 10.8 | 8.0 | 86.4 | 74.6 | | 37.3 | 37.3 | 37.3 | | | | |
| 16 | | | 11.8 | 9.7 | 8.0 | 77.6 | 65.8 | | 32.9 | 32.9 | 32.9 | | | | |
| 17 | | | 11.8 | 8.7 | 8.0 | 69.6 | 57.8 | | 28.9 | 28.9 | 28.9 | | | | |
| 18 | | | 11.8 | 7.9 | 8.0 | 63.2 | 51.4 | | 25.7 | 25.7 | 25.7 | | | | |
| 19 | | | 11.8 | 7.1 | 8.0 | 56.8 | 45.0 | | 22.5 | 22.5 | 22.5 | | | | |
| 20 | | | 11.8 | 6.4 | 8.0 | 51.2 | 39.4 | | 19.7 | 19.7 | 19.7 | | | | |
| nettó összes | | | | | | 1316.0 | | | | 478.1 | 326.1 | | | | |
| NPV (10%) | | | | | | | | | | 135.0 | 142.7 | | | | |
| vállalati IRR | | | | | | | | | | 20.1% | | | | | |