

2016-2017 Annual Assessment Report Template

For instructions and guidelines visit our [website](#)
or [contact us](#) for more help.

Please begin by selecting your program name in the drop down. If the program name is not listed, please enter it below:

BS Civil Engineering

OR

Question 1: Program Learning Outcomes

Q1.1.

Which of the following Program Learning Outcomes (PLOs), Sac State Baccalaureate Learning Goals (BLGs), and emboldened Graduate Learning Goals (GLGs) **did you assess?** [Check all that apply]

- 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, Competency, and Perspectives**
- 13. Ethical Reasoning
- 14. Foundations and Skills for Lifelong Learning
- 15. **Global Learning and Perspectives**
- 16. Integrative and Applied Learning
- 17. Overall Competencies for GE Knowledge
- 18. **Overall Disciplinary Knowledge**
- 19. **Professionalism**
- 20. Other, specify any assessed PLOs not included above:

a.

b.

c.

Q1.2.

Please provide more detailed background information about **EACH PLO** you checked above and other information including how your specific PLOs are **explicitly** linked to the Sac State **BLGs/GLGs**:

Problem solving and critical thinking are inherently linked skills in engineering; it is difficult to be a competent problem solver without adept critical thinking skills.

Both of these PLOs are linked to the BLG "**Intellectual and Practical Skills**" inquiry and analysis, critical, philosophical, and creative thinking, written and oral communication, quantitative literacy, information literacy, teamwork and problem solving, practiced extensively, across the curriculum, in the context of progressively more challenging problems, projects, and standards for performance.

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

4. N/A

5. Other, 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 Senior College and University Commission (WSCUC))?

1. Yes

2. No (skip to Q1.5)

3. Don't know (skip 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", see <http://degreeprofile.org>) 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?

1. Yes

2. No

3. Don't know

(Remember: **Save your progress**)

Question 2: Standard of Performance for the Selected PLO

Q2.1.

Select **OR** type in **ONE(1)** PLO here as an example to illustrate how you conducted assessment (be sure you *checked the correct box* for this PLO in Q1.1):

Problem Solving

If your PLO is **not listed**, please enter it here:

Q2.1.1.

Please provide more background information about the **specific PLO** you've chosen in Q2.1.

The Problem Solving PLO is aligned with an ABET Student Learning Outcome (e) - "an ability to identify, formulate and solve engineering problems". Proficiency in the PLO is defined as a student who can identify problem requirements and limitations, define the problem scope, perform an experiment to determine engineering properties [in select cases] and analyze engineering alternatives.

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 standards of performance** that you have developed for this PLO here or in the appendix.

See attached



LO(e)Rubric.docx
14.52 KB



No file attached

Q2.4. PLO	Q2.5. Stdrd	Q2.6. Rubric	Please indicate where you have published the PLO , the standard of performance, and the rubric that was used to measure the PLO:
<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	1. In SOME course syllabi/assignments in the program that address the PLO
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	2. In ALL course syllabi/assignments in the program that address the PLO
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	3. In the student handbook/advising handbook
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	4. In the university catalogue

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	5. On the academic unit website or in newsletters
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	6. In the assessment or program review reports, plans, resources, or activities
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	7. In new course proposal forms in the department/college/university
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	8. In the department/college/university's strategic plans and other planning documents
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	9. In the department/college/university's budget plans and other resource allocation documents
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	10. Other, specify: <input type="text"/>

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?

1. Yes
 2. No (skip to Q6)
 3. Don't know (skip to Q6)
 4. N/A (skip to Q6)

Q3.1.1.

How many assessment tools/methods/measures **in total** did you use to assess this PLO?

Q3.2.

Was the data **scored/evaluated** for this PLO?

1. Yes
 2. No (skip to Q6)
 3. Don't know (skip to Q6)
 4. N/A (skip to Q6)

Q3.2.1.

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:

Scores on an individual question in a structural analysis course during Fall 2016 (CE 161). Students were asked to find the maximum value of a bending moment in a beam (commonly used to design beams) using any approach they had learned over the duration of the semester. Students gain experience with 3 different methods to solve this type of problem and have to choose which method is best suited for the problem criteria and constraints.

(Remember: **Save your progress**)

Question 3A: Direct Measures (key assignments, projects, portfolios, etc.)

Q3.3.

Were direct measures (key assignments, projects, portfolios, course work, student tests, etc.) used to assess this PLO?

1. Yes
 2. No (skip to Q3.7)
 3. Don't know (skip to Q3.7)

Q3.3.1.

Which of the following direct measures (key assignments, projects, portfolios, course work, student tests, etc.) were used? [Check all that apply]

- 1. Capstone project (e.g. 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 assessment such as simulations, comprehensive exams, or critiques
- 5. External performance assessments such as internships or other community-based projects
- 6. E-Portfolios
- 7. Other Portfolios
- 8. Other, specify:

Q3.3.2.

Please **provide** the direct measure (key assignments, projects, portfolios, course work, student tests, etc.) you used to collect data, THEN **explain** how it assesses the PLO:

Exam question (section 1): "Using an approach covered during the course of the semester, find the largest magnitude of the bending moment in the structure shown below (see attached for figure). Assume EI is constant along the length of the beam."

Exam question (section 2): "Using any approach covered during the course of the semester, please find the displacement at A (see attached for figure). Assume EI is constant along the length of the beam."



ExamFigures.docx
67.07 KB



No file attached

Q3.4.

What tool was used to evaluate the data?

- 1. No rubric is used to interpret the evidence (skip to Q3.4.4.)
- 2. Used rubric developed/modified by the faculty who teaches the class (skip to Q3.4.2.)
- 3. Used rubric developed/modified by a group of faculty (skip to Q3.4.2.)
- 4. Used rubric pilot-tested and refined by a group of faculty (skip to Q3.4.2.)
- 5. The VALUE rubric(s) (skip to Q3.4.2.)
- 6. Modified VALUE rubric(s) (skip to Q3.4.2.)
- 7. Used other means (Answer Q3.4.1.)

Q3.4.1.

If you used other means, which of the following measures was used? [Check all that apply]

- 1. National disciplinary exams or state/professional licensure exams (skip to Q3.4.4.)
- 2. General knowledge and skills measures (e.g. CLA, ETS PP, etc.) (skip to Q3.4.4.)
- 3. Other standardized knowledge and skill exams (e.g. ETC, GRE, etc.) (skip to Q3.4.4.)
- 4. Other, specify: (skip to Q3.4.4.)

Q3.4.2.

Was the rubric aligned directly and explicitly with the PLO?

- 1. Yes
- 2. No

3. Don't know
 4. N/A

Q3.4.3.

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

Q3.4.4.

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

Q3.5.

How many faculty members participated in planning the assessment data **collection** of the selected PLO?

2

Q3.5.1.

How many faculty members participated in the **evaluation** of the assessment data for the selected PLO?

2

Q3.5.2.

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
 4. N/A

Q3.6.

How did you **select** the sample of student work (papers, projects, portfolios, etc.)?

CE161 is an intensive problem solving and critical thinking upper-division required course in the major. Since all students must take the course, it is an attractive option to assess these PLOs. The specific question is cumulative in nature, given during the final exam, and students are asked to make a choice as to which technique/methodology to use to efficiently solve the engineering problem. This combines evaluating solutions, analysis and critical thinking.

There is one of the performance expectations in the rubric that this direct assessment does not address (*Perform an experiment to determine engineering properties*).

Q3.6.1.

How did you **decide** how many samples of student work to review?

All student exam questions were scored during Fall 2016 (68 students)

Q3.6.2.

How many students were in the class or program?

68

Q3.6.3.

How many samples of student work did you evaluated?

68

Q3.6.4.

Was the sample size of student work for the direct measure adequate?

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

(Remember: **Save your progress**)

Question 3B: 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**)
 3. Don't Know (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 or focus groups
 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:

Q3.7.1.1.

Please explain and attach the indirect measure you used to collect data:

Q3.7.2.If surveys were used, how was the sample size **decided**?**Q3.7.3.**If surveys were used, how did you **select** your sample:**Q3.7.4.**

If surveys were used, what was the response rate?

Question 3C: 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 (skip to **Q3.8.2**)
3. Don't Know (skip to **Q3.8.2**)

Q3.8.1.

Which of the following measures was used? [Check all that apply]

1. National disciplinary exams or state/professional licensure exams

2. General knowledge and skills measures (e.g. CLA, ETS PP, etc.)
3. Other standardized knowledge and skill exams (e.g. ETC, GRE, etc.)
4. Other, specify:


Q3.8.2.


Were other measures used to assess the PLO?

1. Yes
2. No (skip to **Q4.1**)
3. Don't know (skip to **Q4.1**)

Q3.8.3.

If other measures were used, please specify:

 No file attached

 No file attached

(Remember: **Save your progress**)

Question 4: Data, Findings, and Conclusions

Q4.1.

Please provide simple tables and/or graphs to summarize the assessment data, findings, and conclusions for the selected PLO in **Q2.1**:

Students were scored out of 3.0, rather than 4.0, since one of the performance indicators was not addressed with the direct assessment (perform an experiment).

The attached histogram illustrates the students' performance. The mean was 2.0 for section 1 and 1.6 (out of 3.0) for section 2; the median was 2.0 and 1.8, respectively. Approximately 81% received a score above 1.5 for section 1 and 64% for section 2.



QuestionEvaluationScores.pdf
68.1 KB




No file attached

Q4.2.

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

The direct assessment demonstrated the students are on the borderline of being successful with this PLO. The department prefers to see a score of 2.0 out of 3.0, or 75% of the students meeting scoring at least a 1.5. While section 1 achieved both of these metrics, section 2 fell short.

The department is continuously trying to improve the students' critical thinking and problem solving abilities. We are currently discussing significant changes to the curriculum that are primarily aimed at this goal, including providing more visualization opportunities in our drafting/CAD class, more engineering problem solving opportunities at the lower division, and a stronger linkage between fundamental courses, such as chemistry, and upper division civil engineering courses, such as environmental engineering.

 No file attached

 No file attached

Q4.3.

For the 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/standard has been specified
- 6. Don't know

Question 4A: Alignment and Quality

Q4.4.

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

Q4.5.

Were **all** the assessment tools/measures/methods that were used good measures of the PLO?

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

Question 5: Use of Assessment Data (Closing the Loop)

Q5.1.

As a result of the assessment effort and based on 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 (skip to Q5.2)
- 3. Don't know (skip to Q5.2)

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.

See Q4.2

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

Q5.2.

Since your last assessment report, **how have the assessment data from then been used** so far?

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

23. Other, specify:

Q5.2.1.

Please provide a detailed example of how you used the assessment data above:

In the 15-16 assessment feedback, it was suggested to -- "Discuss specific program changes that could support improved student teamwork."

Teamwork was addressed more specifically in our capstone class, CE190. Input from faculty was used to assess student teamwork performance, along with the self evaluations by the students themselves. A guideline document was developed for the students with input from the rubric's performance indicators.

Q5.3.

To what extent did you apply **last year's feedback** from the Office of Academic Program Assessment in the following areas?

	1. Very Much	2. Quite a bit	3. Some	4. Not at All	5. N/A
1. Program Learning Outcomes	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>
2. Standards of Performance	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>
3. Measures	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>
4. Rubrics	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>
5. Alignment	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>
6. Data Collection	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>
7. Data Analysis and Presentation	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>
8. Use of Assessment Data	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>
9. Other, please specify: <input type="text"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Q5.3.1.

Please share with us an example of how you applied **last year's feedback** from the Office of Academic Program Assessment in any of the areas above:

In our 15-16 feedback, it was suggested to "Provide a data table indicating the percentage of students scoring at each level of the rubric, rather than the average. Averages mask the distribution of the data, which can be important information."


While a table hasn't been provided, percentages have been relied on more heavily for assessing student performance with respect to the aforementioned rubric.


(Remember: **Save your progress**)

Additional Assessment Activities

Q6.

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

 No file attached

 No file attached

Q7.

What PLO(s) do you plan to assess next year? [Check all that apply]


- 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, Competency, and Perspectives**
- 13. Ethical Reasoning
- 14. Foundations and Skills for Lifelong Learning
- 15. **Global Learning and Perspectives**
- 16. Integrative and Applied Learning
- 17. Overall Competencies for GE Knowledge
- 18. **Overall Disciplinary Knowledge**
- 19. **Professionalism**
- 20. Other, specify any PLOs not included above:


a.


b.

c.

Q8. Please attach any additional files here:

 No file attached

 No file attached

 No file attached

 No file attached

Q8.1.

Have you attached any files to this form? If yes, please list every attached file here:

Program Information (**Required**)

Program:

(If you typed your program name at the beginning, please skip to Q10)

Q9.

Program/Concentration Name: [skip if program name appears above]

BS Civil Engineering

Q10.

Report Author(s):

Benjamin Fell

Q10.1.

Department Chair/Program Director:

Benjamin Fell

Q10.2.

Assessment Coordinator:

Benjamin Fell

Q11.

Department/Division/Program of Academic Unit

Civil Engineering

Q12.

College:

College of Engineering and Computer Science

Q13.

Total enrollment for Academic Unit during assessment semester (see Departmental Fact Book):

720

Q14.

Program Type:

1. Undergraduate baccalaureate major
2. Credential
3. Master's Degree
4. Doctorate (Ph.D./Ed.D./Ed.S./D.P.T./etc.)
5. Other, specify:

Q15. Number of **undergraduate degree programs** the academic unit has?

1

Q15.1. List all the names:

Bachelor of Science in Civil Engineering

Q15.2. How many concentrations appear on the diploma for this undergraduate program?

0

Q16. Number of **master's degree programs** the academic unit has?

1

Q16.1. List all the names:

Master of Science in Civil Engineering

Q16.2. How many concentrations appear on the diploma for this master's program?

5

Q17. Number of **credential programs** the academic unit has?

0

Q17.1. List all the names:

Environmental Engineering

Geotechnical Engineering

Transportation Engineering

Structural Engineering

Water Resources Engineering

Q18. Number of **doctorate degree programs** the academic unit has?


0

Q18.1. List all the names:

When was your assessment plan ...	1. Before 2011-12	2. 2012-13	3. 2013-14	4. 2014-15	5. 2015-16	6. 2016-17	7. No Plan	8. Don't know
Q19. developed?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Q19.1. last updated?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Q19.2. (REQUIRED)

Please **obtain** and **attach** your latest **assessment plan**:


5YearAssessment.doc
86.5 KB


Q20.

Has your program developed a **curriculum map**?

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

Q20.1.

Please **obtain** and **attach** your latest **curriculum map**:


flowchart_tableformat_update_May2017.pdf
107.75 KB

Q21.

Has your program indicated in the curriculum map where assessment **of student learning** occurs?

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

Q22.

Does your program have a capstone class?

- 1. Yes, indicate:
- 2. No
- 3. Don't know

Q22.1.

Does your program have **any** capstone project?

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

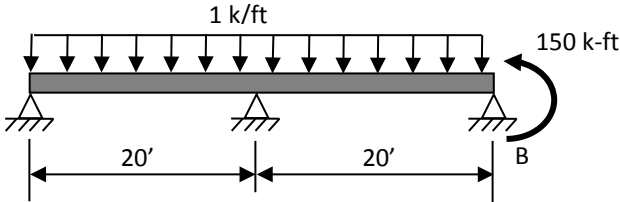
(Remember: **Save your progress**)

ver. 5.15/17

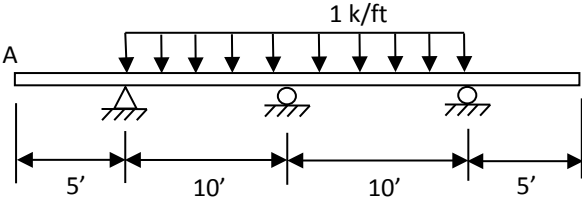
Student Learning Outcome: (e) An ability to identify, formulate, and solve engineering problems

Performance Indicator	Exemplary (Outstanding)	Satisfactory (Proficient)	Developing (Apprentice)	Unsatisfactory (Novice)
Score	4	3	2	1
<i>Identify problem requirement and problem limitations</i>	Identify all problem requirements, and understand problem limitations	Describe overall problem requirements and problem limitations	Identify problem requirements and problem limitations	Did not recognize problem requirements and missed major problem limitations
<i>Define problem scope</i>	Well defined and documented problem scope	Define major problem scope elements	Missed some of the problem components	Crucial problem elements were missed
<i>Perform experiment to determine engineering properties</i>	Identify specific type of experiment to all measured engineering properties that is applicable to the project	Experiment conducted with major required engineering properties measured	Experiment conducted with several needed engineering properties were missed	Experiments were not appropriate for project
<i>Analyze engineering alternatives</i>	Select cost-effective, workable alternative and provide engineering alternatives	An alternative was selected, but few alternatives were discussed	Single method was evaluated, alternatives were not considered	No project alternatives were identified

Section 1 exam question figure:



Section 2 exam question figure:



Assessment Plan by Learning Outcome

Student Learning Outcome	AY 15- 16	AY 16- 17	AY 17- 18	AY 18- 19	AY 19- 20	AY 20- 21
(a) An ability to apply knowledge of mathematics, science, and engineering	A	E	C	A	E	C
(b) An ability to design and conduct experiments, as well as to analyze and interpret data		A	E	C	A	E
(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			A	E	C	A
(d) An ability to function on multidisciplinary teams	A	E	C	A	E	C
(e) An ability to identify, formulate, and solve engineering problems		A	E	C	A	E
(f) An understanding of professional and ethical responsibility			A	E	C	A
(g) An ability to communicate effectively	A	E	C	A	E	C
(h) The broad education necessary to understand the impact of engineering solutions in a global, economic, environmental, and societal context		A	E	C	A	E
(i) A recognition of the need for, and an ability to engage in life-long learning			A	E	C	A
(j) A knowledge of contemporary issues	A	E	C	A	E	C
(k) An ability to use the techniques, skills, and modern engineering tools necessary for engineering practice.		A	E	C	A	E

Key: A = Assess, E = Evaluate, C = Change (if necessary)

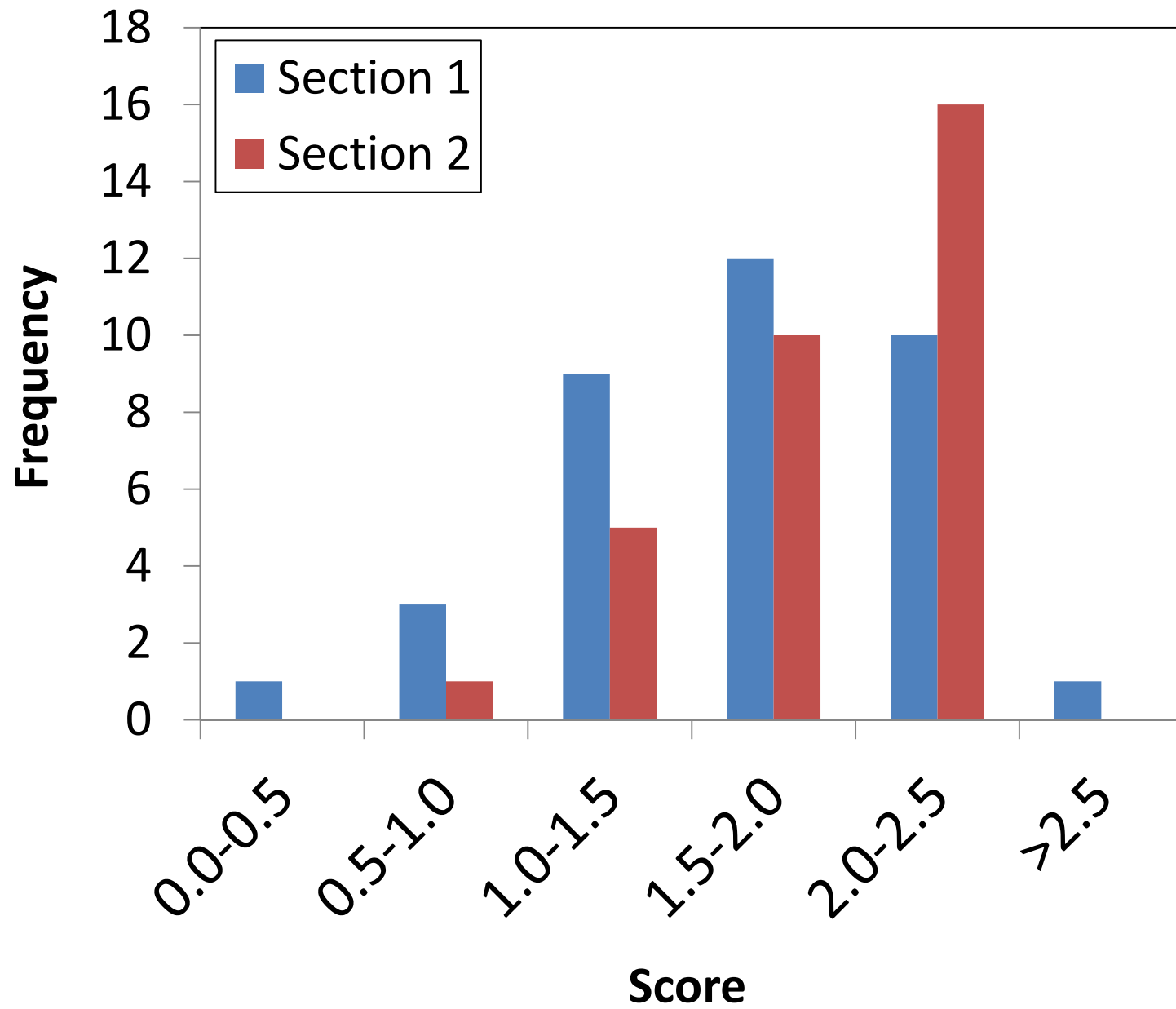
Table 1. Courses Contributing to Student Learning Outcomes

ABET Learning Outcome	Lower Division					Upper Division																	Overall	
	CE1	CE4	CE9	E30	E45	E110	E112	E115	E124	E132	E140	CE100	CE101	CE113	CE135	CE137	CE146	CE147	CE161	CE170	CE171A	CE190		Design Elective
(a)	-	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	-	M	M	D	D	M	M	M
(b)	-	-	I	-	D	D	-	I	-	I	-	I	I	M	M	D	-	D	-	D	D	M	M	M
(c)	-	-	-	I	-	-	I	-	D	-	-	-	-	-	D	D	-	D	-	D	D	M	M	M
(d)	-	-	I	-	I	D	-	-	-	-	-	I	-	D	-	-	D	I	-	-	-	M	-	M
(e)	-	-	I	I	I	D	D	I	D	D	I	I	D	D	D	D	I	M	M	M	M	M	M	M
(f)	I	-	-	I	I	D	-	-	D	-	-	I	-	I	-	-	M	I	-	D	D	D	-	M
(g)	I	-	I	I	I	-	-	-	-	-	-	I	I	D	D	-	D	M	I	D	D	M	-	M
(h)	I	-	-	-	-	-	I	I	-	-	D	D	-	I	-	D	D	D	I	D	D	M	-	M
(i)	-	-	-	I	I	I	I	-	D	-	-	I	I	D	-	I	I	I	D	-	I	D	M	M
(j)	I	-	I	I	-	-	-	I	-	-	-	D	I	I	-	-	D	D	D	D	D	M	-	M
(k)	I	I	I	I	D	-	I	I	D	D	-	D	D	D	M	I	-	M	D	M	D	M	M	M

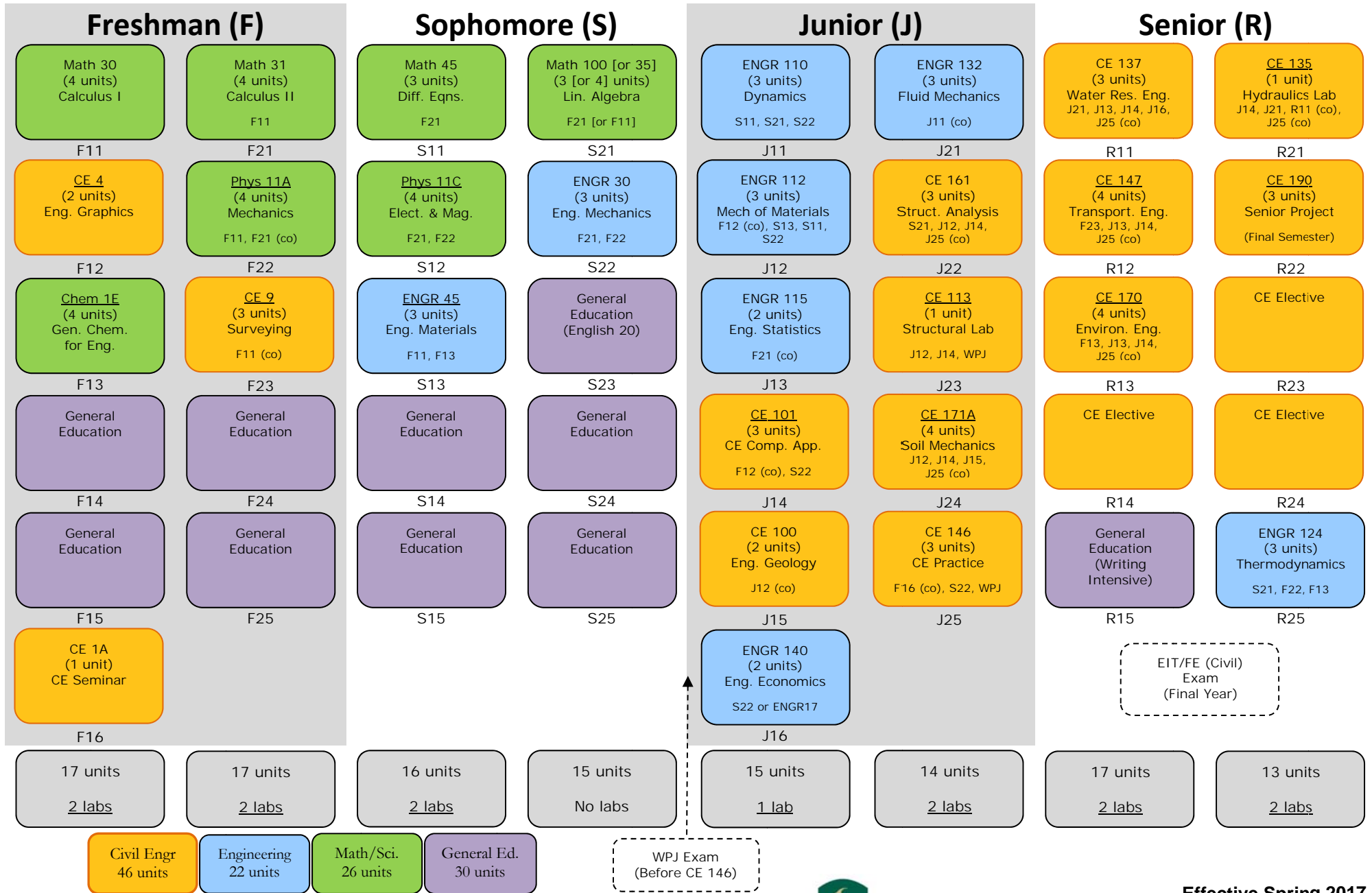
I = Introduced, D = Developed and Practiced with feedback, M = Demonstrated as Mastery level appropriate for graduation

ABET Student Learning Outcomes

- (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.



Department of Civil Engineering – California State University, Sacramento



The color coding for the courses shown above is used for ease of readability and not for accreditation purposes. A minimum grade of C- or better is required in all major courses.



SACRAMENTO STATE
Department of Civil Engineering

Effective Spring 2017