

## Faculty of Engineering & Technology

### Properties of Petroleum Fluids

#### Information :

**Course Code :** PE 301

**Level :** Undergraduate

**Course Hours :** 3.00- Hours

**Department :** Department of Petroleum Engineering

#### Instructor Information :

Title	Name	Office hours
Professor	Ismail Shaaban Ismail Mahgoub	10
Assistant Lecturer	MOAMEN AHMED GASSER HASSAN KAMEL IBRAHIM KAMEL	
Teaching Assistant	Reham Shawket Mostafa Taha Khalaaf	2

#### Area Of Study :

- Develop knowledge about the various properties of petroleum reservoir fluids
- Prepare to identification of reservoir fluid types
- Train to perform prediction of phase behaviour in both single phase and multi-component systems.

#### Description :

Physical properties of petroleum fluids; chemical components of petroleum fluids. Elementary phase behaviour; calculations of the physical properties of gases, liquids, and gas-liquid mixtures in equilibrium.

#### Course outcomes :

##### a. Knowledge and Understanding: :

- 1 - Illustrate the various petroleum fluid types
- 2 - Compare between the lab tests used to identify different fluid type and behaviour.
- 3 - Explain the properties of each type of fluid as well as its phase diagram.

##### b. Intellectual Skills: :

- 1 - Solve the reservoir fluid properties and composition

##### c. Professional and Practical Skills: :

- 1 - Practice basic experiments to perform the required lab tests to know reservoir fluid
- 2 - Evaluate the different types of reservoir fluids

##### d. General and Transferable Skills: :

- 1 - Collaborate effectively within multidisciplinary team.
- 2 - Work in stressful environment and within constraints.
- 3 - Communicate effectively

### **Course Topic And Contents :**

<b>Topic</b>	<b>No. of hours</b>	<b>Lecture</b>	<b>Tutorial / Practical</b>
Introduction	5	3	2
Physical properties of petroleum fluids	10	6	4
Chemical components of petroleum fluids	5	3	2
Hydrocarbon phase behavior	15	9	6
Laboratory PVT Data	13	9	4
Physical properties of gas	15	9	6
Gas-Liquid mixtures in equilibrium	12	6	6

### **Teaching And Learning Methodologies :**

Interactive Lecturing  
Discussion  
Problem-based Learning  
Report  
Experiential Learning

### **Course Assessment :**

<b>Methods of assessment</b>	<b>Relative weight %</b>	<b>Week No</b>	<b>Assess What</b>
Assignment	5.00	5	
Final Exam	40.00	15	
Lab Exper.	10.00		
Mid- Exam I	25.00	1	
Oral Exam	5.00	7	
Quizzes	15.00	5	

### **Web Sites :**

www.spe.org