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| **California State University, Fresno**  **Lyles College of Engineering**  **Department of Construction Management**  **Department Assessment Coordinator: Maria Calahorra-Jimenez** |
| **Student Outcomes Assessment Plan (SOAP)** |
| Mission Statement |
| Our mission is to develop professionals, build leaders, and sustain learners for the AEC industry. |

## Institutional Learning Outcomes, Program Learning Outcomes/Goals, and SLO's

* 1. **Institutional Learning Outcomes**.

Students who graduate from California State University, Fresno will demonstrate the importance of discovery, diversity, and distinction by

* + 1. **Developing a foundational, broad and integrative knowledge** of the humanities, the arts, the sciences, and social sciences, and their integration with their major field of study. Students will consolidate learning from different fields and explore the concepts and questions that bridge those essential areas of learning. Graduate students will articulate the significance, implications and challenges within their field in a societal and global context. In fields in which interdisciplinarity is fundamental, graduate students will further draw from the perspectives of other domains of inquiry/practice so as to assess a problem better and offer solutions to it.
    2. **Acquiring specialized knowledge** as identified by program learning outcomes in their major field. Students will demonstrate expertise in a specialized area of study, including integration of ideas, methods, theory and practice. Graduate students will demonstrate further mastery of the field's theories, research methods, and approaches to inquiry. They will also show the ability to assess major contributions to the field, as well as expand on those contributions through empirical research or aesthetic exploration.
    3. **Improving intellectual skills** including critical thinking, effective oral and written communication, information literacy and quantitative reasoning. Students will demonstrate fluency via application of these skills to everyday problems and complex challenges. Graduate students will hone these skills further, demonstrating coherent arguments, analysis, insight, creativity, and acumen as they address local, regional, and global issues in their respective fields of study.
    4. **Applying knowledge** by integrating theory, practice, and problem solving to address real world issues using both individual and team approaches. Students will apply their knowledge in a project, paper, exhibit, performance, or other appropriate demonstration that links knowledge and skills acquired at the university with those from other areas of their lives. Graduate students will integrate knowledge and skills from coursework, practicum, and research to address critical issues in their field and demonstrate advanced application of knowledge through a culminating experience that validates, challenges, and/or expands the profession's body of knowledge.
    5. **Exemplifying equity, ethics, and engagement.** Students will form and effectively communicate their own evidence-based and reasoned views on public issues, interact with others to address social, environmental and economic challenges, apply knowledge of diversity and cultural competencies to promote equity and social justice in the classroom and the community, value the complexity of ethical decision making in a diverse society, acknowledge the importance of standards in academic and professional integrity, and demonstrate honesty, tolerance, and civility in social and academic interactions. Building upon this at the graduate level, students will apply these values in the creation of scholarly and/or aesthetic works that enrich the human experience.
  1. **Program Learning Outcomes** (PLOs)

The Construction Management (CM) educational degree's program goals meet and exceed the student learning outcomes required by the American Council of Construction Education (ACCE). In addition to the program objectives and strategic initiatives listed above, the CM program has adopted the 20 Student Learning Outcomes (SLOs) from ACCE as our Program Learning Outcomes. SLOs will be assessed, reviewed, and results acted on annually. Student work will be assessed for a minimum level of conformance and to the standard of the program's performance criteria.

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| **PLOs/ACCE SLOs** |
| 1. Create written communications appropriate to the construction discipline 2. Create oral presentations appropriate to the construction discipline. 3. Create a construction project safety plan. 4. Create construction project cost estimates. 5. Create construction project schedules. 6. Analyze professional decisions based on ethical principles. 7. Analyze construction documents for planning and management of construction processes. 8. Analyze methods, materials, and equipment used to construct projects. 9. Understand construction management skills as a member of a multi- disciplinary team. 10. Apply electronic-based technology to manage the construction process. 11. Apply basic surveying techniques for construction layout and control. 12. Understand different methods of project delivery and the roles and responsibilities of all constituencies involved in the design and construction process. 13. Understand construction risk management. 14. Understand construction accounting and cost control. 15. Understand construction quality assurance and control. 16. Understand construction project control processes. 17. Understand the legal implications of contract, common, and regulatory law to manage a construction project. 18. Understand the basic principles of sustainable construction. 19. Understand the basic principles of structural behavior. 20. Understand the basic principles of mechanical, electrical and piping systems. |

## Curriculum Map : Courses in which SLO's are addressed and evaluated

To ensure all ACCE SLOs will be assessed, the Department mapped all 20 ACCE SLOs to specific CLOs to hold assigned course instructors accountable for assessment and data collection. To meet ACCE accreditation standard, all SLOs will also be indirectly assessed (IA) via senior exit survey.

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| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Course** | **ACCE SLO's** | | | | | | | | | | | | | | | | | | | | |
| **Create** | | | | | **Analyze** | | | **Apply** | | | **Understand** | | | | | | | | | |
| **Written** | **Oral** | **Safety** | **Cost** | **Sched.** | **Ethics** | **Plng** | **Mtds/Mt** | **Team** | **Tech** | **Survey** | **PDM** | **Risk** | **Acctng** | **QA/C** | **Control** | **Legal** | **Sust** | **Struct** | **MEP** |
| **1** | **2** | **3** | **4** | **5** | **6** | **7** | **8** | **9** | **10** | **11** | **12** | **13** | **14** | **15** | **16** | **17** | **18** | **19** | **20** |
| **CM 17** |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | T, DA |  |  |
| **CM 18** |  |  |  |  |  |  |  |  | I, DA |  |  |  |  |  |  |  |  |  |  |  |
| **CM 20** |  |  |  |  |  |  |  |  |  |  |  | T, DA |  |  |  |  |  |  |  |  |
| **CM 107** |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | T, DA |  |
| **CM 110** |  |  |  | T, DA |  |  |  | I, DA |  |  |  |  |  |  |  |  |  |  |  |  |
| **CM 116** |  |  |  |  | T, DA |  | I, DA |  |  |  |  |  |  |  |  |  |  |  |  |  |
| **CM 120** |  |  | T, DA |  |  |  |  |  |  |  |  |  | I, DA |  |  |  |  |  |  |  |
| **CM 122** |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | T, DA |  |  |  |
| **CM 127** |  |  |  |  |  |  |  |  |  |  |  |  |  |  | T, DA |  |  |  |  |  |
| **CM 160** |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | T, DA |
| **CM 162** |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | T, DA |
| **CM 164** |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | T, DA |
| **CM 170** |  |  |  |  |  |  |  |  |  | T, DA |  |  |  | T, DA |  | T, DA |  |  |  |  |
| **CM 174L** |  |  |  |  |  |  |  |  |  |  | U, DA |  |  |  |  |  |  |  |  |  |
| **CM 180B** | U, DA |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| **CM 193I** |  | U, DA |  |  |  | U, DA |  |  |  |  |  |  |  |  |  |  |  |  |  |  |

The Department sets 3 levels of Student Learning Outcome progression, including **I = Introduced**, **T = Taught** (equivalent to D = Developed), and **U = Utilized** (equivalent to M = Mastered);

**DA = Direct Assessment**

## SLO's Mapped to Assessment Measures and Methods

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| --- | --- | --- | --- |
| **ACCE SLOs #** | **Assessment Measures** | | |
| **Direct Assessment**  **Measure (DM)** | | **Indirect Assessment Measure (IM)** |
| **Course** | **Assessment tool** |
| 1 | CM 180B | ACCE\_SLO1\_Individual paper. Final Submission | Senior Exit Survey |
| 2 | CM 193I | ACCE\_SLO2\_Internship Reflection Video | Senior Exit Survey |
| 3 | CM 120 | ACCE\_SLO3\_Final Project Safety plan | Senior Exit Survey |
| 4 | CM 110 | ACCE\_SLO4\_Final Bid Submittal | Senior Exit Survey |
| 5 | CM 116 | ACCE\_SLO5\_Lab 15 | Senior Exit Survey |
| 6 | CM 193I | ACCE\_SLO6\_Ethical Decision-Making Report | Senior Exit Survey |
| 7 | CM 116 | ACCE\_SLO7\_Lab 2\_WBS | Senior Exit Survey |
| 8 | CM 110 | ACCE\_SLO8\_Exam 3. Part 1 | Senior Exit Survey |
| 9 | CM 18 | ACCE\_SLO9\_multidisciplinary teamwork | Senior Exit Survey |
| 10 | CM 170 | ACCE\_SLO10\_Exam 3 | Senior Exit Survey |
| 11 | CM 174L | ACCE\_SLO11\_Survey layout quiz | Senior Exit Survey |
| 12 | CM 20 | ACCE\_SLO12\_Exam 2 | Senior Exit Survey |
| 13 | CM 120 | ACCE\_SLO13\_Quiz Risk Assessment | Senior Exit Survey |
| 14 | CM 170 | ACCE\_SLO14\_Exam 2 | Senior Exit Survey |
| 15 | CM 127 | ACCE\_SLO15\_Quiz QA/QC | Senior Exit Survey |
| 16 | CM 170 | ACCE\_SLO16\_Exam 1 | Senior Exit Survey |
| 17 | CM 122 | ACCE\_SLO17\_Mid-term exam | Senior Exit Survey |
| 18 | CM 17 | ACCE\_SLO18\_Sustainability Final Quiz | Senior Exit Survey |
| 19 | CM 107 | ACCE\_SLO19\_Assignment 4 | Senior Exit Survey |
| 20 | CM 160  CM 162  CM 164 | ACCE\_SLO\_20\_Final Exam  ACCE\_SLO\_20\_Final Exam  ACCE\_SLO\_20\_Final Exam | Senior Exit Survey |

## Assessment Measures: Description of Assignment and Method (rubric, criteria, etc.) used to evaluate the assignment

The Construction Management Department follows the ACCE accreditation requirements by assessing 20 SLO, each of them with a minimum of one direct measurement and one indirect measurement.

These assessment measures for each of the 20 SLO are explained in this section:

**SLO 1 Create written communications appropriate to the construction discipline**

*Direct Assessment:* ACCE\_SLO1\_Individual paper. Final Submission

* **Description:** Students write an article with a minimum of 2,000 words and an outline given. Article topics might vary across semesters.
* **Assessment method:** rubric including the following criteria:
* **Context of and Purpose for Writing**: Includes considerations of audience, purpose, and the circumstances surrounding the writing task(s).
* **Content Development**: Uses appropriate, relevant, and compelling content to illustrate mastery of the subject, conveying the writer's understanding, and shaping the whole work.
* **Technical Content**: Provides appropriate detail for the technical aspects of the project.
* **Control of Syntax and Mechanics**: Uses graceful language that skillfully communicates meaning to readers with clarity and fluency and is virtually error-free.
* **Sources and Evidence**: Use of credible and relevant sources to develop ideas that are appropriate for the discipline and genre of the writing.
* **APA Formatting**: Applies APA formatting as required.

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| --- | --- | --- | --- | --- | --- |
| **Criterion** | **Level of Achievement** | | | | |
| **Poor** | **Below Expectations** | **Meet Expectations** | **Confident** | **Advanced** |
| Context of and purpose of writing | 4 | 8 | 12 | 16 | 20 |
| Content Development | 4 | 8 | 12 | 16 | 20 |
| Technical content | 4 | 8 | 12 | 16 | 20 |
| Control of Syntax and Mechanics | 4 | 8 | 12 | 16 | 20 |
| Sources of Evidence | 2 | 4 | 6 | 8 | 10 |
| APA formatting | 2 | 4 | 6 | 8 | 10 |

*Indirect Assessment:* Senior Exit Survey prompt on Level of Agreement. Students state their level of agreement with the following statement: "I am able to create written communications appropriate to the construction discipline" using a Liker-type scale, where:

* 1-Strongly Disagree
* 2- Disagree
* 3- Neither Agree or Disagree
* 4-Agree
* 5-Strongly Agree

The performance criterion is measured considering an average score at least 3.5 out of the 5

**SLO 2 Create oral presentations appropriate to the construction discipline.**

*Direct Assessment:* ACCE\_SLO2\_Internship Reflection Video

* Description: Students create a presentation based on their internship experience where they should cover the following points: (1) Introduce yourself, (2) Introduce your work experience, (3) Describe the project(s) on which you worked, (4) Describe how previous courses tied to your work experience, and (5) describe how future courses could help to prepare you for future work experiences.
* Assessment method: rubric including the following criteria, aligned with the WASC Oral communication assessment.

Table

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*Indirect Assessment:* Senior Exit Survey prompt on Level of Agreement. Students state their level of agreement with the following statement: "I am able to create oral communications appropriate to the construction discipline" using a Liker-type scale, where:

* 1-Strongly Disagree
* 2- Disagree
* 3- Neither Agree or Disagree
* 4-Agree
* 5-Strongly Agree

The performance criterion is measured considering an average score at least 3.5 out of the 5

**SLO 3 Create a construction project safety plan.**

*Direct Assessment:* ACCE\_SLO3\_Final Project Safety plan

* Description: Students create a safety plan based on the following instructions:

Provide a narrative describing your company's commitment to safety and the project specific safety measures that will be taken to ensure the safety of the following items associated with the project: (1) Construction personnel, (2) Visitors, (3) The public and surrounding neighbors, (4) The project site and its materials and equipment, and (5) he existing building (if any). The safety plan should also address efforts to assess project safety hazards, mechanisms to enforce safety compliance requirements and define appropriate management measures, including designation of safety managers, provisions on project and field safety meetings, subcontractors compliance, safety inspection and corrective actions. As needed, correlate your narrative to your site plan(s). Be sure to identify the responsible party on the job site for ensuring safety measures are in place on a daily basis. Identify how safety is to be accomplished on a daily, weekly and/or monthly basis. Some items that may need to be incorporated into your project safety plan: Barriers, Pedestrian walkways, Temporary fences, Material laydown areas, Equipment operation zones, Material loading zones, Parking, Phased construction measures, Fabrication areas, Job task analysis and Specific routing of construction traffic / Traffic Control Measures.

* Assessment method: rubric including the following criteria:

A picture containing table

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*ndirect Assessment:* Senior Exit Survey prompt on Level of Agreement. Students state their level of agreement with the following statement: "I am able to create a construction project safety plan" using a Liker-type scale, where:

* 1-Strongly Disagree
* 2- Disagree
* 3- Neither Agree or Disagree
* 4 Agree
* 5 Strongly Agree

The performance criterion is measured considering an average score at least 3.5 out of the 5

**SLO 4 Create construction project cost estimates.**

*Direct Assessment:* ACCE\_SLO4\_Final Bid Submittal

* Description: Students create a project's cost estimate based on real procurement documents. To this end, students have to (1) review the notice to bidders, plans, and specifications, (2) review the scope of work, (3) determine the appropriate bid forms and bid documents and (4) perform a detailed estimate in Excel (including all formulas, notes and back-up documentation within an organized workbook).
* Assessment method: rubric including the following criteria:

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*Indirect Assessment:* Senior Exit Survey prompt on Level of Agreement. Students state their level of agreement with the following statement: "I am able to create construction project cost estimates" using a Liker-type scale, where:

* 1-Strongly Disagree
* 2- Disagree
* 3- Neither Agree or Disagree
* 4-Agree
* 5-Strongly Agree

The performance criterion is measured considering an average score at least 3.5 out of the 5

**SLO 5 Create construction project schedules.**

*Direct Assessment:* ACCE\_SLO5\_Lab 15

* Description: Students create a construction project's schedule in Microsoft Project by adding activities, relationships, and resources appropriate to a project given.
* Assessment method: rubric including the following criteria:

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*Indirect Assessment:* Senior Exit Survey prompt on Level of Agreement. Students state their level of agreement with the following statement: "I am able to create a construction project schedule" using a Liker-type scale, where:

* 1-Strongly Disagree
* 2- Disagree
* 3- Neither Agree or Disagree
* 4-Agree
* 5-Strongly Agree

The performance criterion is measured considering an average score at least 3.5 out of the 5

**SLO 6 Analyze professional decisions based on ethical principles.**

*Direct Assessment:* ACCE\_SLO6\_Ethical Decision-Making Report

* Description: Students write a 500-750 words-report based on an interview they should have conducted with a key construction professional. The interview is focused on an ethical situation that the professional has encountered in the construction industry. The report should include the following sections: (1) Introduction to the ethical issue, (2) description of the situation, (3) description of the resolution, (4) analysis, and (5) conclusions.
* Assessment method: the rubric that will be used starting in Fall 2023 it the AACU Ethical Reasoning Value Rubric adapted to the specific assignment

**AACU Ethical Reasoning Value Rubric**

Table

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*Indirect Assessment:* Senior Exit Survey prompt on Level of Agreement. Students state their level of agreement with the following statement: "I am able to analyze professional decisions based on ethical principles using a Liker-type scale, where:

* 1-Strongly Disagree
* 2- Disagree
* 3- Neither Agree or Disagree
* 4-Agree
* 5-Strongly Agree

The performance criterion is measured considering an average score at least 3.5 out of the 5

**SLO 7 Analyze construction documents for planning and management of construction processes.**

*Direct Assessment:* ACCE\_SLO7\_Lab 2\_WBS

* Description: Students develop a work breakdown structure for a project and determine the appropriate level of detail for the given project
* Assessment method: rubric including the following criteria:

Table

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*Indirect Assessment:* Senior Exit Survey prompt on Level of Agreement. Students state their level of agreement with the following statement: "I am able to analyze construction documents for planning and management of construction processes" using a Liker-type scale, where:

* 1-Strongly Disagree
* 2- Disagree
* 3- Neither Agree or Disagree
* 4-Agree
* 5-Strongly Agree

The performance criterion is measured considering an average score at least 3.5 out of the 5

**SLO 8 Analyze methods, materials, and equipment used to construct projects.**

*Direct Assessment:* ACCE\_SLO8\_Exam 3. Part 1

* Description: Exam that covers method, equipment, and production process, which are the basis for developing a project's estimate.
* Assessment method: Quiz-type exam with key answers sheet.

*Indirect Assessment:* Senior Exit Survey prompt on Level of Agreement. Students state their level of agreement with the following statement: "I am able to analyze methods, materials, and equipment used to construct projects" using a Liker-type scale, where:

* 1-Strongly Disagree
* 2- Disagree
* 3- Neither Agree or Disagree
* 4-Agree
* 5-Strongly Agree

The performance criterion is measured considering an average score at least 3.5 out of the 5

**SLO 9 Understand construction management skills as a member of a multi- disciplinary team.**

*Direct Assessment:* ACCE\_SLO9\_multidisciplinary teamwork quiz

* Description: Comprehensive quiz that tests students on the roles and responsibilities of different stakeholders on a project team. The quiz also presents typical business processes and expects students to understand the workflow.
* Assessment method: Quiz with key answers sheet

*Indirect Assessment:* Senior Exit Survey prompt on Level of Agreement. Students state their level of agreement with the following statement: "I am able to understand construction management skills as a member of a multi-disciplinary team" using a Liker-type scale, where:

* 1-Strongly Disagree
* 2- Disagree
* 3- Neither Agree or Disagree
* 4-Agree
* 5-Strongly Agree

The performance criterion is measured considering an average score at least 3.5 out of the 5

**SLO 10 Apply electronic-based technology to manage the construction process.**

*Direct Assessment:* ACCE\_SLO10\_Exam 3

* Description: Exam 3 covers the use of Microsoft Project and Excel in the creation of a construction project schedule
* Assessment method: Quiz with key answers sheet

*Indirect Assessment:* Senior Exit Survey prompt on Level of Agreement. Students state their level of agreement with the following statement: "I am able to apply electronic-based technology to manage the construction process" using a Liker-type scale, where:

* 1-Strongly Disagree
* 2- Disagree
* 3- Neither Agree or Disagree
* 4-Agree
* 5-Strongly Agree

The performance criterion is measured considering an average score at least 3.5 out of the 5

**SLO 11 Apply basic surveying techniques for construction layout and control.**

*Direct Assessment:* ACCE\_SLO11\_Survey layout quiz

* Description: Quiz that covers all the main basic concepts to understand and apply basic surveying techniques to create a project layout and to control the construction execution
* Assessment method: Quiz with key answers sheet

*Indirect Assessment:* Senior Exit Survey prompt on Level of Agreement. Students state their level of agreement with the following statement: "I am able to apply basic surveying techniques for construction layout and control" using a Liker-type scale, where:

* 1-Strongly Disagree
* 2- Disagree
* 3- Neither Agree or Disagree
* 4-Agree

5-Strongly Agree

The performance criterion is measured considering an average score at least 3.5 out of the 5

**LO 12 Understand different methods of project delivery and the roles and responsibilities of all constituencies involved in the design and construction process.**

*Direct Assessment:* ACCE\_SLO12\_Exam 2

* Description: Exam covering the following topics: project lifecycle, project participants, project delivery systems, and procurement methods
* Assessment method: Quiz-type exam with key answers sheet.

*Indirect Assessment:* Senior Exit Survey prompt on Level of Agreement. Students state their level of agreement with the following statement: "I am able to understand different methods of project delivery and the roles and responsibilities of all constituencies in the design and construction process" using a Liker-type scale, where:

* 1-Strongly Disagree
* 2- Disagree
* 3- Neither Agree or Disagree
* 4-Agree
* 5-Strongly Agree

The performance criterion is measured considering an average score at least 3.5 out of the 5

**SLO 13 Understand construction risk management.**

*Direct Assessment:* ACCE\_SLO13\_Quiz Risk Assessment

* Description: Comprehensive quiz covering what is a risk management process, risk identification, risk assessment, and risk mitigation

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* Assessment method: Quiz with key answers sheet

*Indirect Assessment:* Senior Exit Survey prompt on Level of Agreement. Students state their level of agreement with the following statement: "I am able to understand construction risk management" using a Liker-type scale, where:

* 1-Strongly Disagree
* 2- Disagree
* 3- Neither Agree or Disagree
* 4-Agree
* 5-Strongly Agree

The performance criterion is measured considering an average score of at least 3.5 out of the 5

**SLO 14 Understand construction accounting and cost control.**

*Direct Assessment:* ACCE\_SLO14\_Exam 2

* Description: Comprehensive exam covering budgeting, labor costs, cost reporting and pay application, and cash Flow.
* Assessment method: Quiz-type exam with key answers sheet.

*Indirect Assessment:* Senior Exit Survey prompt on Level of Agreement. Students state their level of agreement with the following statement: "I am able to understand construction accounting and cost control" using a Liker-type scale, where:

* 1-Strongly Disagree
* 2- Disagree
* 3- Neither Agree or Disagree
* 4-Agree
* 5-Strongly Agree

The performance criterion is measured considering an average score at least 3.5 out of the 5

**SLO 15 Understand construction quality assurance and control.**

*Direct Assessment:* ACCE\_SLO15\_Quiz QA/QC

* Description: Comprehensive quiz covering the concept of quality, what is a quality management system, what are the differences between quality manual and quality management, what are the differences between quality assurance and quality control, what inspection tests and plans are, and what is the owner's role in quality assurance.
* Assessment method: Quiz with key answers sheet

*Indirect Assessment:* Senior Exit Survey prompt on Level of Agreement. Students state their level of agreement with the following statement: "I am able to understand construction quality assurance and control" using a Liker-type scale, where:

* 1-Strongly Disagree
* 2- Disagree
* 3- Neither Agree or Disagree
* 4-Agree
* 5-Strongly Agree

The performance criterion is measured considering an average score at least 3.5 out of the 5

**SLO 16 Understand construction project control processes.**

*Direct Assessment:* ACCE\_SLO16\_Exam 1

* Description: Comprehensive exam covering construction management processes, such as scope management, risk management & problem solving, safety management, management of physical resources and quality management.
* Assessment method: Quiz type exam with key answers sheet.

*Indirect Assessment:* Senior Exit Survey prompt on Level of Agreement. Students state their level of agreement with the following statement: "I am able to understand construction project control processes" using a Liker-type scale, where:

* 1-Strongly Disagree
* 2- Disagree
* 3- Neither Agree or Disagree
* 4-Agree
* 5-Strongly Agree

The performance criterion is measured considering an average score at least 3.5 out of the 5

**SLO 17 Understand the legal implications of contract, common, and regulatory law to manage a construction project.**

*Direct Assessment:* ACCE\_SLO17\_Mid-term exam

* Description: Exam providing a real case scenario where students are given a description of a contract, including the contracting parties, issues in executing the contract, actions taken by different parties in addressing these issues, and conflicts that arose from the communication. Students are required to develop an in-depth analysis of the scenarios presented and document the analysis and conclusion in an essay.
* Assessment method: A grading rubric was used to grade the essay, as shown below

**Legal Essay Grading Rubric**

| **Criterion** | **Capstone** | **Milestones** | **Milestones** | **Benchmark** |
| --- | --- | --- | --- | --- |
| Examination of Issues | Issues/Problems to be considered critically is clearly stated and described with significant comprehension.  All relevant information is presented and demonstrates full understanding of the subject matter | Issues/Problems to be considered critically is stated, described and clarified so that understanding is not seriously impeded by omissions | Issues/Problems to be considered critically is stated but description leaves some terms undefined, ambiguities or undetermined | Issues/Problems to be considered critically is without clarification or description |
| Evidence | Specific information is taken from the source documents from the class with enough interpretation/evaluation, to develop comprehensive analysis | Information is taken from the source documents from the class and develop coherent analysis | Information is taken from the source documents from the class but not enough to develop coherent analysis | Information is taken from the source documents from the class without any interpretation or analysis |
| Conclusions and related outcomes | Conclusion and related outcomes are logical and reflect the students informed evaluation and ability to place evidence and perspectives in a coherent and intelligent manner | Conclusion is logically tied to a range of information including opposing viewpoints, related outcomes and identified clearly | Conclusion is logically tied to a desired conclusion with a much more narrow analysis and less information is identified clearly | Conclusion is inconsistently tied to some of the information discussed and are oversimplified |
| Depth/Breadth | Response displays a full understanding of the complexity of the issues addressed and multiple points of view | Of the following two topics, the author does well in at least one, or both partially, 1.  Recognize varied points of view, 2. Explored the topic in depth from one point of view | Of the following two topics, the author does well in at least one, or both minimally, 1.  Recognize varied points of view, 2. Explored the topic in depth from one point of view | Response is both narrower than appropriate and superficial, Fails to recognize varied interpretations and implications |
| Clarity | Grammar, spelling, and style make it easy for the reader to follow the response, use of vocabulary is correct | Occasional (2 to 3 per page) grammar, spelling or style problems.  Tendency to be vague and less descriptive | Problems in grammar, spelling or style that interfere with the authors statements (multiple problems in each paragraph) | Significant problems in grammar, spelling or style that make it challenging to follow the author's statements |

*Indirect Assessment:* Senior Exit Survey prompt on Level of Agreement. Students state their level of agreement with the following statement: "I am able to understand the legal implications of contract, common, and regulatory law to manage a construction project" using a Liker-type scale, where:

* 1-Strongly Disagree
* 2- Disagree
* 3- Neither Agree or Disagree
* 4-Agree
* 5-Strongly Agree

The performance criterion is measured considering an average score at least 3.5 out of the 5

**SLO 18 Understand the basic principles of sustainable construction.**

*Direct Assessment:* ACCE\_SLO18\_Sustainability Final Quiz

* Description: Comprehensive quiz covering main aspects of sustainability in construction materials and execution.
* Assessment method: Quiz with key answers sheet

*Indirect Assessment:* Senior Exit Survey prompt on Level of Agreement. Students state their level of agreement with the following statement: "I am able to understand the basic principles of sustainable construction" using a Liker-type scale, where:

* 1-Strongly Disagree
* 2- Disagree
* 3- Neither Agree or Disagree
* 4-Agree
* 5-Strongly Agree

The performance criterion is measured considering an average score at least 3.5 out of the 5

**SLO 19 Understand the basic principles of structural behavior.**

*Direct Assessment:* ACCE\_SLO19\_Assignment 4

* Description: Assignment including ten problems where students need to use basic principles of structural behavior to solve them.
* Assessment method: Answers key document

*Indirect Assessment:* Senior Exit Survey prompt on Level of Agreement. Students state their level of agreement with the following statement: "I am able to understand the basic principles of structural behavior" using a Liker-type scale, where:

* 1-Strongly Disagree
* 2- Disagree
* 3- Neither Agree or Disagree
* 4-Agree
* 5-Strongly Agree

The performance criterion is measured considering an average score at least 3.5 out of the 5

**SLO 20 Understand the basic principles of mechanical, electrical and piping systems.**

*Direct Assessment:* ACCE\_SLO\_20\_Final Exam

* Description: This learning outcome is assessed through three different courses, each of them covering mechanical, electrical, and piping systems, respectively. In each of these courses, the final exam covers the conceptual aspects of understanding each of the systems
* Assessment method: Quiz-type exam with key answers sheet

*Indirect Assessment:* Senior Exit Survey prompt on Level of Agreement. Students state their level of agreement with the following statement: "I am able to understand the basic principles of mechanical, electrical and piping systems" using a Liker-type scale, where:

* 1-Strongly Disagree
* 2- Disagree
* 3- Neither Agree or Disagree
* 4-Agree
* 5-Strongly Agree

The performance criterion is measured considering an average score at least 3.5 out of the 5

## Assessment Schedule/Timeline

The table below presents the current and future Assessment Schedule/Timeline for the CM Program Assessment.



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| Closing the Loop |
| **Fresno State Closing the Loop process is described immediately below.** |
| A major assessment report, which focuses on assessment activities carried out the previous academic year, is submitted in September of each academic year and evaluated by the Learning Assessment Team and Director of Assessment at Fresno State. |
| Department Closing the Loop process:  The BSCM has implemented major curriculum changes since the previous SOAP was submitted. Thus, the current version of this document aims to align the assessment efforts with the current courses and assessments in the program.  Besides this clarification, this section aims to discuss the status of initiatives and proposals included in the previous document.  The previous SOAP version included a set of initiatives and a new assessment process proposal. The current status of these proposals is the following   * Initiative 1. Adapt current Course Kaizen to SLO Kaizen to help enhance clarity and accountability in assessment efforts;   Current status: Kaizen sessions have been held at the end of each Spring semester following the assessment implementation plan. In these sessions, the instructor in charge of the course where the SLO was assessed presented: (1) the course, (2) the SLO to be assessed, (3) the assessment measure used, and (4) the data collected from that and previous semesters. Based on this information, a discussion is established between the instructor, assessment coordinator, and the rest of the faculty members to determine whether changes or additional measures should be considered in the future.   * Initiative 2. Identify faculty leads for different SLOs assessment based upon their subject matter expertise to streamline assessment data collection and documentation process, and also potentially helps balance assessment load on individual faculty;   Current status: Each SLO has a faculty assigned, as follows   |  |  |  | | --- | --- | --- | | **SLO** | | **Instructor** | | 1 | | Vivien Luo | | 2 | | Wei Wu/Maria Calahorra-Jimenez | | 3 | | Molly Smith | | 4 | | Lloyd Crask | | 5 | | Anthony Davidson | | 6 | | Wei Wu/Maria Calahorra-Jimenez | | 7 | | Anthony Davidson | | 8 | | Lloyd Crask | | 9 | | Wei Wu | | 10 | | Christi Banks | | 11 | Manideep Tummalapudi | | | | 12 | Maria Calahorra-Jimenez/Steven Banevedes | | | | 13 | Molly Smith | | | | 14 | Christi Banks | | | | 15 | Lloyd Crask/Maria Calahorra-Jimenez | | | | 16 | Christi Banks | | | | 17 | Charles Leath | | | | 18 | Manideep Tummalapudi/Sagata Bhawani | | | | 19 | Vivien Luo | | | | 20 | Molly Smith/Kelly Yost | | |  * Initiative 3. Conduct assessment-oriented faculty retreat at both beginning and end of the semester to plan and review assessment efforts, results and action plans;   Current status: Meetings at the beginning and at the end of the semester has been held to plan and review assessment efforts. In addition, a Canvas course has been created aiming to create a hub of information (with videos, written instructions) that facilitates the assessment efforts for instructors.   * Initiative 4. Align SOAP, Major Assessment and ACCE Accreditation efforts by developing, implementing and continuously improving scientific assessment plans and measures.   Current status: The current version of the SOAP is completely aligned with the major assessment and ACCE accreditation efforts.  Regarding the new assessment process proposed in the previous SOAP:  *"The new assessment process will include the following steps:*   1. *Collection of assessment data for all SLO's each time the associated course is taught. An online repository in Google Drive will house the assessment data.* 2. *Each SLO will be reviewed based upon the schedule provided in part IV above. The SLO review process will include:*    1. *The faculty lead for the SLO will analyze all assessment data.*    2. *The faculty lead for the SLO will schedule a SLO Kaizen meeting to present the relevant findings and lead faculty discussions for future improvements.*    3. *The faculty lead for the SLO will create a written report of the SLO and submit to the CM Program Assessment Coordinator.*    4. *The CM Program Assessment Coordinator will retain the written report in the SLO folder in the online repository.*    5. *The CM Program Assessment Coordinator will schedule an end of year CM faculty meeting to review all recommendations from SLO Kaizens to develop a comprehensive strategy to implement identified improvements.*    6. *The CM Program Assessment Coordinator will schedule a beginning of year CM Faculty Meeting to review all planned changes and improvements.*   *The CM Program Assessment Coordinator will schedule a mid-year CM Faculty Meeting to review all implemented changes to measure any changes based on the improvements."*  The efforts have slightly changed toward streamlining and facilitating the assessment process by creating and implementing an "SLO assessment Hub" in Canvas, where all the instructors are enrolled, and the assessment coordinator acts as the instructor of this "course." The primary purposes of this "SLO assessment hub" are"   * Share general information that all instructors should be aware of, using text and videos. * Share specific information about how each SLO should be assessed and how the results should be reported. * Announce and remind the main assessment milestones that take place during the academic year, so anyone forgets to collect the data. * Serve as a unique point of assessment data collection.   Overall, the "Assessment Hub" will help to follow the steps (1) and (2) included in the previous SOAP.  The CM Department started using this Canvas tool in Fall 2022. The tool will be complemented and improved during this academic year, and its effectiveness will be evaluated in Spring 2023. |
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