

Module (Course Syllabus) Catalogue 2022-2023

Institute	Erbil Technology College	
Department	Petroleum Technology	
Module Name	Petroleum Industrial Equipment	
Module Code	GEG203	
Semester	2 nd	
Credits	5	
Module type	Prerequisite <input type="checkbox"/>	Core <input checked="" type="checkbox"/> Assist. <input type="checkbox"/>
Weekly hours	3	
Weekly hours (Theory)	(3)hr Class	(125)hr Workload
Weekly hours (Practical)	(-)hr Class	()hr Workload
Lecturer (Theory)	Revan Akram, PhD. student	
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Lecturer (Tutorial)	Bekhal, MSc	
E-Mail & Mobile NO.		

Course Book

<p>Course Description</p>	<p>10. Course overview: In general, this course explains the basic foundation of Geology and its branches: sedimentology, stratigraphy, structural geology ...etc. in the end of this course the students will have an overview about the geological processes that is associated with formation of hydrocarbon formation and reservoir development</p>
<p>Course objectives</p>	<ul style="list-style-type: none"> ○ Introduction to Geology ○ Types of rocks ○ Mountain formation ○ Earthquakes and volcanoes ○ Sedimentary rocks and hydrocarbon basins ○ Paleontology, fossils and its relation with oil and gas industry ○ Structural geology and reservoir formation ○
<p>Student's obligation</p>	<ol style="list-style-type: none"> 1. Attendance – is expected at all lectures and it is monitored and recorded. 2. Students in all sections of this course will be required to do the following: 3. Students will participate in lecture activities including discussions, quizzes and in class assignments 4. Quizzes are designed to assist you in understanding the course materials and to provide you with examples of the type of questions that will be on the exams. 5. Students will turn in assigned homework problems and questions 6. Students may participate in optional cooperative learning groups 7. Students will participate in laboratory experiments and turn in laboratory reports 8. NO CELL PHONES- Cell phones are not allowed to be used as calculators in class or lab
<p>Required Learning Materials</p>	<ol style="list-style-type: none"> 1. First five minutes is to remind students with a previous subject in last lecture. 2. Noted and handout of lecture are given to students containing details of the topics using power point presentation. 3. During the lecture, lecturer explains subject by a written on white board to become more understandable and simple.

	<p>4. At the end of the lecture, lecturer allows students ask their questions.</p> <p>5. Presenting some of the available operations with videos if required for better understanding.</p>	
Assessment scheme	<p>16% Mid Term exam</p> <p>4% Quiz</p> <p>40% Assignment (report, paper, homework, seminar...)</p> <p>25% final exam</p> <p>15% final theory</p>	
Specific learning outcome:	<p>General idea of the petroleum industry</p> <p>Equipment associated with drilling operation.</p> <p>Operations and procedures runs during drilling operation</p> <p>Some specific operations which is significant in the field.</p>	
Course References:	<p>Bjorlykke, Knut 2010. Petroleum geoscience: From sedimentary environments to rock physics, Springer Science & Business Media</p> <p>Selley, Richard C 1998. Elements of petroleum geology, Gulf Professional Publishing.</p> <p>Tucker, Maurice E 2003. Sedimentary rocks in the field, John Wiley & Sons.</p> <p>Tyson, Rv 2012. Sedimentary organic matter: organic facies and palynofacies, Springer Science & Business Media.</p> <p>Atlas of Geology, 2012</p>	
Course topics (Theory)	Week	Learning Outcome
General Geology-01 (Introduction and course overview)	1	What is geology? How does geology impact our lives Key points in history of geology
General Geology-02 (Plate tectonics and geodynamic)	2	Tectonic plates and their movement, earth quakes and volcanoes
General Geology-03 (Mineral and Rocks)	3	Mineral and rock properties, rock classifications: geologic

		rock types, Igneous rocks and Metamorphic rocks
General Geology-04-05 (Sedimentary Rocks)	4-5	Mechanism of sedimentary rock formation, weathering erosion, and hydrocarbon contribution, sedimentary structures, palaeontology and fossil implications
Stratigraphy	6	Stratigraphic definitions, their implication in oil and gas industry
Structural Geology	7	Types of stress and strain with their associated structures: Mountain, faults, ...ect. Types of reservoirs.
	8	
Mid-term and final examination based on provided schedule by the department		
Examinations:		
<p>Q1/ Define the followings</p> <p>Minerals, Fossils, Hydrocarbon</p> <p>Answer/</p> <p>Mineral: is naturally occurring, solid crystalline substance, generally inorganic with a specific chemical composition. Minerals are generally homogenous: they cannot be divided mechanically into smaller</p> <p>Fossils: are remains of animals or plants that's preserved in rocks. They are the record of life on earth.</p>		

<p>Hydrocarbon: it's a mixture of hydrogen and carbon with some impurities, present in gaseous, liquid and plastic state.</p> <p>componentsQ2/ mention Earth layers and which layer associated with oil and gas accumulation?</p> <p>Answer/</p> <ul style="list-style-type: none">• Core (inner and outer core) solid and liquid• Mantel semi liquid• Core (continental and oceanic crust) <p>Hydrocarbons are accumulated in this layer</p>		
<p>Extra notes: This course require a simulation laboratory. And more preferably field visiting.</p>		
<p>External Evaluator:</p>		