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 Physics

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
- [x] 18. **Overall Disciplinary Knowledge**
- [ ] 19. **Professionalism**
- [x] 20. Other, specify any assessed PLOs not included above:

a. Technical Skills
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**:

We collected data on two of our program's LOs.

Physics Knowledge (Overall Disciplinary Knowledge) - Graduating seniors will be asked to take the Major Field Test in Physics. This comprehensive physics examination is given by departments nationwide to assess physics knowledge. Student test results are compiled by ETS and will be returned to us along with data about comparable institutions. This data will help us identify areas in our curriculum that are proving ineffective. This is quite clearly aligned with the first BLG, Competence in Discipline. This data was collected and analyzed. It is reported here.

Technical Skills (Other) - Students must be exposed to a broad range of technical skills and should become proficient in most. This PLO aligns with the "Intellectual and Practical Skills" BLG. Unfortunately, we were unable to complete a full analysis of the works provided for this PLO in time to include in this report. The analysis will be completed by the end of the summer.

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):

Overall Disciplinary Knowledge

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.

Students will develop a broad understanding of the basic principles of Physics and have a firm foundation for acquiring new knowledge and applying it in a variety of situations. We desire our students to be well schooled in the theories and laws of Physics. In addition to classroom and laboratory experiences, all students in this program are required to attend a minimum of twenty physics colloquium where they are exposed to current research subjects in Physics and Astronomy as well as occasional talks on the history of Physics. We wish the future evolution of our curriculum to keep course content and laboratories as modern as feasible with available resources.

We administered the Major Field Test in phyiscs to students in our capstone laboratory course (PHYS 175 - Advanced Physics Laboratory). This is generally one of the last classes taken "in major" by students across all of our degree programs.

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.

We compare the performance of our students who have taken the test to those from similiar schools (public comprehensive schools) across the country.

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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:
☐	☐	☐	1. In **SOME** course syllabi/assignments in the program that address the PLO
☐	☐	☐	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
☐	☐	☐	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: website

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?

1

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:

Used the ETS website to download aggregate data.

(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: standardized text

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:

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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?

Q3.5.1.
How many faculty members participated in the **evaluation** of the assessment data for the selected PLO?

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.)?

Q3.6.1.
How did you **decide** how many samples of student work to review?

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

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

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:

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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:

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(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**:

We found using ETS's Major Field Test that in the area of physics knowledge, our students (N=18) performed right at average when compared to students from other similar institutions (regional comprehensive colleges/universities) with a total student set of nearly 1000 students in the past five years. Our top scoring student scored in the 97th percentile and our lowest in the 4th percentile. In "Introductory Physics" our students scored slightly below the average (but well within one standard deviation), but in "Advanced Physics" our students scored slightly above the average (but again within one standard deviation). Breaking down into categories of areas of physics, the more "classical" areas of physics were slightly below national average, but "modern" physics was slightly above average. This difference does not appear to be statistically significant at this point, but we will be watching it as we continue to administer the test.

Given our small sample size, it is helpful to track over longer intervals. We have previously administered the MFT one other time with another dozen students. If we merge both data sets, we found no significant difference in the results.

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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?

We are generally pleased with the results of the tests. While we would have hoped that we were "better than average" we do not find any particular areas of concern that we need to address at this point.

We will be watching to see if a meaningful difference between "classical" and "modern" physics develops as we increase our sample size.

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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.

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	○	○	○	◉	○
2. Modifying curriculum	○	○	○	◉	○
3. Improving advising and mentoring	○	○	○	◉	○
4. Revising learning outcomes/goals	○	○	○	◉	○
5. Revising rubrics and/or expectations	○	○	○	◉	○
6. Developing/updating assessment plan	○	○	◉	○	○
7. Annual assessment reports	○	◉	○	○	○
8. Program review	○	○	◉	○	○
9. Prospective student and family information	○	○	◉	○	○
10. Alumni communication	○	○	◉	○	○
11. WSCUC accreditation (regional accreditation)	○	○	○	○	◉
12. Program accreditation	○	○	○	○	◉
13. External accountability reporting requirement	○	○	○	○	◉
14. Trustee/Governing Board deliberations	○	○	○	○	◉
15. Strategic planning	○	○	◉	○	○
16. Institutional benchmarking	○	○	◉	○	○
17. Academic policy development or modifications	○	○	◉	○	○
18. Institutional improvement	○	○	◉	○	○
19. Resource allocation and budgeting	○	○	○	◉	○
20. New faculty hiring	○	○	○	◉	○
21. Professional development for faculty and staff	○	○	○	◉	○
22. Recruitment of new students	○	○	○	◉	○

23. Other, specify:

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

As we are entering a Program Review cycle, this data is very helpful to know.

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	○	○	○	◉	○
2. Standards of Performance	○	○	○	◉	○
3. Measures	○	○	○	◉	○
4. Rubrics	○	○	○	◉	○
5. Alignment	○	○	○	◉	○
6. Data Collection	○	○	○	◉	○
7. Data Analysis and Presentation	○	○	○	◉	○
8. Use of Assessment Data	○	○	○	◉	○
9. Other, please specify:	○	○	○	◉	○

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:

(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:

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Q7.
What PLO(s) do you plan to assess next year? [**Check all that apply**]

- [ ] 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
- [ ] 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
- [x] 18. **Overall Disciplinary Knowledge**
- [ ] 19. **Professionalism**
- [ ] 20. Other, specify any PLOs not included above:

a.
b.
c.

Q8. Please attach any additional files here:

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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 Physics

Q10.
Report Author(s):
William DeGraffenreid

Q10.1.
Department Chair/Program Director:

William DeGraffenreid

Q10.2.
Assessment Coordinator:
William DeGraffenreid

Q11.
Department/Division/Program of Academic Unit
Physics & Astronomy

Q12.
College:
College of Natural Science & Mathematics

Q13.
Total enrollment for Academic Unit during assessment semester (see Departmental Fact Book):
767 FTES

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?
4

Q15.1. List all the names:

Physics BS

Physics BA

Physics BS (Applied Physics Concentration)

Physics BA (Teacher Preparation Concentration)

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

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

Q16.1. List all the names:

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

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

Q17.1. List all the names:

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

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?	○	○	○	○	◉	○	○	○
Q19.1. last updated?	○	○	○	○	◉	○	○	○

Q19.2. (REQUIRED)
Please **obtain** and **attach** your latest **assessment plan**:
No file attached

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**:
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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: PHYS 175

- ○ 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**)