

**Construction Management
Department of Professional Management**

Student Outcome & Program Assessment

Annual Assessment Report

Spring 2020-Fall 2020

Prepared by

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Spring 2021

INTRODUCTION

This is the nineteenth year for our assessment process. Fall 2015, the assessment process was revised to meet the new ACCE Standards. The new standards require three separate and distinct components: Assessment Quality Improvement Plan, Assessment Implementation Plan, and a Strategic Plan.

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, additional goals and objectives are identified in the Strategic Plan to grow and enhance the CM Program.

The CM Program is transitioned to a Quality Improvement Plan based on the new ACCE standards. The CM faculty began developed new processes in fall of 2014 and spring 2015. The overall process started with mapping the ACCE SLOs to the CM courses, then mapping them to the five Program Learning Outcomes. The Strategic Plan was also updated to guide and direct the development of the Quality Improvement Plan for the program. In addition, Course Learning Outcomes were identified and incorporated into each course syllabi.

A process has been developed to evaluate course learning outcomes which are associated with the ACCE SLOs. 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 will allow the program to evaluate the course content as well as how it supports the ACCE SLOs.

There are electronic folders for each of the 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. Each ACCE SLOs is mapped to each of the courses in the program. Assessment measures tied to each ACCE SLO in a given course is identified. If new courses are added or course learning change, the responsible faculty will update the course syllabus.

Program Outcome Evaluation forms are developed for each of the goals and objectives identified in the Strategic Plan. Analysis and action items are completed to close the assessment loop. The Program Outcome Evaluations are completed in preparation the annual assessment report.

OVERVIEW OF THE ASSESSMENT PROCESS

The Assessment plan has four levels of assessment:

- 1. Evaluate the Program Student Learning Outcomes.**
- 2. Evaluate ACCE 20 Student Learning Outcome (SLO's)**
- 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, 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.
4. 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, 5,13, 14, & 16)

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 10, 11, 19, & 20)

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 8, 15 &18)

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 7, 12 & 17)

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, & 9)

Assessment Measures:	Assessment Results	Date Assessed
CM 492 Capstone Final Submittal(safety plan, estimate, schedule, analysis of documents and analysis of materials and methods) <ul style="list-style-type: none"> • <i>75 % of the teams will receive a 75% on the final submittal.</i> 	Spring 2020 23 of 24 students (95.8%) of students scored 75 % or higher on the semester assignments. One team was select to compete in a regional competition as their capstone project which they placed 2 nd .	1/5/2020
CM 492 Capstone Team Evaluation <ul style="list-style-type: none"> • <i>75 % of the team evaluations will demonstrate that the team members worked as an effective team.</i> 	Spring 2020 23 of 24 (95.8%) student team evaluations indicated the students functioned very well working as teams. One student discontinued participating in the course overall part way through the course.	1/5/2020
CM 492 Capstone Final Presentation <ul style="list-style-type: none"> • <i>75 % of the teams will receive a 75% on the professional presentation of their final submittal.</i> 	Spring 2020 11/24 (45.8%) scored 75% or higher. The presentations were presented via Zoom, with students all in different locations due to the COVID-19 pandemic. Student’s found out that they could not return to campus after spring break due to the pandemic. I do believe our students could perform better than they did, which is reflected in their grade. However, they were faced with completing their courses during a pandemic and shifting courses online very quickly.	1/5/2020
Internship Employer Evaluation <ul style="list-style-type: none"> • <i>Students will receive 3/5 or higher on all items on the Employer survey that apply to their internship.</i> 	Fall 2020 Of the 20 criteria evaluated the <u>average scores</u> were all between 4 and 5.	1/5/2020
AIC Level I Certification Exam <ul style="list-style-type: none"> • <i>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.</i> 	Spring 2020 The AC exam was not administered Spring 2020 due to the COVID-19 pandemic. The university would not allow faculty and students on campus	5/25/20

	<p>starting mid-March 2020. The exam will be continue to be utilized in the future.</p> <p>PLO 1.1 0/0 or 0.0% were met.</p> <p>PLO 1.2 0/0 or 0.0% were met.</p> <p>PLO 1.3 0/0 or 0.0% were met.</p> <p>PLO 1.4 0/0 or 0.0% were met.</p> <p>PLO 1.5 0/0 or 0.0% were met.</p>	
<p>Evaluation of results and define action item(s) if necessary.</p> <p>Spring and Fall 2020</p> <p>An analysis of all of the assessment measures shows that five PLOs were met.</p>		
<p>Follow-up on Action Items.</p> <p>We will continue to monitor. No Action Items.</p>		
<p>2. Evaluate the ACCE 20 Student Learning Outcomes(SLO's)</p> <p>2.1 Set up a process to evaluate for each ACCE SLO.</p> <p>2.2 Evaluate ACCE SLO's on a three year cycle.</p>		
<p>Assessment Measures:</p>	<p>Assessment Results</p>	<p>Date Assessed</p>
<ul style="list-style-type: none"> <i>100% of the ACCE SLO are monitored and revised as needed</i> 	<p>All 20 SLO's were evaluated in the Spring 2020 and Fall 2020.</p> <p>The CM program faculty evaluates all ACCE SLO's on a three-year cycle.</p>	<p>05/25/21</p>
<p>Evaluation of results and define action item(s) if necessary</p> <p>The CLO evaluations for each CM course was completed annually. Data was collected and CLO assessment was performed by the instructor of record.</p>		

Data for each SLO was collected and electronically recorded on each SLO data form. Any action suggestions are recorded on the data form based evaluation from CM faculty. The CM faculty meet at the end of spring semester to evaluate SLO's based on the following schedule:

- SLO's 1-5 (May 2020)
- SLO's 9-11 (May 2021)
- SLO's 6-8,12-20 (May 2022)

This process was implemented spring of 2020, prior to that SLO's were evaluated annually.

In addition, the Direct and Indirect Assessments curriculum mapping spreadsheet was revised in the fall of 2019 to reflect ACCE interpretation that only individual student assessment was acceptable and no group/team evaluation were permitted, although individual assessment within team projects is acceptable as long as the work is separately identifiable.

Follow-up on Action Items.

The CM faculty will meet in mid-May to evaluate ACCE SLO's 1 - 5.

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
<ul style="list-style-type: none"> • <i>100% of the course syllabi will be developed in a consistent format (See format in the Assessment Plan).</i> 	Currently all course syllabi are developed in a consistent format.	05/25/2021
<ul style="list-style-type: none"> • <i>Each course syllabus will include course learning outcomes with associated benchmarks and assessment measures.</i> 	Currently all existing course syllabi have course learning outcomes with associated benchmarks and assessment measures.	05/25/2021

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.

<p>All course syllabi were updated to a format recommended by Catherine Artec, Instructional Technologist, to reflect best standards. All ACCE SLO's and CLO's are still identified in each syllabi, just the overall format of all the syllabi were updated.</p>		
<p>Follow-up on Action Items.</p> <p>For next assessment cycle, CM faculty to review all CLO's for each course.</p>		
<p>4. Maintain ACCE Accreditation</p> <p><i>4.1 The CM Program maintains accreditation.</i></p>		
<p>Assessment Measures:</p>	<p>Assessment Results</p>	<p>Date Assessed</p>
<ul style="list-style-type: none"> The CM Program will be re-accredited each six-year accreditation cycle. 	<p>The program was re-accredited in July 2016. The third-year report was prepared and submitted in May 2019. Our next accreditation visit is Fall 2021. Schedule/dates to be determined summer 2021. The self-study for the fall 2021 accreditation visit was submitted spring 2021.</p>	<p>5/25/21</p>
<p>Evaluation of results and define action item(s) if necessary.</p> <p>ACCE accreditation first year report and third year report is available for review upon request.</p>		
<p>Follow-up on Action Items.</p> <p>Accreditation Visit will be fall 2021. The dates of the visit and schedule will be finalized summer 2021.</p>		

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

<p>2.1 Increase CM program enrollment at MSUM (Short Term Goal). Established in the fall semester 2015 20-day enrollment total and implement 2015/16 recruiting plan.</p>
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<p>2.2 Increase CM program enrollment at NHCC (Short Term Goal). Establish fall semester 2015 20-day enrollment total and implement 2015/16 recruiting plan. (Goal was eliminated Spring 2018 because NHCC CM program option was phased out)</p> <p>2.3 Reach and maintain a stable CM program enrollment corresponding to three full-time CM faculty members. (Long Term Goal)</p>		
Assessment Measures:	Assessment Results	Date Assessed
<ul style="list-style-type: none"> • Increase fall 2016 MSUM CM enrollment by 10 students over previous fall enrollment. 	CM Program Enrollment Fall 15 = 72 CM Program Enrollment Fall 16 = 79 CM Program Enrollment Fall 17 = 87 CM Program Enrollment Fall 18 = 74 CM Program Enrollment Fall 19 = 81 CM Program Enrollment Fall 20 = 86	5/25/21
<ul style="list-style-type: none"> • Increase fall 2016 NHCC/outstate CM enrollment by 10 students over fall 2015 enrollment. 	<i>The NHCC CM program delivery option is going to be phased out starting fall semester 2016 and completed in spring semester 2018. No new students will be accepted into the NHCC CM option starting February 2016. The NHCC student s who were in the program were all scheduled to complete Spring 2018. (Goal was eliminated Spring 2018 because NHCC CM program option was phased out)</i>	02/01/18
<ul style="list-style-type: none"> • Maintain a CM program of 120 to 130 CM majors. 	20-Day Enrollment totals are list below. CM Program Enrollment Fall 15 = 72 CM Program Enrollment Fall 16 = 79 CM Program Enrollment Fall 17 = 87 CM Program Enrollment Fall 18 = 74 CM Program Enrollment Fall 19 = 81 CM Program Enrollment Fall 20 = 86	05/25/21
Evaluation of results and define action item(s) if necessary.		

Goal 2.1: Short Term Enrollment Increase

Fall 2016 CM Program enrollment increased by 7 students over the fall 2015 enrollment. The short term goal of 10 new students was not met. No changes are recommended to the process at this time.

Fall 2017 CM Program enrollment increased by 8 students over the fall 2016 enrollment.

Scott Seltveit was on sabbatical and did a number of recruiting visits during the fall of 2016. The recruiting visits seemed to have a positive impact on new entering students. The short term goal of 10 new was not achieved. No changes are recommended to the process at this time.

Fall 2018 CM program enrollment was down from 87 students to 74 students. This was due to higher than normal attrition. The attrition rate was almost double that of the average. The program lost 8 juniors and seniors which normally doesn't occur. See goal 2.3 response for action item.

Fall 2019 enrollment was up from 74 majors to 81 majors. CM faculty are continually recruiting, but there hasn't been any substantial rise in the number of majors.

In an attempt to increase the number of majors, the CM faculty with approval of the University Administration, will deliver the CM program both online and face-to-face fall semester 2020. The CM faculty submitted a proposal to the administration in early 2019 and they supported the effort.

Fall 2020 enrollment was up from 81 majors to 86. This is the first semester our online program is being offered, along with our face-to-face program. Although we are not increasing enrollments by 10 students per semester, our enrollment is increasing. All CM faculty have efforts toward recruitment by attending our two year transfer schools and local high schools giving presentations about our program.

Goal 2.2: NHCC CM Program Option

Fall 2017: There was a strategic decision by both the MSUM administration and CM faculty to phase out the NHCC CM program delivery option. The CM program will continue to deliver classes to NHCC through spring semester 2018 in order to graduate existing students.

Goal 2.3: Increase program enrollment to 120 majors

Fall 2017: Program enrollment was 79 majors, approximately 40 majors below target enrollment. Continue short term enrollment activities.

Fall 2018: Program enrollment was 87 majors, approximately 30 majors below target enrollment. Continue short term enrollment activities.

The CM faculty should discuss whether the program major enrollment goal needs to be revised down to between 100 and 110 students. There are two reasons the CM program total enrollment goal needs to be discussed. The first reason is because the NHCC CM delivery option is being phased out and new students from that transfer option won't exist in the future. The second reason is that the program enrollments at CM Articulated 2-year programs seem to be declining. Only one 2-year program (CM at NDSCS) indicated an increase in enrollment this academic year. It follows that if the pool of transfer students is declining, then the number of transfer students in the future will likely also decline.

There has been a strategic decision by both the MSUM administration and CM faculty to phase out the NHCC CM program delivery option. Students currently enrolled in the program will individually advise and a graduation "plan of study" completed for each student. The CM program will continue to deliver classes to NHCC through spring semester 2018 in order to graduate existing students. The final seven student will graduate Spring 2018

The CM program major enrollment total needs to be revised down to between 90 and 110 students because the NHCC CM delivery option is being phased out.

Fall 2018: The CM program enrollment decreased from 87 students down to 74 students due to higher than normal attrition. Current recruiting efforts are not increasing student enrollments. See the Follow-up Action Item for suggested alternative.

Fall 2019 enrollment was up to 81 majors from 74 majors in the fall of 2018. CM faculty are continually recruiting, but there hasn't been any substantial rise in the number of majors.

Fall 2020 enrollment increase by 5 students this fall. CM faculty continue to recruit by attending our two year transfer school and local high schools. Our program has social media pages, Facebook and Twitter, to market our program that way as well. The MSUM marketing team is also planning on putting together stories that will be published on MSUM's website and our social media pages.

Follow-up on Action Items.

CM Faculty need to discuss the total CM program enrollment measures associated with Goal 2. Is the goal of a 120 to 130 majors realistic with the current face-to-face only delivery model? Should the enrollment goal be revised down to 100 to 110 students?

Fall 2018: CM Faculty need to discuss the total CM program enrollment measures associated with Goal 2. Is the goal of a 120 to 130 majors realistic with the current face-to-face only delivery model? Should the enrollment goal be revised down to 100 to 110 students?

The CM program enrollment decreased from 87 students down to 74 students due to higher than normal attrition. Current recruiting efforts are not increasing student enrollments. See the Follow-up Action Item for suggested alternative.

Action Item: CM faculty will revise this goal Spring 2018.

Fall 2019 Action Item: The CM faculty feel one way to increase CM program enrollment is to launch an online version of the CM degree in addition to the existing face-to-face version. The proposal comes with some risks, i.e. – more face-to-face students may want to complete the program online and the additional resources will needed to offer both delivery modes. The MSUM administration has given their approval and the CM program faculty plan to launch the CM online degree in the fall of 2020. It may take two or three years to stabilize enrollments in the online program, but there should be an immediate increase in the overall number of students in the program.

Fall 2020: The launch of the CM program online began fall 2020, offering only our 200 and 300 level courses. Fall 2021 the 400 level courses will be offered online. We did see a slight increase in our enrollment numbers and feel this delivery method will be more advantageous than the remote delivery our program tried at NHCC. We will closely monitor our program, both face-to-face and online enrollments.

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
<ul style="list-style-type: none"> CM Advisory Board will review and comment on the CM Program soft money proposed budget. 	<p>Scott Seltveit also presented a budget update of CM Discretionary Accounts. The account balance for CM funds are:</p> <ul style="list-style-type: none"> CM Discretionary Account: \$4,462 	02/01/18

	<ul style="list-style-type: none"> • NAHB Competition Fund: \$2,830 • Construction Management Banquet Fund: \$3,249 • Sigma Lambda Chi: \$2,600 • Mechanical Contractors Assn. Fund: \$2,600. 	
<ul style="list-style-type: none"> • Fall 2016 – Submit Plan to IAB for review and comments. • Fall 2017 and beyond – Report back to IAB success of fundraising plan. • Fall 2018 and beyond – Report back to IAB success of fundraising plan. • Fall 2019 and beyond – Report back to IAB success of fundraising plan. 		05/04/19
<ul style="list-style-type: none"> • Fall 2019 	Soft money account balances are increasing. No major gifts were given. The largest gift was \$5,000 to the Hasslen Scholarship fund by Brent Hasslen.	05/04/19
<ul style="list-style-type: none"> • Fall 2020 	Data requested. Waiting on response.	5/25/21
Evaluation of results and define action item(s) if necessary.		
<p>Follow-up on Action Items.</p> <p>The CM faculty continue to monitor the soft money account balances and report back to the Advisory Board.</p> <p>Fall 2020: No action recommended</p>		

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
<ul style="list-style-type: none"> <i>The IAB, CM faculty, and student groups will complete one joint project/activity each semester.</i> 	<p>CM student group and IAB will publish one joint newsletter in the spring of 2017 – to be completed by end of April 2017. The link to the newsletter posted on the website is</p> <p>https://issuu.com/msumoorhead/docs/cmgt_newsletter_spring_2017</p>	02/01/18
	The Newsletter was published in May 2018 and in May of 2019.	05/04/19
<ul style="list-style-type: none"> <i>Record industry interaction on “Industry Interaction Spreadsheet” and reference course number and industry person.</i> 	Industry interaction log is maintained on an annual basis is available to review anytime a request is made.	05/04/19
	<p>The CM newsletter was published May 2020 and another in May 2021.</p> <p>Spring 2020: https://issuu.com/msumoorhead/docs/cmgtnewsletter2020</p> <p>Spring 2021: https://issuu.com/msumoorhead/docs/cmgt_newsletter_spring_2021-v2_1_fr=sNTlhNTM2MDUwNDc</p> <p>Many CM courses went on site tours and plant tours. Many CM courses had guest lectures. Refer to the industry interaction spreadsheet for reference.</p>	5/25/21
<p>Evaluation of results and define action item(s) if necessary.</p> <p>During Spring 2016 and Fall 2017 semesters most of the classes had IAB participating in some way. The CM student group focused on a CM program newsletter publication in the spring of 2017.</p>		

During Spring 2018 and Fall 2018 semesters most of the classes had IAB participating in some way. The CM student group focused on a CM program newsletter publication in the spring of 2018.

During Spring 2019 and Fall 2019 IAB meeting, board members were challenged to participate or contribute in some way. Each board member identified what their contribution or activity would be for the upcoming year and then that individual included a progress report at each meeting to share activities with other board members.

Spring 2020 and Fall 2020: Many IAB members participated in our curriculum one way or another. We had a “Demo Day” with General Equipment, allowing students to demo heavy equipment in a demo yard. Students went on site tours of Teracon Precast, True North Steel, Aggregate Industries, many project site tours, and numerous guest speakers. We have very involved local industry members as well.

Follow-up on Action Items:

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. All of the mean scores for the twenty areas were above 4 on a scale of 1-5 with 5 being the highest.

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

A “comments” section for the internship evaluation will be added for the next academic year to provide valuable feedback. We will continue to compare the Internship, Capstone, and AC summary evaluations. Evaluating these reports will provide us with indicators that will be reflected in curriculum and course content changes.

- **Graduate 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.

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 2018 or fall 2018.

An alumni survey was conducted spring 2021 to all email contacts we have of alumni who graduated within the past 5 years. We received 15 responses.

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

No Alumni Survey was conducted spring 2018 or fall 2018.

An alumni survey was conducted spring 2021. The evaluated how well they felt they were prepared by MSUM's Construction Management program in the 20 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.

SLO 1 = 4.4

SLO 2 = 4.36

SLO 3 = 4.07

SLO 4 = 4.33

SLO 5 = 4.27

SLO 6 = 4.6

SLO 7 = 4.67

SLO 8 = 4.67

SLO 9 = 4.6

SLO 10 = 4.6

SLO 11 = 4

SLO 12 = 4.47

SLO 13 = 4.4

SLO 14 = 4

SLO 15 = 4.47

SLO 16 = 4.33

SLO 17 = 4.13

SLO 18 = 4.13

SLO 19 = 4.27

SLO 20 = 3.87

All SLO's were rated at a 4 and above, with the exception for SLO 20 – Understand the basic principles of mechanical, electrical, and piping systems which was rated at 3.87. We will review our CM254 curriculum to see if there are modifications that should be made to that course.

CM Employer Survey

No CM employer Survey was conducted spring 2018 or fall 2018.

Spring 2021: An employer survey was sent spring 2021.

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

No CM employer Survey was conducted spring 2017 or fall 2018.

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.

ACCE SLO ASSESSMENT

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

DA: Schedule Delay Letter

Analysis: The benchmark was met. 12 of 15 (80%) students scored greater than 70%. No action recommended at this time.

IA: Senior Exit Interview

Analysis: The benchmark was met. Students evaluated their writing skills as an aggregate of 4.2 based on a Likert Scale of 1 to 5.

SLO #2 – Oral Presentations

DA: CM469 Internship Presentation

Analysis: The presentation criteria was the same for this academic year, however, this was the first year this class was taught online. There was a rubric to follow for the students and a rubric for the faculty to grade the presentation. Students were required to present to another class about their internship experience. Next academic year, the graded rubrics will be required to be returned to earn credit. This year it was only required to have a signed document stating that they presented. No action recommend at this time.

IA: Senior Exit Survey

Analysis: Average Likert Scale was 4.60. The benchmark was met. No recommended action at this time. Students evaluated their writing skills as an aggregate of 4.60 based on a Likert Scale of 1 to 5.

SLO #3 – Create a Construction Safety Plan

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

Analysis: 18 of 20 students (90%) earned 75% or greater on their project safety plan. Benchmark was met. No recommended action at this time.

IA: Senior Exit Survey

Analysis: Average Likert Scale was 4.50. Benchmark was met. No action items at this time.

SLO #4 – Create Construction Project Cost Estimate

DA: CM335 Semester Project – Construction Estimate

Analysis: 66.7% of students earned 70% or greater. The benchmark was not met. Many of the students who did not perform well were missing parts of the assignment. This is a semester project that lasts 10 weeks. Students perform estimates by CSI Division that gets them to a total estimate. This was a different year, continuing with COVID-19 issues such as quarantine. Faculty to continue to monitor this SLO.

IA: Senior Exit Survey

Analysis: Over 94% of students believe they can create a construction estimate. Students have three different projects in estimating. Estimating 1 they perform all of the quantity takeoffs for an entire small commercial project (approx. \$3 million). In Estimating 2 students price out two different projects; one we go through division by division and then another we simulate a bid day experience. In Capstone students estimate a much larger project (approx. \$30-40 million), this one is done as a group. By the time our students graduate, they have completed numerous estimates which is likely why they are comfortable with estimating.

SLO #5 – Create Construction Project Schedules

DA: CM340 Semester Project – Construction Schedule

Analysis: 72% of the individuals scored at the 70% or higher. The class average was 79%. The benchmark was met. No action recommended.

IA: Senior Exit Survey

Analysis: Average Likert Scale was 3.9. Benchmark was not met. Students in this cohort took scheduling & planning Spring 2020. Due to the COVID-19 pandemic class was shifted to online delivery for the final 6 weeks. We will continue to monitor results to see if this effected our scores in the coming year.

SLO #6 – Analyze Professional Decisions Based on Ethical Principles

DA: AC Exam

Analysis: 21/22 or 95% scored at the minimum passing score or higher.

Benchmark was met and exceeded. No further action at this time.

IA: Senior Exit Survey

Analysis: Average Likert Scale was 4.4. Benchmark was met. No action recommended at this time.

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

DA: AC Exam

Analysis: 14/22 or 63% scored at the minimum passing score or higher. Our students did not meet the threshold, however, our students exceeded the national average by 6%. CM370 – Documents and Specifications was redeveloped in Fall 2020 to address this SLO. We will continue to monitor this SLO.

IA: Senior Exit Survey

Analysis: Average Likert Scale was 4.5. Benchmark is met. No further action required.

SLO #8 – Analyze Methods, Materials, and Equipment used to Construct Projects

DA: AC Exam

Analysis: MSUM results exceeded the national average by 5%. No action recommended at this time.

IA: Senior Exit Survey

Analysis: Average Likert Scale was 4.3. Benchmark was met. No further action required.

SLO#9 – Multi-Disciplinary Team

DA: Conflict Resolution Activity

Analysis: 19 of 27 (70.4%) students received 70% or higher. This semester's assessment is not a good indicator for student performance. COVID-19 pandemic shut down our campus in March 2020, making students complete the remainder of the semester online. With the delivery mode shift, students did not get the in-class experience of this assessment measure. Numerous students (5 total) didn't do the assignment at all. Next year CM380 will no longer be taught and this assignment will be in CM460 – Project Administration. This is an effective activity and assignment, teaching students negotiation skills, the importance of documentation, and how to work effectively as a multi-disciplinary team. Continue to monitor SLO#9.

IA: Senior Exit Survey

Analysis: Benchmark was met. No action items at this time. Students evaluated their multi-disciplinary team skills as an aggregate of 4.5 based on a Likert Scale of 1 to 5.

SLO#10 - Apply Electronic-Based Technology to Manage the Construction Process

DA: CM 216 – Proficiency Test for Revit Software - CM 230 – Proficiency Test for On-Center Software - CM 340 – Proficiency Test for P-6 Scheduling

Analysis:

19/20 (95%) of students exceeded 70% on their CM216 Revit Software proficiency test.

23/27 (85%) of students exceeded 70% on their CM335 On-Center software proficiency test.

13/15 (86%) of students exceeded 70% on their CM 340 Microsoft Project Scheduling software proficiency test.

For next academic year, the Scheduling faculty will be administering the proficiency exam to the online section of CM340 – Scheduling as well.

IA: Senior Exit Interview

Analysis: Benchmark was met. No action items at this time. Students evaluated their electronic – based technology to manage the construction process skills as an aggregate of 4.4 based on a Likert Scale of 1 to 5.

SLO#11 - Apply basic surveying techniques for construction layout and control

DA: AC Exam

Analysis: Both benchmarks were met for Exam #1 and the Final Exam for both the combined on-campus and asynchronous online students. Both benchmarks for on-campus students only students were met for Exam #1. The Final Exam benchmark was met for online asynchronous students only while the Exam #1 benchmark for online asynchronous students did not meet at 67%. This equates to only a single student of exceeding 70% on Exam #1. A significant amount of video lectures and sample problems were developed and added to the course. This was the first semester that this course was offered online asynchronous. No action recommended at this time.

IA: Senior Exit Interview

Analysis: Benchmark was met. No action items at this time. Students evaluated their basic survey techniques skills as an aggregate of 4.1 based on a Likert Scale of 1 to 5.

SLO#12 - Understand different delivery methods

DA: AC Exam

Analysis: 18/22 or 81% scored at the minimum passing score or higher. Threshold was met. No action taken at this time.

IA: Senior Exit Interview

Analysis: Benchmark was met. No action items at this time. Students evaluated their risk management skills as an aggregate of 4.5 based on a Likert Scale of 1 to 5.

SLO#13 - Understand construction risk management

DA: AC Exam

Analysis: 16/22 students or 72% scored at the minimum passing score or higher. We scored 8% higher than the national average. Threshold was met, not action taken at this time.

IA: Senior Exit Interview

Analysis: Benchmark was met. No action items at this time. Students evaluated their risk management skills as an aggregate of 4.5 based on a Likert Scale of 1 to 5.

SLO#14 - Understand Construction Accounting and Cost Control

DA: AC Exam

Analysis: MSUM students exceeded the national average by 3%. We will closely monitor this SLO in the coming years.

IA: Senior Exit Interview

Analysis: Benchmark was met. No action items at this time. Students evaluated their construction accounting and cost control as an aggregate of 4.2 based on a Likert Scale of 1 to 5. We will monitor closely since the average Likert Scale has declined the past 2 years. We are still meeting the benchmark. The decline may be due to COVID-19 and/or initial roll out of online asynchronous section this year.

SLO#15 - Understand construction quality assurance and control

DA: AC Exam

Analysis: The MSUM test results exceeded the national average by 7% (76% to 67%). This course was redeveloped Fall 2020. We will continue to monitor this SLO.

IA: Senior Exit Interview

Analysis: Benchmark was met. No action items at this time. Students evaluated their QA&QC skills as an aggregate of 4.4 based on a Likert Scale of 1 to 5.

SLO#16 - Understand construction project control processes

DA: AC Exam

Analysis: MSUM exceeded national average by 8% (72% MSUM to 64% national average). No action recommended at this time.

IA: Senior Exit Interview

Analysis: Benchmark was met. No action items at this time. Students evaluated their construction project control skills an aggregate of 4.5 based on a Likert Scale of 1 to 5.

SLO#17 - Understand the legal implications of contracts

DA: AC Exam

Analysis: Our students exceeded the national average by 9%. All of our students now take CM470 – Construction Law along with ACCT 280 – Legal Environment of Business. Adding CM470 to the curriculum has been beneficial to our students about construction law.

IA: Senior Exit Interview

Analysis: Benchmark was met. No action items at this time. Students evaluated their legal implication skills an aggregate of 4.4 based on a Likert Scale of 1 to 5.

SLO#18 - Understand the Basic Principles of Sustainable Construction

DA: AC Exam

Analysis: We did not exceed the national average; the threshold was not met. (MSUM 56% National Average 56%). We will need to evaluate our CM327 – Sustainability in the Built Environment course. We also changed our Capstone course to have students participate in The Pursuit competition, in which they do not require any LEED certification or green construction concepts on the project which we have done in previous years in the Capstone course. We will monitor this SLO closely.

IA: Senior Exit Interview

Analysis: Benchmark was met. No action items at this time. Students evaluated their principles of sustainable construction as an aggregate of 4.3 based on a Likert Scale of 1 to 5.

SLO#19 – Understand the basic principles of structural behavior.

DA: AC Exam

Analysis: MSUM AC exam scores exceeded the national average (68% to 66%) in category 19. No action recommended at this time.

IA: Senior Exit Interview

Analysis: Benchmark was met. No action items at this time. Students evaluated their structural behavior skills as an aggregate of 4.2 based on a Likert Scale of 1 to 5.

SLO #20 – Understand the basic principles of mechanical, electrical and plumbing systems

DA: AC Exam

Analysis: MSUM exceeded national average by 6% (73% MSUM to 67% national average). No action recommended at this time.

IA: Senior Exit Interview

Analysis: Benchmark was met. No action items at this time. Students evaluated their MEP skills as an aggregate of 4.1 based on a Likert Scale of 1 to 5.

CONCLUSION OF CM ASSESSMENT PLAN

ACCE has changed to an Outcome Based Standard that will be fully implemented fall 2016. Our program was a pilot program for the new standards. We assessed the new outcome based standards. The current Assessment Plan, Assessment Implementation Plan and Strategic Plan were revised to meet the new standards. Assessment instruments were revised. The program is beginning to collect data based on the ACCE 20 Student Learning Outcomes. The assessment process will be monitored and revisions will be made when results indicate or goals in the Strategic Plan have been reached. As a result of the Accreditation Visit, we made minor adjustments to our Quality Assessment Process.

Spring 2018/Fall 2018 is the third year of the new assessment process. The assessment report is based on the current assessment process as written. CLO's and SLO's for new or revised courses need to be reviewed and evaluated during spring 2019/Fall 2019. When completing the Assessment Report Spring 2019 it became apparent that some goals have been met or need to be revised. During spring 2019/ fall 2019, the CM faculty will need to revise the Assessment Plan Goals due to curriculum changes, elimination of adjuncts and the upcoming retirement in the CM faculty. The entire process should be reviewed to include input from the new faculty and the advisory Board.

Spring 2020 and Fall 2020:

Spring 2019 we had the retirement of Dr. Norma Andersen. Mr. John Green filled her position. Spring 2020 we had the retirement of Mr. Scott Seltveit, who led our department as the department chair for the past 9 years. Mr. Jay Cournia replaced his position with Ms. Rachel Axness fulfilling the chair responsibilities. While completing the assessment report for spring 2021, it appears that the transition of new faculty has gone smoothly. Our students still score above the national average in the AC exam, our Capstone group that proceeded to a regional level placed second overall, and our senior exit survey, internship evaluations, and alumni survey provided valuable and positive feedback on our program. With the significant change in faculty within our program, we will evaluate all of our CLO's in the upcoming year.

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.