

Assurance of Student Learning Reflection 2024-2025

<i>Ogden College of Science and Engineering</i>	<i>School of Engineering and Applied Science</i>
<i>533 - Construction Management</i>	
<i>Jason Wilson, MS, PE</i>	
Is this an online program? ☐ Yes ☒ No	Please make sure the Program Learning Outcomes listed match those in CourseLeaf. Indicate verification here ☐ Yes, they match! (If they don't match, explain on this page under Evaluation)

Instructions: For the 2024-25 assessment, we are asking you to reflect on the last three-year cycle rather than collect data. It's important to take time to look over the results from the last assessment cycle and really focus on a data-informed direction going forward. In collaboration with your assessment team and program faculty, review each submitted template from 2021-2024 and consider the following for each Program Learning Outcome, add your narrative to the template, and submit the draft to your **ASL Rep** by **May 15, 2025**.

Program Student Learning Outcome 1	
Program Student Learning Outcome	Demonstrate the skills of construction management competencies including estimating, planning, scheduling, project control, print reading, safety management, quality management and construction law.
Evaluation	Using the last three assessment cycles (2021–2024), this student learning outcome remains relevant and highly important as cost estimation is a core competency in construction management. However, due to the program's transition from ATMAE to ACCE accreditation, slight adjustments are necessary to align with ACCE's required learning outcomes fully. The outcome currently includes measurable action verbs aligned with Bloom's Taxonomy and supports essential industry expectations. The outcome currently includes measurable action verbs aligned with Bloom's Taxonomy and supports essential industry expectations. To better reflect ACCE language and expectations, we propose a refined wording: "Create Construction Project Cost Estimates."
Measurement Instruments	Historically, cost estimating has been assessed using project-based assignments in upper-division coursework (e.g., CM 363, CM 462, and CM 490), where students prepare detailed estimates for real or simulated projects. These are direct measures. Rubrics were used to assess accuracy, methodology, documentation, and use of digital tools (e.g., RSMeans, or Bluebeam Revu). While these methods are generally valid, the shift to ACCE requires reassessing rubric alignment with ACCE's performance criteria.
Criteria & Targets	Previous success criteria required a minimum of 70% of students scoring 70% or higher on the cost estimate assignment. As we transition to ACCE, we propose adjusting our success metric to "At least 70% of students will achieve 4 out of 5 or higher on a standardized ACCE-aligned rubric for cost estimate deliverables." Rubrics will be revised to emphasize format, accuracy, use of estimating software, quantity takeoff, and supporting documentation.
Results & Conclusion	<u>Results:</u> Over the past three years, results have shown that over 70% of students met the existing target ($\geq 70\%$) in cost estimating assignments. However, qualitative feedback from industry advisory board members indicated that some estimates lacked consistency in format and supporting assumptions. <u>Conclusions:</u> While most students perform well, there is room for improvement to meet ACCE's more rigorous expectations. As part of the program's transition, we are introducing changes in CM 363 to implement software-specific training modules. Beginning Fall 2025, rubrics will be updated, and CM faculty will receive ACCE-aligned training to ensure consistent expectations. These changes are designed to align the program with ACCE standards better and prepare students for real-world estimating tasks.

<u>**IMPORTANT - Plans for Next Assessment Cycle:</u>	As the Construction Management program transitions from ATMAE to ACCE accreditation, the next assessment cycle will focus on aligning program outcomes, instructional strategies, and assessment instruments with ACCE standards. Specifically, for the outcome “Create construction project cost estimates,” we plan to implement the following: • Adjust Targets and Rubrics: Revise existing rubrics for estimating assignments to align with ACCE performance indicators. These rubrics will place greater emphasis on detailed quantity takeoffs, pricing justification, and use of industry-standard estimating software. • Faculty Training and Calibration: Offer training sessions for CM faculty on ACCE-aligned assessment expectations, rubric usage, and consistent scoring. This will ensure inter-rater reliability and standardization across course sections. • Indirect Assessment Integration: Add an industry-reviewed component where students present their cost estimate and defend assumptions to external reviewers or advisory board members, providing professional context and feedback. These efforts will help us “close the loop” by ensuring that future assessments are rigorous, aligned with accreditor expectations, and reflective of current industry practice. We expect to implement these changes by Fall 2025 so that data from AY 2025–26 forward reflects the updated assessment plan.
---	--

Program Student Learning Outcome 2	
Program Student Learning Outcome	Demonstrate the ability to communicate effectively with a range of audiences.
Evaluation	Based on the 2021–2024 assessment data, this outcome remains highly relevant but requires refinement to align more precisely with ACCE expectations. ACCE Outcome #2 emphasizes oral communication specific to construction-related content, audiences, and contexts. Our current phrasing is broad and includes communication with “a range of audiences,” but it lacks the disciplinary specificity ACCE requires. Therefore, we recommend narrowing the outcome to: <i>“Create oral presentations appropriate to the construction discipline.”</i> This version retains measurable language and aligns with Bloom’s Taxonomy while better supporting ACCE assessment standards.
Measurement Instruments	Historically, oral communication has been assessed through final presentations in senior-level coursework (e.g., CM 490 Senior Project), where students present their project scope, schedule, and budget to faculty, industry partners, and peers. This is a direct measure using a standardized rubric that scores organization, delivery, technical content, and professional appearance. Moving forward, rubrics must be revised to align with ACCE’s emphasis on discipline-specific language, audience appropriateness, and technical depth. We also plan to an indirect measure through external stakeholder feedback when students present to advisory board members or industry guests, ensuring authenticity and real-world relevance.
Criteria & Targets	Previous success criteria required a minimum of 70% of students scoring 70% or higher on the cost estimate assignment. As we transition to ACCE, we propose adjusting our success metric to “At least 70% of students will achieve 4 out of 5 or higher on a standardized ACCE-aligned rubric for oral presentation.” The rubric will assess clarity, professional demeanor, use of visual aids, technical accuracy, and audience engagement. Faculty will receive rubric calibration training to ensure consistent scoring and expectations across all sections.
Results & Conclusion	<u>Results:</u> From 2021–2024, data shows that over 70% of students met or exceeded the prior target, indicating strong performance. However, industry feedback has noted that some students lacked clarity when explaining technical content. <u>Conclusions:</u> While oral communication performance is generally strong, improvements are needed to better prepare students for real-world industry communication scenarios. In Spring 2024, the Senior Project course was revised to include presentation rehearsals and faculty critique sessions.
<u>**IMPORTANT - Plans for Next Assessment Cycle:</u>	For the 2025–2028 cycle, we plan to: • Adjust the Student Learning Outcome wording to match ACCE Outcome and narrow focus to oral communication in construction. • Revise assessment rubrics to align with ACCE criteria and ensure evaluation of discipline-specific communication. • Collect more authentic artifacts by incorporating presentations assessment in earlier coursework. • Provide faculty development on communication instruction strategies and rubric calibration for oral presentations.

	These updates will ensure our assessments reflect professional expectations and strengthen students' readiness for communication challenges in construction careers.
--	--

Program Student Learning Outcome 3	
Program Student Learning Outcome	Demonstrate managerial and leadership experience through working in teams to solve problems, and participation in required internships.
Evaluation	Based on review of the past three-year assessment cycle (2021–2024), the previous outcome was too broad and difficult to measure objectively, as it combined teamwork, leadership, and internship participation—each requiring different instruments and contexts. By narrowing the outcome to “Create construction project schedules,” we now have a clear, measurable, discipline-specific objective that aligns with ACCE Student Learning Outcome #5. This updated language supports professional preparation. It also allows for consistent and targeted evaluation in scheduling-focused courses, such as CM 462 and CM 490.
Measurement Instruments	In prior assessments, teamwork was observed through group projects, and internship participation was verified through employer evaluations—both indirect and inconsistent measures. Moving forward, students will be directly assessed on their ability to develop construction schedules using tools such as Microsoft Project or Primavera P6. These schedules will be graded using a rubric that evaluates sequencing logic, use of milestones, critical path identification, and resource allocation. This direct assessment will occur in CM 462, supported by introductions in earlier coursework and reinforced in the CM capstone project.
Criteria & Targets	Previous targets were difficult to define due to the vague outcome and indirect measures. With the revised outcome, we propose the following: <i>At least 70% of students will score 4 out of 5 or higher on the ACCE-aligned project scheduling rubric.</i> The rubric will assess completeness, logic, formatting, software use, and adherence to construction sequencing conventions. Students will also be required to defend their schedules in written or oral form, ensuring a deeper understanding of scheduling concepts.
Results & Conclusion	Results: From 2021–2024, limited data existed to draw meaningful conclusions about teamwork and internship experiences due to the variability of environments. Conclusions: The decision to adopt “Create construction project schedules” allows for a more direct, objective, and skill-specific approach that better aligns with both industry expectations and ACCE standards. In Fall 2025, CM 462 will be revised to increase hands-on software use, introduce multiple scheduling exercises, and embed quiz-based assessments. Teamwork and internship engagement will still be expected program elements, but not as core SLOs for accreditation assessment.
<u>**IMPORTANT - Plans for Next Assessment Cycle:</u>	For the upcoming three-year cycle, we will: • Replace the prior broad outcome with the focused outcome: “Create construction project schedules.” • Develop and calibrate rubrics that evaluate schedule logic, software proficiency, and milestone identification. • Collect direct artifacts from CM 462 for consistent benchmarking. These changes support a more accurate and meaningful assessment process that aligns with ACCE expectations and prepares students for project management roles in the construction industry.