



ANALYSIS OF PETROLEUM SYSTEMS, PROSPECT EVALUATION

Petroleum Geoscience MSc course

2018/19 2. Semester

COURSE COMMUNICATION FOLDER

University of Miskolc
Faculty of Earth Science and Engineering
Institute of Mineralogy and Geology

Course datasheet

Course Title: Analysis of petroleum systems, prospect evaluation	Credits: 2
Type (lec. / sem. / lab. / consult.) and Number of Contact Hours per Week: sem. 2	
Neptun code: MFFAT730003	
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>):	
Course Description:	
Acquired store of learning: <u>Study goals:</u> <u>Course content:</u> This topic presents a modern approach to the analysis of sedimentary basins, emphasizing the fundamental controls on basin development. The mechanisms controlling large-scale basin evolution are integrated with structural evolution and sedimentary processes. Analysis techniques include quantitative geophysical modelling, seismic interpretation and detailed sedimentary and stratigraphic analysis of basin infill. Fundamentals of play-based exploration aimed at demonstrating the integration of all aspects of petroleum exploration and petroleum systems analysis. The course includes seismic interpretation, well correlation and common risk segment mapping and the integration of reservoir, source, seal and trap analysis. Prospect and play risk analysis is also outlined as a basis for generating a consistent approach to estimating risked volumetric estimations. This course is deliberately practical and is used as a precursor to the annual European Heath of the Imperial Barrel Award competition (AAPG). <u>Education method:</u> Competencies to evolve: T1, T2, T3, T4, T5, T6, T7, T8, T9, T10, T12, K1, K2, K3, K4, K5, K6, K7, K8, K9, K10, K11, F1, F2, F3	
The 3-5 most important compulsory, or recommended literature (textbook, book) resources:	
<ul style="list-style-type: none">• Bjorlykke, K., 2010: Petroleum Geoscience. From Rock Sediementary Environments to Rock Physics. Springer Verlag• Magoon, L.B., Dow W.G., 1994: The Petroleum System – From Source to Trap. In AAPG Memoir 60, p. 3-24• Otis, R.M., Schneidermann, N., 1997: A Process for Evaluating Exploration Prospects. In AAPG Bulletin, Vol. 81, No.7, p. 1087-1109• Rose, P.R., 2001: Risk Analyses and Management of Petroleum Exploration Ventures. In AAPG Methods in Exploration Series No. 12• Tissot, B.P & Welte, D.H. 1978: Petroleum Formation and Occurence. A new Approach to Oil and Gas Exploration. Springer-Verlag	
Responsible Instructor (<i>name, position, scientific degree</i>):	

Imre Szilágyi., assistant lecturer (Eötvös Lóránd University)

Other Faculty Member(s) Involved in Teaching, if any (*name, position, scientific degree*):

Ahmed Amran Dr., PhD (MOL Group)

Syllabus of the semester

Thursday, 15:00 – 17:00

<i>Date</i>	<i>Practical</i>
2019.02.14.	This topic presents a modern approach to the analysis of sedimentary basins, emphasizing the fundamental controls on basin development.
2019.02.21.	The mechanisms controlling large-scale basin evolution are integrated with structural evolution and sedimentary processes.
2019.02.28.	The mechanisms controlling large-scale basin evolution are integrated with structural evolution and sedimentary processes.
2019.03.07.	Analysis techniques include quantitative geophysical modelling, seismic interpretation and detailed sedimentary and stratigraphic analysis of basin infill.
2019.03.14.	Analysis techniques include quantitative geophysical modelling, seismic interpretation and detailed sedimentary and stratigraphic analysis of basin infill.
2019.03.21.	Fundamentals of play-based exploration aimed at demonstrating the integration of all aspects of petroleum exploration and petroleum systems analysis.
2019.03.28.	Fundamentals of play-based exploration aimed at demonstrating the integration of all aspects of petroleum exploration and petroleum systems analysis.
2019.04.04.	The course includes seismic interpretation, well correlation and common risk segment mapping and the integration of reservoir, source, seal and trap analysis.
2019.04.11.	The course includes seismic interpretation, well correlation and common risk segment mapping and the integration of reservoir, source, seal and trap analysis.
2019.04.18.	Prospect and play risk analysis is also outlined as a basis for generating a consistent approach to estimating risked volumetric estimations.
2019.04.25.	Prospect and play risk analysis is also outlined as a basis for generating a consistent approach to estimating risked volumetric estimations.
2019.05.02.	This course is deliberately practical and is used as a precursor to the annual European Heath of the Imperial Barrel Award competition (AAPG).
2019.05.09.	Holiday
2019.05.16.	This course is deliberately practical and is used as a precursor to the annual European Heath of the Imperial Barrel Award competition (AAPG).

Test

1. The „critical moment” is the time of the onset of hydrocarbon generation
2. The Hydrogen Index informs about the efficiency of primary migration.
3. The orthocontour map illustrates migration focusing.
4. Additional data acquisition always increases the Geological Probability of a Play Segment.
5. Observation of few IV type kerogen suggests that hydrocarbon generation is improbable.
6. The Geological Probability of a Prospect is usually lower than that of the embodying Play Segment.
7. Play Fairway Maps are illustrating lithofacies information.
8. The complexity of Play processes increases the geological risk.
9. The Geological Probability of a Play Segment gives the chance to find hydrocarbon within the Segment.
10. The chance to find hydrocarbon in a carbonate build-up is always higher than it is fractured metamorphic reservoirs.