

## Faculty of Engineering & Technology

### Petroleum Engineering Design Project

#### Information :

**Course Code :** PE 501

**Level :** Undergraduate

**Course Hours :** 3.00- Hours

**Department :** Department of Petroleum Engineering

#### Instructor Information :

Title	Name	Office hours
Professor	Ismail Shaaban Ismail Mahgoub	
Associate Professor	Taher El Sebaey Taher El Fakhry	
Lecturer	Omar Saad Ahmed Mahmoud	2
Lecturer	Mohamed Alaa Eldin Mohamed Abdelbakey	
Lecturer	Mohamed Ghareeb Moustafa Ahmed	2
Assistant Lecturer	YOUSSEF ELSAYED ABDELHAFEZ KANDIEL	
Teaching Assistant	Akram Rabie Hamed Ragheb Tobar	
Teaching Assistant	Ahmed Hamdy Hafez Hassan Saied	

#### Area Of Study :

- Manage in group with opportunity to implement the appropriate concepts and techniques to design a particular project.
- Implement industrial field data and use it in the designing a project.
- Develop knowledge of the petroleum engineering project design.
- Recognize to select the appropriate petroleum engineering technique to evaluate and predict the future performance of a specific field case study.

#### Description :

Senior capstone design project(s) based on industry data. -Application of reservoir engineering, drilling and production engineering principles to evaluate and solve an industry problem such as a new field development, evaluation of an existing reservoir asset, or analysis of field re-development.

#### Course outcomes :

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

1 -	List reservoir applications to evaluate and solve an industry problem
2 -	Describe drilling engineering to evaluate and solve an industry problem
3 -	Explain production engineering to evaluate and solve an industry problem
4 -	Describe logging to evaluate and solve an industry problem

##### b. Intellectual Skills: :

1 -	Investigate appropriate solutions for engineering problems based on analytical thinking and data collection.
2 -	Develop a creative and innovative way in problem solving and design.

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

1 -	Apply knowledge of mathematics, science, information technology, design, business context and engineering practice integrally to create proper project design.
2 -	Develop the engineering knowledge, understanding, collected data and feedback to make the integration of project design.
3 -	Apply practical knowledge in final presentations.

**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 :**

Topic	No. of hours	Lecture	Tutorial / Practical
Future Performance Prediction for Nameless Reservoir Using Material Balance Calculations and Decline Curve Analysis.	5	3	2
Determination of the OOIP for Water Drive Reservoirs with NO Prior Knowledge of Aquifer Properties and Geometry.	10	6	4
Comparative Investigation of Well Testing Results using Horner and Saphir Software for Pressure Buildup and Drawdown Tests.	5	3	2
Diagnoses and Management of Water Production Resources in Mature Sandstone Reservoirs Using TDT and CHFR Logging Data.	10	6	4
Maximize oil Recovery by using water Flooding Technique: Simulation Study.	5	3	2
Interactive Program for Drill String Failure Detection and Prevention before and while Drilling.	5	3	2
Basis of Ideal Well Design.	10	6	4
Developing a Reservoir Zonation and Characterization Using Core-Data.	5	3	2
Basic open and cased hole logging interpretation in Oil & Gas Zones.	5	3	2
Integration of geological & engineering data in the development of oil & gas fields.	10	6	4
Uncertainty Analysis of Archie's Parameters Determination Techniques and Water Saturation in Carbonate Reservoirs.	10	6	4

**Teaching And Learning Methodologies :**

Interactive Lecturing
Discussion
Report

### **Course Assessment :**

Methods of assessment	Relative weight %	Week No	Assess What
Final Presentation and Report	40.00		
Project preparation	15.00		
Weekly discussion with the project supervisor	45.00		

### **Recommended books :**

All Petroleum Engineering References delivered previously by FUE

### **Periodicals :**

Onepetro

### **Web Sites :**

www.spe.org