

Regular Training Course on **Petroleum Exploration, Development and Production**

- Module 1 -

(Module 1) – Petroleum Economics & Unconventional Resources

(Venue : Ara room)

Date/Time	Program Description	Remarks
1.19 (Mon) 09:20-9:50	Orientation	IS-Geo (Nuri Hall)
1.19 (Mon)	Overview of Petroleum Industry	
10:00-10:50	Overview: Global energy supply and demand	Dr. Younkyoo Kim (Hanyang Univ.)
11:00-12:10	Is unconventional energy the answer to peak oil?	
12:10-13:10	<i>Lunch</i>	
13:10-14:00	Does the US have more oil than Soudai Arabia?	
14:10-15:30	The 21st century goldrush: shale gas revolution	
15:40-17:00	The LNG market in the Asia-Pacific	
1.20 (Tue)	Petroleum Economics	
09:00-9:50	<i>Korean Language Class</i>	Mirinae room
10:00-12:10	Energy projects and DCF	Dr. Jinsoo Kim (Hanyang Univ.)
12:10-13:10	<i>Lunch</i>	
13:10-14:20	Basics of feasibility study for petroleum assets	
14:30-15:40	Risks in energy projects	
15:50-17:00	Economics of energy sources	
1.21(Wed)	Investment on Shale Gas Revolution	
09:00-9:50	<i>Korean Language Class</i>	Mirinae room
10:00-10:50	Overview of recent M&A transactions regarding the shale gas revolution	Mr. Heejun Park (Energy Innovation Partners)
11:00-12:10	New Trend of Shale Gas Revolution – by Key Words	
12:10-13:10	<i>Lunch</i>	
13:10-14:00	Investment Technique: Where to go? When & How?	
14:10-15:00	Oil and Gas Value Chain – Upstream, Midstream, Downstream	
15:10-16:00	Case Study I	
16:10-17:00	Case Study II	
1.22 (Thu)	Unconventional Gas	
09:00-9:50	<i>Korean Language Class</i>	Mirinae room
10:00-10:50	Feature of unconventional gas (CBM)	Dr. Won Suk Lee (KIGAM)
11:00-12:10	Feature of unconventional gas (CBM) (cont.)	
12:10-13:10	<i>Lunch</i>	
13:10-14:00	Feature of unconventional gas (CBM) (cont.)	
14:10-15:00	Feature of unconventional gas (Shale Gas)	
15:10-16:00	Feature of unconventional gas (Shale Gas) (cont.)	
16:10-17:00	Feature of unconventional gas (Shale Gas) (cont.)	
1.23 (Fri)	Unconventional Oil	
09:00-9:50	<i>Korean Language Class</i>	Mirinae room
10:00-10:50	Introduction to unconventional oil	Dr. Hyundon Shin (Inha Univ.)
11:00-12:10	Fundamental of oil sands development	
12:10-13:10	<i>Lunch</i>	
13:10-14:00	Fundamental of oil sands development (cont)	
14:10-15:00	Oil sands in-situ recovery method	
15:10-16:00	Oil sands in-situ recovery methods(cont)	
16:10-17:00	Introduction to SAGD process	

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- Module 2 -

(Module 2) – Reservoir & Sequence Stratigraphy

(Venue : Ara room)

Date/Time	Program Description	Remarks
1.26 (Mon)	Sandstone Reservoir	
09:00-09:50	<i>Korean Language Class</i>	Mirinae room
10:00-10:50	Reservoir related sedimentology	Dr. In Gul Hwang (KIGAM)
11:00-12:10	Sedimentary processes and structures	
12:10-13:10	<i>Lunch</i>	
13:10-14:00	Facies model of alluvial fan, fluvial, delta and lake environment	
14:10-15:30	Facies model of clastic shoreline	
15:40-17:00	Facies model of deep sea environment	
1.27 (Tue)	Carbonate Reservoir	
09:00-09:50	<i>Korean Language Class</i>	Mirinae room
10:00-11:00	Limestone forming components and classification	Dr. Suk-Joo Choh (Korea Univ.) & Dr. Yi Kyun Kwon (Kongju Nat' Univ.)
11:10-12:10	Diagenesis of calcareous sediments	
12:10-13:10	<i>Lunch</i>	
13:10-14:00	Dolomitization	
14:10-15:00	Carbonate depositional environments	
15:10-16:00	Carbonate sequence stratigraphy	
16:10-17:00	Carbonate and hydrocarbon reservoir	
1.28 (Wed)	Basin Analysis	
09:00-09:50	<i>Korean Language Class</i>	Mirinae room
10:00-11:00	Plate tectonics and sedimentary basins	Dr. Yong Il Lee (Seoul Nat' Univ.)
11:10-12:10	Basin-fills: Data acquisition	
12:10-13:10	<i>Lunch</i>	
13:10-15:00	Basin-fills: Facies and stratigraphy	
15:10-16:00	Trapping mechanisms for oil and gas	
16:10-17:00	Application to exploration	
1.29 (Thu)	Visit to MOFA (Ministry of Foreign Affairs) & Culture Trip	IS-Geo Staffs
1.30 (Fri)	Petroleum Geology & Geochemistry	
09:00-09:50	<i>Korean Language Class</i>	Mirinae room
10:00-11:00	Composition and characteristics of Petroleum	Dr. Young Joo Lee (KIGAM)
11:10-12:10	Characteristics of organic matter	
12:10-13:10	<i>Lunch</i>	
13:10-14:00	From Kerogen to Petroleum	
14:10-15:00	Biomarkers	
15:10-16:00	Analytical methods of Source Rocks	
16:10-17:00	Petroleum Migration & Trap	

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- Module 3 -

(Module 3) – Reservoir Geophysics & Petrophysics

(Venue : Ara room)

Date/Time	Program Description	Remarks
2.2 (Mon)	Petrophysics	
09:00-09:50	<i>Korean Language Class</i>	Mirinae room
10:00-11:00	Introduction to petrophysics	Dr. Youngseuk Keehm (Kongju Nat' Univ.)
11:10-12:10	Petrophysical properties and lab measurements	
12:10-13:10	<i>Lunch</i>	
13:10-14:00	Well logging: Primary tool for petrophysical analysis	
14:10-15:00	Pore structures and property estimation techniques	
15:10-16:00	Reservoir characterization with petrophysical properties	
16:10-17:00	Characterization example: Offshore gas reservoirs in Korea	
2.3 (Tue)	Seismic Interpretation	
08:30-09:30	<i>Korean Language Class</i>	Mirinae room
10:00-10:50	Introduction to oil and gas exploration	Dr. Don Sunwoo (KIGAM)
11:00-12:10	Seismic basics (1)	
12:10-13:10	<i>Lunch</i>	
13:10-14:00	Seismic basics (2)	
14:10-15:00	Seismic reflection method	
15:10-16:00	Seismic reflection method (cont.)	
16:10-17:00	Seismic reflection method (cont.)	
2.4 (Wed)	Seismic Interpretation (cont.)	
09:00-09:50	<i>Korean Language Class</i>	Mirinae room
10:00-11:00	Seismic data preparation and preliminary studies	Dr. Don Sunwoo (KIGAM)
11:10-12:10	Seismic data preparation and preliminary studies (cont.)	
12:10-13:10	<i>Lunch</i>	
13:10-14:00	Seismic structural interpretation	
14:10-15:00	Seismic structural interpretation (cont.)	
15:10-16:00	Seismic stratigraphic interpretation	
16:10-17:00	Seismic stratigraphic interpretation (cont.)	
2.5 (Thu)	Well Logging	
09:00-09:50	<i>Korean Language Class</i>	Mirinae room
10:00-11:00	Basic principles	Dr. Bohyun Chon (Inha Univ.)
11:10-12:10	Types of logging tools	
12:10-13:10	<i>Lunch</i>	
13:10-14:00	Methods to determine water saturation	
14:10-15:00	Analysis of gas formation	
15:10-16:00	Methods to determine porosity and lithology	
16:10-17:00	Interpretation of shaly formation	
2.6 (Fri)	G & G Model	
09:00-09:50	<i>Korean Language Class</i>	Mirinae room
10:00-11:00	G&G data feature and practical data loading process	Mr. Yongchae Cho (Schlumberger)
11:10-12:10	Data preparation of geological modeling	
12:10-13:10	<i>Lunch</i>	
13:10-14:00	Basic geostatistics	
14:10-15:00	Overview of geological modeling process	
15:10-16:00	Example of geological modeling (with Petrel)	
16:10-17:00	Example of geological modeling (with Petrel) (cont.)	

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- Module 4 -

(Module 4) – Petroleum Engineering		(Venue : Ara room)
Date/Time	Program Description	Remarks
2.9 (Mon)	Reservoir Engineering	
09:00-09:50	<i>Korean Language Class</i>	Mirinae room
10:00-10:50	Fundamental Reservoir Engineering	Dr. S.M. Farouq Ali (Univ. of Calgary)
11:00-12:10	Fundamental Reservoir Engineering (cont.)	
12:10-13:10	<i>Lunch</i>	
13:10-14:00	Reservoir fluid and PVT behavior	
14:10-15:00	Reservoir fluid and PVT behavior (cont.)	
15:10-16:00	Drive mechanisms/ Material balance	
16:10-17:00	Drive mechanisms/ Material balance (cont.)	
2.10 (Tue)	Reservoir Engineering (cont.)	
09:00-09:50	<i>Korean Language Class</i>	Mirinae room
10:00-11:00	Fundamental well test analysis	Dr. S.M. Farouq Ali (Univ. of Calgary)
11:10-12:10	Fundamental well test analysis (cont.)	
12:10-13:10	<i>Lunch</i>	
13:10-14:00	Fundamental well test analysis (cont.)	
14:10-15:00	Reservoir modelling and simulation	
15:10-16:00	Reservoir modelling and simulation (cont.)	
16:10-17:00	Reservoir modelling and simulation (cont.)	
2.11 (Wed)	Enhanced Oil Recovery (EOR)	
09:00-09:50	<i>Korean Language Class</i>	Mirinae room
10:00-11:00	Introduction to EOR processes	Dr. S.M. Farouq Ali (U of Calgary)
11:10-12:10	Primary and secondary recovery phase	
12:10-13:10	<i>Lunch</i>	
13:10-14:00	Miscible, chemical and thermal methods	
14:10-15:00	Miscible, chemical and thermal methods (cont.)	
15:10-16:00	New technical challenges	
16:10-17:00	New technical challenges (cont.)	
2.12 (Thu)	Drilling & Completion	
09:00-09:50	<i>Korean Language Class</i>	Mirinae room
10:00-11:00	Drilling system, Drilling rig & rig selection	Dr. Dae Sung Lee (Dong-A Univ.)
11:10-12:10	Hole problems & Drilling fluids	
12:10-13:10	<i>Lunch</i>	
13:10-14:00	Drill bit & Casing & cementing	
14:10-15:00	Directional drilling	
15:10-16:00	Well control	
16:10-17:00	Completion	
2.13 (Fri)	Country Report Presentation	IS-Geo staffs and all nominees

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