CAL POLY POMONA
ASSESSMENT & PROGRAM REVIEW

Annual Assessment Report 2021-2022

Engineering Environmental Engineering Option Civil Engineering General Option, Civil Engineering Geospatial Option (double accreditation), Civil Engineering Environmental Engineering Option

Civil Engineering

College of Engineering

CONTACT

Name of Program Assessment Lead Ghada Gad, Giuseppe Lomiento

Name of Person Completing Report Ghada Gad, Giuseppe Lomiento

DISCIPLINARY ACCREDITATION Yes

DEVELOPMENT AND DOCUMENTATION OF STUDENT LEARNING OUTCOMES

How were the program's SLOs developed? (select all that apply)

- Our disciplinary accrediting agency has recommended learning outcomes, so we used and/or modified them.

Other than the CPP Catalog and the Office of Assessment and Program Review website, where else are your SLOs published? Select all that apply.

- Department Website - provide URL: https://www.cpp.edu/engineering/ce/index.shtml

ASSESSMENT ACTIVITIES IN 2021-2022

This section provides the opportunity for programs to share and discuss assessment activities conducted in **AY 2021-2022.** This includes data collection, rubric development, data analysis, discussion of findings, development or implementation of closing the loop improvement strategies, update of your assessment plan and/or curriculum matrix, etc.

How many total SLOs does your program assess according to your assessment plan?

- **7**

How many SLOs did your program assess this past year in 2021-2022?

- My program assessed SLOs in AY 2021-2022

Please list the SLOs examined

- SLO #1: Problem solving - an ability to identify, formulate, and solve complex engineering problems by applying principles of engineering, science, and mathematics
- SLO #2: Engineering design - An ability to apply engineering design to produce solutions that meet specified needs with consideration of public health, safety, and welfare, as well as global, cultural, social, environmental, and economic factors
- SLO #3: Communication - An ability to communicate effectively with a range of audiences
- SLO #4: Professionalism & Ethics - An ability to recognize ethical and professional responsibilities in engineering situations and make informed judgments, which must consider the impact of engineering solutions in global, economic, environmental, and societal contexts
- SLO #5: Teamwork - An ability to function effectively on a team whose members together provide leadership, create a collaborative and inclusive environment, establish goals, plan tasks, and meet objectives
- SLO #6: Experiment analysis - An ability to develop and conduct appropriate experimentation, analyze and interpret data, and use engineering judgment to draw conclusions
- SLO #7: Apply knowledge - An ability to acquire and apply new knowledge as needed, using appropriate learning
- strategies.

Student Learning Outcome (SLO): **Problem solving - an ability to identify, formulate, and solve complex engineering problems by applying principles of engineering, science, and mathematics**

Assessment Activities	Evidence Used	Evaluation and Interpretation of Evidence
• Created/modified/discussed assessment procedures (e.g., SLOs, curriculum matrix, mechanism to collect student work, rubric, survey, etc.)		
• Collected direct evidence (e.g., student work, exam items, etc.) • Scored direct evidence of student learning • Interpreted and made meaning of findings for direct evidence	• Assignment/exam/paper completed as part of regular coursework	• Used rubric or scoring guide
• Collected indirect evidence of student learning (e.g., surveys, interviews, focus groups, etc.) • Scored indirect evidence of student learning • Interpreted and made meaning of findings for direct evidence	• Other, please explain: stakeholder survey	
• Discussed assessment results to make program decisions to improve SLO achievement (e.g., design new course, modify assignments, etc.)		
• Implemented closing the loop improvement strategies to improve SLO achievement		

Findings			
N of Artifacts	Criterion Used	Goal Met	Eye-opening Result
20	Percentage at 75%	no	created new project assignment already, work with Kenneth to distribute new assignment, added skeletal notes

Student Learning Outcome (SLO): **Engineering design - An ability to apply engineering design to produce solutions that meet specified needed with consideration of public health, safety, and welfare, as well as global, cultural, social, environmental, and economic factors**

Assessment Activities	Evidence Used	Evaluation and Interpretation of Evidence
• Created/modified/discussed assessment procedures (e.g., SLOs, curriculum matrix, mechanism to collect student work, rubric, survey, etc.)		
• Collected direct evidence (e.g., student work, exam items, etc.) • Scored direct evidence of student learning • Interpreted and made meaning of findings for direct evidence	• Assignment/exam/paper completed as part of regular coursework	• Used rubric or scoring guide
• Collected indirect evidence of student learning (e.g., surveys, interviews, focus groups, etc.) • Scored indirect evidence of student learning • Interpreted and made meaning of findings for direct evidence	• Other, please explain: stakeholder survey	
• Discussed assessment results to make program decisions to improve SLO achievement (e.g., design new course, modify assignments, etc.)		
• Implemented closing the loop improvement strategies to improve SLO achievement		

Findings			
N of Artifacts	Criterion Used	Goal Met	Eye-opening Result
20	75%	Yes	

Student Learning Outcome (SLO): **Communication - An ability to communicate effectively with a range of audiences**

Assessment Activities	Evidence Used	Evaluation and Interpretation of Evidence
• Created/modified/discussed assessment procedures (e.g., SLOs, curriculum matrix, mechanism to collect student work, rubric, survey, etc.)		
• Collected direct evidence (e.g., student work, exam items, etc.) • Scored direct evidence of student learning • Interpreted and made meaning of findings for direct evidence	• Assignment/exam/paper completed as part of regular coursework	• Used rubric or scoring guide
• Collected indirect evidence of student learning (e.g., surveys, interviews, focus groups, etc.) • Scored indirect evidence of student learning • Interpreted and made meaning of findings for direct evidence	• Other, please explain: stakeholder survey	
• Discussed assessment results to make program decisions to improve SLO achievement (e.g., design new course, modify assignments, etc.)		
• Implemented closing the loop improvement strategies to improve SLO achievement		

Findings			
N of Artifacts	Criterion Used	Goal Met	Eye-opening Result
20	75%	Yes	

Student Learning Outcome (SLO): **Professionalism & Ethics - An ability to recognize ethical and professional responsibilities in engineering situations and make informed judgments, which must consider the impact of engineering solutions in global, economic, environmental, and societal contexts**

Assessment Activities	Evidence Used	Evaluation and Interpretation of Evidence
• Created/modified/discussed assessment procedures (e.g., SLOs, curriculum matrix, mechanism to collect student work, rubric, survey, etc.)		
• Collected direct evidence (e.g., student work, exam items, etc.) • Scored direct evidence of student learning • Interpreted and made meaning of findings for direct evidence	• Assignment/exam/paper completed as part of regular coursework • Capstone product (e.g., project, senior thesis etc)	• Used rubric or scoring guide
• Collected indirect evidence of student learning (e.g., surveys, interviews, focus groups, etc.) • Scored indirect evidence of student learning • Interpreted and made meaning of findings for direct evidence	• Student survey/interview/focus group with self-reports of SLO achievement • Other, please explain: stakeholder survey	
• Discussed assessment results to make program decisions to improve SLO achievement (e.g., design new course, modify assignments, etc.)		
• Implemented closing the loop improvement strategies to improve SLO achievement		

Findings			
N of Artifacts	Criterion Used	Goal Met	Eye-opening Result
20	75%	no	improve literacy and referencing

Student Learning Outcome (SLO): Teamwork - An ability to function effectively on a team whose members together provide leadership, create a collaborative and inclusive environment, establish goals, plan tasks, and meet objectives

Assessment Activities	Evidence Used	Evaluation and Interpretation of Evidence
• Created/modified/discussed assessment procedures (e.g., SLOs, curriculum matrix, mechanism to collect student work, rubric, survey, etc.)		
• Collected direct evidence (e.g., student work, exam items, etc.) • Scored direct evidence of student learning • Interpreted and made meaning of findings for direct evidence	• Assignment/exam/paper completed as part of regular coursework • Capstone product (e.g., project, senior thesis etc)	• Used rubric or scoring guide
• Collected indirect evidence of student learning (e.g., surveys, interviews, focus groups, etc.) • Scored indirect evidence of student learning • Interpreted and made meaning of findings for direct evidence	• Student survey/interview/focus group with self-reports of SLO achievement • Other, please explain: stakeholder survey	
• Discussed assessment results to make program decisions to improve SLO achievement (e.g., design new course, modify assignments, etc.)		
• Implemented closing the loop improvement strategies to improve SLO achievement		

Findings			
N of Artifacts	Criterion Used	Goal Met	Eye-opening Result
20	75%	no	Create writing about alternative choices based on cost, sustainability, social that can be implemented in design classes

Student Learning Outcome (SLO): **Experiment analysis - An ability to develop and conduct appropriate experimentation, analyze and interpret data, and use engineering judgment to draw conclusions**

Assessment Activities	Evidence Used	Evaluation and Interpretation of Evidence
• Created/modified/discussed assessment procedures (e.g., SLOs, curriculum matrix, mechanism to collect student work, rubric, survey, etc.)		
• Collected direct evidence (e.g., student work, exam items, etc.) • Scored direct evidence of student learning • Interpreted and made meaning of findings for direct evidence	• Assignment/exam/paper completed as part of regular coursework	• Used rubric or scoring guide
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• Discussed assessment results to make program decisions to improve SLO achievement (e.g., design new course, modify assignments, etc.)		
• Implemented closing the loop improvement strategies to improve SLO achievement		

Findings			
N of Artifacts	Criterion Used	Goal Met	Eye-opening Result
20	75%	yes	

Student Learning Outcome (SLO): **Apply knowledge - An ability to acquire and apply new knowledge as needed, using appropriate learning strategies.**

Assessment Activities	Evidence Used	Evaluation and Interpretation of Evidence
• Created/modified/discussed assessment procedures (e.g., SLOs, curriculum matrix, mechanism to collect student work, rubric, survey, etc.)		
• Collected direct evidence (e.g., student work, exam items, etc.) • Scored direct evidence of student learning • Interpreted and made meaning of findings for direct evidence	• Assignment/exam/paper completed as part of regular coursework • Capstone product (e.g., project, senior thesis etc)	• Used rubric or scoring guide
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• Discussed assessment results to make program decisions to improve SLO achievement (e.g., design new course, modify assignments, etc.)		
• Implemented closing the loop improvement strategies to improve SLO achievement		

Findings			
N of Artifacts	Criterion Used	Goal Met	Eye-opening Result
20	75%	no	Develop transparent project assignment + grading rubric

IMPROVING THROUGH ASSESSMENT

Overall, what best describes how the program used the results in 2021-2022? Select all that apply.

- Assessment procedure changes (SLOs, curriculum matrix, rubrics, evidence collected, sampling, communications with faculty, etc.)
- Course-level changes (e.g., syllabus, content, pedagogy)
- Program curricular changes (e.g., course sequencing, changes to required curriculum, added or deleted courses)

Ideas to improve student learning can come from different constituents. With whom did the program discuss assessment planning and/or share results during AY 2021-2022? Select all that apply.

- Program/department faculty as whole
- Program/department assessment committee

The past academic year posed both challenges and opportunities. Please share any assessment discoveries (e.g., insights about assessment procedures, great achievements, etc.) regarding program assessment in 2021-2022 so that others may learn from your experiences.

Completed a full cycle of assessment and achieved first accreditation for the new CEM program

CPP's GI2025 goals What assessment-related efforts do you already implement, or would implement to support the campus' diversity, equity, and inclusion (DEI) efforts? (e.g., planned or current disaggregation of assessment data by race/ethnicity, etc.) Undergraduate programs may wish to refer to CPP's GI2025 goals. (Not Mandatory)

Disaggregate data for bottleneck classes CE 2041 and CE 2051

Does the program offer a certificate or credential (e.g., teaching credential)?

- No

The most current assessment plan and curriculum matrix we have on file for your program may be found here. To ensure we have the most updated assessment plan and curriculum matrix for your program, and for posting on our website, please upload the following documents:

Assessment Plan

No

Curriculum Matrix

No