ORE & ABET Accreditation

The Ocean and Resources Engineering Department is a small highly specialized graduate department within the School of Ocean and Earth Sciences and Technology.

ORE is accredited by ABET: Accreditation Board for Engineering and Technology.

Accreditation means more than that students learn material favored by a selection of departmental faculty…failure by designers to master key ocean engineering concepts can result in catastrophic loss for society.

Department Facts

Small: 7 faculty
Graduate: MS & PhD only
Highly design-oriented
Very strong international relations and component
Rigorously accredited by ABET: 6 year-cycle

Successful ABET Assessment in 2015

1. All 12 Program Outcomes assessed for 2015 ABET review
2. ORE received a highly unusual perfect score (no deficiencies, weaknesses, concerns)
3. Following success, ORE committed to strengthen 12 winning rubrics to better quantify assessment results & present itself as a nationally leading program

Example of New Rubric to Evaluate Theses

<table>
<thead>
<tr>
<th>Category</th>
<th>Needs work</th>
<th>Meets expectations</th>
<th>Exemplary</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hypothesis</td>
<td>Hypothesis stated but is vague and lacks clarity regarding the research questions to be answered.</td>
<td>Provides a clear understanding of the research questions to be answered. Is significant.</td>
<td>- Hypothesis is very clearly stated, concise and logical.</td>
</tr>
<tr>
<td>Research Design/Methods</td>
<td>Clear enough for readers to understand what is to be accomplished.</td>
<td>- Provides a map of the study. Represents rigor.</td>
<td>- Skill oriented in theory, software and possibilities.</td>
</tr>
<tr>
<td>Data Analysis</td>
<td>- Data analysis techniques provide basic answer to the hypothesis in research question.</td>
<td>- Analyze sequence/sequence correlation. The accuracy of the results is unclear.</td>
<td>- Use clear and innovative analysis techniques.</td>
</tr>
<tr>
<td>Data Interpretation/Conclusion</td>
<td>- There lacks investigation of the quality of the data.</td>
<td>- Analyze sequence/sequence correlation. The accuracy of the results is unclear.</td>
<td>- Discussion is rigorous and engaging.</td>
</tr>
<tr>
<td>Writing Quality</td>
<td>- There are language errors that interfere understanding of major concepts in the writing.</td>
<td>- The writing is logical and clearly expresses the research questions.</td>
<td>- Writing is highly polished and of publication quality, with few if any grammatical, spelling, stylistic or other language errors.</td>
</tr>
</tbody>
</table>

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Conclusions from ABET Success

Extremely positive review was supported by a testimony to:
- the strong research and teaching performance of ORE;
- the significant interaction between the department and its advisory committees;
- the strong foundation of the past work and contributes significantly to the field;
- conclusions/summaries and recommendations are appropriate and clearly based on outcomes.

Moving forward...
- Expand three option areas to include oceanographic engineering and interdisciplinary engineering.
- Include more courses in each option area for specialization beyond core classes.
- Strengthen advising through a new form and procedure.