



Course Code OGEE-526DL	Course Title Production Process Engineering	ECTS Credits 7.5
Department Engineering	Semester Fall, Spring	Prerequisites None
Type of Course Required	Field Oil, Gas and Energy Engineering	Language of Instruction English
Level of Course 2 nd Cycle	Year of Study 1 st /2 nd	Lecturer(s) Dr Ioannis Bakouros
Mode of Delivery Distance Learning	Work Placement N/A	Co-requisites None

Objectives of the Course:

The main objectives of the course are to:

- Introduce students to the practical knowledge of Oil & Gas processes
- Provide the tools to convert theoretical knowledge into useful practical skills.
- Help the students to apply their knowledge of mechanical, electrical and chemical engineering in an oil and gas production engineering environment

Learning Outcomes:

After completion of the course students are expected to:

- Explain the main characteristics and principles of Oil & Gas processes and Production Engineering.
- Understand and calculate the main properties of petroleum fluids.
- Calculate the main losses in pipe flows.
- Use engineering tools to evaluate the petroleum process.
- Be familiar with the most critical, demanding and common practice processes in terms of Complexity of Operation and Plant Profit in the Gas & Oil Process.

Course Contents:

- Introduction to Petroleum Engineering
- Petroleum – Oil and Gas - Hydrocarbons
- Properties of Hydrocarbon Mixtures
- Fundamentals of reservoir and Laboratory analysis of reservoir fluids
- Ideal Gases – Equation of State
- Real Gases – Compressibility Factor
- Flow of Fluids – Laminar and Turbulent Flow
- Basic Parameters of Multiphase Flow
- Natural Flow Performance
- The completion phase in Petroleum Engineering

- Oil recovery mechanisms – material balance equation
- Pipe Flow; Artificial Lift

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
T.Ahmed	Reservoir Engineering Handbook, 4 th edition	Elsevier	2010	
Havard Devold	Oil and Gas Production Handbook: An Intro to Oil and Gas Production		2006	

Practice Software (Work in the PC Lab):

Authors	Title	Publisher	Year	ISBN
Aspen Tech group http://www.aspentech.com	Chemical Process Design	Aspen Tech Inc	2010	

Recommended Textbooks/Reading:

Authors	Title	Publisher	Year	ISBN
F.S. Manning	Oilfield Processing Petroleum, Vol.1: Natural Gas	PennWell Books	1991	
F.S. Manning	Oilfield Processing Petroleum, Vol.2: Crude oil	PennWell Books	1995	