Course unit title:	**Oil & Gas Geology and Reservoir Characterization**		
Course unit code:	PEG200		
Type of course unit:	Compulsory		
Level of course unit:	Bachelor (1st Cycle)		
Year of study:	3		
Semester when the unit is delivered:	6		
Number of ECTS credits allocated :	6		
Name of lecturer(s):	Dr. Christakis Onisiphorou		
Learning outcomes of the course unit:	1. Understand the process of oil & gas formation and position in the overall petroleum system. 2. Appreciate the potential of sedimentary rocks as source, reservoir or seal rocks. 3. Integrate data from a variery of sources to establish the geological history of an area. 4. Understand fundamental reservoir properties and familiarize with phase behaviour of hydrocarbon systems and mutli-phase flow of fluids. 5. Appreciate different reservoir types and the importance of reservoir monitoring.		
Mode of delivery:	Face-to-face		
Prerequisites:	None	Co-requisites:	None
Recommended optional program components:	None		
Course contents:	• **Introduction to petroleum geology**: the Earth as a dynamic body. Origin, formation and age. Importance of geological time and geological periods. Long-term geological evolution. • **Stratigraphic principles, plate tectonics and structural geology**: Stratigraphy and paleontology. Plate tectonics. Structural geology (faults, folds and joints) and its importance to oil and gas exploration. • **Sedimentology and sedimentary rock formation:** Earth Surface Processes. Depositional environments. Sedimentary rocks and importance in oil and gas exploration. Significance of internal structures in sedimentary rocks. Source, reservoir and seal rocks. Oil entrapment. • **Hydrocarbon exploration**: geological and seismic surveys. Gravity methods. Exploratory wells and logging. • **Reservoir characterization**: Material balance concept. Phase behaviour of hydrocarbons, Pressure Temperature diagram. Multi-phase fluid flow in porous media. Reservoir classification, monitoring and drive mechanisms. Oil reserve estimation. • **Field development and recovery methods**: Field development planning. Primary and secondary recovery methods. Enhanced oil recovery.		
Recommended and/or required reading:			

Textbooks:	Selley, R.C. (1998), ***Elements of Petroleum Geology***. 2nd ed. Academic Press, San Diego.
References:	Bjorlykke, K. (2010), ***Petroleum Geoscience: From Sedimentary Environments to Rock Physics***. Springer, Heidelberg. Slatt, R.M. (2007), ***Stratigraphic reservoir characterization for petroleum geologists, geophysicists, and engineers***, Elsevier Science.
Planned learning activities and teaching methods:	The course will be presented through formal lectures in class. The lectures will present to the student the course content and allow time for questions and discussion. Part of the material will be presented using visual aids such as powerpoint slides. The aim is to familiarize the student with the different and faster pace of presentation and also allow the instructor to present related material (videos, slides, photographs etc) that would otherwise be very difficult to do so. Notes shall be taken by the students in class during lectures. In addition, all of the course material will be made available through the class website and also through the university's own e-learning platform. Finally, the instructor will be available to students during office hours or by appointment in order to provide any necessary tutoring.
Assessment methods and criteria:	• Coursework 40% • Final Exam 60%
Language of instruction:	English
Work placement(s):	No