Course Code	Course Title	ECTS Credits
OGEE-520DL	Drilling Methods and Well Testing	7.5
Department	**Semester**	**Prerequisites**
Engineering	Fall, Spring	None
Type of Course	**Field**	**Language of Instruction**
Required	Oil, Gas and Energy Engineering	English
Level of Course	**Year of Study**	**Lecturer(s)**
2nd Cycle	1st/2nd	Dr Nicolas Kokkinos
Mode of Delivery	**Work Placement**	**Co-requisites**
Distance Learning	N/A	None

Objectives of the Course:

The main objectives of the course are to:

- Introduce the students to the role of drilling methods, the concepts and the results of well test analysis
- Provide solid knowledge on drilling engineering, types of drilling structures and rotary drilling process
- Provide solid knowledge on well testing, well performance, reservoir performance, reservoir characterization, interpretation and reservoir models
- Provide solid technical knowledge on the geological and economical aspects, reserves and resources

Learning Outcomes:

After completion of the course students are expected to:

- Explain the role of drilling methods, the concepts and the results of well test analysis
- Analyze the types of drilling structures and rotary drilling process
- Analyze the well testing, well performance, reservoir performance, reservoir characterization, interpretation and reservoir models
- Evaluate the performance of the geological and economical aspects, reserves and resources

Course Contents:

- Introduction to drilling engineering overview, drilling methods, types of drilling structures, the rotary drilling process.
- Drilling rigs, drilling functions and components, drilling equipment.
- Identification and solution of drilling problems.
- Well completion.
- Acidizing and fracturing.

- Directional and horizontal drilling.
- Introduction to well testing, well performance, reservoir performance, reservoir characterization, interpretation and reservoir models.
- Mathematical representations of the well test interpretation model.
- Well test interpretation techniques.
- Interpretation models.
- Gas wells, multiphase flows.
- Special tests – test design.
- Prospects and probabilities (Geological aspects, economical aspects, reserves and resources)

Learning Activities and Teaching Methods:

Lectures, Online Questions, Projects, Discussion

Assessment Methods:

Assignments, Online Exercises, Final Exam

Required Textbooks/Reading:

Authors	Title	Publisher	Year	ISBN
R.F. Mitchell and S.Z. Miska (ed.)	Fundamentals of drilling engineering	SPE	2011	
D. Bourdet	Well Test Analysis: The Use of Advanced Interpretation Models	Elsevier	2002	

Recommended Textbooks/Reading:

Authors	Title	Publisher	Year	ISBN
J.J. Azar and G.R. Samuel	Drilling Engineering	PennWell	2007	
Schlumberger	Foundamentals of formation testing	Schlumberger	2006	