Activity: Determine the alignment between ABET SLOs and Mānoa undergraduate Institutional Learning Outcomes (ILOs)

<table>
<thead>
<tr>
<th>ABET SLOs</th>
<th>Indicate the related undergraduate ILO(s) (or leave blank)</th>
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<tbody>
<tr>
<td>a) an ability to apply knowledge of mathematics, science, and engineering</td>
<td>1a, 1b</td>
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<tr>
<td>b) an ability to design and conduct experiments, as well as to analyze and interpret data</td>
<td>2a, 2b, 1a</td>
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<tr>
<td>c) an ability to design a system, component, or process to meet desired needs within realistic constraints such as economic, environmental, social, political, ethical, health and safety, manufacturability, and sustainability</td>
<td>1b, 3a, 3c, 3d</td>
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<tr>
<td>d) an ability to function on multidisciplinary teams</td>
<td>2c</td>
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<tr>
<td>e) an ability to identify, formulate, and solve engineering problems</td>
<td>2a, 2b</td>
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<tr>
<td>f) an understanding of professional and ethical responsibility</td>
<td>3a, 3b, 3c</td>
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<tr>
<td>g) an ability to communicate effectively</td>
<td>2c</td>
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<tr>
<td>h) the broad education necessary to understand the impact of engineering solutions in a global, economic, environmental, and societal context</td>
<td>3b, 3c</td>
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<tr>
<td>i) a recognition of the need for, and an ability to engage in life-long learning</td>
<td>3a</td>
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<tr>
<td>j) a knowledge of contemporary issues</td>
<td>2b, 3d, 3c</td>
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<tr>
<td>k) an ability to use the techniques, skills, and modern engineering tools necessary for engineering practice</td>
<td>2a, 2b</td>
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</tbody>
</table>

Which of the Mānoa undergraduate ILOs are not related to any of the ABET SLOs?
1c,
Mānoa ILOs for Undergraduates

1. Know—Breadth and Depth of Knowledge
   1a. General education (liberal arts: arts, humanities, sciences, languages, social sciences, technology)
   1b. Specialized study in an academic field
   1c. Hawaiian culture and history

2. Do—Intellectual and Practice Skills
   2a. Think critically and creatively
   2b. Conduct research
   2c. Communicate and report

3. Value—Personal and Social Responsibility
   3a. Continuous learning and personal growth
   3b. Respect for people and cultures, in particular Hawaiian culture
   3c. Stewardship of the natural environment
   3d. Civic participation in their communities

Example of alignment

**Undergraduate ILO**
Communicate and report (ILO 2c)

**Program/ABET**
An ability to communicate effectively (ABET g)

**Course SLOs**
Able to describe in writing the project site, salient problems, and constraints and to propose in writing concepts and solutions (ENGR 400, 1)

Able to produce a presentable report containing an executive summary, introduction, tasks distribution, concepts, design calculations, drawings for tender documentation, and conclusions (ENGR 400, 5)

ILO Assessment Overview: Example
1. ILOs assessed: think critically and creatively (2a); communicate and report (2c)
2. Student learning evidence: senior capstone project report
3. Evaluation tool: scoring rubrics
4. Evaluation: Capstone course instructor scores his/her students and a random sample are scored by faculty on the ILO Assessment Team
5. Reporting: aggregate results are reported to faculty, administrators, and WASC
6. Use: aggregate results are used by faculty groups to improve overall campus effectiveness