Module Title: Reservoir Rock & Fluid Properties Laboratory

Level: 4

Reference No. (showing level): EAX_4_275/PTRL16I02

Credit Value: 10 credit points

Student Study Hours: Contact hours: 10, 4h laboratories
Student managed learning hours: 100

Pre-requisite learning: -
Co-requisites: -
Excluded combinations: -

Module co-ordinator (Name + Email): Dr. Shedid Shedid
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Faculty/Department: Engineering/Petroleum Engineering and Gas Technology Engineering

Short Description: porosity, permeability, saturation, capillary pressure, wettability, resistivity, reservoir fluid characteristics, oil, water and gas properties, bubble point pressure, dew point pressure, CCE and CVD.

Aims: The aims of this module are: to understand the importance of the reservoir rock and fluid properties in petroleum engineering practice. Rock properties laboratory measurements will be performed to determine electrical resistivity, porosity, permeability, capillary pressure and wettability. Also, this module is to introduce students to the various properties of petroleum reservoir fluids, lab and field identification of reservoir fluids, and produce a PVT report.

Learning Outcomes: Knowledge and Understanding:
1. To understand various rock and fluid properties
2. To be familiar with all the skills needed to achieve all experiments
3. To know all the different methods will be used to measure reservoir rock and fluid properties.

Intellectual Skills:
4. analyses lab tests results and develop an understanding of reservoir rocks and fluid properties;
5. to conduct the different results

Practical Skills:
6. determine the physical characteristics and composition of natural gas, crude oil and formation water;
7. perform analytical laboratory measurements of rocks in order to establish their petro-physical properties

Transferable Skills:
8. Write and produce professional laboratory reports conforming to industrial norms and expectations (SCAL and PVT reports).
9. To work through a team work.
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<tr>
<th><strong>Employability</strong></th>
<th>The development of one or more of the top engineering skills, namely problem solving, communication, management and environment and economics, is the priority of this module.</th>
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<tbody>
<tr>
<td><strong>Teaching and learning pattern</strong></td>
<td>10, 4h laboratories. This method informs learning outcomes 1, 2, 3, 4, 5</td>
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<td><strong>Indicative content</strong></td>
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<td><strong>Assessment Elements &amp; weightings</strong></td>
<td><strong>Course Work:</strong> Laboratory work constituting continuous assessment of technical achievement 50% and two laboratory reports (one for rock (Conventional or SCAL) the other for fluid PVT report) at 25% each and assesses learning outcomes 1, 2, 3, 4, 5, 6,7,8,9. Each student must achieve at least 40% of the total module mark to pass this module.</td>
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