2017 - 2018
Annual Program Assessment Report

The Office of Academic Program Assessment
California State University, Sacramento

For more information 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:

BA Liberal Studies

OR enter program name:

Section 1: Report All of the Program Learning Outcomes Assessed

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**
- ☐ 20A. Other, specify any assessed PLOs not included above:

a. _____

b. _____

c. _____

- ☐ 20B. **Check here if your program has not collected any data for any PLOs**. Please go directly to Q6 (skip Q1.2 to Q5.3.1.)

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**:

Quantitative Literature one of the American Association of Colleges and Universities (AAC&U) VALUE rubrics and a Sacramento State Baccalaureate Learnig Goal (Intellectual and Practical Skills).

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)

Section 2: Report One Learning Outcome in Detail

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):

Quantitative Literacy

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.

Quantitative Literacy is assessed on (1) Interpretation, (2) Representation, (3) Calculation, (4) Application/Analysis, (5) Assumptions, and (6) Communication.

Q2.2.
Has the program developed or adopted ***explicit program standards of performance/expectations*** for this PLO? (e.g. "We expect 70% of our students to achieve at least a score of 3 or higher in all dimensions of the Written Communication VALUE rubric.")

- ⦿ 1. Yes
- ◯ 2. No
- ◯ 3. Don't know
- ◯ 4. N/A

Q2.3.
Please **1) provide and/or attach the rubric(s) AND 2) the standards of performance/expectations** that you have developed for *the selected PLO* here:

See Attachment 1: Quantitative Literacy VALUE Rubric.

📎 QuantitativeLiteracyValueRubric.pdf 221.32 KB	📎 No file attached

Q2.4. PLO	**Q2.5. Stdrd**	**Q2.6. Rubric**	Please indicate where you have published the **PLO**, the **standard (stdrd)** 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:

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:

Final examinations from MATH 107A in the spring 2018 semester were reviewed and evaluated based on the AAC&U Quantitative Literacy rubric.

(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 **1) provide and/or attach the direct measure** (key assignments, projects, portfolios, course work, student tests, etc.) you used to collect data, **THEN 2) explain here** how it assesses the PLO:

See Attachment 2: MATH 107B Final Exam. Each Final Exam was reviewed by the instructor of record (Kim Elce), Lead Liberal Studies Advisor (Kristen Anderegg), risten Anderegand the Liberal Studies Program Director (Timothy Fong).

📎 **No file attached** | 📎 **LBST Assessment_Math 107B_Final 2018.pdf 2.33 MB**

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.
Please enter the number (#) of faculty members who participated in planning the assessment data **collection** of the selected PLO?

2

Q3.5.1.
Please enter the number (#) of faculty members who participated in the **evaluation** of the assessment data for the selected PLO?

3

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.)?

Liberal Studies majors are required to take MATH 107A.   One section of MATH 107A out of three sections was chosen for review.

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

All students in one section of MATH 107A were reviewed.

Q3.6.2.
Please enter the number (#) of students that were in the class or program?
```
22
```

Q3.6.3.
Please enter the number (#) of samples of student work that you evaluated?
```
22
```

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:

📎 **No file attached** | 📎 **No file attached**

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, please enter 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:

The Liberal Studies Program also utilizes the Department Factbook published by the Office of Institutional Research and Cognos for additeional information on retention rates, average student GPAs, Good Standing, and graudation rates.

📎 No file attached   📎 No file attached

(Remember: Save your progress)

Question 4: Data, Findings, and Conclusions

Q4.1.
Please provide tables and/or graphs to summarize the assessment data, findings, and conclusions for the selected PLO in **Q2.1** (see Appendix 12 in our Feedback Packet Example):

FIGURE 1
LIBERAL STUDIES ANNUAL ASSESSMENT
SPRING 2018
QUANTITATIVE LITERACY (Numerical)
MATH 107B

N = 22

Level Criteria	Capstone 4	Milestone 3	Milestone 2	Benchmark 1
Interpretation	15	2	4	1
Representation	4	11	5	2
Calculation	6	11	3	2
Application/Analysis	4	8	8	2
Assumptions	0	0	17	5
Communication	10	4	4	4

📎 FIGURE 1 Liberal Studies Assessment 2018.docx
12.41 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?

FIGURE 2
LIBERAL STUDIES ANNUAL ASSESSMENT

SPRING 2018
QUANTITATIVE LITERACY (Percentage)
MATH 107B

N = 22

Level Criteria	Capstone 4	Milestone 3	Milestone 2	Benchmark 1
Interpretation	68.2	9.1	18.2	4.5
Representation	18.2	50.0	22.7	9.1
Calculation	27.3	50.0	13.6	9.1
Application/Analysis	18.2	36.4	36.4	9.1
Assumptions	0	0	77.3	22.7
Communication	45.5	18.2	18.2	18.2

Our expectation is 60% of our students will score 3 or above and 80 percent will score 2 and above using the VALUE rubric. Students met expecations in the areas of Interpretation, Representation, Calculation, and Communication. Students did not meet the 60% expectation for 3 and above in Application/Analysis, but met the expectation for 80% for 2 and above. Students did not meet expectations for Assumptions.

See question 5.1.1 on how our program will work to improve student performance of the selected PLO.

📎 FIGURE 2 Liberal Studies Assessment 2018.docx
12.24 KB

📎 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.

Reflections:

- In the category of assumptions, the assessment tool was not sufficient. The way the question was stated on the final exam did not really necessitate the student to venture into category 3 or 4. Although this is an area that is discussed within the class, the choice of assessment tool in this case did not allow a true assessment in this area.

- The nature of the mathematics involved does affect the outcomes of the assessment even though the categories themselves are not mathematical content specific. For example, the problem used to assess calculation had more difficult mathematical content. In the future, we will think more carefully about how to address this issue. For example, should we assess each category within multiple mathematical content areas to truly evaluate the category itself?
- Although using the final exam as the assessment tool is a natural choice, we should think more carefully about better ways to assess our students. In particular, the time constraints of the exam sometimes cause students to more hastily solve problems, so some of the more subtle aspects of quantitative reasoning are not always communicated as carefully. In particular, the areas of Application/Analysis, Assumptions, and Communications could be affected by this.

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

- ⦿ 1. Yes, describe your plan:

We will assess Quantitative Literacy again next year. This decision was made in consultation with Dr. Kim Elce.

- ◯ 2. No
- ◯ 3. Don't know

Q5.2.

To what extent did you apply **previous assessment results** collected through your program in the following areas?	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	◯	◯	⦿	◯	◯

	1.	2.	3.	4.	5.
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:

Annual assessments are important for our Program Review scheduled for 2018-2019.

Q5.3. To what extent did you apply **previous assessment 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 **previous feedback** from the Office of Academic Program Assessment in any of the areas above:

Our goal is to utilize the same quality of program assessment consistently in the future.

(Remember: Save your progress)

Section 3: Report Other Assessment Activities

Other Assessment Activities

Q6.
If your program/academic unit conducted assessment activities that are **not directly related to the PLOs** for this year (i.e. impacts of an advising center, etc.), please provide those activities and results here:

N/A

📎 No file attached   📎 No file attached

Q6.1.
Please explain how the assessment activities reported in **Q6** will be linked to any of your PLOs and/or PLO assessment in the future and to the mission, vision, and the strategic planning for the program and the university:

N/A

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 explain how this year's assessment activities help you address recommendations from your department's last program review?

Our last program review was done in spring 2015. There was a recommendation to integrate Baccalaureate Learning Goals with Program Learning Objectives, which we are now doing. See Attachment 3.

Q9. Please attach any additional files here:

📎 Attachment 3 Aligned Liberal Studies and Sacramento State Learning Objectives_2018.docx
13.58 KB

📎 No file attached

📎 No file attached   📎 No file attached

Q9.1.
If you have attached **any** files to this form, please list **every** attached file here:

Attachment 1
Attachment 2
Attachment 3
Figure 1
Figure 2
Liberal Studies Roadmap

Section 4: Background Information about the Program

Program Information (**Required**)

Program:

(If you typed in your program name at the beginning, please skip to **Q11**)

Q10.
Program/Concentration Name: [skip if program name is already selected or appears above]
BA Liberal Studies

Q11.
Report Author(s):
Timothy P. Fong

Q11.1.
Department Chair/Program Director:
Timothy P. Fong

Q11.2.
Assessment Coordinator:
Timothy P. Fong

Q12.
Department/Division/Program of Academic Unit (select):
Liberal Studies

Q13.
College:
College of Social Sciences & Interdisciplinary Studies

Q14.
What is the total enrollment (#) for Academic Unit during assessment (see Departmental Fact Book):
484 (Fall 2016)

Q15.
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:

Q16. Number of **undergraduate degree programs** the academic unit has?
2

Q16.1. List all the names:

Traditional

Non-Teaching

Q16.2. How many concentrations appear on the diploma for this undergraduate program?
10+

Q17. Number of **master's degree programs** the academic unit has?

0

Q17.1. List all the names:

Concentration in Linguistics Composition

Concentration in Literature

Concentration in Foreign Language

Concentration in United States History

Concentration in World History

Concentration in California Studies

Concentration in American Studies

Concentration in Multicultural Studies

Concentration in Mathematics

Concentration in Natural Science

Concentration in Art

Concentration in Music

Concentration in Theatre

Concentration in Physical Education

Concentration in Human Development

Q17.2. How many concentrations appear on the diploma for this master's program?

0

Q18. Number of **credential programs** the academic unit has?

0

Q18.1. List all the names:

Q19. Number of **doctorate degree programs** the academic unit has?

0

Q19.1. List all the names:

When was your **Assessment Plan**...	1.	2.	3.	4.	5.	6.	7.	8.
	Before 2012-13	2013-14	2014-15	2015-16	2016-17	2017-18	No Plan	Don't know

Q20. Developed?	○	○	○	●	○	○	○	○
Q20.1. Last updated?	○	○	○	●	○	○	○	○

Q20.2. (Required)
Please **obtain** and **attach** your latest **assessment plan**:

> 📎 **Aligned Liberal Studies and Sacramento State Learning Objectives_2018.docx**
> **13.59 KB**

Q21.
Has your program developed a **curriculum map?**
- ● 1. Yes
- ○ 2. No
- ○ 3. Don't know

Q21.1.
Please **obtain** and **attach** your latest **curriculum map**:

> 📎 Roadmap LIBS updated 5-7-18.docx
> 149.44 KB

Q22.
Has your program indicated explicitly in the curriculum map where assessment **of student learning** occurs?
- ● 1. Yes
- ○ 2. No
- ○ 3. Don't know

Q23.
Does your program have a capstone class?
- ○ 1. Yes, specify:

> [   ]

- ● 2. No
- ○ 3. Don't know

Q23.1.
Does your program have a capstone project(s)?
- ○ 1. Yes
- ● 2. No
- ○ 3. Don't know

(**Remember**: **Save your progress**)
Save When Completed!

ver. 10.**31**.17

QUANTITATIVE LITERACY VALUE RUBRIC

for more information, please contact value@aacu.org

The VALUE rubrics were developed by teams of faculty experts representing colleges and universities across the United States through a process that examined many existing campus rubrics and related documents for each learning outcome and incorporated additional feedback from faculty. The rubrics articulate fundamental criteria for each learning outcome, with performance descriptors demonstrating progressively more sophisticated levels of attainment. The rubrics are intended for institutional-level use in evaluating and discussing student learning, not for grading. The core expectations articulated in all 15 of the VALUE rubrics can and should be translated into the language of individual campuses, disciplines, and even courses. The utility of the VALUE rubrics is to position learning at all undergraduate levels within a basic framework of expectations such that evidence of learning can by shared nationally through a common dialog and understanding of student success.

Definition

Quantitative Literacy (QL) – also known as Numeracy or Quantitative Reasoning (QR) – is a "habit of mind," competency, and comfort in working with numerical data. Individuals with strong QL skills possess the ability to reason and solve quantitative problems from a wide array of authentic contexts and everyday life situations. They understand and can create sophisticated arguments supported by quantitative evidence and they can clearly communicate those arguments in a variety of formats (using words, tables, graphs, mathematical equations, etc., as appropriate).

Quantitative Literacy Across the Disciplines

Current trends in general education reform demonstrate that faculty are recognizing the steadily growing importance of Quantitative Literacy (QL) in an increasingly quantitative and data-dense world. AAC&U's recent survey showed that concerns about QL skills are shared by employers, who recognize that many of today's students will need a wide range of high level quantitative skills to complete their work responsibilities. Virtually all of today's students, regardless of career choice, will need basic QL skills such as the ability to draw information from charts, graphs, and geometric figures, and the ability to accurately complete straightforward estimations and calculations.

Preliminary efforts to find student work products which demonstrate QL skills proved a challenge in this rubric creation process. It's possible to find pages of mathematical problems, but what those problem sets don't demonstrate is whether the student was able to think about and understand the meaning of her work. It's possible to find research papers that include quantitative information, but those papers often don't provide evidence that allows the evaluator to see how much of the thinking was done by the original source (often carefully cited in the paper) and how much was done by the student herself, or whether conclusions drawn from analysis of the source material are even accurate.

Given widespread agreement about the importance of QL, it becomes incumbent on faculty to develop new kinds of assignments which give students substantive, contextualized experience in using such skills as analyzing quantitative information, representing quantitative information in appropriate forms, completing calculations to answer meaningful questions, making judgments based on quantitative data and communicating the results of that work for various purposes and audiences. As students gain experience with those skills, faculty must develop assignments that require students to create work products which reveal their thought processes and demonstrate the range of their QL skills.

This rubric provides for faculty a definition for QL and a rubric describing four levels of QL achievement which might be observed in work products within work samples or collections of work. Members of AAC&U's rubric development team for QL hope that these materials will aid in the assessment of QL – but, equally important, we hope that they will help institutions and individuals in the effort to more thoroughly embed QL across the curriculum of colleges and universities.

Framing Language

This rubric has been designed for the evaluation of work that addresses quantitative literacy (QL) in a substantive way. QL is not just computation, not just the citing of someone else's data. QL is a habit of mind, a way of thinking about the world that relies on data and on the mathematical analysis of data to make connections and draw conclusions. Teaching QL requires us to design assignments that address authentic, data-based problems. Such assignments may call for the traditional written paper, but we can imagine other alternatives: a video of a PowerPoint presentation, perhaps, or a well designed series of web pages. In any case, a successful demonstration of QL will place the mathematical work in the context of a full and robust discussion of the underlying issues addressed by the assignment.

Finally, QL skills can be applied to a wide array of problems of varying difficulty, confounding the use of this rubric. For example, the same student might demonstrate high levels of QL achievement when working on a simplistic problem and low levels of QL achievement when working on a very complex problem. Thus, to accurately assess a students QL achievement it may be necessary to measure QL achievement within the context of problem complexity, much as is done in diving competitions where two scores are given, one for the difficulty of the dive, and the other for the skill in accomplishing the dive. In this context, that would mean giving one score for the complexity of the problem and another score for the QL achievement in solving the problem.

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Definition

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Evaluators are encouraged to assign a zero to any work sample or collection of work that does not meet benchmark (cell one) level performance.

	Capstone 4	Milestones 3	Milestones 2	Benchmark 1
Interpretation *Ability to explain information presented in mathematical forms (e.g., equations, graphs, diagrams, tables, words)*	Provides accurate explanations of information presented in mathematical forms. Makes appropriate inferences based on that information. *For example, accurately explains the trend data shown in a graph and makes reasonable predictions regarding what the data suggest about future events.*	Provides accurate explanations of information presented in mathematical forms. *For instance, accurately explains the trend data shown in a graph.*	Provides somewhat accurate explanations of information presented in mathematical forms, but occasionally makes minor errors related to computations or units. *For instance, accurately explains trend data shown in a graph, but may miscalculate the slope of the trend line.*	Attempts to explain information presented in mathematical forms, but draws incorrect conclusions about what the information means. *For example, attempts to explain the trend data shown in a graph, but will frequently misinterpret the nature of that trend, perhaps by confusing positive and negative trends.*
Representation *Ability to convert relevant information into various mathematical forms (e.g., equations, graphs, diagrams, tables, words)*	Skillfully converts relevant information into an insightful mathematical portrayal in a way that contributes to a further or deeper understanding.	Competently converts relevant information into an appropriate and desired mathematical portrayal.	Completes conversion of information but resulting mathematical portrayal is only partially appropriate or accurate.	Completes conversion of information but resulting mathematical portrayal is inappropriate or inaccurate.
Calculation	Calculations attempted are essentially all successful and sufficiently comprehensive to solve the problem. Calculations are also presented elegantly (clearly, concisely, etc.)	Calculations attempted are essentially all successful and sufficiently comprehensive to solve the problem.	Calculations attempted are either unsuccessful or represent only a portion of the calculations required to comprehensively solve the problem.	Calculations are attempted but are both unsuccessful and are not comprehensive.
Application / Analysis *Ability to make judgments and draw appropriate conclusions based on the quantitative analysis of data, while recognizing the limits of this analysis*	Uses the quantitative analysis of data as the basis for deep and thoughtful judgments, drawing insightful, carefully qualified conclusions from this work.	Uses the quantitative analysis of data as the basis for competent judgments, drawing reasonable and appropriately qualified conclusions from this work.	Uses the quantitative analysis of data as the basis for workmanlike (without inspiration or nuance, ordinary) judgments, drawing plausible conclusions from this work.	Uses the quantitative analysis of data as the basis for tentative, basic judgments, although is hesitant or uncertain about drawing conclusions from this work.
Assumptions *Ability to make and evaluate important assumptions in estimation, modeling, and data analysis*	Explicitly describes assumptions and provides compelling rationale for why each assumption is appropriate. Shows awareness that confidence in final conclusions is limited by the accuracy of the assumptions.	Explicitly describes assumptions and provides compelling rationale for why assumptions are appropriate.	Explicitly describes assumptions.	Attempts to describe assumptions.
Communication *Expressing quantitative evidence in support of the argument or purpose of the work (in terms of what evidence is used and how it is formatted, presented, and contextualized)*	Uses quantitative information in connection with the argument or purpose of the work, presents it in an effective format, and explicates it with consistently high quality.	Uses quantitative information in connection with the argument or purpose of the work, though data may be presented in a less than completely effective format or some parts of the explication may be uneven.	Uses quantitative information, but does not effectively connect it to the argument or purpose of the work.	Presents an argument for which quantitative evidence is pertinent, but does not provide adequate explicit numerical support. (May use quasi-quantitative words such as "many," "few," "increasing," "small," and the like in place of actual quantities.)

Name: _____

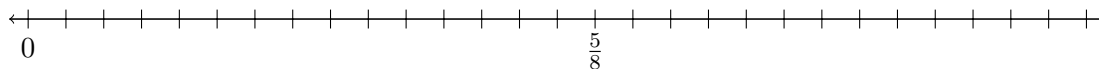| Problems	Points	Possible
1		12
2		8
3		8
4		6
5		8
6		10
7		5
8		8
9		10
10		18
11		6
12		10
13		12
14		10
Total		131
Percent		100

Final Exam

Math 107B

Decmeber 13, 2017

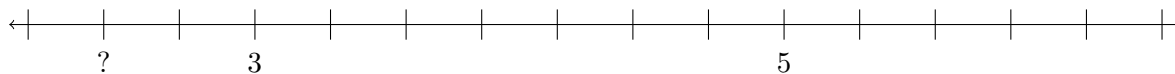- Please check that you have all of the problems listed at the right.

- On this exam you may use anything learned in Math 107A.

1. (a) Where is 1 on the number line below?

$$\longleftarrow|\ |\ |\ |\ |\ |\ |\ |\ |\ |\ |\ |\ |\ |\ |\ |\ |\ |\ |\ |\ |\ |\ |\ |\ |\ |\ |\ |\ |\ |\ |\ |\ |\ |\ |\longrightarrow$$

0 $\frac{5}{8}$

(b) What is the coordinate for the spot indicated by the question mark?

$$\longleftarrow|\ \ \ |\ \ \ |\ \ \ |\ \ \ |\ \ \ |\ \ \ |\ \ \ |\ \ \ |\ \ \ |\ \ \ |\ \ \ |\ \ \ |\ \ \ |\ \ \ |\longrightarrow$$

?   3   5

(c) Use the definition of a fraction to place $\dfrac{\frac{5}{4}}{3}$ on the number line below. Be sure it is clear from your picture that you did not rename this fraction before placing it.

$$\longleftarrow|\ \ \ \ \ \ \ \ \ \ \ \ \ \ \ |\ \ \ \ \ \ \ \ \ \ \ \ \ \ \ |\ \ \ \ \ \ \ \ \ \ \ \ \ \ \ |\longrightarrow$$

0   1   2   3
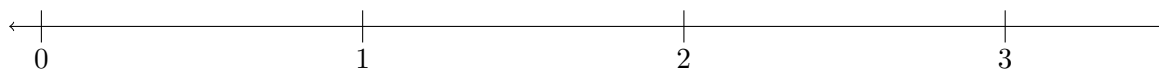
(d) What is a more "friendly" name for the fraction $\dfrac{\frac{5}{4}}{3}$? Please be sure to show how you arrived at your answer.

On this page you may only use the definition of a fraction and your knowledge from Math 107A to compute the following. Please make it clear how you arrived at your answer.

2. Compute $\frac{2}{3} \times \frac{5}{7}$.

3. Compute $\frac{3}{8} \div \frac{2}{5}$.

4. Below is a representation of $\frac{3}{7}$.

$$\begin{array}{c|c|c|c|c|c|c|c} \hline \rule{0pt}{12pt} \\ 0 & & & \frac{3}{7} & & & & 1 \end{array}$$

(a) Describe how the above picture can be altered so that the segment will represent $\frac{18}{42}$?

(b) After the above alteration, explain how you know (without actually counting them) that there are 18 pieces that are shaded.

5. Convert the decimal $.234\overline{5}$ to a fraction. (You do not need to simplify the fraction.)

6. Kaden has $5\frac{2}{7}$ feet of ribbon that he is using to make bows. Each bow uses $\frac{3}{5}$ of a foot of ribbon.

    (a) How many bows can Kaden make?

    (b) After making all of the bows he can, how many feet of ribbon will he have left?

7. If we want 234.695×10^2 to be equal to $234695 \times 10^?$, then what must the question mark be? Please make it clear how you arrived at your answer.

8. Max and Macy are working on figuring out what $\left(\frac{3}{4}\right)^{-1}$ must equal by using the method discussed in class. Max suggests they start with the problem on the left, and Macy suggests they start with the problem on the right. One of the problems will lead to a successful solution, and one will not. Indicate which one is which, and why.

$$\left(\frac{3}{4}\right)^{-1} \times \left(\frac{3}{4}\right)^{-1} \qquad\qquad\qquad\qquad \left(\frac{3}{4}\right)^{-1} \times \left(\frac{3}{4}\right)^{2}$$

9. Please read both questions below before writing down your answers.

   (a) Max is computing the product 2.36×5.7. He knows his final answer will have 3 digits behind the decimal point, but he doesn't understand why. Explain to Max why that is.

   (b) Max then asks why that is true for multiplication but not addition. For example, the final answer to $2.36 + 5.7$ does not have 3 digits behind the decimal point. Answer Max's question.

10. Max is using a calculator to find the decimal equivalent of some fractions. He has written down the fraction and to what decimal the calculator says it is equal. Which of the following decimals are in fact equal to the fraction and which are not? How do you know? Please give a justification that does not rely on actually finding the correct decimal by some other method.

(a) $\dfrac{1234983}{9765625} = .1264622592$

(b) $\dfrac{1235}{4096} = .3015136719$

(c) $\dfrac{10}{17} = .5882352941$

11. Max is doing long division to find the decimal equivalent of $\frac{2}{41}$. His work is shown below. He stopped at that point because he saw an 8 show up in the answer again, so he thinks $\frac{2}{41} = .04\overline{87}$.

By just looking at Max's work, and without doing any more computations, explain how you know $\frac{2}{41}$ is definitely not equal to $.04\overline{87}$.

12. Use a tape diagram to solve the following problem. Be sure you make it clear how the tape diagram was used **to solve** the problem, and not just to verify an answer you found in another way.

> The ratio of Jack's money to Jenny's money is 4 to 5. After Jenny spends half of her money she now has $15 less than Jack. How much money does Jack have?

13. Max likes green when blue and yellow are mixed in a ratio of 2 to 3. Macy likes green when blue and yellow are mixed in a ratio of 3 to 5.

    (a) Determine how much blue paint Max will need if he uses 1 cup of yellow.

    (b) Using a similar idea to above, explain what the fraction $\frac{3}{5}$ represents in Macy's green paint. (Be sure you are explaining what the **fraction three fifths** represents and not the ratio 3 to 5.)

    (c) In order to determine whose paint is bluer, Max says that his paint is bluer because the fraction $\frac{2}{3}$ is bigger than the fraction $\frac{3}{5}$. Macy says her paint is bluer because the fraction $\frac{5}{3}$ is bigger than the fraction $\frac{3}{2}$. Who is right? Explain your reasoning.

14. Use a ratio table to answer the following question. **Be sure to write a sentence in the context of the problem that justifies each new entry in the ratio table.**

It takes 6 RoboSmashers 5 minutes to smash 6 pounds of cans. If all RoboSmashers work at the same rate, how long will it take for 3 RoboSmashers to smash 4 pounds of cans.

Powers of 2

2^1	2
2^2	4
2^3	8
2^4	16
2^5	32
2^6	64
2^7	128
2^8	256
2^9	512
2^{10}	1024
2^{11}	2048
2^{12}	4096

Powers of 5

5^1	5
5^2	25
5^3	125
5^4	625
5^5	3125
5^6	15625
5^7	78125
5^8	390625
5^9	1953125
5^{10}	9765625
5^{11}	48828125
5^{12}	244140625

FIGURE 1
LIBERAL STUDIES ANNUAL ASSESSMENT
SPRING 2018
QUANTITATIVE LITERACY (Numerical)
MATH 107B

N = 22

Level

Criteria	Capstone 4	Milestone 3	Milestone 2	Benchmark 1
Interpretation	15	2	4	1
Representation	4	11	5	2
Calculation	6	11	3	2
Application/Analysis	4	8	8	2
Assumptions	0	0	17	5
Communication	10	4	4	4

FIGURE 2
LIBERAL STUDIES ANNUAL ASSESSMENT
SPRING 2018
QUANTITATIVE LITERACY (Percentage)
MATH 107B

N = 22

Level **Criteria**	**Capstone 4**	**Milestone 3**	**Milestone 2**	**Benchmark 1**
Interpretation	68.2	9.1	18.2	4.5
Representation	18.2	50.0	22.7	9.1
Calculation	27.3	50.0	13.6	9.1
Application/ Analysis	18.2	36.4	36.4	9.1
Assumptions	0	0	77.3	22.7
Communication	45.5	18.2	18.2	18.2

ATTACHMENT 3
Aligned Liberal Studies and Sacramento State Learning Objectives
Student Learning Objectives

Sacramento State	Liberal Studies	Where LBST SLOs are Measured
1. Competence in the Discipline	1. Synthesize fundamentals of interdisciplinary approaches as the basis for competence for primary school teaching and learning.	Measured throughout the interdisciplinary program in the areas of Language and Literature, Mathematics, Natural Science, Social Science, Visual and Performing Arts, Physical and Health Education, Human Development, Integrated Studies, and Field Experience. In addition, Passage of the California Subject Examination for Teachers (CSET) is required of all Liberal Studies majors before acceptance into a teacher credential program.
2. Knowledge of Human Culture and the Physical and Natural World	2. Demonstrate knowledge of human cultures and the physical and natural world required for primary school educators.	Measured in coursework that focus on Social Science, Mathematics, Natural Science, Physical and Health Education, and Credential Prerequisites.
3. Intellectual and Practical Skills:	3. Demonstrate intellectual and practical skills:	Measured in specific required courses taken exclusively by all Liberal Studies majors:
3.1 Critical Thinking	3.1 Critical Thinking	Social Science (LBST 110)
3.2 Information Literacy	3.2 Information Literacy	Social Science (LBST 110)
3.3 Written Communication	3.3 Written Communication	Language and Literacy (ENGL 16, 107A, or 107B)
3.4 Oral Communication	3.4 Oral Communication	Social Science (LBST 110)

| | | Mathematics (Math 107A, 107B)

Natural Science (BIO 7, CHEM 107, or PHYS 107) |
|---|---|---|
| 3.5 Quantitative Literacy

3.6 Inquiry and Analysis | 3.5 Quantitative Literacy

3.6 Inquiry and Analysis | |
| 4. Personal and Social Responsibility

4.1 Civic knowledge and engagement

4.2 Intercultural knowledge and competence | 4. Apply personal and social responsibility

4.1 Civic knowledge and engagement

4.2 Intercultural knowledge and competence | Measured in specific required courses taken exclusively by all Liberal Studies majors:

Field Experience (EDUC 124A/B, 125A/B, or 127A/B)

Social Science (LBST110) or Credential Prerequisites (EDUC 170) |
| 5. Integrated Studies | 5. Synthesize integration of studies | Passage of the California Subject Examination for Teachers (CSET) required of all Liberal Studies majors before acceptance into a teacher credential program. |

ATTACHMENT 3
Aligned Liberal Studies and Sacramento State Learning Objectives
Student Learning Objectives

Sacramento State	Liberal Studies	Where LBST SLOs are Measured
1. Competence in the Discipline	1. Synthesize fundamentals of interdisciplinary approaches as the basis for competence for primary school teaching and learning.	Measured throughout the interdisciplinary program in the areas of Language and Literature, Mathematics, Natural Science, Social Science, Visual and Performing Arts, Physical and Health Education, Human Development, Integrated Studies, and Field Experience. In addition, Passage of the California Subject Examination for Teachers (CSET) is required of all Liberal Studies majors before acceptance into a teacher credential program.
2. Knowledge of Human Culture and the Physical and Natural World	2. Demonstrate knowledge of human cultures and the physical and natural world required for primary school educators.	Measured in coursework that focus on Social Science, Mathematics, Natural Science, Physical and Health Education, and Credential Prerequisites.
3. Intellectual and Practical Skills:	3. Demonstrate intellectual and practical skills:	Measured in specific required courses taken exclusively by all Liberal Studies majors:
3.1 Critical Thinking	3.1 Critical Thinking	Social Science (LBST 110)
3.2 Information Literacy	3.2 Information Literacy	Social Science (LBST 110)
3.3 Written Communication	3.3 Written Communication	Language and Literacy (ENGL 16, 107A, or 107B)
3.4 Oral Communication	3.4 Oral Communication	Social Science (LBST 110)

3.5 Quantitative Literacy 3.6 Inquiry and Analysis	3.5 Quantitative Literacy 3.6 Inquiry and Analysis	Mathematics (Math 107A, 107B) Natural Science (BIO 7, CHEM 107, or PHYS 107)
4. Personal and Social Responsibility 4.1 Civic knowledge and engagement 4.2 Intercultural knowledge and competence	4. Apply personal and social responsibility 4.1 Civic knowledge and engagement 4.2 Intercultural knowledge and competence	Measured in specific required courses taken exclusively by all Liberal Studies majors: Field Experience (EDUC 124A/B, 125A/B, or 127A/B) Social Science (LBST110) or Credential Prerequisites (EDUC 170)
5. Integrated Studies	5. Synthesize integration of studies	Passage of the California Subject Examination for Teachers (CSET) required of all Liberal Studies majors before acceptance into a teacher credential program.

LIBERAL STUDIES

F O U R ♦ Y E A R   P L A N

Minimum total units required for BA Degree: 120 ▪ GE requirements are met within the major
▪ Additional course may be needed in Math prior to completing Math 17 (pass ALEKS or must take Math 10 prereq)
This form is designed to be used with your Major advisors - modifications may be necessary to meet the unique needs of each student. Seek assistance each semester to stay on track and graduate!

YEAR 1

Sem. 1 → ENGL 5 or 5M or 10 | CHDV 35 | CHDV 35F | BIO 7 | EDUC 21 | **15 UNITS**

Sem. 2 → Critical Thinking | COMS 5 | ENGL 16 | MATH 17 | Elective (or Engl 11 if stretch chosen) | **15 UNITS**

YEAR 2

Sem. 3 → MATH 107A | THEA 118 | HIST 17A+ | ENGL 20*/20M* | GEOL 8 | GEOL 8T | **16 UNITS**

Sem. 4 → MATH 107B | GOVT 1 | HIST 187 or ECON 1A | EDUC 124A/125A/127A | EDUC 124B/125B/127B | HIST 50 | **15 UNITS**

YEAR 3

Sem. 5 → LBST 110 | MUSC 101 | ENGL 116A** | HIST 132 | Concentration Course | **15 UNITS**

Sem. 6 → ART 133 | CHEM 106 | ENGL 116B** | GEOG 100 | Concentration Course | **15 UNITS**

YEAR 4

Sem. 7 → KINS 172 | PHYS 107 | HLSC 136 | Concentration Course | Elective (or For Lang if necessary) | **15 UNITS**

Sem. 8 → Integrative Study | Writing | Elective (Educ | Elective (Educ | Elective (or FL if necessary) | **14 UNITS**

KEY:

- ▬ Major requirements
- ▬ GE/graduation requirements
- ▬ Electives

UD	Upper Division
+	Race & Ethnicity
*	Take WPJ during/following Engl 20
**	Complete WPJ (or ENGL 109W/M) before enrolling
FL	If requirement was not met in high school or through testing, substitute two semesters of Foreign Language for electives
^	Sac State credential pre/co-requisite (should be taken for elective credit if entering Sac State credential program)
( )	Courses in parentheses are suggested, not required.

NOTES:
- Grades of C- or better in ALL courses.
- Students seeking the minor in math will complete alternate core math requirements (17-30, 107A-31, 107B-35)
- There are several opportunities for overlap within the major (Writing Intensive, Race & Ethnicity, Critical Thinking, concentration, Integrative Study). See your advisor for options.

TOTAL = 120 UNITS

SACRAMENTO STATE