Course Code	Course Title	ECTS Credits
OGEE-521DL	Reservoir Engineering	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 students to basic aspects of oil and gas process engineering
- Provide technical/practical knowledge and skills related to important processing concepts (i.e. flow phenomena, hydrate formation, pressure (surge) waves, or high viscosity liquid flow failure)
- Promote the use of complex software tools; process simulation, process design, process control, or similar technical specialized software
- Identify any special requirements for optimal design and operations of natural gas/oil transmission pipelines and processing plants

Learning Outcomes:

After completion of the course students are expected to:

- Use engineering tools and practices to assess the diversified processing operations
- Familiarise students on dynamic modelling software environments
- Ability to work effectively with engineers, operators and managers in oil and gas facilities and interface effectively with plant operation personnel
- Understand and evaluate “downstream” sector; refining and processing of crude oil and gas products, their distribution and marketing
- Define future prospects of oil and gas process engineering

Course Contents:

- Introduction to oil and gas process engineering
- Description of equipment and operational units
- Properties of hydrocarbon mixtures
- Performance and natural flow of fluids
- Separation processing
- Condensate stabilization

- Dynamic simulation of processing plants
- Real time optimization
- Production of added value products
- Sulfur recovery and handling, sweetening of natural gas
- Environmental aspects of natural gas and oil supply chain

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
William C. Lyons, Gary J Plisga	Standard Handbook of Petroleum and Natural Gas Engineering	Elsevier, 2nd Edition	2011	0-7506-7785-6

Practice Software (Work in the PC Lab):

Authors	Title	Publisher	Year	ISBN
Computer Modelling Group Ltd. http://www.cmgl.ca	Reservoir simulation	Computer Modelling Group Ltd.		

Recommended Textbooks/Reading:

Authors	Title	Publisher	Year	ISBN
Saeid Mokhatab, William A. Poe	Handbook of Natural Gas Transmission and Processing	Gulf Professional Publishing	2012	978-0-12-386914-2
William Lyons	Working Guide to Petroleum and Natural Gas Production Engineering	Elsevier	2010	978-1-85617-845-7