

BS Mechanical Engineering 2014-15 Annual Assessment Report

FOR GRADUATE AND CREDENTIAL PROGRAMS: THIS TEMPLATE REFERS TO SAC STATE BACCALAUREATE LEARNING GOALS. PLEASE IGNORE THESE REFERENCES IN YOUR REPORT.

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]

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

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
 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
 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)?

Yes

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:

Twelve student outcomes assessed for the BS Mechanical Engineering Program (outcome g is divided into "written" and "oral"). These are closely aligned with the ABET student outcomes and are aligned with the other engineering programs in the College of Engineering and Computer Science. They are consistent with the Sacramento State BLGs and the Mission of the University.

Together the University Mission and the BLGs inform the Mechanical Engineering Program Learning Objectives. The mission of providing a transformative learning experience "by preparing students for leadership, service and success" and the BLGs including competency in the major discipline and significant breadth and depth in an integrative manner are consistent with all of the specific Mechanical Engineering Program Objectives.

By preparing students to "enter professional employment and/or graduate study" and to use their understanding of professional, ethical, and social responsibilities, the nature and background of diverse cultures, and the importance of life-long learning in the conduct of their professional careers." the program offers individuals the opportunity to realize their highest aspirations. By preparing students to "use knowledge of the principles of science, mathematics, and engineering, to identify, formulate, and solve problems in mechanical engineering" the program emphasizes the development of critical thought

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

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

processes and by preparing students to “apply creativity in the design of systems, components, processes, and/or experiments and in the application of experimental results” the program emphasizes the acquisition and synthesis of knowledge. Finally, by preparing students to “communicate effectively through speaking, writing, and graphics, including the use of appropriate computer technology”, “to work effectively on multi-disciplinary teams” and to “use their understanding of professional, ethical, and social responsibilities, the nature and background of diverse cultures, and the importance of life-long learning in the conduct of their professional careers” the program enables graduates to become active and involved citizens for the good of the individual and society.

The student outcomes are:

- a. An ability to apply knowledge of mathematics, science, and engineering
- b. An ability to design and conduct experiments, as well as to analyze and interpret data
- 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
- d. An ability to function on multidisciplinary teams
- e. An ability to identify, formulate, and solve engineering problems
- f. An understanding of professional and ethical responsibility
- g. An ability to communicate effectively
- h. The broad education necessary to understand the impact of engineering solutions in a global, economic, environmental, and societal context
- i. A recognition of the need for, and an ability to engage in life-long learning
- j. A knowledge of contemporary issues
- k. An ability to use the techniques, skills, and modern engineering tools necessary for engineering practice.

The College Assessment Committee proposed we use a rubric that is similar for all programs. The rubrics were developed by the College Assessment Committee and adopted by the faculty. The specific evaluation rubric is presented in Appendix I, preliminary assessment data are presented in Appendix II, and a summative tables indicating where the student outcomes are assessed, the methods of assessment, etc. and preliminary results from the 2015 cycle are presented in Appendix III.

The specifics for the student outcome for written communication are:

Outcome g. An ability to communicate effectively (written)

- g-1. Meets audience needs.*
- g-2. Organizes material in a logical manner*
- g-3. Provides adequate explanations, justifications, or supporting evidence*
- g-4. Develop visual materials which effectively support narrative (e.g., figures and tables)*
- g-5. Apply appropriate language, sentence structure, and terminology*
- g-6. Construct grammatically correct text*

IN QUESTIONS 2 THROUGH 5, REPORT IN DETAIL ON ONE PLO THAT YOU ASSESSED IN 2014-2015

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):
Written Communication

Q2.2. 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]**

Standard of performance is 80% Students are at Proficient level or higher. See Appendix I and Appendix III

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

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

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

	Q2.5	Q2.6	Q2.7
	(1) PLO	(2) Standards of Performance	(3) Rubrics
1. In SOME course syllabi/assignments in the program that address the PLO	X	X	X
2. In ALL course syllabi/assignments in the program that address the PLO			
3. In the student handbook/advising handbook			
4. In the university catalogue			
5. On the academic unit website or in newsletters			
6. In the assessment or program review reports, plans, resources or activities	X	X	X
7. In new course proposal forms in the department/college/university			
8. In the department/college/university's strategic plans and other planning documents			
9. In the department/college/university's budget plans and other resource allocation documents			
10. Other, specify:			

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?

- | | |
|-------------------------------------|----------------------------|
| <input checked="" type="checkbox"/> | 1. Yes |
| <input type="checkbox"/> | 2. No (Skip to Q6) |
| <input type="checkbox"/> | 3. Don't know (Skip to Q6) |
| <input type="checkbox"/> | 4. N/A (Skip to Q6) |

Q3.2. If yes, was the data **scored/evaluated** for this PLO in 2014-2015?

- | | |
|-------------------------------------|----------------------------|
| <input checked="" type="checkbox"/> | 1. Yes |
| <input type="checkbox"/> | 2. No (Skip to Q6) |
| <input type="checkbox"/> | 3. Don't know (Skip to Q6) |
| <input type="checkbox"/> | 4. N/A (Skip to Q6) |

<p>Q3.1A. How many assessment tools/methods/measures in total did you use to assess this PLO? Two. We will also look at survey data but have not yet done that.</p>	<p>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]</p> <p>ME 138 – project reports</p> <p>ME 190 – project reports</p>
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Q3A: Direct Measures (key assignments, projects, portfolios)

<p>Q3.3. Were direct measures [key assignments, projects, portfolios, etc.] used to assess this PLO?</p> <p><input checked="" type="checkbox"/> 1. Yes</p> <p><input type="checkbox"/> 2. No (Go to Q3.7)</p> <p><input type="checkbox"/> 3. Don't know (Go to Q3.7)</p>	<p>Q3.3.1. Which of the following direct measures were used? [Check all that apply]</p> <p><input checked="" type="checkbox"/> 1. Capstone projects (including theses, senior theses), courses, or experiences</p> <p><input checked="" type="checkbox"/> 2. Key assignments from required classes in the program</p> <p><input type="checkbox"/> 3. Key assignments from elective classes</p> <p><input type="checkbox"/> 4. Classroom based performance assessments such as simulations, comprehensive exams, critiques</p> <p><input type="checkbox"/> 5. External performance assessments such as internships or other community based projects</p> <p><input type="checkbox"/> 6. E-Portfolios</p> <p><input type="checkbox"/> 7. Other portfolios</p> <p><input type="checkbox"/> 8. Other measure. Specify:</p>
<p>Q3.3.2. Please attach the direct measure you used to collect data.</p> <p>ME 138 – Design project for Concurrent Processes and Product Design (graded 20% for Quality of Writing)</p> <p>ME 190 – Senior Project I – Design Report (graded for Quality of Writing)</p>	

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

<p>Q3.4.1. Was the direct measure (e.g. assignment, thesis, etc.) aligned directly and explicitly with the PLO?</p> <p><input checked="" type="checkbox"/> 1. Yes</p> <p><input type="checkbox"/> 2. No</p> <p><input type="checkbox"/> 3. Don't know</p> <p><input type="checkbox"/> 4. N/A</p>	<p>Q3.4.2. Was the direct measure (e.g. assignment, thesis, etc.) aligned directly and explicitly with the rubric?</p> <p><input checked="" type="checkbox"/> 1. Yes</p> <p><input type="checkbox"/> 2. No</p> <p><input type="checkbox"/> 3. Don't know</p> <p><input type="checkbox"/> 4. N/A</p>	<p>Q3.4.3. Was the rubric aligned directly and explicitly with the PLO?</p> <p><input checked="" type="checkbox"/> 1. Yes</p> <p><input type="checkbox"/> 2. No</p> <p><input type="checkbox"/> 3. Don't know</p> <p><input type="checkbox"/> 4. N/A</p>
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<p>Q3.5. How many faculty members participated in planning the assessment data collection of the selected PLO?</p> <p>The entire full time tenure track faculty (6 at the time) planned the assessment strategies and the entire faculty review the data and make recommendations to close the loop.</p>	<p>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)?</p> <p><input checked="" type="checkbox"/> 1. Yes</p> <p><input type="checkbox"/> 2. No</p> <p><input type="checkbox"/> 3. Don't know</p>
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<p>Q3.6. How did you select the sample of student work [papers, projects, portfolios, etc.]?</p> <p>Random</p>	<p>Q3.6.1. How did you decide how many samples of student work to review?</p> <p>We have been told that 4 to 5 is a good representative number</p>
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<p>Q3.6.2. How many students were in the class or program?</p> <p>These are required courses. About 900 majors in the program at this time</p>	<p>Q3.6.3. How many samples of student work did you evaluate?</p> <p>5</p>	<p>Q3.6.4. Was the sample size of student work for the direct measure adequate?</p> <p><input checked="" type="checkbox"/> 1. Yes <input type="checkbox"/> 2. No <input type="checkbox"/> 3. Don't know</p>
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Q3B: Indirect Measures (surveys, focus groups, interviews, etc.)

<p>Q3.7. Were indirect measures used to assess the PLO?</p> <p><input checked="" type="checkbox"/> 1. Yes <input type="checkbox"/> 2. No (Skip to Q3.8) <input type="checkbox"/> 3. Don't know</p>	<p>Q3.7.1. Which of the following indirect measures were used? [Check all that apply]</p> <p><input type="checkbox"/> 1. National student surveys (e.g., NSSE) <input type="checkbox"/> 2. University conducted student surveys (e.g. OIR) <input checked="" type="checkbox"/> 3. College/Department/program student surveys <input type="checkbox"/> 4. Alumni surveys, focus groups, or interviews <input type="checkbox"/> 5. Employer surveys, focus groups, or interviews <input type="checkbox"/> 6. Advisory board surveys, focus groups, or interviews <input type="checkbox"/> 7. Other, specify:</p>
<p>Q3.7.2 If surveys were used, how was the sample size decided?</p> <p>All Graduating Seniors Exit Interview</p>	<p>Q3.7.4. If surveys were used, what was the response rate?</p> <p>100%</p>

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

<p>Q3.8. Were external benchmarking data such as licensing exams or standardized tests used to assess the PLO?</p> <p><input type="checkbox"/> 1. Yes <input checked="" type="checkbox"/> 2. No (Go to Q3.8.2) <input type="checkbox"/> 3. Don't know</p>	<p>Q3.8.1. Which of the following measures were used?</p> <p><input type="checkbox"/> 1. National disciplinary exams or state/professional licensure exams <input type="checkbox"/> 2. General knowledge and skills measures (e.g., CLA, CAAP, ETS PP, etc.) <input type="checkbox"/> 3. Other standardized knowledge and skill exams (e.g., ETS, GRE, etc.) <input type="checkbox"/> 4. Other, specify:</p>
<p>Q3.8.2. Were other measures used to assess the PLO?</p> <p><input type="checkbox"/> 1. Yes <input checked="" type="checkbox"/> 2. No (Go to Q3.9) <input type="checkbox"/> 3. Don't know (Go to Q3.9)</p>	<p>Q3.8.3. If other measures were used, please specify:</p>

Q3D: Alignment and Quality

<p>Q3.9. Did the data, including the direct measures, from all the different assessment tools/measures/methods directly align with the PLO?</p> <p><input checked="" type="checkbox"/> 1. Yes</p>	<p>Q3.9.1. Were ALL the assessment tools/measures/methods that were used good measures for the PLO?</p> <p><input checked="" type="checkbox"/> 1. Yes</p>
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- | | |
|--------------------------|---------------|
| <input type="checkbox"/> | 2. No |
| <input type="checkbox"/> | 3. Don't know |

- | | |
|--------------------------|---------------|
| <input type="checkbox"/> | 2. No |
| <input type="checkbox"/> | 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]

See Appendix III

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?

Yes students are meeting the standard for the most part. We will continue to refine our measurements to ensure students continue to meet this standard which will help ensure their success in their futures.

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

- | | |
|-------------------------------------|--|
| <input checked="" type="checkbox"/> | 1. Exceeded expectation/standard |
| <input type="checkbox"/> | 2. Met expectation/standard |
| <input type="checkbox"/> | 3. Partially met expectation/standard |
| <input type="checkbox"/> | 4. Did not meet expectation/standard |
| <input type="checkbox"/> | 5. No expectation or standard has been specified |
| <input type="checkbox"/> | 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)?

1. Yes
 2. No (Go to **Q6**)
 3. Don't know (Go to **Q6**)

Q5.1.2. Do you have a plan to assess the impact of the changes that you anticipate making?

1. Yes
 2. No
 3. Don't know

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]**

No significant changes

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

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

23. Other Specify:

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

These assessment activities are not particularly useful for our program improvement. We have very specific criteria we report on for ABET and our Grad Program closely matches those. We are not well connected to the purpose of the University assessment. It is not clear how this aids us in program improvement.

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]**

ABET Accreditation requires programmatic assessment which includes assessing multiple student outcomes.

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

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

Q8. Have you attached any appendices? If yes, please list them all here:

Appendix I – Written Communication Rubrics
 Appendix II – Written Communication Assessment Data
 Appendix III – Written Communication Student Outcome Summary

Program Information

P1. Program/Concentration Name(s):
 BS in Mechanical Engineering

P1.1. Report Authors:
 Susan L. Holl and Kenneth Sprott

P2. Program Director:

P2.1. Department Chair:
 Susan L. Holl

P3. Academic unit: Department, Program, or College:
 Department of Mechanical Engineering

P4. College:
 Engineering and Computer Science

P5. Fall 2014 enrollment for Academic unit (See [Department Fact Book 2014](#) by the Office of Institutional Research for fall 2014 enrollment:
 Fall 2013 (from Fall 2014 Factbook): 744
 Fall 2014 (from SacVault enrolled majors): 813

P6. Program Type: **[Select only one]**

<input checked="" type="checkbox"/>	1. Undergraduate baccalaureate major
<input type="checkbox"/>	2. Credential
<input type="checkbox"/>	3. Master's degree
<input type="checkbox"/>	4. Doctorate (Ph.D./Ed.d)
<input type="checkbox"/>	5. Other. Please specify:

Undergraduate Degree Program(s):
P7. Number of undergraduate degree programs the academic unit has: 1

P7.1. List all the name(s): BS in Mechanical Engineering

P7.2. How many concentrations appear on the diploma for this undergraduate program? 0

Master Degree Program(s):
P8. Number of Master's degree programs the academic unit has: 1

P8.1. List all the name(s): MS in Mechanical Engineering

P8.2. How many concentrations appear on the diploma for this master program? 0

Credential Program(s):
P9. Number of credential programs the academic unit has: 0

P9.1. List all the names:

Doctorate Program(s)
P10. Number of doctorate degree programs the academic unit has: 0

P10.1. List all the name(s):

When was your assessment plan?	1. Before 2007-08	2. 2007-08	3. 2008-09	4. 2009-10	5. 2010-11	6. 2011-12	7. 2012-13	8. 2013-14	9. 2014-15	10. No formal plan
P11. Developed	X									
P12. Last updated									X	
								1. Yes	2. No	3. Don't Know
P13. Have you developed a curriculum map for this program?								X		
P14. Has the program indicated explicitly where the assessment of student learning occurs in the curriculum?								X		
P15. Does the program have any capstone class?								X		

P16. Does the program have ANY capstone project?	X		
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BS Mechanical Engineering 2014-15 Annual Assessment Report

Appendix I:

Student Outcome: (g) An ability to communicate effectively (written)

Performance Indicator	Exemplary (Outstanding)	Satisfactory (Proficient)	Developing (Apprentice)	Unsatisfactory (Novice)
<i>Meets audience needs</i>	Delivers material at level and format needed by the audience	Material mostly delivered at appropriate level, considering audience; appropriate format	Material delivered at a consistent level, but inappropriate for audience; appropriate formats	Material delivered at a variety of levels and inappropriate formats
<i>Organizes material in a logical manner</i>	Report is well organized and clearly written. The underlying logic is clearly articulated and easy to follow	. Report is organized and clearly written for the most part. In some areas the logic or flow of ideas is difficult to follow	Report is unorganized, but the reader can understand the general idea and logic used	Report lacks an overall organization. Reader has to make considerable effort to understand the underlying logic and flow of ideas
<i>Provides adequate explanations, justifications, or supporting evidence</i>	. Explanations, justifications, and/or evidence are complete. All applicable aspects are addressed in the narrative	. Regardless if answer is correct, some important aspects of explanation, justification, or evidence is missing. Supporting information is mostly complete	Regardless if answer is correct, some important aspects of explanation, justification, or evidence missing. Supporting information is incomplete .	Regardless if answer is correct, not well explained, justified or supported with evidence. Major elements of supporting information are missing
<i>Develop visual materials which effectively support narrative (e.g., figures and tables)</i>	Visual materials are clear in content and visual presentation; correctly formatted; materials integrated seamlessly into narrative	Visual materials are mostly clear in content and format with some exceptions; materials consistently relevant to narrative	Visual materials are mostly clear in content; some format errors; materials mostly relevant to narrative	Visual materials are unclear in content and irrelevant to narrative; incorrect format; not referenced

<i>Apply appropriate language, sentence structure, and terminology</i>	Language is unambiguous, correct for subject matter. Sentence structure is varied and promotes flow. Parallel structure properly used.	Language is mostly unambiguous, correct terminology. Sentences reasonably variable, few inappropriate uses of parallel structure.	Language is often ambiguous, mostly correct terminology, clear. Sentences lack variety. Inappropriate uses of parallel structure	Language is ambiguous, incorrect terminology. Sentences are overly simple or repetitive. Improper use of parallel structure hinders understanding
<i>Construct grammatically correct text</i>	No grammar, spelling or punctuation errors	Occasional errors which don't affect meaning	Meaning is clear to readers who can ignore errors	Grammatical errors confuse meaning

Appendix II:

Student Outcome: (g) An ability to communicate effectively (written)

Course	Performance Indicator	Exemplary (Outstanding)	Satisfactory (Proficient)	Developing (Apprentice)	Unsatisfactory (Novice)
	<i>Meets audience needs</i>	Delivers material at level and format needed by the audience	Material mostly delivered at appropriate level, considering audience; appropriate format	Material delivered at a consistent level, but inappropriate for audience; appropriate formats	Material delivered at a variety of levels and inappropriate formats
ME 138		8	66	8	
ME 190		10	64	7	
	<i>Organizes material in a logical manner</i>	Report is well organized and clearly written. The underlying logic is clearly articulated and easy to follow	. Report is organized and clearly written for the most part. In some areas the logic or flow of ideas is difficult to follow	Report is unorganized, but the reader can understand the general idea and logic used	Report lacks an overall organization. Reader has to make considerable effort to understand the underlying logic and flow of ideas
ME 138		7	65	10	
ME 190		11	65	5	

	<i>Provides adequate explanations, justifications, or supporting evidence</i>	. Explanations, justifications, and/or evidence are complete. All applicable aspects are addressed in the narrative	. Regardless if answer is correct, some important aspects of explanation, justification, or evidence is missing. Supporting information is mostly complete	Regardless if answer is correct, some important aspects of explanation, justification, or evidence missing. Supporting information is incomplete .	Regardless if answer is correct, not well explained, justified or supported with evidence. Major elements of supporting information are missing
<i>ME 138</i>		9	65	8	
<i>ME 190</i>		10	64	7	
	<i>Develop visual materials which effectively support narrative (e.g., figures and tables)</i>	Visual materials are clear in content and visual presentation; correctly formatted; materials integrated seamlessly into narrative	Visual materials are mostly clear in content and format with some exceptions; materials consistently relevant to narrative	Visual materials are mostly clear in content; some format errors; materials mostly relevant to narrative	Visual materials are unclear in content and irrelevant to narrative; incorrect format; not referenced
<i>ME 138</i>		10	68	4	
<i>ME 190</i>		12	65	4	
	<i>Apply appropriate language, sentence structure, and terminology</i>	Language is unambiguous, correct for subject matter. Sentence structure is varied and promotes flow. Parallel structure properly used.	Language is mostly unambiguous, correct terminology. Sentences reasonably variable, few inappropriate uses of parallel	Language is often ambiguous, mostly correct terminology, clear. Sentences lack variety. Inappropriate uses of parallel	Language is ambiguous, incorrect terminology. Sentences are overly simple or repetitive. Improper use of parallel structure hinders

			structure.	structure	understanding
<i>ME</i> <i>138</i>		8	65	9	
<i>ME</i> <i>190</i>		10	62	9	
	<i>Construct grammatically correct text</i>	No grammar, spelling or punctuation errors	Occasional errors which don't affect meaning	Meaning is clear to readers who can ignore errors	Grammatical errors confuse meaning
<i>ME</i> <i>138</i>		9	65	8	
<i>ME</i> <i>190</i>		10	65	6	

Appendix III:

Outcome g. <i>An ability to communicate effectively (written)</i>						
Performance Indicator	Educational Strategies	Methods of Assessment	Where Data Collected	Length of Assessment Cycle	Year/Semester of Data Collection	Target for Performance (% students Proficient)
<i>1.Meets audience needs</i>	E 6, E 45, E 110, ME 105, ME 108, ME 116, ME 117, ME 171, ME 172, ME 180, ME 126, ME 128, ME 190, ME 191	Faculty Evaluation	ME 138, ME 190	3 years	2012, 2015	80%
		Senior Survey	Exit Interview			
<i>2.Organizes material in a logical manner</i>	E 6, E 45, E 110, ME 105, ME 108, ME 116, ME 117, ME 171, ME 172, ME 180, ME 126, ME 128, ME 190, ME 191	Faculty Evaluation	ME 138, ME 190	3 years	2012, 2015	80%
		Senior Survey	Exit Interview			
<i>3.Provides adequate explanations, justifications, or supporting evidence</i>	E 6, E 45, E 110, ME 105, ME 108, ME 116, ME 117, ME 171, ME 172, ME 180, ME 126, ME 128, ME 190, ME 191	Faculty Evaluation	ME 138, ME 190	3 years	2012, 2015	80%
		Senior Survey	Exit Interview			
<i>4.Develop visual materials which effectively support narrative (e.g., figures and tables)</i>	E 6, E 45, E 110, ME 105, ME 108, ME 116, ME 117, ME 171, ME 172, ME 180, ME 126, ME 128, ME 190, ME 191	Faculty Evaluation	ME 138, ME 190	3 years	2012, 2015	80%
		Senior Survey	Exit Interview			

5. Apply appropriate language, sentence structure, and terminology	E 6, E 45, E 110, ME 105, ME 108, ME 116, ME 117, ME 171, ME 172, ME 180, ME 126, ME 128, ME 190, ME 191	Faculty Evaluation	ME 138, ME 190	3 years	2012, 2015	80%
		Senior Survey	Exit Interview			
6. Construct grammatically correct text	E 6, E 45, E 110, ME 105, ME 108, ME 116, ME 117, ME 171, ME 172, ME 180, ME 126, ME 128, ME 190, ME 191	Faculty Evaluation	ME 138, ME 190	3 years	2012, 2015	80%
		Senior Survey	Exit Interview			

2015 cycle (preliminary direct measure): A sample of 82 students in ME 138 (60% of the 2014-15 cohort) were assessed. This represents 2 of the 4 sections. The percent of the sample that demonstrated each indicator at the proficient or above level were as follows: Indicator 1 – 89%; Indicator 2 – 92%; Indicator 3 – 90% ; Indicator 4 – 95%; Indicator 5 – 88% ; Indicator 6 – 90%;

A sample of 81 students in ME 190 (52% of 2014-15 cohort) were assessed. This represents 2 of 4 sections. The percent of the sample that demonstrated each indicator at the proficient or above level were as follows:

Indicator 1 – 91%; Indicator 2 – 94%; Indicator 3 – 91% ; Indicator 4 – 96%; Indicator 5 – 90% ; Indicator 6 – 92%;