

INTRODUCTION

This is the twenty-second year for our assessment process. There are three separate and distinct components: Assessment Quality Improvement Plan, Assessment Implementation Plan, and a Strategic Plan. Below you will find an analysis of our overall Program Assessment and Student Learning Outcomes.

The CM Program's Quality Improvement Plan and Strategic Plan are coordinated. The major part of both plans focus on providing a quality CM Program and assessing Program SLOs, ACCE SLOs, and Course SLOs. In addition, goals and objectives are identified in the Strategic Plan to grow and enhance the CM Program.

The Quality Improvement Plan includes a mapping document showing where each ACCE SLO is introduced "I", reinforced (R), and directly assessed (DA). Course Learning Outcomes are identified for each course and identified in each course syllabi.

A process has been developed to evaluate course learning outcomes and student learning outcomes. Faculty are required to complete the course evaluation and collect the supporting data, analyze the data, and present the results to the CM faculty. This process allows the program to evaluate the course content as well as how it supports the ACCE SLOs.

There is an electronic folders containing summarized data for each of the 17 ACCE SLOs. Faculty are required to provide documentation for all direct and indirect assessment measures for each of the ACCE SLOs that are supported by each course they teach. If new courses are added or course learning change, the responsible faculty will update the course syllabus.

OVERVIEW OF THE ASSESSMENT PROCESS

The Assessment plan has four levels of assessment:

- 1. Evaluate the Program Student Learning Outcomes.
- 2. Evaluate ACCE's 17 Student Learning Outcome (SLO's) and evaluate course learning outcome for each CM course.
- 3. Develop, maintain, and evaluate Course Learning Outcomes for each CM Course.
- 4. Maintain ACCE Accreditation

Course Learning Outcomes are identified for each course associated with the appropriate ACCE SLO. The Course Learning Outcomes are evaluated each time the course is taught. This process provides the foundation for both the Level I and Level II assessment of student learning. (See ACCE SLO /Curriculum Spreadsheet)

Level I – Assessment of ACCE Student Learning Outcomes.
 Direct measures of ACCE student learning outcomes include the AC Exam,
 Capstone Experience, Course Comprehensive Exams, Course Semester or Major Projects, Technology Proficiency Exams, and the Internship Presentation.

Level II – Program Assessment
 Assessment measures include Program Learning Outcomes, Maintaining ACCE
 Accreditation, Enrollment, Senior Exit Survey, Internship Employer Evaluation,
 Graduate Placement, Alumni and Employer Surveys, and input from the Advisory
 Board.

An Implementation Plan has been developed to keep the process on a schedule.

SUMMARY OF PROGRAM OUTCOME ASSESSMENT

Goal #1: Implement an Academic Quality Improvement Process for the CM Program

1. Evaluate the Program Student Learning Outcomes.

- **1.1** Students will demonstrate basic knowledge of, and be able to apply, the concepts of estimating, construction planning, scheduling, project controls, construction finance, cost control, risk management, and safety as they relate to being a field or project engineer, superintendent, or project manager. (ACCE SLO's 3, 4, 5, 11, 12,13, 14)
- **1.2** Student will apply appropriate knowledge of mathematics, science, business fundamentals, and electronic-based technology to various construction management processes, design theory, surveying techniques, mechanical/electrical concepts, and analysis of construction systems. (ACCE SLO's 8, 9, 16, 17)
- **1.3** Students will be able to analyze construction materials, methods, construction systems, equipment, design theory, quality assurance, sustainable/lean construction concepts, and have basic knowledge of their application to the construction process. (ACCE SLO's 7, 12, 15)
- **1.4** Analyze construction documents for planning and management of construction processes and understand the legal implications of project delivery methods, contracts, common, and regulatory law needed to manage a construction project. (ACCE SLO's 10, 13, 14)
- **1.5** Students will develop ethical principles and be able to communicate clearly and effectively as individuals and as a member of a multi-disciplinary team. (ACCE SLO's 1, 2, 6)

Assessment Measures:	Assessment Results	Date Assessed
CM 492 Capstone Final Submittal (safety plan, estimate, schedule, analysis of documents and analysis of materials and methods)	Spring 2024 13 of 17 students (76.5%) of students scored 75 % or	5/2024

• 75 % of the students will receive a 75% on the final submittal.	higher on the semester assignments. The class average score was 80.5%	
CM 492 Capstone Team Evaluation • 75 % of the team evaluations will demonstrate that the team members worked as an effective team.	Spring 2024 17 of 17 (100%) student team evaluations indicated the students functioned very well working as teams. Everyone received 100% as an effective team member, except for one student who received 85%.	5/2024
CM 492 Capstone Final Presentation • 75 % of the students will receive a 75% on the professional presentation of their final submittal.	Spring 2024 9/17 (52.9%) scored 75% or higher. Some of the presentations were presented via Zoom (online students). When looking at the scores, most of the scores that fall below 75% were presented via Zoom. An industry panel judges the presentations. We will need to continue to monitor the online presentations to see if changes need to be implemented to improve our online public speaking delivery by our students. The class average was 78%.	5/2024
 Students will receive 3/5 or higher on all items on the Employer survey that apply to their internship. 	Fall 2023 The overall average employer evaluation based on all criteria area for all Interns was 4.37 out of a 1-5 Likert Scale. This employer evaluation review ability to work as a team member, effective communication skills, estimating, scheduling, layout, etc which covers the ACCE SLO's.	10/2023
AIC Level I Certification Exam • The CM Program will meet or exceed the national average in 50% of the Student Learning Outcomes of the exam mapped to the Program SLO's.	Spring 2024 Spring 2024 AC Exam results indicated that MSUM School Average exceeded that national average for 3 of 10 (30%) SLO's. AIC only reports on	9/2024

SLO's #6, 7, 10, 11, 12, 13, 14, 15, 16, and 17.

We did not meet our benchmark. Historically, MSUM's average has exceeded the national average in most SLO's. Faculty have discussed this years AC exam scores and have compared it to other student work (exams, projects, etc.) which also show lower scores when compared to previous years. This cohort entered college at the height of the COVID-19 pandemic and data shows lower scores across numerous assessments. We will continue to monitor the AC exam scores for another year or two prior to making any significant changes to our curriculum.

Evaluation of results and define action item(s) if necessary.

Fall 2023 – Spring 2024

An analysis of the assessment measures shows that the following measure were met:

- Employer Internship Evaluations
- Capstone Team Evaluations
- Capstone Final Submittals

The following measures were not met:

- AIC Level I Exam Exceeding National Average
- Capstone Final Presentations

Faculty have discussed this year's assessment scores. We have analyzed the AIC Level 1 Exam scores and have compared it to other student work (exams, projects, etc.) which also show lower scores when compared to previous years. This cohort entered college at the height of the COVID-19 pandemic and data shows lower scores across numerous assessments. We will continue to monitor the AC exam scores for another year or two prior to making any significant changes to our curriculum.

Follow-up on Action Items.

We will continue to monitor closely to see if measures continue to not be met. If data shows our students continue to not meet assessment measures, we will make changes within our curriculum with industry advisory board input and faculty discussion.

2. Evaluate the ACCE 17 Student Learning Outcomes (SLO's)

- 2.1 Set up a process to evaluate for each ACCE SLO.
- 2.2 Evaluate ACCE SLO's every academic year.

Assessment Measures:	Assessment Results	Date Assessed
100% of the ACCE SLO are monitored and revised as needed Output Description: Out	All 17 SLO's for AY23-24 were evaluated in the fall of 2024. This changed from the previous year where our assessment cycle was based on a calendar year instead of an academic year. We changed to academic year assessment to align with ACCE's A-17 form. We evaluated all SLO's in the fall to allow time for the faculty to enter their spring 2024 data. For the Direct Assessment, the following SLO's did not meet the benchmark (70% or higher): SLO 5 – Create Construction Project Schedule – 68% SLO7 – Materials, Methods, & Equipment – 68.7 % SLO10 – Project Delivery – 66.5% SLO11 – Accounting & Cost Control – 65.8% SLO12 – Quality Assurance & Control – 62.6% SLO14 – Legal Implications – 64.6% SLO15 – Sustainable Construction – 65.8%	09/2024

- SLO16 Structural Behavior 62.4%
- SLO17 HVAC, Electrical, & Plumbing 50.3%

We utilize the AC exam results for SLO 7, 10, 11, 12, 14, 15, 16, & 17. Students create a construction project schedule for SLO 5.

The following discussion and decision was made at the CM faculty meeting reviewing all SLO's:

• Faculty have discussed this year's assessment scores. We have analyzed the AIC Level 1 Exam scores and have compared it to other student work (exams, projects, etc.) which also show lower scores when compared to previous years. This cohort entered college at the height of the COVID-19 pandemic and data shows lower scores across numerous assessments. We will continue to monitor the AC exam scores for another year or two prior to making any significant changes to our curriculum.

Evaluation of results and define action item(s) if necessary

The SLO evaluations are completed annually.

Data for each SLO was collected and electronically recorded on the "SLO Assessment Results 2022-2028" form which is stored on the departmental share drive. Any action suggestions are recorded on the data form based evaluation from CM faculty meeting in the fall of 2024. The CM faculty met in September 2024 to evaluate all 17 SLO's for AY23-24.

Follow-up on Action Items.

The CM faculty will continue to meet each academic year to evaluate every SLO and to ensure that all SLO's are introduced, reinforced, and assessed throughout the entire CM curriculum and feed into the CLO's.

3. Develop, maintain and evaluate course learning outcomes for each CM Course.

- **3.1** All CM course syllabi are developed in a consistent format.
- **3.2** Course Learning Outcomes are evaluated for every CM course.

Assessment Measures:	Assessment Results	Date Assessed
• 100% of the course syllabi will be developed in a consistent format (See format in the Assessment Plan.).	Currently all course syllabi are developed in a consistent format.	5/17/2024
Each course syllabus will include course learning outcomes with associated benchmarks and assessment measures.	Currently all existing course syllabi have course learning outcomes with associated benchmarks and assessment measures.	05/17/2024

Evaluation of results and define action item(s) if necessary.

Course syllabi are to be updated each semester the course is taught. Course Learning Outcomes are updated if the course content is changed.

All ACCE SLO's and CLO's are identified in each syllabi.

Each individual faculty maintain course learning outcome data for each course they teach.

Follow-up on Action Items.

For next assessment cycle, CM faculty to review all CLO's for each course.

4. Maintain ACCE Accreditation

4.1 The CM Program maintains accreditation.

Assessment Measures:	Assessment Results	Date Assessed
The CM Program will be reaccredited each six-year accreditation cycle.	The program was re-accredited in February 2022. Our ACCE site	5/17/2024

visit was October 2021. The first- year report was prepared and submitted in December 2022. The third-year report will be submitted Fall 2024. Our next accreditation visit is Fall 2027.
New ACCE form A-17 was implemented this academic year. All data will be entered and submitted to ACCE to stay within compliance.

Evaluation of results and define action item(s) if necessary.

ACCE accreditation first year report is available for review upon request. A third-year report will be submitted Fall 2024.

Form A-17 (SLO evaluation and overall program evaluation data) will be submitted to ACCE to stay within compliance.

Follow-up on Action Items.

Continue to have CM faculty attend the ACCE annual meetings to stay up-to-date on ACCE standards and any changes that may be occurring with the accreditation process.

GOAL #2: Increase the number of Construction Management majors.

2.1 Increase C	M program	enrollment	at MSUM.
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2.2 Reach and maintain a stable CM program enrollment corresponding to three full-time CM faculty members.

CM Program Enrollment Fall 21 = 94	5/17/2024
CM Program Enrollment Fall 22 = 86	
CM Program Enrollment Fall 23 = 81	
CI	M Program Enrollment Fall 22 = 86

CM Program Enrollment Fall 24 =	
CM Program Enrollment Fall 25 =	
CM Program Enrollment Fall 26 =	

Evaluation of results and define action item(s) if necessary.

The CM program enrollment has declined the past few years. Faculty have put in a significant amount of time recruiting at 2-year institutions along with high-schools. Data indicates there is not one activity that attracts our students. In CM205 we survey our students asking them how they heard of our program and why did you choose MSUM CM's program. The data shows: website search, alumni encourage them, family member encouraged them, school presentation by a faculty, and more. CM faculty will continue recruiting efforts, encourage our board to participate in recruiting efforts, and the IAB board is currently working on getting a recruiting video put together for our program.

Goal 2.1: CM Enrollment Increase

5/25/23:

All three CM faculty are diligent to go recruiting at two-year transfer schools and regional high schools. We will continue to place an effort on recruiting and modify our approach if necessary. We have gone from a traditional presentation at the high-school level and started doing a short project-based presentation, so students have a hands-on activity related to construction management (negotiation activity or building a tower).

Goal 2.2: Reach & Maintain a Stable CM Program Enrollment

5/25/23:

We would like to see a steady increase of CM students and sustain approximately 120-130 students per academic year. Universities nationwide are experiencing significant enrollment decline for a few reasons: 1.) the enrollment cliff which is the dramatic drop in the college-age population. 2.) currently less high-school students are choosing to attend a four-year degree program. MSUM is not immune to this and as a university has seen a significant decline in enrollment. Although CM has not been gaining at the numbers we are hoping for, our enrollment has not declined at the same rate of the university as a whole. Our faculty put much effort on recruiting new students, but also retaining our current students. We will continue with these efforts to try to increase our enrollment.

As an initiative to increase enrollments, we started offering our degree program online in the fall 2020, asynchronous. This online program is identical to our face-to-face program, but is designed for a non-traditional student who has construction experience or a two-year construction related

degree. This allows for students who are place-bound and/or working full-time in the industry to work towards a bachelor's degree in CM.

Follow-up on Action Items.

5/25/23:

We will continue with our recruiting efforts and monitor our online enrollment.

GOAL #3: Develop Annual CM Soft Money Budget and Develop/Implement a Fund Raising Plan.

- **3.1** Prepare a CM supplemental soft money budget annually and present to the IAB.
- **3.2** Develop/Implement a CM Fundraising/Scholarship Plan

Assessment Measures:	Assessment Results	Date Assessed
CM Advisory Board will review and comment on the CM Program soft money proposed budget.	Rachel Axness and IAB member, Scott Weicht presented an update of CM Discretionary Accounts. The account balance for CM Discretionary is: \$47,000 Our goal is to keep these discretionary funds greater than \$20,000.	6/2024

Evaluation of results and define action item(s) if necessary.

6/2024: Working in conjunction with the foundation, we had a successful Giving Hearts Day in October 2023. This raised our funds significantly. We also had an employer donate \$3,000 to our program which went into our discretionary account. We will continue to work with the foundation and our IAB on this initiative.

Follow-up on Action Items.

6/2024:

The CM faculty continue to monitor the soft money account balances and report back to the Advisory Board.

GOAL #4: Develop activities which lead to greater construction industry interaction with CM students.

- 3.1 CM faculty and students will work with the members and leadership of the IAB to facilitate industry interaction.
- 3.2 CM faculty will incorporate construction industry field trips and/or speakers in every course.

Assessment Measures:	Assessment Results	Date Assessed
• The IAB, CM faculty, and student groups will complete one joint project/activity each semester.	CM student group and IAB will publish one joint newsletter in the spring of 2024 which is issued to students and alumni. It can be seen here: https://issuu.com/msumoorhead/docs/constructionmgmt-spring2024 newsletter-v3	5/17/2024
Record industry interaction on "Industry Interaction Spreadsheet" and reference course number and industry person.	Industry interaction log is maintained on an annual basis is available to review anytime a request is made.	5/17/2024

Evaluation of results and define action item(s) if necessary.

9/25/23:

Our local industry members are very active and supportive of our program. We have utilized guest lecturers and taken students on local site tours. There is an assignment incorporated within our CM445 – Quality Control & Pre-Construction Services class that requires each student to meet with and interview an industry member. There is another assignment, interviewing an estimator in CM230 – Estimating 1. We will continue to utilize our supportive industry members and their expertise. Additionally, our IAB members support our students who compete in CM student competitions, helping mentor competition teams.

Fall 2023 we also hosted our 2nd Annual CM Career Fair in the Center for Business Atrium. This was a success! We limited the number of contractors to 25 and all CM students were required to attend. We will continue to host the CM Career Fair annually at MSUM.

Follow-up on Action Items:

5/25/23:

Continue providing numerous interaction opportunities for students with our local industry.

Overall Program Evaluation

Internship Evaluation

Overall, the employers rated the interns above average in each of the twenty areas assessed. The average score for the twenty areas was 4.38 on a scale of 1-5 with 5 being the highest.

Evaluation of results and define action item(s) if necessary.

Making a statement that not all areas may be applicable to each intern was incorporated. This year those items were not measured and taken out of the average score.

Senior Exit Survey

Overall, the results indicate that the students are pleased with the experience that they have had in the CM program and at MSUM. Responses indicated that the students felt they were well prepared to start their careers in construction. Data results can be seen in the SLO Indirect Assessment Scores below.

Evaluation of results and define action item(s) if necessary.

Overall, results are positive and indicate a high level of satisfaction with the program and faculty at MSUM.

CM Alumni Survey

No Alumni Survey was conducted spring 2024.

Evaluation of results and define action item(s) if necessary.

No Alumni Survey was conducted spring 2024. An alumni survey was conducted spring 2021. The alumni evaluated how well they felt they were prepared by MSUM's Construction Management program in the SLO's for their current career. It was a likert scale 1-5, with 5 being the highest. The average number for each is listed below.

A CM Alumni Survey will be sent Spring 2025.

CM Employer Survey

No CM employer Survey was conducted spring 2024.

Spring 2021: An employer survey was sent spring 2021.

A CM Employer Survey will be sent Spring 2025.

Evaluation of results and define action item(s) if necessary.

No CM employer Survey was conducted spring 2024.

Spring 2021: We received only one response, which is not a strong representativeness of our program. Although the feedback was good, we need a stronger response rate to ensure we have an evaluation of numerous alumni. We will try to get a stronger response rate in our Spring 2025 surveys.

2027

ACCE SLO ASSESSMENT

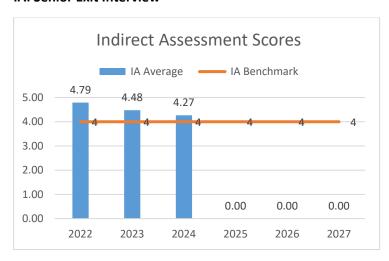
See "SLO Assessment Results 2022-2028" in the Professional Management Share Drive folder for a full analysis. This provides all data related to each SLO.

SLO #1 - Create written communications appropriate to the construction discipline

Direct Assessment Scores DA Average DA Benchmark 100 89 84 83 80 60 40 20 2022 2023 2024 2025 2026

DA: CM460 - Schedule & Quality Subcontractor Letter

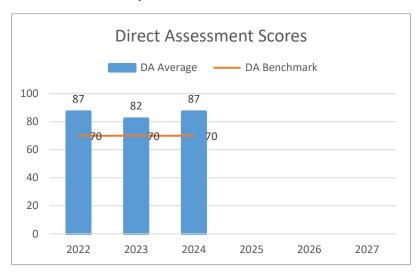
IA: Senior Exit Interview



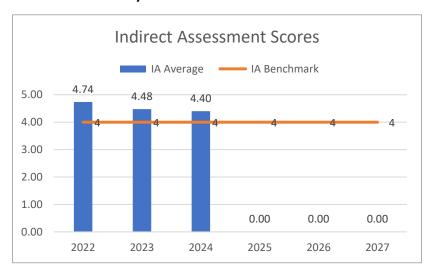
Analysis: Benchmarks were exceeded. Continue to monitor.

SLO #2 - Oral Presentations

DA: CM469 Internship Presentation



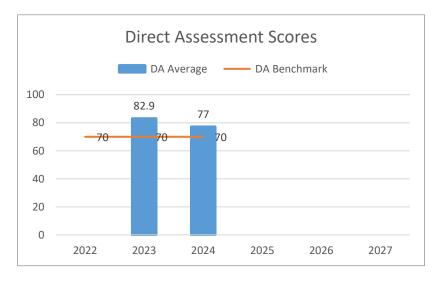
IA: Senior Exit Survey



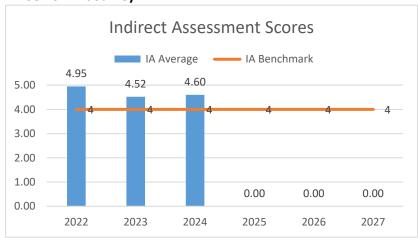
Analysis: Benchmark exceeded; continue to monitor

SLO #3 – Create a Construction Safety Plan

DA: CM365 Construction Safety – Each student is responsible to create a construction project safety plan.



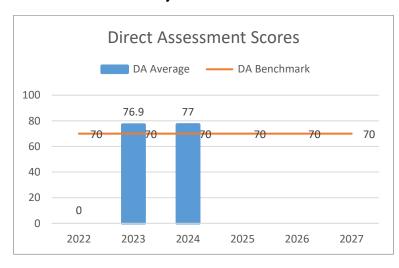
IA: Senior Exit Survey

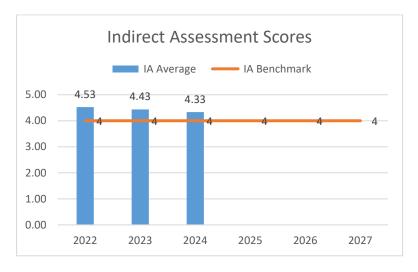


Analysis: Benchmark Exceeded; Continue to monitor.

SLO #4 – Create Construction Project Cost Estimate

DA: CM335 Semester Project – Construction Estimate

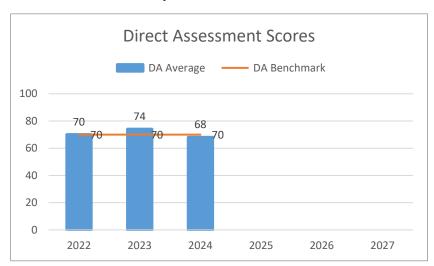


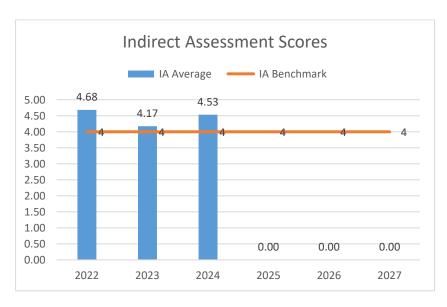


Analysis: Benchmark Exceeded; Continue to Monitor.

SLO #5 – Create Construction Project Schedules

DA: CM340 Semester Project – Construction Schedule

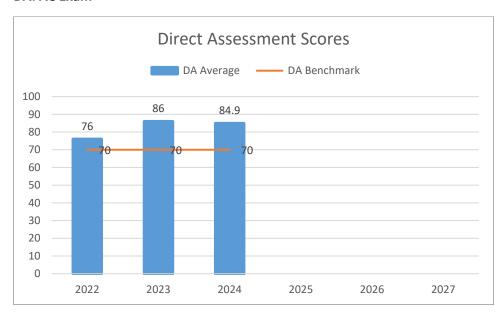


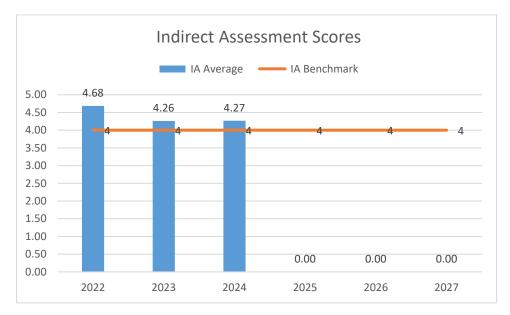


Analysis: Faculty felt students did not understand the rubric. Video was created for the students to go over the rubric. Faculty will review the rubric and reconstruct.

SLO #6 - Analyze Professional Decisions Based on Ethical Principles

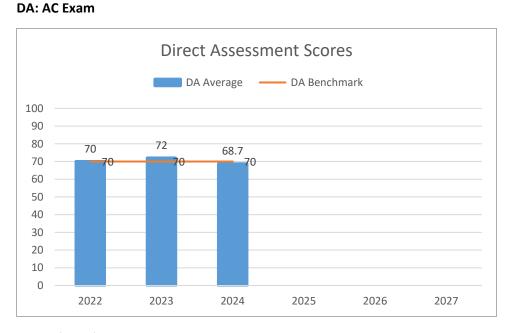
DA: AC Exam

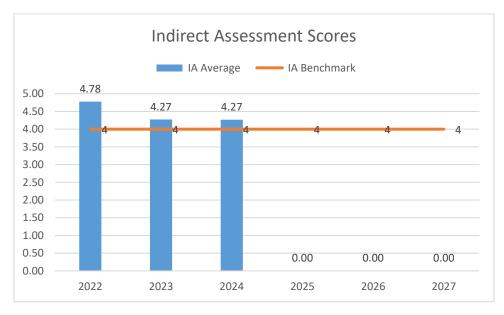




Analysis: Benchmark exceeded; continue to monitor.

SLO #7 – Construction Documents for Planning and Management of Construction Processes

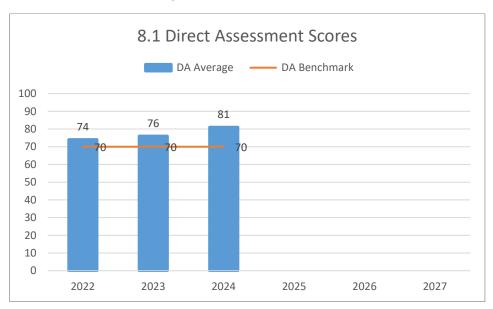




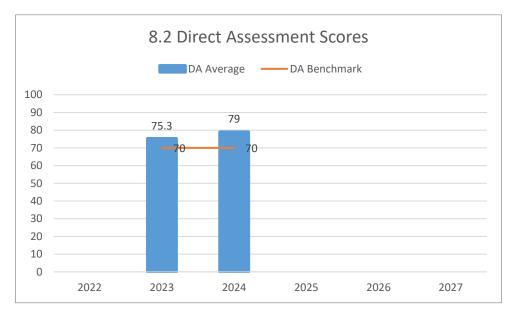
Analysis: Content of curriculum has not changed. National average score of AC exam went down from last year as well. Continue to monitor.

SLO #8 - Electronic-Based Technology

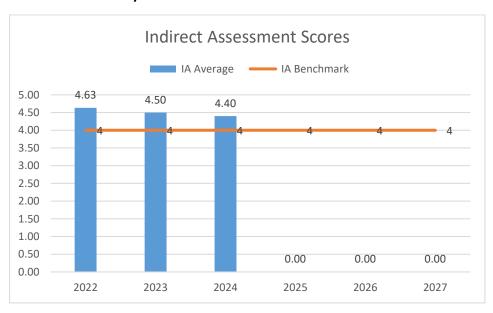
DA 8.1 – CM340 Proficiency Exam



DA 8.2 - CM335 Proficiency Exam

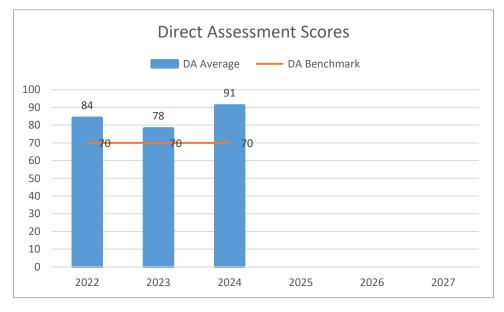


IA: Senior Exit Survey

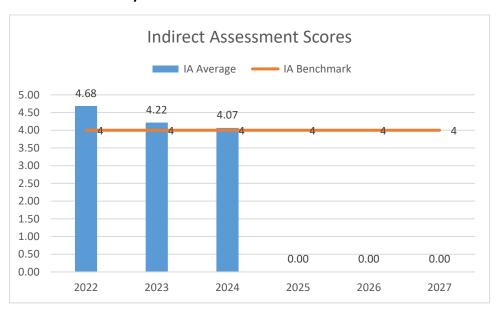


Analysis: Benchmark met, continue to monitor.

SLO#9 – Apply basic surveying techniques for construction layout and control DA: CM200 - Surveying Comprehensive Exam

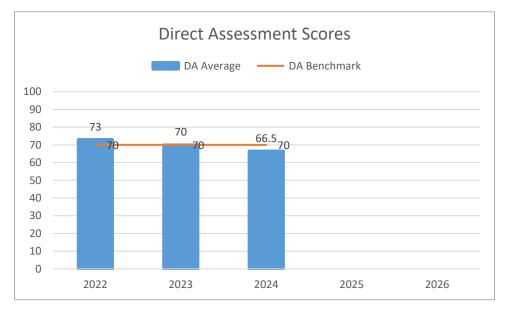


IA: Senior Exit Survey

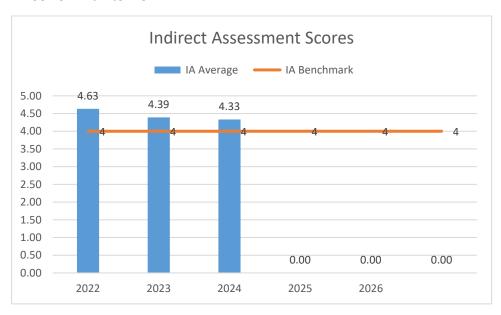


Analysis: Benchmark exceeded; continue to monitor

SLO#10 - Project Delivery

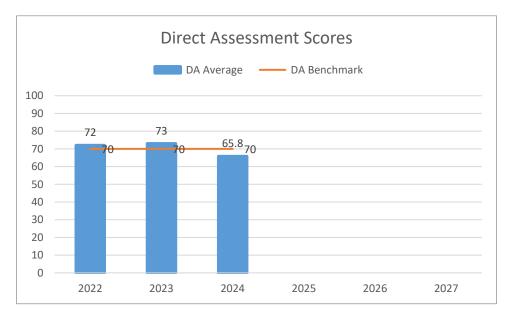


IA: Senior Exit Interview

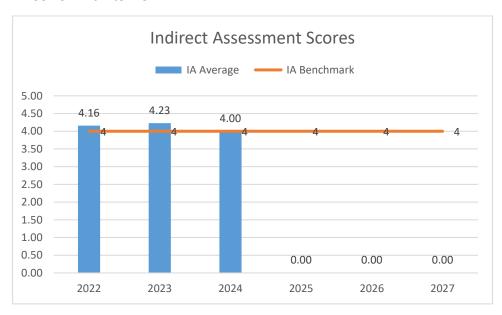


Analysis: Delivery models are covered in CM220, CM335, CM340, CM370, CM445, CM460. CM335 is design-bid-build; CM445 has CM@R proposal as well as CM492. Continue to monitor.

SLO#11 – Understand Construction Accounting and Cost Control

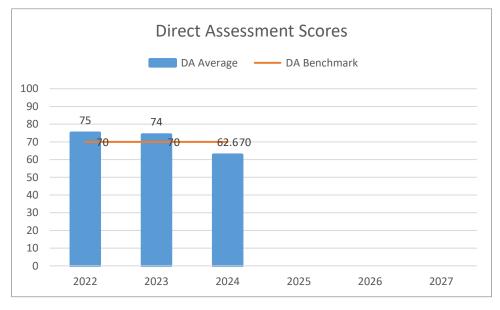


IA: Senior Exit Interview

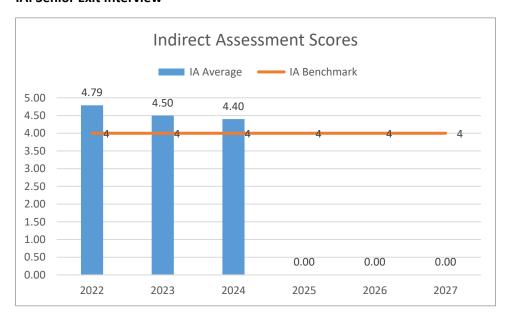


Analysis: Previous years indicated students performed well. Faculty understand that this group entered college at the height of COVID and are seeing lower average scores this year on the AC exam. Continue to monitor.

SLO#12 - Quality Assurance & Control

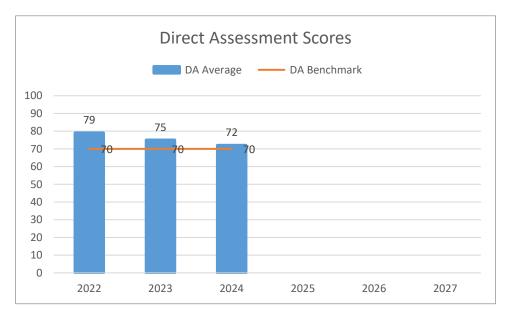


IA: Senior Exit Interview

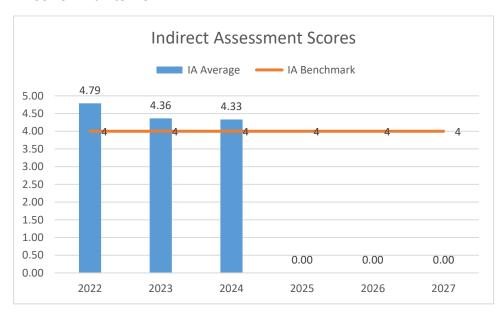


Analysis: Previous years indicated students performed well. Faculty understand that this group entered college at the height of COVID and are seeing lower average scores this year on the AC exam. Continue to monitor.

SLO#13 - Project Control

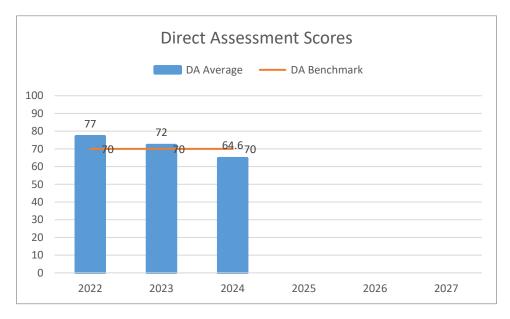


IA: Senior Exit Interview.

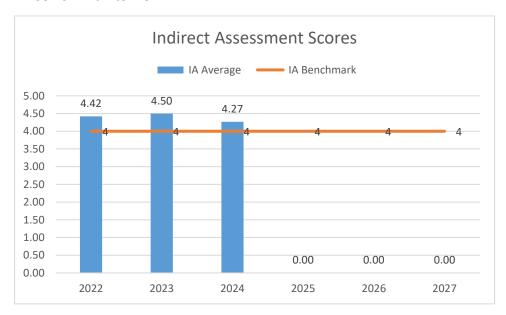


Analysis: Previous years indicated students performed well. Faculty understand that this group entered college at the height of COVID and are seeing lower average scores this year on the AC exam. Continue to monitor.

SLO#14 – Understand the legal implications of contracts

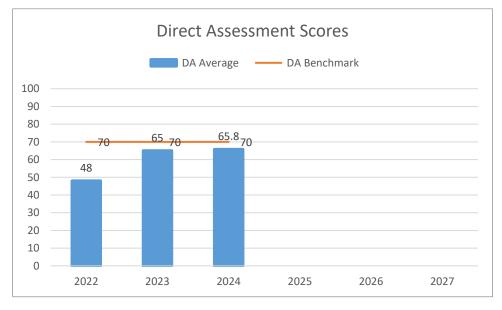


IA: Senior Exit Interview

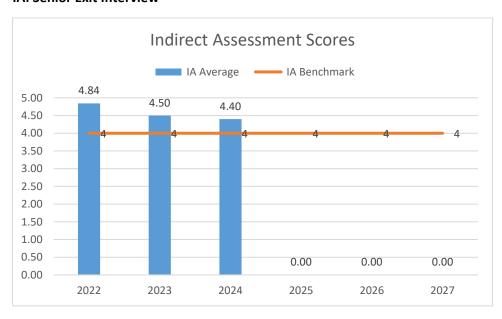


Analysis: Previous years indicated students performed well. Faculty understand that this group entered college at the height of COVID and are seeing lower average scores this year on the AC exam. Continue to monitor.

SLO#15 – Understand the Basic Principles of Sustainable Construction

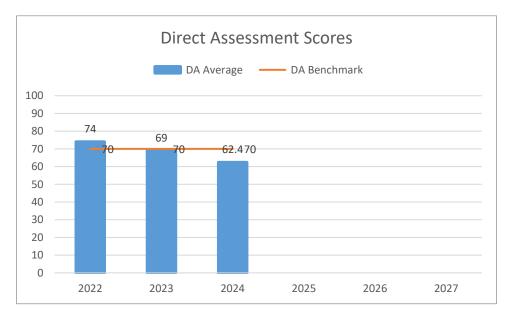


IA: Senior Exit Interview

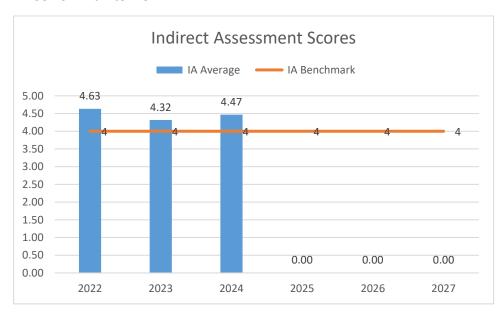


Analysis: Score has increased from previous years, continue to monitor.

SLO#16 – Understand the basic principles of structural behavior

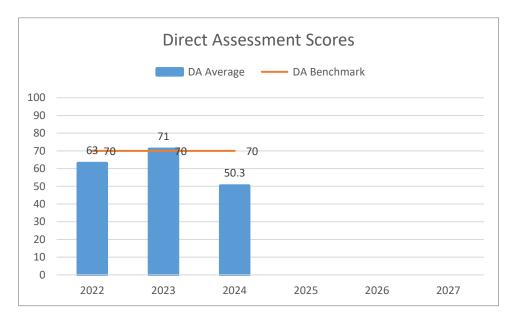


IA: Senior Exit Interview

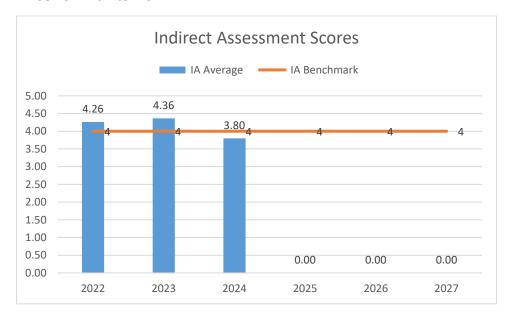


Analysis: Previous years indicated students performed well. Faculty understand that this group entered college at the height of COVID and are seeing lower average scores this year on the AC exam. Continue to monitor.

SLO#17 - Understand the basic principles of mechanical, electrical and plumbing systems



IA: Senior Exit Interview



Analysis: Previous years indicated students performed well. Faculty understand that this group entered college at the height of COVID and are seeing lower average scores this year on the AC exam. Continue to monitor.

CONCLUSION OF CM ASSESSMENT PLAN

ACCE has developed A-17 form for each program to complete SLO analysis and overall program analysis. We will transfer our assessment data each year to complete the A-17 form and keep compliance with ACCE standards.

ACCE has 17 student learning outcome standards that our program assesses annually. Assessment instruments were revised spring 2022 (after our last accreditation visit) to allow easy visual from year-to-year assessment. The assessment process will be monitored and

revisions will be made when results indicate our goals in the Strategic Plan have not been reached.

Overall, we continue to deliver a strong and rigorous program serving the tri-state area and now providing an online program to reach a larger, more diverse audience. We will closely monitor our classes to ensure regardless of delivery method that our students are learning the outcomes of each course.