Q1.
Please complete the program assessment plan. The format is similar to the one for the 2016 plans. If you need assistance, please contact the Office of Assessment. You can enter the data and return to complete, using the same computer and original link. Once you submit, that action is final. You will receive a copy of your submittal.
Be sure to review academic program outcomes for appropriate rigor (Bloom's taxonomy) and assessable results. Avoid vague or general statements that cannot be quantified or measured.
The update of Academic Program Assessment Plans (AY 2019-2021) are due by September 30, 2019.

Q2. Person completing the report

Andrew Weber

Q3. Email address of person completing the report

weber@georgian.edu

Q4. Program Name

Chemistry and Biochemistry

Q5. School or Department

- (●) School of Arts and Sciences
- ( ) School of Business and Digital Media
- ( ) School of Education
- ( ) other, please specify

Q6. Level of Program

- (●) Undergraduate Major
- ( ) Graduate-Masters
- ( ) Graduate-certificate only
- ( ) Undergraduate-University wide
- ( ) other, please specify

Q7. Assessment Plan for years

- (●) Fall 2019 through Fall 2022
- ( ) Fall 2020 through Fall 2023
- ( ) Fall 2021 through Fall 2024

Q8. Indicate the name of the major(s), minor(s), and the associated degree(s) for this academic program.

Major(s)	Chemistry, Biochemistry
Degree(s)	BA, BS
Minor(s)	Chemistry

Q9. **State your learning outcomes**

- [x] Learning Outcome (LO) 1
  Knowledge of Foundations of the Chemical Sciences
- [x] Learning Outcome (LO) 2
  Communication Skills
- [x] Learning Outcome (LO) 3
  Laboratory Skills
- [x] Learning Outcome (LO) 4
  Problem Solving Skills
- [ ] Learning Outcome (LO) 5

Q10. **Related USLG-Undergraduate Student Learning Goals. Align the program learning outcomes stated above with the associated USLG.**

	Foundational Knowledge of Human Cultures and the Physical and Natural World	Intellectual and Practical Skills	Personal and Social Responsibility	Integrative Learning	Mastery of a Defined Body of Knowledge at a Baccalaureate Level
Learning Outcome 1	☑	☑	☐	☑	☑
Learning Outcome 2	☐	☑	☐	☑	☑
Learning Outcome 3	☐	☑	☐	☑	☑
Learning Outcome 4	☑	☑	☐	☑	☑
Learning Outcome 5	☐	☐	☐	☐	☐

Q11. **Related GSLG-Graduate Student Learning Goals. Align the learning outcomes stated above with the associated GSLG.**

This question was not displayed to the respondent.

Q12. **Related BRIDGE-General Education Goals**

This question was not displayed to the respondent.

Q13. **Related Accreditation Standard** *(if applicable)*

- [ ] Learning Outcome (LO) 1
- [ ] Learning Outcome (LO) 2
- [ ] Learning Outcome (LO) 3
- [ ] Learning Outcome (LO) 4
- [ ] Learning Outcome (LO) 5

Q14. **Course Mapping**. Program Courses and Experiential Learning mapping to Program Outcomes.
Map **all** program courses to the program's learning outcomes here. List courses with short catalog name, i.e. EN101.
Please check to see if all program courses are mapped to at least one program outcome.

How do students learn this? In what course(s) and/or co-curricular experience(s)?

- [x] Learning Outcome (LO) 1
  CH113, CH114, CH223, CH224, CH241, CH331, CH332, CH311, CH332, CH334, CH402, and CH416
- [x] Learning Outcome (LO) 2
  CH241, CH304, CH311, CH402 and CH420
- [x] Learning Outcome (LO) 3
  CH113, CH114, CH223, CH224, CH241, CH331, CH332, CH311, CH332, and CH402
- [x] Learning Outcome (LO) 4
  CH113, CH114, CH223, CH224, CH331, CH332, and CH416
- [ ] Learning Outcome (LO) 5

Q15.
Formative Assessment will occur in.....
(Designate the selected course from above mapping where evidence will be collected.)

- [x]

Learning Outcome (LO) 1
CH114

- [x] Learning Outcome (LO) 2
  CH241
- [x] Learning Outcome (LO) 3
  CH241
- [x] Learning Outcome (LO) 4
  CH223
- [ ] Learning Outcome (LO) 5

Q16.
Summative Assessment will occur in.....
(Designate the selected course from above mapping where evidence will be collected.)

- [x] Learning Outcome (LO) 1
  CH416
- [x] Learning Outcome (LO) 2
  CH420
- [x] Learning Outcome (LO) 3
  CH312 (Biochem.); CH402 (Chem.)
- [x] Learning Outcome (LO) 4
  CH416
- [ ] Learning Outcome (LO) 5

Q17. **Assessment Protocol.** How and when do you assess the achievement of all students in your program before they graduate and record the results of your assessment.

Formative Assessment

	LO 1	LO2	LO3	LO4	LO5
Direct Evidence	American Chemical Society Subject Test.	Designated laboratory report evaluated by a faculty using department's laboratory report rubric on a 5-point scale.	Laboratory skills evaluated by a faculty during a selected laboratory session by a faculty using department's laboratory skills rubric on a 5-point scale.	Critical thinking skills evaluated by a faculty during a specifically designated exercise using a weighed numerical grading scheme (parsing question – 20%; data analysis – 57%; solution presentation – 15%; solution evaluation 8%).	

Indirect Evidence	Learning Outcomes Questions developed on new Student Assessment of Learning Survey (SET)				

Q18. **Assessment Protocol**. How and when do you assess the achievement of all students in your program before they graduate and record the results of your assessment.

Summative Assessment

	LO 1	LO2	LO3	LO4	LO5
Direct Evidence	Chemistry discipline's sub-scores and item analysis (if available) of the Major Field Test in Chemistry.	Student's topic-review paper and public presentation evaluated by faculty (and student audience) using department's written report and oral presentation rubrics on a 5-point scale.	Laboratory skills evaluated by a faculty during a during a selected laboratory session by faculty using department's laboratory skills rubric on a 5-point scale.	Critical thinking skills evaluated by a faculty during a specifically designated exercise using AACU's problem solving or critical thinking value rubric on a 4-point scale.	
Indirect Evidence				Critical Thinking sub-score on the Major Field Test in Chemistry.	

Q19. **What do you consider satisfactory achievement of this outcome? Why?**

Formative Assessment

	LO 1	LO2	LO3	LO4	LO5
Direct Evidence Benchmark	50% of majors correctly answer at least 50% of the ACS exam questions.	80% students score at or above the intermediate level (i.e. 2 on 5-point scale) in the majority of rubric criteria related to the outcome.	80% students score at or above the intermediate level (i.e. 2 on 5-point scale) in the majority of rubric criteria related to the outcome.	40% students score at or above 80% (a letter grade B-) for most criteria related to the outcome. All students will achieve score of 60% (i.e. a letter grade D) or higher for each criterion in the evaluation rubric.	
Indirect Evidence Benchmark	At least 75% of students completed the survey, with an overall satisfaction rate of 3.0 or better on a 5-point scale.				

Q20. **What do you consider satisfactory achievement of this outcome? Why?**

Summative Assessment

	LO 1	LO2	LO3	LO4	LO5
Direct Evidence Benchmark	50% majors scoring at higher than 25th national percentile in each analyzed chemistry sub-discipline.	80% students score at or above the proficient level (i.e. 3 on 5-point scale) in the majority of rubric criteria related to the outcome.	80% students score at or above the proficient level (i.e. 3 on 5-point scale) in the majority of rubric criteria related to the outcome.	50% students score at or above the 2nd milestone level (i.e. 3 on 4-point scale) in the majority of rubric criteria related to the outcome.	
Indirect Evidence Benchmark				Evaluated cohort of majors scoring 30% or better on critical thinking MFAT questions.	

Q21. **Program Assessment Time Frame:** Time Frame for Assessing the outcome.
Indicate the year of the plan where the data will be analyzed. Also indicate if data will be collected annually. This is helpful for gathering assessment artifacts from small classes or groups.

	Year 1 of Plan	Year 2 of Plan	Year 3 of Plan	Data collected annually
Learning Outcome 1	☐	☐	☐	☑
Learning Outcome 2	☐	☐	☐	☑
Learning Outcome 3	☐	☐	☐	☑
Learning Outcome 4	☐	☐	☐	☑
Learning Outcome 5	☐	☐	☐	☐

Location Data

Location: (43.621505737305, -79.391998291016)

Source: GeoIP Estimation