

**Faculty of Engineering & Technology**

**Humanities/Social Science Elective**

**Information :**

**Course Code :** HUM HY

**Level :** Undergraduate

**Course Hours :** 2.00- Hours

**Department :** Department of Petroleum Engineering

**Instructor Information :**

Title	Name	Office hours
Associate Professor	Moataz Mohamed Adel EIShafeiy	2
Associate Professor	Moataz Mohamed Adel EIShafeiy	2
Teaching Assistant	Taha Abdelhamid Abdelmaqsoud Abdelhamid Yehia	
Teaching Assistant	Taha Abdelhamid Abdelmaqsoud Abdelhamid Yehia	

**Area Of Study :**

The Main Goals of this course are to familiarize students with the unique aspects of unconventional gas and oil reservoirs, including their economic significance, geologic occurrences, controls on production, drilling and completion practices, reservoir management, and present activity.

**Description :**

Intro. to interdisciplinary environmental study in the social sciences and humanities. Topics include: differing interpretations of nature and environment; contrasting understandings of relationships between humans and their environments; key concepts in environmental studies such as sustainable development and the precautionary principle; different conceptions of, and objections to, environmentalism. These ideas and debates will be explored in the context of important current environmental controversies.

**Course outcomes :**

**a.Knowledge and Understanding: :**

1 -	Describe unique geological characteristics of unconventional resources and their technical, economic, political, and environmental constraints.
2 -	Illustrate the low-permeability sands and their drilling and completion methods.
3 -	Describe the Coalbed Gases and their occurrences, resources, reservoir characteristics, drilling and completion methods.
4 -	Describe the Heavy oil and their occurrences, resources, reservoir characteristics, drilling and completion methods.

**b.Intellectual Skills: :**

1 -	Apply principles of geo-mechanics to unconventional reservoirs.
2 -	Identify maps and reservoir traps.
3 -	Think in a creative way.

**c. Professional and Practical Skills: :**

1 -	Apply knowledge of mathematics, science, and engineering to compute the characteristics of unconventional resources, Coalbed Gases, low permeability sands and heavy oils.
-----	--

**d. General and Transferable Skills: :**

1 -	Collaborate effectively within multidisciplinary teams.
2 -	Acquire entrepreneurial skills.
3 -	Refer to relevant literature.

**Course Topic And Contents :**

Topic	No. of hours	Lecture	Tutorial / Practical
Introduction to Unconventional Energy Resources	8	4	4
Low-permeability (Tight) Sands	8	4	4
Coalbed Gas	12	6	6
Shale Reservoirs (Gas and Oil)	12	6	6
Heavy Oil	12	6	6
Other Unconventional Energy Resources and Issues That May be Addressed	8	4	4

**Teaching And Learning Methodologies :**

Interactive Lecturing
Problem Solving
Experiential Learning

**Course Assessment :**

Methods of assessment	Relative weight %	Week No	Assess What
Assignment	10.00		
Final Exam	40.00		
Mid- Exam I	25.00		
Participation	10.00		
Quiz	15.00		

**Recommended books :**

Á. Zee Ma and Stephen A. Holditch: %Unconventional Oil and Gas Resources Handbook Evaluation and Development-Á Gulf Professional Publishing is an imprint of Elsevier, 2016.

ÁM. RAFIQL ISLAM : %UNCONVENTIONAL GAS RESERVOIRS Evaluation, Appraisal and Development-Á Gulf Professional Publishing is an imprint of Elsevier, 2015.

ÁVivek Bakshi : %Shale Gas: A Practitioner's Guide to Shale Gas and Other Unconventional Resources-Á Globe Law And Business; 1 edition (December 1, 2012)

ÁJames Jacobs, and Stephen Testa : %Fracking: Environmental Protection and Development of Unconventional Oil and Gas Resources, -Á 1st edition, McGraw-Hill Education; 1 edition (June 24, 2016).

ÁReza Rezaee : %Fundamentals of Gas Shale Reservoirs, %1st Edition, Wiley; 1 edition (July 27, 2015).

ÁSpeight %Shale Gas Production Processes, -Á 1st Edition, Gulf Professional Publishing, 24 Jun 2013.