### Question 1: Program Learning Outcomes

#### Q1.1. Which of the following Program Learning Outcomes (PLOs) and Sac State Baccalaureate Learning Goals (BLGs) did you assess in 2014-2015? [Check all that apply]

- [x] 1. Critical thinking
- [ ] 2. Information literacy
- [ ] 3. Written communication
- [ ] 4. Oral communication
- [ ] 5. Quantitative literacy
- [ ] 6. Inquiry and analysis
- [ ] 7. Creative thinking
- [ ] 8. Reading
- [ ] 9. Team work
- [ ] 10. Problem solving
- [ ] 11. Civic knowledge and engagement
- [ ] 12. Intercultural knowledge and competency
- [ ] 13. Ethical reasoning
- [ ] 14. Foundations and skills for lifelong learning
- [ ] 15. Global learning
- [ ] 16. Integrative and applied learning
- [ ] 17. Overall competencies for GE Knowledge
- [ ] 18. Overall competencies in the major/discipline
- [ ] 19. Other, specify any PLOs that were assessed in 2014-2015 but not included above:
  - a.
  - b.
  - c.

#### Q1.2. Please provide more detailed background information about EACH PLO you checked above and other information such as how your specific PLOs were explicitly linked to the Sac State BLGs:

iMET program (MA in Educational Technology) has developed five program learning outcomes and assessed the five program learning outcomes in the previous years. The five program learning outcomes are:

This year, we have assessed the new program learning outcome (PLO 6): critical thinking skill. iMET students will demonstrate a habit of mind characterized by the comprehensive exploration of issues, ideas, artifacts, and events before accepting or formulating an opinion or conclusion: they will (PLO 6: Critical thinking adopted from the VALUE rubric in Appendix I):

6.1: Clearly state the issue/problem which needs to be considered critically, comprehensively describe the issue/problem and deliver all relevant information (issues, texts and/or numerical data) necessary for a full understanding of the issue/problem (6.1: Explanation of issues).

6.2: Thoroughly interpret and evaluate the information taken from source(s) to develop a comprehensive analysis or synthesis (6.2: Evidence)

6.3: Thoroughly analyze their own and others’ assumptions and carefully evaluate the relevance of contexts when presenting a position (6.3: Influence of context and assumptions).

6.4: Students’ specific position (perspective, thesis, or hypothesis) takes into account the complexities (all sides) of an issue. Limits of position and others’ points of view are acknowledged and synthesized within position (6.4: Student’s position);

6.5: Conclusions, consequences and implications are logical and reflect student’s informed evaluation and ability to place evidence and perspectives discussed in priority order (6.5: Conclusions and related outcomes).

#### Q1.2.1. Do you have rubrics for your PLOs?

- [x] 1. Yes, for all PLOs
- [ ] 2. Yes, but for some PLOs
- [ ] 3. No rubrics for PLOs
- [ ] 4. N/A, other (please specify):

#### Q1.3. Are your PLOs closely aligned with the mission of the university?

- [ ] 1. Yes
- [ ] 2. No
- [ ] 3. Don’t know

#### Q1.4. Is your program externally accredited (other than through WASC)?

- [ ] 1. Yes
- [x] 2. No (Go to Q1.5)
- [ ] 3. Don’t know (Go to Q1.5)

#### Q1.4.1. If the answer to Q1.4 is yes, are your PLOs closely aligned with the mission/goals/outcomes of the accreditation agency?

- [ ] 1. Yes
- [ ] 2. No
- [ ] 3. Don’t know

#### Q1.5. Did your program use the Degree Qualification Profile (DQP) to develop your PLO(s)?

- [ ] 1. Yes
- [x] 2. No, but I know what the DQP is.
- [ ] 3. No, I don’t know what the DQP is.
- [ ] 4. Don’t know

#### Q1.6. Did you use action verbs to make each PLO measurable (See Attachment I)?

- [ ] 1. Yes
- [ ] 2. No
- [ ] 3. Don’t know
Question 2: Standard of Performance for the selected PLO

Q 2.1. Specify one PLO here as an example to illustrate how you conducted assessment (be sure you checked the correct box for this PLO in Q1.1):

iMet chose to assess the new PLO: Critical Thinking and used Master thesis and ePortfolio as the direct measures to assessment this PLO.

Q 2.2. Has the program developed or adopted explicit standards of performance for this PLO?

- 1. Yes
- 2. No
- 3. Don’t know
- 4. N/A

Q2.3. Please provide the rubric(s) and standard of performance that you have developed for this PLO here or in the appendix: [Word limit: 300]

70% of our second year graduate students should score 3.0 or above by the time of their graduation.

Q2.4. Please indicate the category in which the selected PLO falls into.

- 1. Critical thinking
- 2. Information literacy
- 3. Written communication
- 4. Oral communication
- 5. Quantitative literacy
- 6. Inquiry and analysis
- 7. Creative thinking
- 8. Reading
- 9. Team work
- 10. Problem solving
- 11. Civic knowledge and engagement
- 12. Intercultural knowledge and competency
- 13. Ethical reasoning
- 14. Foundations and skills for lifelong learning
- 15. Global learning
- 16. Integrative and applied learning
- 17. Overall competencies for GE Knowledge
- 18. Overall competencies in the major/discipline
- 19. Other PLO. Specify:

Please indicate where you have published the PLO, the standard of performance, and the rubric that measures the PLO:

<table>
<thead>
<tr>
<th>PLO</th>
<th>Standards of Performance</th>
<th>Rubrics</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>In SOME course syllabi/assignments in the program that address the PLO</td>
<td>1. ×</td>
</tr>
<tr>
<td>2.</td>
<td>In ALL course syllabi/assignments in the program that address the PLO</td>
<td>1.</td>
</tr>
<tr>
<td>3.</td>
<td>In the student handbook/advising handbook</td>
<td>1.</td>
</tr>
<tr>
<td>4.</td>
<td>In the university catalogue</td>
<td>1.</td>
</tr>
<tr>
<td>5.</td>
<td>On the academic unit website or in newsletters</td>
<td>1.</td>
</tr>
<tr>
<td>6.</td>
<td>In the assessment or program review reports, plans, resources or activities</td>
<td>1.</td>
</tr>
<tr>
<td>7.</td>
<td>In new course proposal forms in the department/college/university</td>
<td>1.</td>
</tr>
<tr>
<td>8.</td>
<td>In the department/college/university’s strategic plans and other planning documents</td>
<td>1.</td>
</tr>
<tr>
<td>9.</td>
<td>In the department/college/university’s budget plans and other resource allocation documents</td>
<td>1.</td>
</tr>
<tr>
<td>10.</td>
<td>Other, specify:</td>
<td></td>
</tr>
</tbody>
</table>
### Question 3: Data Collection Methods and Evaluation of Data Quality for the Selected PLO

**Q3.1.** Was assessment data/evidence **collected** for the selected PLO in 2014-2015?
- 1. Yes
- 2. No (Skip to Q6)
- 3. Don’t know (Skip to Q6)
- 4. N/A (Skip to Q6)

**Q3.2.** If yes, was the data **scored/evaluated** for this PLO in 2014-2015?
- 1. Yes
- 2. No (Skip to Q6)
- 3. Don’t know (Skip to Q6)
- 4. N/A (Skip to Q6)

**Q3.1A.** How many assessment tools/methods/measures **in total** did you use to assess this PLO?
- 2

**Q3.2A.** Please describe how you collected the assessment data for the selected PLO. For example, in what course(s) or by what means were data collected (see Attachment II)? **[Word limit: 300]**

Students in iMet program completed their Master thesis and eportfolio in EDTE 507: Culminating Experience. The VALUE critical thinking rubric has been used to collect data in order to directly assess 13 student master theses and eportfolios from EDTE 507: Culminating Experiences Educational Technology offered in spring 2014. The program advising team is made up of three faculty members. The program coordinator determined the final scores for program assessment purpose. This is the first time that our graduate program has used a rubric (The VALUE rubric) to EXPLICITLY AND DIRECTLY assess our students’ critical thinking skills. We have discovered excellent insight into students’ critical thinking skill.

### Q3A: Direct Measures (key assignments, projects, portfolios)

**Q3.3.** Were direct measures [key assignments, projects, portfolios, etc.] used to assess this PLO?
- 1. Yes
- 2. No (Go to Q3.7)
- 3. Don’t know (Go to Q3.7)

**Q3.3.1.** Which of the following direct measures were used? **[Check all that apply]**
- 1. Capstone projects (including theses, senior theses), courses, or experiences
- 2. Key assignments from required classes in the program
- 3. Key assignments from elective classes
- 4. Classroom based performance assessments such as simulations, comprehensive exams, critiques
- 5. External performance assessments such as internships or other community based projects
- 6. E-Portfolios
- 7. Other portfolios
- 8. Other measure. Specify:

**Q3.3.2.** Please attach the direct measure you used to collect data.

Please see appendix II and III.

**Q3.4.** How was the data evaluated? **[Select only one]**
- 1. No rubric is used to interpret the evidence (Go to Q3.4.3)
- 2. Used rubric developed/modified by the faculty who teaches the class
- 3. Used rubric developed/modified by a group of faculty
- 4. Used rubric pilot-tested and refined by a group of faculty
- 5. The VALUE rubric(s)
- 6. Modified VALUE rubric(s)
- 7. Used other means. Specify:

**Q3.4.1.** Was the direct measure (e.g. assignment, thesis, etc.) aligned directly and explicitly with the PLO?
- 1. Yes
- 2. No
- 3. Don’t know
- 4. N/A

**Q3.4.2.** Was the direct measure (e.g. assignment, thesis, etc.) aligned directly and explicitly with the rubric?
- 1. Yes
- 2. No
- 3. Don’t know
- 4. N/A

**Q3.4.3.** Was the rubric aligned directly and explicitly with the PLO?
- 1. Yes
- 2. No
- 3. Don’t know
- 4. N/A
Q3.5. How many faculty members participated in planning the assessment data collection of the selected PLO?  
3

Q3.5.1. If the data was evaluated by multiple scorers, was there a norming process (a procedure to make sure everyone was scoring similarly)?  
☒ 1. Yes  
☐ 2. No  
☐ 3. Don’t know

Q3.6. How did you select the sample of student work [papers, projects, portfolios, etc.]?  
We assessed 13 out of 13 students in this cohort.

Q3.6.1. How did you decide how many samples of student work to review? 
Program faculty decided to assess all 13 out of 13 students' work.

Q3.6.2. How many students were in the class or program?  
13

Q3.6.3. How many samples of student work did you evaluate?  
13

Q3.6.4. Was the sample size of student work for the direct measure adequate?  
☒ 1. Yes  
☐ 2. No  
☐ 3. Don’t know

Q3B: Indirect Measures (surveys, focus groups, interviews, etc.)

Q3.7. Were indirect measures used to assess the PLO?  
☒ 1. Yes  
☐ 2. No (Skip to Q3.8)

Q3.7.1. Which of the following indirect measures were used? 
[Check all that apply]  
☐ 1. National student surveys (e.g., NSSE)  
☐ 2. University conducted student surveys (e.g. OIR)  
☐ 3. College/Department/program student surveys  
☐ 4. Alumni surveys, focus groups, or interviews  
☐ 5. Employer surveys, focus groups, or interviews  
☐ 6. Advisory board surveys, focus groups, or interviews  
☐ 7. Other, specify:

Q3.7.2 If surveys were used, how was the sample size decided?  

Q3.7.3. If surveys were used, briefly specify how you selected your sample.

Q3.7.4. If surveys were used, what was the response rate?

Q3C: Other Measures (external benchmarking, licensing exams, standardized tests, etc.)

Q3.8. Were external benchmarking data such as licensing exams or standardized tests used to assess the PLO?  
☒ 1. Yes  
☐ 2. No (Go to Q3.8.2)

Q3.8.1. Which of the following measures was used?  
☐ 1. National disciplinary exams or state/professional licensure exams  
☐ 2. General knowledge and skills measures (e.g., CLA, CAAP, ETS PP, etc.)  
☐ 3. Other standardized knowledge and skill exams (e.g., ETS, GRE, etc.)  
☐ 4. Other, specify:

Q3.8.2. Were other measures used to assess the PLO?  
☐ 1. Yes  
☐ 2. No (Go to Q3.9)  
☐ 3. Don’t know (Go to Q3.9)

Q3.8.3. If other measures were used, please specify:
Q3D: Alignment and Quality

Q3.9. Did the data, including the direct measures, from all the different assessment tools/measures/methods directly align with the PLO?

- 1. Yes
- 2. No
- 3. Don’t know

Q3.9.1. Were ALL the assessment tools/measures/methods that were used good measures for the PLO?

- 1. Yes
- 2. No
- 3. Don’t know

Question 4: Data, Findings and Conclusions

Q4.1. Please provide simple tables and/or graphs to summarize the assessment data, findings, and conclusions: (see Attachment III) [Word limit: 600 for selected PLO]

<table>
<thead>
<tr>
<th>Table I: The Results for Critical Thinking Skill</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Different Levels</strong></td>
</tr>
<tr>
<td>-----------------------</td>
</tr>
<tr>
<td>6.1: Explanation of issues</td>
</tr>
<tr>
<td>6.2: Evidence</td>
</tr>
<tr>
<td>6.3: Influence of context and assumptions</td>
</tr>
<tr>
<td>6.4: Student’s position</td>
</tr>
<tr>
<td>6.5: Conclusions and related outcomes</td>
</tr>
</tbody>
</table>

Q4.2. Are students doing well and meeting program standard? If not, how will the program work to improve student performance of the selected PLO?

The key assessments analyzed here are student culminating experience project (Master Thesis) and eportfolios. Based on the standards and criteria from 6.1 to 6.5 in the critical thinking rubric in Appendix I, the majority of iMET students were thinking critically. Students meet the standards of 6.1 (92%), 6.4 (77%) and 6.5 (69%).

Students do not meet the standards of 6.2 (61%) and 6.3 (61%).

Students meet some of our Critical Thinking standards.

The areas needing improvement:
1). 6.2: Evidence (61%)
2). 6.3: Influence of context and assumptions (61%).

In order to help students in our program successfully become critical thinking researchers, we will design more classroom activities and assignments related to:

1). Re-examination of evidence (6.2) and context and assumptions (6.3) in the research
2). Require students to apply these skills as they compose comprehensive responses for all their assignments.

In conclusion, iMET students successfully met criteria 6.1: Explanation of issues (92%), 6.4: Student’s position (77%) and 6.5: Conclusions and related outcomes (69%). The areas for more improvement are 6.2: Evidence (61%) and 6.3: Influence of context and assumptions (62%).

Q4.3. For selected PLO, the student performance:

- 1. Exceeded expectation/standard
- 2. Met expectation/standard
- 3. Partially met expectation/standard
- 4. Did not meet expectation/standard
- 5. No expectation or standard has been specified
- 6. Don’t know
**Question 5: Use of Assessment Data (Closing the Loop)**

**Q5.1.** As a result of the assessment effort in 2014-2015 and based on the prior feedback from OAPA, do you anticipate making any changes for your program (e.g., course structure, course content, or modification of PLOs)?

- [x] 1. Yes
- [ ] 2. No (Go to Q5.3)
- [ ] 3. Don’t know (Go to Q5.3)

**Q5.1.1.** Please describe what changes you plan to make in your program as a result of your assessment of this PLO. Include a description of how you plan to assess the impact of these changes. **[Word limit: 300 words]**

According to the assessment data, the following two areas need some improvement. The program faculty met and discussed the ways to address these two areas in the courses and key assignments (Master thesis and eportfolio). We will assess the two direct measures by using the same VALUE rubric.

1. 6.2: Evidence (61%)
2. 6.3: Influence of context and assumptions (61%)

**Q5.2.** How have the assessment data from last year (2013 - 2014) been used so far? **[Check all that apply]**

<table>
<thead>
<tr>
<th>(1) Very Much</th>
<th>(2) Quite a Bit</th>
<th>(3) Some</th>
<th>(4) Not at all</th>
<th>(8) N/A</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Improving specific courses</td>
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<tr>
<td>2. Modifying curriculum</td>
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<tr>
<td>3. Improving advising and mentoring</td>
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<tr>
<td>4. Revising learning outcomes/goals</td>
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<td>5. Revising rubrics and/or expectations</td>
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<tr>
<td>6. Developing/updating assessment plan</td>
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<td>7. Annual assessment reports</td>
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<td>8. Program review</td>
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<td>9. Prospective student and family information</td>
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<tr>
<td>10. Alumni communication</td>
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<td>11. WASC accreditation (regional accreditation)</td>
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<td>12. Program accreditation</td>
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<td>13. External accountability reporting requirement</td>
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<td>14. Trustee/Governing Board deliberations</td>
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<td>15. Strategic planning</td>
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<tr>
<td>16. Institutional benchmarking</td>
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<td>17. Academic policy development or modification</td>
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<tr>
<td>18. Institutional Improvement</td>
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<tr>
<td>19. Resource allocation and budgeting</td>
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<tr>
<td>20. New faculty hiring</td>
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<tr>
<td>21. Professional development for faculty and staff</td>
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<td></td>
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<tr>
<td>22. Recruitment of new students</td>
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<tr>
<td>23. Other Specify:</td>
<td></td>
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</tbody>
</table>

**Q5.2.1.** Please provide a detailed example of how you used the assessment data above.

1. IMET core faculty are in the process of modifying curriculum in IMET program and have used some assessment data from 2013-2014.
2. IMET core faculty are in the process of initiating Alumni advisory board and have used some assessment data from 2013-2014.
### Additional Assessment Activities

**Q6.** Many academic units have collected assessment data on aspects of a program that are not related to PLOs (i.e., impacts of an advising center, etc.). If your program/academic unit has collected data on the program elements, please briefly report your results here. **[Word limit: 300]**

**Q7.** What PLO(s) do you plan to assess next year?

- [ ] 1. Critical thinking
- [ ] 2. Information literacy
- [x] 3. Written communication
- [ ] 4. Oral communication
- [ ] 5. Quantitative literacy
- [ ] 6. Inquiry and analysis
- [ ] 7. Creative thinking
- [ ] 8. Reading
- [ ] 9. Team work
- [ ] 10. Problem solving
- [ ] 11. Civic knowledge and engagement – local and global
- [ ] 12. Intercultural knowledge and competency
- [ ] 13. Ethical reasoning
- [ ] 14. Foundations and skills for lifelong learning
- [ ] 15. Global learning
- [ ] 16. Integrative and applied learning
- [ ] 17. Overall competencies for GE Knowledge
- [ ] 18. Overall competencies in the major/discipline
- [ ] 19. Other, specify any PLOs **not included above:**
  a. 
  b. 
  c. 

**Q8.** Have you attached any appendices? If yes, please list them all here:
- Appendix I: Critical Thinking Value Rubric for PLO 6: Critical Thinking Skill
- Appendix II: Key Assessment for the IMET Program Culminating Experience Report
- Appendix III: Key Assessment for the IMET Program ePortfolio
## Program Information

<table>
<thead>
<tr>
<th>P1. Program/Concentration Name(s):</th>
<th>MA in Educational Technology (iMET)</th>
</tr>
</thead>
<tbody>
<tr>
<td>P2. Report Authors:</td>
<td>Chia-Jung Chung</td>
</tr>
<tr>
<td>P3. Academic unit: Department, Program, or College: Graduate and Professional Studies in Education</td>
<td>P4. College: Education</td>
</tr>
<tr>
<td>P5. Fall 2014 enrollment for Academic unit (See Department Fact Book 2014 by the Office of Institutional Research for fall 2012 enrollment: 13</td>
<td>P6. Program Type: [Select only one]</td>
</tr>
<tr>
<td></td>
<td>☒ 1. Undergraduate baccalaureate major</td>
</tr>
<tr>
<td></td>
<td>☒ 2. Credential</td>
</tr>
<tr>
<td></td>
<td>☒ 3. Master’s degree</td>
</tr>
<tr>
<td></td>
<td>☒ 4. Doctorate (Ph.D./Ed.d)</td>
</tr>
<tr>
<td></td>
<td>☒ 5. Other. Please specify:</td>
</tr>
</tbody>
</table>

### Undergraduate Degree Program(s):

<table>
<thead>
<tr>
<th>P7. Number of undergraduate degree programs the academic unit has:</th>
</tr>
</thead>
<tbody>
<tr>
<td>P7.1. List all the name(s):</td>
</tr>
<tr>
<td>P7.2. How many concentrations appear on the diploma for this undergraduate program?</td>
</tr>
</tbody>
</table>

### Master Degree Program(s):

<table>
<thead>
<tr>
<th>P8. Number of Master’s degree programs the academic unit has:</th>
</tr>
</thead>
<tbody>
<tr>
<td>P8.1. List all the name(s):</td>
</tr>
<tr>
<td>P8.2. How many concentrations appear on the diploma for this master program?</td>
</tr>
</tbody>
</table>

### Credential Program(s):

<table>
<thead>
<tr>
<th>P9. Number of credential programs the academic unit has:</th>
</tr>
</thead>
<tbody>
<tr>
<td>P9.1. List all the names:</td>
</tr>
</tbody>
</table>

### Doctorate Program(s):

<table>
<thead>
<tr>
<th>P10. Number of doctorate degree programs the academic unit has:</th>
</tr>
</thead>
<tbody>
<tr>
<td>P10.1. List the name(s):</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>When was your assessment plan?</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Before 2007-08</td>
</tr>
<tr>
<td>2. 2007-08</td>
</tr>
<tr>
<td>3. 2008-09</td>
</tr>
<tr>
<td>4. 2009-10</td>
</tr>
<tr>
<td>5. 2010-11</td>
</tr>
<tr>
<td>6. 2011-12</td>
</tr>
<tr>
<td>7. 2012-13</td>
</tr>
<tr>
<td>8. 2013-14</td>
</tr>
<tr>
<td>9. 2014-15</td>
</tr>
<tr>
<td>10. No formal plan</td>
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<table>
<thead>
<tr>
<th>P11. Developed</th>
</tr>
</thead>
<tbody>
<tr>
<td>☒ Yes</td>
</tr>
<tr>
<td>☒ No</td>
</tr>
<tr>
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<table>
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<tbody>
<tr>
<td>☒ Yes</td>
</tr>
<tr>
<td>☒ No</td>
</tr>
<tr>
<td>☒ Don’t Know</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>P13. Have you developed a curriculum map for this program?</th>
</tr>
</thead>
<tbody>
<tr>
<td>☒ Yes</td>
</tr>
<tr>
<td>☒ No</td>
</tr>
<tr>
<td>☒ Don’t Know</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>P14. Has the program indicated explicitly where the assessment of student learning occurs in the curriculum?</th>
</tr>
</thead>
<tbody>
<tr>
<td>☒ Yes</td>
</tr>
<tr>
<td>☒ No</td>
</tr>
<tr>
<td>☒ Don’t Know</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>P15. Does the program have any capstone class?</th>
</tr>
</thead>
<tbody>
<tr>
<td>☒ Yes</td>
</tr>
<tr>
<td>☒ No</td>
</tr>
<tr>
<td>☒ Don’t Know</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>P16. Does the program have ANY capstone project?</th>
</tr>
</thead>
<tbody>
<tr>
<td>☒ Yes</td>
</tr>
<tr>
<td>☒ No</td>
</tr>
<tr>
<td>☒ Don’t Know</td>
</tr>
</tbody>
</table>
Assessing Other Program Learning Outcomes (Optional)

If your program assessed PLOs not reported above, please summarize your assessment activities in the table below. If you completed part of the assessment process, but not the full process (for example, you revised a PLO and developed a new rubric for measuring it), then put N/A in any boxes that do not apply.

### Report Assessment Activities on Additional PLOs Here

<table>
<thead>
<tr>
<th>Q1: Program Learning Outcome (PLO)</th>
<th>Q2: Standard of Performance/ Target Expectation</th>
<th>Q3: Methods/ Measures (Assignments)</th>
<th>Q4: Data/Findings/ Conclusions</th>
<th>Q5: Use of Assessment Data/ Closing the Loop</th>
</tr>
</thead>
</table>

### Example: Educational Technology (iMet), MA

**Critical Thinking Skills**

- 6.1 Explanation of issues
- 6.2 Evidence
- 6.3 Influence of context and assumptions
- 6.4 Student’s position
- 6.5 Conclusions and related outcomes

(See Critical Thinking Rubric and data tables on Next Page)

- Seventy percent (70%) of our students will score 3.0 or above in all five dimensions using the VALUE rubric by the time they graduate from the four semester program.

- **Culminating Experience Projects:** Master’s Thesis

- **Students meet some of our Critical Thinking standards.**
  - The areas needing improvement:
    1. 6.2: Evidence (61%)
    2. 6.3: Influence of context and assumptions (61%).

- **In order to help students in our program successfully become critical thinking researchers, we will design more classroom activities and assignments related to:**
  1. Re-examination of evidence (6.2) and context and assumptions (6.3) in the research
  2. Require students to apply these skills as they compose comprehensive responses for all their assignments.
Example: Chemistry BS/BA

Students will quantitatively determine the composition of chemical unknowns through the use of classical and modern analytical techniques and instrumentation.

Target performance for this assessment was that 50% of students would demonstrate "mastery" (i.e., reported values within 0.5% of the true value) and 75% of students would demonstrate "proficiency" (i.e., reported values within 1.0% of the true value).

Students were provided with nine chemical samples and quantitatively analyzed each unknown to determine their respective weight percent of chloride in a solid.

Findings were 44% mastery and 56% proficiency.

To close the loop, faculty has implemented additional opportunities for practice and achievement in analytical techniques and methodology in two core courses.

Additional PLOs

PLO

PLO

PLO
## The Importance of Verbs

<table>
<thead>
<tr>
<th>Multiple Interpretations</th>
<th>Fewer Interpretations</th>
</tr>
</thead>
<tbody>
<tr>
<td>to grasp</td>
<td>to write</td>
</tr>
<tr>
<td>to know</td>
<td>to recite</td>
</tr>
<tr>
<td>to enjoy</td>
<td>to identify</td>
</tr>
<tr>
<td>to believe</td>
<td>to construct</td>
</tr>
<tr>
<td>to appreciate</td>
<td>to solve</td>
</tr>
<tr>
<td>to understand</td>
<td>to compare</td>
</tr>
</tbody>
</table>

## Relevant Verbs in Defining Learning Outcomes

(Based on Bloom’s Taxonomy)

<table>
<thead>
<tr>
<th>Knowledge</th>
<th>Comprehension</th>
<th>Application</th>
<th>Analysis</th>
<th>Synthesis</th>
<th>Evaluation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cite</td>
<td>Arrange</td>
<td>Apply</td>
<td>Analyze</td>
<td>Arrange</td>
<td>Appraise</td>
</tr>
<tr>
<td>Define</td>
<td>Classify</td>
<td>Change</td>
<td>Appraise</td>
<td>Assemble</td>
<td>Assess</td>
</tr>
<tr>
<td>Describe</td>
<td>Convert</td>
<td>Compute</td>
<td>Break Down</td>
<td>Choose</td>
<td>Choose</td>
</tr>
<tr>
<td>Identify</td>
<td>Describe</td>
<td>Construct</td>
<td>Calculate</td>
<td>Compare</td>
<td>Compare</td>
</tr>
<tr>
<td>Indicate</td>
<td>Defend</td>
<td>Demonstrate</td>
<td>Categorize</td>
<td>Combine</td>
<td>Conclude</td>
</tr>
<tr>
<td>Know</td>
<td>Diagram</td>
<td>Discover</td>
<td>Compare</td>
<td>Compile</td>
<td>Contrast</td>
</tr>
<tr>
<td>Label</td>
<td>Discuss</td>
<td>Dramatize</td>
<td>Contrast</td>
<td>Compose</td>
<td>Criticize</td>
</tr>
<tr>
<td>List</td>
<td>Distinguish</td>
<td>Employ</td>
<td>Criticize</td>
<td>Construct</td>
<td>Construct</td>
</tr>
<tr>
<td>Match</td>
<td>Estimate</td>
<td>Illustrate</td>
<td>Debate</td>
<td>Create</td>
<td>Decide</td>
</tr>
<tr>
<td>Memorize</td>
<td>Explain</td>
<td>Interpret</td>
<td>Determine</td>
<td>Design</td>
<td>Discriminate</td>
</tr>
<tr>
<td>Name</td>
<td>Extend</td>
<td>Investigate</td>
<td>Diagram</td>
<td>Devise</td>
<td>Estimate</td>
</tr>
<tr>
<td>Outline</td>
<td>Generalize</td>
<td>Manipulate</td>
<td>Differentiate</td>
<td>Explain</td>
<td>Evaluate</td>
</tr>
<tr>
<td>Recall</td>
<td>Give Examples</td>
<td>Modify</td>
<td>Discriminate</td>
<td>Formulate</td>
<td>Explain</td>
</tr>
<tr>
<td>Recognize</td>
<td>Infer</td>
<td>Operate</td>
<td>Distinguish</td>
<td>Generate</td>
<td>Explain</td>
</tr>
<tr>
<td>Record</td>
<td>Locate</td>
<td>Organize</td>
<td>Examine</td>
<td>Manage</td>
<td>Explain</td>
</tr>
<tr>
<td>Relate</td>
<td>Outline</td>
<td>Practice</td>
<td>Experiment</td>
<td>Modify</td>
<td>Explain</td>
</tr>
<tr>
<td>Repeat</td>
<td>Paraphrase</td>
<td>Predict</td>
<td>Identify</td>
<td>Organizer</td>
<td>Measure</td>
</tr>
<tr>
<td>Reproduce</td>
<td>Predict</td>
<td>Prepare</td>
<td>Illustrate</td>
<td>Perform</td>
<td>Measure</td>
</tr>
<tr>
<td>Select</td>
<td>Report</td>
<td>Produce</td>
<td>Infer</td>
<td>Plan</td>
<td>Rate</td>
</tr>
<tr>
<td>State</td>
<td>Restate</td>
<td>Schedule</td>
<td>Inspect</td>
<td>Prepare</td>
<td>Rate</td>
</tr>
<tr>
<td>Underline</td>
<td>Review</td>
<td>Shop</td>
<td>Inventory</td>
<td>Produce</td>
<td>Rate</td>
</tr>
<tr>
<td></td>
<td>Suggest</td>
<td>Sketch</td>
<td>Outline</td>
<td>Propose</td>
<td>Rate</td>
</tr>
<tr>
<td></td>
<td>Summarize</td>
<td>Solve</td>
<td>Question</td>
<td>Rearrange</td>
<td>Rate</td>
</tr>
<tr>
<td></td>
<td>Translate</td>
<td>Translate</td>
<td>Relate</td>
<td>Relate</td>
<td>Rate</td>
</tr>
<tr>
<td></td>
<td>Use</td>
<td>Test</td>
<td>Select</td>
<td>Relate</td>
<td>Rate</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Solve</td>
<td>Reorganize</td>
<td>Support</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Test</td>
<td>Revise</td>
<td>Support</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Score</td>
<td>Value</td>
</tr>
</tbody>
</table>
Attachment II: Simplified Annual Assessment Report
Basic Assessment

Q1. Program Learning Outcome
Q2. Standards of Performance/Target Expectations
Q3. Methods/Measures (Assignments) and Surveys
Q4. Data/Findings/Conclusion
Q5. Use of Assessment Data/Closing the Loop

Examples:
Chemistry, BS/BA
(Example of Content Knowledge)

PLO 1:
Students will quantitatively determine the composition of chemical unknowns through the use of classical and modern analytical techniques and instrumentation.

Target performance for this assessment was that 50% of students would demonstrate "mastery" (i.e., reported values within 0.5% of the true value) and 75% of students would demonstrate "proficiency" (i.e., reported values within 1.0% of the true value).

Students were provided with nine chemical samples and quantitatively analyzed each unknown to determine their respective weight percent of chloride in a solid.

Findings were 44% mastery and 56% proficiency.

To close the loop, faculty has implemented additional opportunities for practice and achievement in analytical techniques and methodology in two core courses.

Educational Technology (iMet), MA
(Example of Complicated Skills)

PLO 1:
Critical Thinking Skills
6.1 Explanation of issues
6.2 Evidence
6.3 Influence of context and assumptions
6.4 Student’s position
6.5 Conclusions and related outcomes
(See Appendix III)

Seventy percent (70%) of our students will score 3.0 or above in all five dimensions using the VALUE rubric by the time they graduate from the four semester program.

Students meet the standards 6.1 (92%), 6.4 (77%) and 6.5 (69%).

Students do not meet the standards 6.2 (61%) and 6.3 (61%).

Students meet some of our Critical Thinking standards. The areas needing improvement:
1). 6.2: Evidence (61%)
2). 6.3: Influence of context and assumptions (61%).

Culminating Experience Projects:
Master’s Thesis

In order to help students in our program successfully become critical thinking researchers, we will design more classroom activities and assignments related to:
1). Re-examination of evidence (6.2) and context and assumptions (6.3) in the research
2). Require students to apply these skills as they compose comprehensive responses for all their assignments.
Assessment Flowchart – Multiple Methods
One PLO Assessed by Multiple Assignments

Multiple-Methods Example:

Summary of Standards
Summary of Methods
Summary of Data
Summary of Improvement

PLO 1: Critical Thinking

Standard 1
Thesis
Data 1
Improvement 1

Standard 2
Exit Survey
Data 2
Improvement 2

Standard 3
Exam
Data 3
Improvement 3

Summary of Standards
Summary of Methods
Summary of Data
Summary of Improvement

Findings were 44% mastery and 56% proficiency.
Multiple-PLOs Example

- **PLO 1: Critical Thinking**
  - Standard
  - Thesis
  - Data
  - Improvement

- **PLO 2: Ethical Reasoning**
  - Standard
  - Thesis
  - Data
  - Improvement

- **PLO 3: Written Communication**
  - Standard
  - Thesis
  - Data
  - Improvement
Attachment III: Program Learning Outcomes (PLOs) for the Educational Technology (iMet) Graduate Program

Table I: The Results for Critical Thinking Skill
Note: Data shown here drawn from Data Collection Sheet

<table>
<thead>
<tr>
<th>Different Levels²</th>
<th>Capstone (4)</th>
<th>Milestone (3)</th>
<th>Milestone (2)</th>
<th>Benchmark (1)</th>
<th>Total (N=10)</th>
</tr>
</thead>
<tbody>
<tr>
<td>6.1: Explanation of issues</td>
<td>38%</td>
<td>54%</td>
<td>0%</td>
<td>8%</td>
<td>(100%, N=13)</td>
</tr>
<tr>
<td>6.2: Evidence</td>
<td>15%</td>
<td>46%</td>
<td>23%</td>
<td>15%</td>
<td>(100%, N=13)</td>
</tr>
<tr>
<td>6.3: Influence of context and assumptions</td>
<td>15%</td>
<td>46%</td>
<td>23%</td>
<td>15%</td>
<td>(100%, N=13)</td>
</tr>
<tr>
<td>6.4: Student’s position</td>
<td>23%</td>
<td>54%</td>
<td>8%</td>
<td>15%</td>
<td>(100%, N=13)</td>
</tr>
<tr>
<td>6.5: Conclusions and related outcomes</td>
<td>15%</td>
<td>54%</td>
<td>15%</td>
<td>15%</td>
<td>(100%, N=13)</td>
</tr>
</tbody>
</table>

Standards of Performance for Education Technology (iMet) Graduate Students

Q2.3. If your program has an explicit standard(s) of performance for the selected PLO, describe the desired level of learning: Seventy percent (70%) of our students will score 3.0 or above using the VALUE rubric by the time they graduate from the four semester program.
## Critical Thinking Value Rubric

<table>
<thead>
<tr>
<th>Criterion</th>
<th>Capstone 4</th>
<th>Milestone 3</th>
<th>Milestone 2</th>
<th>Benchmark 1</th>
</tr>
</thead>
<tbody>
<tr>
<td>6.1: Explanation of issues</td>
<td>Issue/problem to be considered critically is stated clearly and described comprehensively, delivering all relevant information necessary for full understanding.</td>
<td>Issue/problem to be considered critically is stated, described, and clarified so that understanding is not seriously impeded by omissions.</td>
<td>Issue/problem to be considered critically is stated but description leaves some terms undefined, ambiguities unexplored, boundaries undetermined, and/or backgrounds unknown.</td>
<td>Issue/problem to be considered critically is stated without clarification or description.</td>
</tr>
<tr>
<td>6.2: Evidence Selecting and using information to investigate a point of view or conclusion</td>
<td>Information is taken from source(s) with enough interpretation/evaluation to develop a comprehensive analysis or synthesis.</td>
<td>Information is taken from source(s) with enough interpretation/evaluation to develop a coherent analysis or synthesis.</td>
<td>Information is taken from source(s) with some interpretation/evaluation, but not enough to develop a coherent analysis or synthesis.</td>
<td>Information is taken from source(s) without any interpretation/evaluation. Viewpoints of experts are taken as fact, without question.</td>
</tr>
<tr>
<td>6.3: Influence of context and assumptions</td>
<td>Thoroughly (systematically and methodically) analyzes own and others' assumptions and carefully evaluates the relevance of contexts when presenting a position.</td>
<td>Identifies own and others' assumptions and several relevant contexts when presenting a position.</td>
<td>Questions some assumptions. Identifies several relevant contexts when presenting a position. May be more aware of others' assumptions than one's own (or vice versa).</td>
<td>Shows an emerging awareness of present assumptions (sometimes labels assertions as assumptions).</td>
</tr>
<tr>
<td>6.4: Student's position (perspective, thesis/hypothesis)</td>
<td>Specific position (perspective, thesis/hypothesis) is imaginative, taking into account the complexities of an issue. Limits of position (perspective, thesis/hypothesis) are acknowledged. Others' points of view are synthesized within position.</td>
<td>Specific position (perspective, thesis/hypothesis) takes into account the complexities of an issue. Others' points of view are acknowledged within position (perspective, thesis/hypothesis).</td>
<td>Specific position (perspective, thesis/hypothesis) acknowledges different sides of an issue.</td>
<td>Specific position (perspective, thesis/hypothesis) is stated, but is simplistic and obvious.</td>
</tr>
<tr>
<td>6.5: Conclusions and related outcomes (implications and consequences)</td>
<td>Conclusions and related outcomes (consequences and implications) are logical and reflect students' informed evaluation and ability to place evidence and perspectives discussed in priority order.</td>
<td>Conclusion is logically tied to a range of information, including opposing viewpoints; related outcomes (consequences and implications) are identified clearly.</td>
<td>Conclusion is logically tied to information (because information is chosen to fit the desired conclusion); some related outcomes (consequences and implications) are identified clearly.</td>
<td>Conclusion is inconsistently tied to some of the information discussed; related outcomes (consequences and implications) are oversimplified.</td>
</tr>
<tr>
<td>Criterion</td>
<td>Capstone 4</td>
<td>Milestone 3</td>
<td>Milestone 2</td>
<td>Benchmark 1</td>
</tr>
<tr>
<td>------------------------------------------------------------------</td>
<td>------------</td>
<td>-------------</td>
<td>-------------</td>
<td>-------------</td>
</tr>
<tr>
<td><strong>6.1: Explanation of issues</strong></td>
<td>Issue/problem to be considered critically is stated clearly and described comprehensively, delivering all relevant information necessary for full understanding.</td>
<td>Issue/problem to be considered critically is stated, described, and clarified so that understanding is not seriously impeded by omissions.</td>
<td>Issue/problem to be considered critically is stated but description leaves some terms undefined, ambiguities unexplored, boundaries undetermined, and/or backgrounds unknown.</td>
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<tr>
<td><strong>6.2: Evidence Selecting and using information to investigate a point of view or conclusion</strong></td>
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<td>Information is taken from source(s) with enough interpretation/evaluation to develop a coherent analysis or synthesis.</td>
<td>Information is taken from source(s) with some interpretation/evaluation, but not enough to develop a coherent analysis or synthesis.</td>
<td>Information is taken from source(s) without any interpretation/evaluation. Viewpoints of experts are taken as fact, without question.</td>
</tr>
<tr>
<td><strong>6.3: Influence of context and assumptions</strong></td>
<td>Thoroughly (systematically and methodically) analyzes own and others’ assumptions and carefully evaluates the relevance of contexts when presenting a position.</td>
<td>Identifies own and others’ assumptions and several relevant contexts when presenting a position.</td>
<td>Questions some assumptions. Identifies several relevant contexts when presenting a position. May be more aware of others’ assumptions than one’s own (or vice versa).</td>
<td>Shows an emerging awareness of present assumptions (sometimes labels assertions as assumptions).</td>
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<tr>
<td><strong>6.4: Student’s position (perspective, thesis/hypothesis)</strong></td>
<td>Specific position (perspective, thesis/hypothesis) is imaginative, taking into account the complexities of an issue. Limits of position (perspective, thesis/hypothesis) are acknowledged. Others’ points of view are synthesized within position.</td>
<td>Specific position (perspective, thesis/hypothesis) takes into account the complexities of an issue. Others’ points of view are acknowledged within position (perspective, thesis/hypothesis).</td>
<td>Specific position (perspective, thesis/hypothesis) acknowledges different sides of an issue.</td>
<td>Specific position (perspective, thesis/hypothesis) is stated, but is simplistic and obvious.</td>
</tr>
<tr>
<td><strong>6.5: Conclusions and related outcomes (implications and consequences)</strong></td>
<td>Conclusions and related outcomes (consequences and implications) are logical and reflect student’s informed evaluation and ability to place evidence and perspectives discussed in priority order.</td>
<td>Conclusion is logically tied to a range of information, including opposing viewpoints; related outcomes (consequences and implications) are identified clearly.</td>
<td>Conclusion is logically tied to information (because information is chosen to fit the desired conclusion); some related outcomes (consequences and implications) are identified clearly.</td>
<td>Conclusion is inconsistently tied to some of the information discussed; related outcomes (consequences and implications) are oversimplified.</td>
</tr>
</tbody>
</table>

**Standards and Achievement Targets:** 70% of our first year graduate students should score 3 or above by the time of their graduation.
Appendix II: Key Assessment for the iMET Program
Culminating Experience Report

Culminating Experience Report (Action Research Report): The main task in action research is to design and implement a study using data collection tools that will allow you to "show" the reader what happened during and as a result of your intervention. After collecting your data, you will sort through your findings, looking for bits of data that reveal some information pertinent to your study. You then look for relationships (patterns) between these bits or pieces. The patterns that emerge from a variety of sources such as things that happen, things that you observe, things that people say and things that you measure result in your findings (conclusions).

Suggested Headings for iMET Action Research Report

Title Page
Abstract
Introduction

Statement Of The Problem
Significance
Research Questions
Definitions

Review of Literature
Methods

Description of the Innovation/Intervention
Setting
Limitations/Delimitations of the Study

Data Collection
  Types of data collected.
  Subjects.
  Variables.
  Steps taken.

Data Analysis
  Procedures.
  Validity and reliability.

Findings
Discussion
References
Appendices
Appendix III: Key Assessment for the iMET Program
ePortfolio

The iMET culminating experience is an ePortfolio consisting of:
1. **Abstract**: Simply put, the portfolio abstract is an introduction to your e-portfolio. The basic components of the abstract includes elements such as:
   • a welcome to the reader
   • an overview of the portfolio components
   • an introduction to the navigation of the portfolio
2. **Process**: The process section of the portfolio consists of a personal reflection on your experience of the iMET program and a resume. In addition, many students include a narrative of their teaching history and philosophy in this section.
3. **Products**: In the product section of the portfolio, you link artifacts (products) you have created during your time in the program. Each product you include in the product section must be accompanied by:
   • a description of how the product was conceived (what was the individual or group process that led to the creation of the product).
   • a description of how technology and teaching strategies were utilized
   • standards covered by the use of the product
   • feedback on the product you have received from received 2 peers and 1 faculty on your project
   • Most portfolio's contain at least 3-5 Artifacts
4. **Report: Literature Review and Action Research**
   **Literature Review**: The goal of the literature review is to introduce your readers to your research by synthesizing for them what has been written about your area of focus. It is also a place where you address the educational theories that motivated the design of your research. Ultimately, the review of literature should set the stage for your discussion of your research. Also remember that, though you can use a variety of sources, it is very important to share primary sources of information.
   **Action Research**: The main task in action research is to design and implement a study using data collection tools that will allow you to "show" the reader what happened during and as a result of your intervention. After collecting your data, you will sort through your findings, looking for bits of data that reveal some information pertinent to your study. You then look for relationships (patterns) between these bits or pieces. The patterns that emerge from a variety of sources such as things that happen, things that you observe, things that people say and things that you measure result in your findings (conclusions).
5. **Symposium: Electronic Poster and/or Webinar**