Reservoir Description

<table>
<thead>
<tr>
<th>Module Title</th>
<th>Reservoir Description</th>
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</thead>
<tbody>
<tr>
<td>Level</td>
<td>6</td>
</tr>
<tr>
<td>Reference No. (showing level)</td>
<td>EAX_6_298/PTRL11H03</td>
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<tr>
<td>Credit Value</td>
<td>10 credit points</td>
</tr>
<tr>
<td>Student Study Hours</td>
<td>Contact hours: 22 lectures + 11 Tutors</td>
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<td></td>
<td>Student managed learning hours: 100</td>
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<tr>
<td>Pre-requisite learning</td>
<td>-</td>
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<tr>
<td>Co-requisites</td>
<td>-</td>
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<tr>
<td>Excluded combinations</td>
<td>-</td>
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<tr>
<td>Module co-ordinator (Name + Email)</td>
<td>-</td>
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<tr>
<td>Faculty/Department</td>
<td>Petroleum&amp; Gas Technology department</td>
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<tr>
<td>Short Description</td>
<td>Reservoir description, univariant description, bivariant description, estimation techniques, crossections and reserve estimate.</td>
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<tr>
<td>Aims</td>
<td>The aim of this module is to develop students' learning skills of principles and techniques of petroleum reservoir description. The module covers subsurface data from geological and engineering sources, univariant and bivariant description, estimation techniques and reserve estimation methods.</td>
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| Learning Outcomes     | Knowledge and understanding
On completion of this module students should be able to demonstrate knowledge and understanding of:
1. reservoir description for modelling and simulation;
2. State-of-the-art of reservoir characterization;
Subject-specific cognitive skills
On completion of this module students should be able to/demonstrate ability in:
3. Understand different reservoir and geological data of given reservoir
4. Prepare data base for reservoir modelling;
Subject-specific practical skills
On completion of this module students should be able to/demonstrate ability in:
5. Design input files for reservoir modelling
6. Apply different techniques for reservoir description and compare results
Key/transferable skills
On completion of this module students should be able to/demonstrate ability in:
7. Apply their understanding of reservoir characterization to propose static and dynamic reservoir models.
8. description of heterogeneous reservoirs.
Employability
To prepare student to get job and be professional graduate in future, the development of one or more of top engineering skills, namely problem solving, communication, management and
| Teaching and learning pattern | 1. 22, 1h lectures. This method informs learning outcomes 1, 2, 3, 5  
2. 11, 1h problem-solving techniques and exercise classes. This method informs learning outcomes, 3, 5, 6, 7, 8. |
| Indicative content | • Introduction to Reservoir Description  
• Data Acquisition for Reservoir Description  
Geological data  
Engineering Data  
• Characteristics of Sandstone and Carbonate Reservoirs  
• Uni-variant Description  
• Bi-variant Description  
• Measure of Reservoir Heterogeneity  
• Averaging and Scale up of Reservoir Properties  
• Estimation Techniques  
• Contour Maps  
• Cross-sections  
• Reserve Estimation Methods |
| Assessment | • **Examination**: A 180 minutes unseen written examination assesses learning outcomes 1, 2, 3, 5. **70%**  
• **Course Work**: 30% A group (4 to 6 students) of in-class assessments and technical group report. This method assesses learning outcomes 3, 5, 6, 7, 8. **30%**  
• Students must achieve (i) 40% for the total module mark and (ii) at least 30% in the unseen examination and the course work in order to achieve an overall passing mark for this module. |
| Indicative Sources | 1- Richard, A., Schatzinger and Jorda, JF, 1999, "Reservoir characterization, Recent Advances" AAPG Pub., USA  