

**Clemson University
Construction Science & Management (CSM) - Undergraduate Program**

2023-2024 Quality/Outcome Assessment Report

The Construction Science and Management (CSM) faculty and staff use information obtained through program and course-level assessment mechanisms and perception surveys to continuously evaluate and improve on the quality of the program curriculum and operations. Modifications are made only after careful consideration of data are obtained from all constituencies, including students, employers, alumni, advisory board members, and faculty. The continuous improvement plan employed by the CSM undergraduate degree program is outlined below in Figure 1.

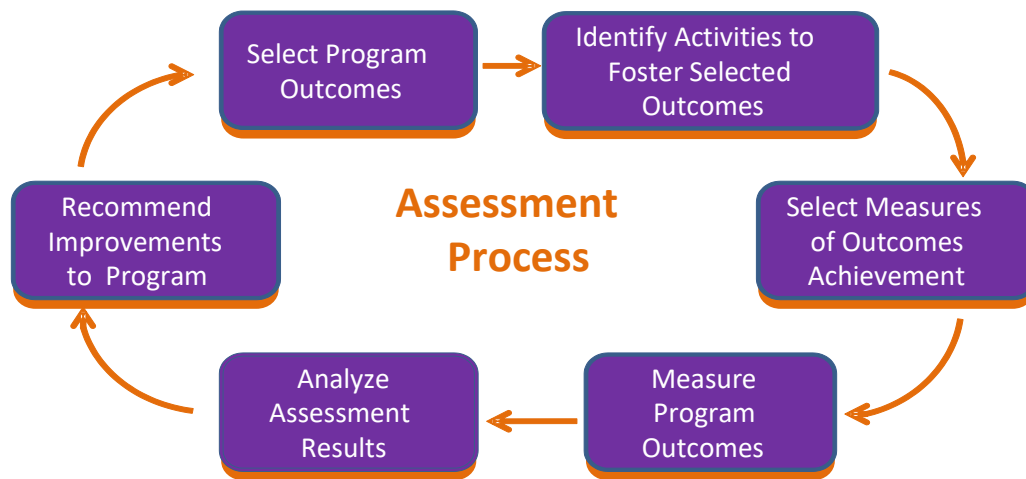


Figure 1. CSM Undergraduate Degree Program Quality/Outcome Assessment Process

CSM Undergraduate Degree Program Mission/Purpose - The mission of the Construction Science and Management undergraduate CSM degree program is to offer a comprehensive program of education, scholarly and service activities, consistent with the Mission of Clemson University and the College of Architecture, Arts and Humanities, for the purpose of improving the quality of the construction industry and thus the built environment.

CSM Undergraduate Degree Program Goals (G's)

- G 1: Excel in the education of undergraduate CSM majors through a vigorous program of academic learning designed to produce motivated, well-educated, responsible citizens with the management and technical skills requisite for leadership positions in the construction industry.
- G 2: Foster Clemson University's service mission by providing outreach activities for the construction industry and the public, both nationally and internationally.
- G 3: Assist in attaining Clemson University's funded research goals by conducting and disseminating the results of research and development, and/or conducting educational courses for the construction industry.

CSM Undergraduate Degree Program Objectives/Outcomes (PO's)

- PO 1: Oral and written communication skills - Upon graduation, students will be able to demonstrate the ability to effectively communicate orally and in writing (G1).
- PO 2: Practices of effective management - Upon graduation, students shall be able to describe practices of effective management of personnel, materials, equipment, costs and time (G1).
- PO 3: Facilitate Advancement of Knowledge - Upon graduation students will facilitate advancement within the field of the management of construction processes by demonstration of ability to define problems and recognize solutions; further students will demonstrate an ability to apply creativity, teamwork and evaluation in their work (G1).
- PO 4: Professional Ethics - Upon graduation, students will demonstrate an understanding of professional ethics (G1).
- PO 5: The undergraduate program will retain its accreditation by the American Council for Construction Education (G1 & G2).
- PO 6: Faculty will have papers published in peer-reviewed publications (G2 & G3).

CSM Undergraduate Degree Program Student Learning Outcomes (17 ACCE SLO's):

- SLO 1: Create written communications appropriate to the construction discipline;
- SLO 2: Create oral presentations appropriate to the construction discipline;
- SLO 3: Create a construction project safety plan;
- SLO 4: Create construction project cost estimates;
- SLO 5: Create construction project schedules;
- SLO 6: Analyze professional decisions based on ethical principles;
- SLO 7: Analyze methods, materials and equipment used to construct projects;
- SLO 8: Apply electronic-based technology to manage construction projects;
- SLO 9: Apply basic surveying techniques for construction layout and control;
- SLO 10: Understand different methods of project delivery and the roles and responsibilities of all constituents involved in the design and construction process;
- SLO 11: Understand construction accounting and cost control;
- SLO 12: Understand construction quality assurance and control;
- SLO 13: Understand construction project control processes;
- SLO 14: Understand the legal implications of contract, common and regulatory law to manage a construction project;
- SLO 15: Understand the basic principles of sustainable construction;
- SLO 16: Understand the basic principles of structural behavior;
- SLO 17: Understand the basic principles of mechanical, electrical and plumbing systems.

- SLO S1: Analyze construction documents for planning and management of construction processes;*
- SLO S2: Understand construction management skills as an effective member of a multi-disciplinary team;*
- SLO S3: Understand construction risk management;*

Table 1 Correlations between CSM Goals, Program Outcomes, and Student Learning Outcomes

CSM Undergraduate Degree Program Goals (G 1-G 3)	CSM Undergraduate Degree Program Objectives/Outcomes (PO 1- PO 6)	CSM Undergraduate Degree Program Student Learning Outcomes (SLO 1-SLO 17)	Other CSM Undergraduate Degree Program Requirements/ Activities
G 1 – Excellent Undergraduate CSM Education	PO 1 – Effective Communication Skills	SLO 1 & SLO 2	1) Required 800 hours of Construction Industry Internship/Experiential Learning.
	PO 2 – Effective Construction Management Skills	SLO 10-SLO 17	
	PO 3 – Facilitate Advancement of Construction Management Knowledge	SLO 3-5 & SLO 7-9	
	PO 4 – Professional Ethics	SLO 6	
G 1, G 2 & G 3	PO 5 – Maintain Program National Accreditation	SLO 1-SLO 17	ACCE Accreditation
G 2 - Industry Outreach & G 3 - Research	PO 6 – Faculty Publications & Presentations		1) Annual Clemson Construction Symposium; 2) Annual CSM Alumni Golf Tournament; 3) Faculty Publications; and 4) Professional Development Courses

Constituencies: CSM Students , Faculty, Industry Advisory Board Members, Alumni, and Employers.

Targets: At least 70% achieve/respond \geq 70% on all noted measures.

Frequency of Data Collection: Student performance data from CSM department courses are collected and assessed annually; CSM Alumni and Employer survey data are collected every three years, and assessed on a three-year cycle

Frequency of Comprehensive CSM Program Assessment: CSM Program Assessment is conducted on a three-year cycle,

Measures: See Figure 2, and the following pages for specific ACCE Student Learning Outcomes (SLO’s), as measured and assessed annually.

BCSM 2023-2024 Outcome Assessment Report

Courses / ACCE SLO's	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 methods, materials, and equipment used to construct projects.																	
8. Apply electronic-based technology to manage the construction process.																	
9. Apply basic surveying techniques for construction layout and control.																	
10. Understand different methods of project delivery and the roles and responsibilities of all constituencies involved in the design and construction process.																	
11. Understand construction accounting and cost control.																	
12. Understand construction quality assurance and control.																	
13. Understand construction project control processes.																	
14. Understand the legal implications of contract, common, and regulatory law to manage a construction project.																	
15. Understand the basic principles of sustainable construction.																	
16. Understand the basic principles of structural behavior.																	
17. Understand the basic principles of mechanical, electrical and plumbing systems.																	
S1. Analyze construction documents for planning and management of construction processes.																	
S2. Understand construction management skills as a member of a multidisciplinary team.																	
S3. Understand construction risk management.																	
CSM 1000			CO-3,9	CO-3	CO-1,4,5				CO-2	CO-3							
CSM 2010								CO-2,6									
CSM 2030								D			CO 1-7						
CSM 2040													CO-9,10				CO 1-10
CSM 2050								D			CO 1-7			CO-9			
CSM 2060									D						D		
CSM 2070					CO-5				CO 2-3	CO-1			CO-4				
CSM 3040													CO-12		D	CO-3,4,6	
CSM 3050													CO-1,10	CO-11-13	D	CO-5,7,14	
CSM 3060								D									
CSM 3070													CO 1-9				
CSM 3510				CO 1-4	CO-5			CO-3								D	
CSM 3520				D	CO-12			CO-10									
CSM 3530				D	CO-4	CO-1,2	D		CO-5								
CSM 4110			D														
CSM 4500	D	D	I	I	I	I	I	I	I	D	I	D	D	D	D	D	D
	I	I								I	I	I	I	I	I	I	I
CSM 4530			CO-15			CO-7		CO-10,11		D	D	D	D	CO 1-4,16	CO-9		CO-5,6
CSM 4610						D				D							CO-3
LEED G.A. Exam																	D

Direct Assessment: Direct Indirect Assessment: Indirect Course Outcomes (CO): CO

Figure 2. 2022-2023 ACCE Student Learning Outcomes and Associated Assessment Measures & Results.

Quality Assessment Report for 2023-2024

Student Learning Outcomes/Objectives, Measures and Achievement Targets:

1. Create written communications appropriate to the construction discipline (ACCE SLO #1/PO 1).

Direct Measure: Student performance on specific written assignments in CSM 4500 using a standard grading rubric.

Indirect Measure: Student perception survey in CSM 4500.

Courses/Measures:	2018-19	2019-20	2020-21	2021-22	2022-23	2023-24
CSM 4500 - Construction Internship - Direct Measure	84%	100%	100%	91%	94%	93%
CSM 4500 - Construction Internship - Indirect Measure	84%	90%	90%	92%	82%	92%

Notes: Targets met for the past 6 years. This past year we tracked whether 70% of our students achieved 70%, 75%, and 80% on all direct and indirect measures to identify if the target needs to be modified. We also changed our survey that captures our Indirect data from a 7-point Likert scale to a 10-point Likert scale to better measure those indirect measures. – Continue to Monitor Student Performance in 2024-25.

2. Create oral presentations appropriate to the construction discipline (ACCE SLO #2/PO 1).

Direct Measures: Student performance on oral presentations in CSM 4500 using a standard grading rubric.

Indirect Measure: Student perception survey in CSM 4500.

Courses/Measures:	2018-19	2019-20	2020-21	2021-22	2022-23	2023-24
CSM 4500 - Construction Internship - Direct Measure	84%	100%	100%	97%	96%	79%
CSM 4500 - Construction Internship - Indirect Measure	84%	90%	90%	92%	85%	92%

Notes: Targets met for the past 6 years. This past year we tracked whether 70% of our students achieved 70%, 75%, and 80% on all direct and indirect measures to identify if the target needs to be modified. We also changed our survey that captures our Indirect data from a 7-point Likert scale to a 10-point Likert scale to better measure those indirect measures. – Continue to Monitor Student Performance in 2024-25.

3. Create a construction project safety plan (ACCE SLO #3/PO 3).

Direct Measure: Student performance on specific course assignments in CSM 4110 using standard grading rubrics.

Indirect Measure: Student perception survey in CSM 4500.

Courses/Measures:	2018-19	2019-20	2020-21	2021-22	2022-23	2023-24
CSM 4110 - Safety in Construction - Direct Measure	100%	100%	86%	97%	97%	94%
CSM 4500 - Construction Internship - Indirect Measure	64%	85%	77%	94%	85%	89%

Notes: Targets met for the past 5 years. This past year we tracked whether 70% of our students achieved 70%, 75%, and 80% on all direct and indirect measures to identify if the target needs to be modified. We also changed our survey that captures our Indirect data from a 7-point Likert scale to a 10-point Likert scale to better measure those indirect measures. – Continue to Monitor Student Performance in 2024-25.

4. Create construction project cost estimates (ACCE SLO #4/PO 3).

Direct Measure: Student performance on specific course assignments in CSM 3530 using standard grading rubrics.

Indirect Measure: Student perception survey in CSM 4500.

Courses/Measures:	2018-19	2019-20	2020-21	2021-22	2022-23	2023-24
CSM 3530 - Construction Estimating II - Direct Measure	89%	86%	85%	N/A	92%	100%
CSM 4500 - Construction Internship - Indirect Measure	94%	94%	92%	89%	81%	81%

Notes: Targets met for the past 4 of 5 years. This past year we tracked whether 70% of our students achieved 70%, 75%, and 80% on all direct and indirect measures to identify if the target needs to be modified. We also changed our survey that captures our Indirect data from a 7-point Likert scale to a 10-point Likert scale to better measure those indirect measures. – Continue to Monitor Student Performance in 2024-25.

5. Create construction project schedules (ACCE SLO #5/PO 3).

Direct Measure: Student performance on specific course assignments in CSM 3520 using standard grading rubrics.

Indirect Measure: Student perception survey in CSM 4500.

Courses/Measures:	2018-19	2019-20	2020-21	2021-22	2022-23	2023-24
CSM 3520 - Construction Scheduling - Direct Measure	100%	85%	89%	100%	87%	96%
CSM 4500 - Construction Internship - Indirect Measure	62%	46%	80%	71%	78%	69%

Notes: Targets met for direct measure for the past 6 years. This past year we tracked whether 70% of our students achieved 70%, 75%, and 80% on all direct and indirect measures to identify if the target needs to be modified. We also changed our survey that captures our Indirect data from a 7-point Likert scale to a 10-point Likert scale to better measure those indirect measures. – Continue to Monitor Student Performance in 2024-25.

6. Analyze professional decisions based on ethical principles (ACCE SLO #6/PO 4).

Direct Measure: Student performance on a specific course assignment in CSM 4610 using standard grading rubrics.

Indirect Measure: Student perception survey in CSM 4500.

Courses/Measures:	2018-19	2019-20	2020-21	2021-22	2022-23	2023-24
CSM 4610 - Construction Economics Seminar - Direct	---	---	91%	93%	97%	98%
CSM 4500 - Construction Internship - Indirect Measure	90%	95%	90%	87%	85%	97%

Notes: Targets met for the past 4 years. This past year we tracked whether 70% of our students achieved 70%, 75%, and 80% on all direct and indirect measures to identify if the target needs to be modified. We also changed our survey that captures our Indirect data from a 7-point Likert scale to a 10-point Likert scale to better measure those indirect measures. – Continue to Monitor Student Performance in 2024-25.

7. Analyze methods, materials and equipment used to construct projects (ACCE SLO #7/PO 3).

Direct Measure: Student performance on the cumulative Final Exams in CSM 2030 and CSM 2050.

Indirect Measure: Student perception survey in CSM 4500.

Courses/Measures:	2018-19	2019-20	2020-21	2021-22	2022-23	2023-24
CSM 2030 - Materials & Methods I - Direct Measure	---	---	77%	100%	65%	93%
CSM 2050 - Materials & Methods II - Direct Measure	---	---	79%	75%	67%	98%
CSM 4500 - Construction Internship - Indirect Measure	92%	91%	98%	88%	81%	93%

Notes: Targets met indirect measures for past 6 years. Targets met for direct measures for 3 years, but not met for 2022-23 year. This past year we tracked whether 70% of our students achieved 70%, 75%, and 80% on all direct and indirect measures to identify if the target needs to be modified. We also changed our survey that captures our Indirect data from a 7-point Likert scale to a 10-point Likert scale to better measure those indirect measures. – Continue to Monitor Student Performance in 2024-25.

8. Apply electronic-based technology to manage construction projects (ACCE SLO #8/PO 3).

Direct Measures: Student performance on specific course assignments in CSM 3060 and/or CSM 3530, using standard grading rubrics.

Indirect Measure: Student perception survey in CSM 4500.

Courses/Measures:	2018-19	2019-20	2020-21	2021-22	2022-23	2023-24
CSM 3060 - Emerging Technologies - Direct Measure	85%	89%	88%	95%	100%	99%
CSM 3530 - Construction Estimating II - Direct Measure	89%	96%	93%	N/A	69%	100%
CSM 4500 - Construction Internship - Indirect Measure	82%	83%	82%	78%	68%	74%

Notes: Targets met for direct measures for 5 years, but not met for 2022-23 year. Target met for indirect measures for 5 years, but not met for 2022-23 year. This past year we tracked whether 70% of our students achieved 70%, 75%, and 80% on all direct and indirect measures to identify if the target needs to be modified. We also changed our survey that captures our Indirect data from a 7-point Likert scale to a 10-point Likert scale to better measure those indirect measures. – Continue to Monitor Student Performance in 2024-25.

9. Apply basic surveying techniques for construction layout and control (ACCE SLO #9/PO 3).

Direct Measures: Student performance on specific course assignments in CSM 2060 using a standard grading rubric.

Indirect Measure: Student perception survey in CSM 4500.

Courses/Measures:	2018-19	2019-20	2020-21	2021-22	2022-23	2023-24
CSM 2060 - Construction Science Workshop - Direct	---	---	---	87%	76%	89%
CSM 4500 - Construction Internship - Indirect Measure	63%	76%	76%	77%	69%	77%

*Notes: Targets met for direct measures for 3 years. Target met for indirect measures for 5 years, but not 2022-23 year. This past year we tracked whether 70% of our students achieved 70%, 75%, and 80% on all direct and indirect measures to identify if the target needs to be modified. We also changed our survey that captures our Indirect data from a 7-point Likert scale to a 10-point Likert scale to better measure those indirect measures. – **Continue to Monitor Student Performance in 2024-25.***

10. Understand different methods of project delivery and the roles and responsibilities of all constituents involved in the design and const. process (ACCE SLO #10 /PO 2).

Direct Measures: Student performance on specific course assignments in CSM 4500 and CSM 4530, using standard grading rubrics.

Indirect Measure: Student perception survey in CSM 4500.

Courses/Measures:	2018-19	2019-20	2020-21	2021-22	2022-23	2023-24
CSM 4500 - Construction Internship - Direct Measure	---	91%	90%	93%	94%	87%
CSM 4530 - Project Management - Direct Measure	---	---	95%	93%	96%	87%
CSM 4500 - Construction Internship - Indirect Measure	92%	93%	90%	90%	74%	97%

*Notes: Targets met for past 5 years. This past year we tracked whether 70% of our students achieved 70%, 75%, and 80% on all direct and indirect measures to identify if the target needs to be modified. We also changed our survey that captures our Indirect data from a 7-point Likert scale to a 10-point Likert scale to better measure those indirect measures. – **Continue to Monitor Student Performance in 2024-25.***

11. Understand construction accounting and cost control (ACCE SLO #11/PO 2).

Direct Measures: Student performance on specific course assignments in CSM 4530 and CSM 4610, using standard grading rubrics.

Indirect Measure: Student perception survey in CSM 4500.

Courses/Measures:	2018-19	2019-20	2020-21	2021-22	2022-23	2023-24
CSM 4530 - Construction Project Management - Direct	---	---	75%	92%	77%	91%
CSM 4610 - Construction Economics Seminar - Direct	---	---	91%	90%	91%	91%
CSM 4500 - Construction Internship - Indirect Measure	84%	66%	72%	68%	76%	79%

Notes: Targets met for past 4 years for direct measures. Targets met for 5 years for indirect measure, but not for 2021-22 year. This past year we tracked whether 70% of our students achieved 70%, 75%, and 80% on all direct and indirect measures to identify if the target needs to be modified. We also changed our survey that captures our Indirect data from a 7-point Likert scale to a 10-point Likert scale to better measure those indirect measures. – Continue to Monitor Student Performance in 2024-25.

12. Understand construction quality assurance and control (ACCE SLO #12/PO 2).

Direct Measures: Student performance on specific course assignments in CSM 4500 and CSM 4530, using standard grading rubrics.

Indirect Measure: Student perception survey in CSM 4500.

Courses/Measures:	2018-19	2019-20	2020-21	2021-22	2022-23	2023-24
CSM 4500 - Construction Internship - Direct Measure	---	85%	84%	94%	93%	91%
CSM 4530 - Const. Project Management - Direct Measure	94%	100%	80%	93%	95%	84%
CSM 4500 - Construction Internship - Indirect Measure	86%	79%	82%	77%	78%	95%

Notes: Targets met for the past 6 years. This past year we tracked whether 70% of our students achieved 70%, 75%, and 80% on all direct and indirect measures to identify if the target needs to be modified. We also changed our survey that captures our Indirect data from a 7-point Likert scale to a 10-point Likert scale to better measure those indirect measures. – Continue to Monitor Student Performance in 2024-25.

13. Understand construction project control processes (ACCE SLO #13/PO 2).

Direct Measures: Student performance on specific course assignments in CSM 4500 and CSM 4530, using standard grading rubrics.

Indirect Measure: Student perception survey in CSM 4500.

Courses/Measures:	2018-19	2019-20	2020-21	2021-22	2022-23	2023-24
CSM 4500 - Construction Internship - Direct Measure	---	85%	84%	90%	95%	88%
CSM 4530 - Const. Project Management - Direct Meas.	100%	100%	75%	95%	97%	92%
CSM 4500 - Construction Internship - Indirect Measure	86%	85%	76%	82%	75%	92%

Notes: Targets met for the past 6 years. This past year we tracked whether 70% of our students achieved 70%, 75%, and 80% on all direct and indirect measures to identify if the target needs to be modified. We also changed our survey that captures our Indirect data from a 7-point Likert scale to a 10-point Likert scale to better measure those indirect measures. – Continue to Monitor Student Performance in 2024-25.

14. Understand the legal implications of contract, common and regulatory law to manage a construction project (ACCE SLO #14/PO 2).

Direct Measures: Student performance on specific course assignments in CSM 4500, using a standard grading rubric.

Indirect Measure: Student perception survey in CSM 4500.

Courses/Measures:	2018-19	2019-20	2020-21	2021-22	2022-23	2023-24
CSM 4500 - Construction Internship - Direct Measure	---	88%	88%	86%	93%	85%
CSM 4500 - Construction Internship - Indirect (Post)	73%	75%	74%	83%	69%	76%

Notes: Targets met for 4 years the indirect measure, but not 2022-23 year. This past year we tracked whether 70% of our students achieved 70%, 75%, and 80% on all direct and indirect measures to identify if the target needs to be modified. We also changed our survey that captures our Indirect data from a 7-point Likert scale to a 10-point Likert scale to better measure those indirect measures. – Continue to Monitor Student Performance in 2024-25.

15. Understand the basic principles of sustainable construction (ACCE SLO #15/ PO 2).

Direct Measures: Student performance on specific course assignments in CSM 4500, using a standard grading rubric.

Indirect Measures: Student perception survey in CSM 4500.

Courses/Measures:	2018-19	2019-20	2020-21	2021-22	2022-23	2023-24
CSM 4500 - Construction Internship - Direct Measure	---	88%	88%	91%	92%	85%
CSM 4500 - Construction Internship - Indirect Measure	94%	90%	80%	80%	74%	94%

Notes: Targets met for past 5 years. This past year we tracked whether 70% of our students achieved 70%, 75%, and 80% on all direct and indirect measures to identify if the target needs to be modified. We also changed our survey that captures our Indirect data from a 7-point Likert scale to a 10-point Likert scale to better measure those indirect measures. – Continue to Monitor Student Performance in 2024-25.

16. Understand the basic principles of structural behavior (ACCE SLO #16/PO 2).

Direct Measures: Student performance on specific course assignments in CSM 2060 and CSM 4500, using standard grading rubrics.

Indirect Measure: Student perception survey in CSM 4500.

Courses/Measures:	2018-19	2019-20	2020-21	2021-22	2022-23	2023-24
CSM 2060 - Construction Science Workshop - Direct	---	---	---	87%	82%	98%
CSM 4500 - Construction Internship - Direct Measure	---	---	88%	79%	94%	96%
CSM 4500 - Construction Internship - Indirect Measure	68%	82%	78%	78%	74%	77%

Notes: Targets met for the past 4 years. This past year we tracked whether 70% of our students achieved 70%, 75%, and 80% on all direct and indirect measures to identify if the target needs to be modified. We also changed our survey that captures our Indirect data from a 7-point Likert scale to a 10-point Likert scale to better measure those indirect measures. – Continue to Monitor Student Performance in 2024-25.

17. Understand the basic principles of mechanical, electrical and plumbing systems (ACCE SLO #17/PO 2).

Direct Measures: Student performance on specific course assignments in CSM 3040 and CSM 3050, using standard grading rubrics.

Indirect Measure: Student perception survey in CSM 4500.

Courses/Measures:	2018-19	2019-20	2020-21	2021-22	2022-23	2023-24
CSM 3040 - Environmental Systems I - Direct Measure	---	---	82%	87%	95%	100%
CSM 3050 - Environmental Systems II - Direct Measure	---	71%	77%	N/A	100%	70%
CSM 4500 - Construction Internship - Indirect Measure	88%	81%	96%	97%	88%	92%

Notes: Targets met for the past 4 out of 5 years for the direct measures. Targets met for the past 6 years for the indirect measures. This past year we tracked whether 70% of our students achieved 70%, 75%, and 80% on all direct and indirect measures to identify if the target needs to be modified. We also changed our survey that captures our Indirect data from a 7-point Likert scale to a 10-point Likert scale to better measure those indirect measures. – Continue to Monitor Student Performance in 2024-25.

21. CSM Program Learning Outcomes (PO 1-4).

Indirect Measures: Alumni, Employer and Graduating Senior Perception Surveys.

Program Measures:	2016-17	2017-18	2018-19	2019-20	2020-21	2021-22	2022-23	2023-24
Alumni Survey - Indirect Measure	---	91%	---	---	89%	---	---	
Intern Employer Survey - Indirect Meas.	---	100%	---	---	---	---	---	
Alumni Employer Survey - Indirect	---	100%	---	---	100%	---	---	
Senior Exit Interview Survey - Indirect	---	---	100%	100%	95%	89%	88%	95%
AC Exam - Direct Measure	86%	88%	80%	71%	81%	---	---	

Notes: Targets met in 2017-18 and 2020-21. Targets for Senior Exit Interview Survey measure met for the past 6 years. – Continue to Monitor Student Performance in 2024-25. No longer use AIC AC Exam for assessment purposes going forward.

July 17, 2024

S1. Analyze construction documents for planning and management of construction processes (ACCE SLO #7/PO 3).

Direct Measure: Student performance on specific course assignments in CSM 3510 using standard grading rubrics.

Indirect Measure: Student perception survey in CSM 4500.

Courses/Measures:	2018-19	2019-20	2020-21	2021-22	2022-23	2023-24
CSM 3510 - Construction Estimating I - Direct Measure	---	---	87%	94%	89%	84%
CSM 4500 - Construction Internship - Indirect Measure	96%	97%	94%	92%	90%	90%

Notes: Targets met for the past 4 years. This past year we tracked whether 70% of our students achieved 70%, 75%, and 80% on all direct and indirect measures to identify if the target needs to be modified. We also changed our survey that captures our Indirect data from a 7-point Likert scale to a 10-point Likert scale to better measure those indirect measures. – Continue to Monitor Student Performance in 2024-25.

S2. Understand construction management skills as an effective member of a multi-disciplinary team (ACCE SLO #9/PO 3).

Direct Measure: Student performance on specific written assignments in CSM 4500 using a standard grading rubric.

Indirect Measure: Student perception survey in CSM 4500.

Courses/Measures:	2018-19	2019-20	2020-21	2021-22	2022-23	2023-24
CSM 4500 - Construction Internship - Direct Measure	---	91%	79%	91%	96%	99%
CSM 4500 - Construction Internship - Indirect Measure	88%	95%	90%	88%	93%	94%

Notes: Targets met for the past 5 years. This past year we tracked whether 70% of our students achieved 70%, 75%, and 80% on all direct and indirect measures to identify if the target needs to be modified. We also changed our survey that captures our Indirect data from a 7-point Likert scale to a 10-point Likert scale to better measure those indirect measures. – Continue to Monitor Student Performance in 2024-25.

S3. Understand construction risk management (ACCE SLO #13/PO 2).

Direct Measures: Student performance on specific course assignments in CSM 4500 and CSM 4610, using standard grading rubrics.

Indirect Measure: Student perception survey in CSM 4500.

Courses/Measures:	2018-19	2019-20	2020-21	2021-22	2022-23	2023-24
CSM 4500 - Construction Internship - Direct Measure	---	85%	88%	91%	93%	94%
CSM 4610 - Construction Economics Seminar - Direct	---	---	95%	91	100%	95%
CSM 4500 - Construction Internship - Indirect Measure	86%	80%	84%	86%	75%	90%

Notes: Targets met for past 5 years. This past year we tracked whether 70% of our students achieved 70%, 75%, and 80% on all direct and indirect measures to identify if the target needs to be modified. We also changed our survey that captures our Indirect data from a 7-point Likert scale to a 10-point Likert scale to better measure those indirect measures. – Continue to Monitor Student Performance in 2024-25.