

**NORTH CAROLINA AGRICULTURAL AND TECHNICAL
STATE UNIVERSITY**

**Program Assessment and Improvement Report
Department of Built Environment
Bachelor of Science in Construction Management**

There are thirteen full-time tenure and non-tenure faculty that deliver 3 programs (and Certificate in OSH) in the Built Environment Department. Specifically, there are six (6) full-time tenure-track faculty and one (1) non-tenure teaching faculty (Core) that deliver the **BS in Construction Management program** along with the assistance of one (1) adjunct faculty each semester (Non-Core). Located in the College of Science and Technology, the Construction Management (CM) program follows university's guidelines for assessing educational programs.

The overall mission of Construction Management program at North Carolina Agricultural and Technical State University is to prepare men and women in the scientific, managerial, and supervisory areas required in Construction Management. The primary focus of the BS in CM is to prepare students academically to secure construction-related positions in the field. The program will prepare students to function as professionals and be able to adapt to the ever-changing world of construction management.

Student Learning Outcomes

1. **Communication Skills.** Students completing the BS degree program in Construction Management will exhibit effective communication skills (written, oral, graphic and interpersonal) appropriate for professionals in this field of study at the bachelor's level.
2. **Critical Thinking Skills.** Students completing the BS degree program in Construction Management will effectively use quantitative and/or qualitative analytical problem-solving skills appropriate for professionals in this field of study at the bachelor's level.
3. **Disciplinary Expertise.** Students completing the BS degree program in Construction Management will demonstrate a level of discipline-specific expertise (knowledge, skills, and professionalism) appropriate for professionals in this field of study at the bachelor's level.
4. **Research/Creative Engagement.** Students completing the BS degree program in Construction Management will demonstrate ability to engage productively in the review and conduct of disciplinary research and creative professional activity appropriate for professionals in this field of study at the bachelor's level.

Assessment Measures

Prior to 2018-2019 academic year, multiple courses were used to assess the outcome. Starting in the 2018-2019 academic year, all SLOs are being measured using the senior capstone course, CM 401. The target for the achievement of proficiency is that 80% of the students earn 80% credit on the key assessment for each SLO.

Table 1: Communication Skills. Students completing the BS degree program in Construction Management will exhibit effective communication skills (written, oral, graphic and interpersonal) appropriate for professionals in this field of study at the bachelor's level.

Method of Assessment	Year	Results of Assessment	Use of Assessment Results for Improvement
<p>2017-2018: Evaluated using ABET SLO G, in CM 401 oral presentation. 2018-2019: Evaluated using SACS SLO in CM 401. Graduating students' writing skills and oral presentation were used to measure the outcome in CM 401 for 2018-2019. Fall 2019 – Evaluated using SACS SLO in CM 401.</p> <p>For spring 2020, SACS SLO was used in CM 401.</p> <p>2020-2021, SACS SLO was used in CM 401.</p>	2017-2018	89% met the target of 80% (N= 9)	Although the set target was reached and /or surpassed, faculty continued to emphasize the importance of oral and written communication.
	2018-2019	100% (N=7) met the target with disaggregated average of 90.2%. Student average in written communication was 82%.	To continue maintaining the target, more structured writing assignments were given and oral presentation techniques were emphasized.
	Fall 2019	100% (N=2) of students met the target with a class average of 87.5%.	Though the target was met, faculty continued to lay strong emphasis on effective written and oral communication. current rubric will also be evaluated by the faculty and revision made, if necessary
	Spring 2020	100% (N=7) of students met the target with an aggregated class average of 89%	No significant changes are planned.
	2020-2021	<p>Fall 2020: 3 of 3 students scored above the minimum performance requirement. The average class score was 92%.</p> <p>Spring 2021: 7 of 7 students scored above the performance requirement, with an average class score of 91%.</p>	The instructor will continue to place emphasis on effective communication skills.

Table 2: Critical Thinking Skills. Students completing the BS degree program in Construction Management will effectively use quantitative and/or qualitative analytical problem-solving skills appropriate for professionals in this field of study at the bachelor's level.

Method of Assessment	Year	Results of Assessment	Use of Assessment Results for Improvement
<p>2017-2018: Evaluated using ABET SLO B, in CM 394. 2018-2019: Evaluated using SACS SLO in CM 401. Graduating Seniors were required to prepare a construction schedule and compute the early start and late finish for the project as well as the critical path of the project.</p> <p>For spring 2020, SACS SLO was used in CM 401.</p> <p>2020-2021, SACS SLO was used in CM 401.</p>	2017-2018	100% of class met the target (N=16).	For this academic year, the target was met. Faculty also prepared to transition to new requirements for Senior Capstone course
	2018-2019	66.2% not met the target (N=7).	More emphasis will be placed on solving complex problems relative to CPM scheduling and time computations to improve this target.
	Fall 2019	100% (N=2) met the target with a class average of 90%.	More problems will be solved so that students can understand and learn how to compute all necessary information. This is the SLO needing the most improvement in the program, although improved from previous year.
	Spring 2020	14% (N=7) of students met the target with an aggregated class average of 12%	This result is an anomaly, considering the fact that <i>only one student turned in the assignment. The COVID19 pandemic could be a contributing factor</i> as lots of student could not meet the assignment submission deadline possibly due to COVID19-related academic stress. We expect a better result next Fall. <i>The faculty will provide more lecture and guidance as well.</i>
2020-2021	<p>Fall 2020: 0 of 3 students met the performance target. Only one student submitted the assignment.</p> <p>Spring 2021: 7 of 7 students scored above the performance requirement, with an average class score of 88.6%.</p>	Fall 2020 was a challenging year for students due to COVID-19. An improvement was seen in spring 2021 as the pandemic began to wind down. The instructor will continue to reinforce the class with more examples in class.	

Table 3: Disciplinary Expertise. Students completing the BS degree program in Construction Management will demonstrate a level of discipline-specific expertise (knowledge, skills, and professionalism) appropriate for professionals in this field of study at the bachelor's level.

Method of Assessment	Year	Results of Assessment	Use of Assessment Results for Improvement
<p>2017-2018: Evaluated using ABET SLO K in CM 216. For 2018-2019, the outcome was achieved through a senior-level course, CM 401 – Senior Capstone. Graduating students will be able to apply the principles and practices of applied construction project management in the field.</p> <p>For spring 2020, SACS SLO was used in CM 401</p> <p>2020-2021, SACS SLO was used in CM 401.</p>	2017-2018	89% of class met the target (N=18).	The faculty in charge will continue to improve course delivery with more challenging problems to allow students to remain competitive in the field.
	2018-2019	100% of class (N=7) met the target of 80% with a disaggregated class average of 89.6%.	Despite this achievement, faculty will continue to improve the course contents and delivery methods and techniques to ensure that students develop the mastery of the discipline.
	Fall 2019	100% (N=2) met the target	
	Spring 2020	57% (N=7) of students met the target with an aggregated class average of 69%	The inability to meet the target <i>could be due to COVID19-related stress</i> on the students. The capstone assignments appeared to be very challenging to student during this time. Faculty expects better performance next Fall. <i>The faculty will provide more lecture and guidance as well.</i>
	2020-2021	<p>Fall 2020: 3 of 3 students scored above the minimum performance requirement. The average class score was 82%.</p> <p>Spring 2021*: 7 of 7 students scored above the performance requirement, with an average class score of 86%.</p>	The students seem to be performing well in the disciplinary measure areas. Instructors who teach in these areas will continue to improve on their teaching innovations.

Table 4: Research/Creative Engagement. Students completing the BS degree program in Construction Management will demonstrate ability to engage productively in the review and conduct of disciplinary research and creative professional activity appropriate for professionals in this field of study at the bachelor's level.

Method of Assessment	Year	Results of Assessment	Use of Assessment Results for Improvement
<p>2017-2018: Evaluated using ABET SLO C in CM 450. For 2018-2019, the outcome was achieved through a senior-level course, CM 401 – Senior Capstone. Graduating students are required to research a given construction-related topic and write a terminal paper following the APA writing format.</p> <p>For spring 2020, SACS SLO was used in CM 401.</p> <p>2020-2021, SACS SLO was used in CM 401.</p>	2017-2018	100% met the target (N=22).	No special action initiated or significant changes made.
	2018-2019	100% (N=7) met the target with a disaggregated class average of 82.6.	The students disaggregated average was a little over the set target, suggesting that some students still had trouble in researching a given topic and then developing a well-written report, following APA style. More emphasis will be devoted to writing mechanics and structure.
	Fall 2019	100% (N=2) met the target with a class average of 95.5%.	Although target met, faculty will continue to encourage students to organize thoughts and in using APA writing style. Students will also be taught how to organize references at the end of their research papers.
	Spring 2020	86% (N=7) of students met the target with an aggregated class average of 92%	No significant changes are planned.
	2020-2021	<p>Fall 2020: 3 of 3 students scored above the minimum performance requirement, with an average class score of 87.7%.</p> <p>Spring 2021: 6 of 6 students scored above the minimum performance requirement, with an average class score of 90.5%.</p>	Students seem to possess basic research paper writing skills. CM faculty will continue to give term paper writing assignments in their classes to enhance students' writing skills.

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Summary

Recently the CM program has made changes to the curriculum to update prerequisites and the better sequencing of courses. In addition, the new curriculum will allow for two electives to create greater flexibility in the future. The new curriculum will be approved in the summer. There are plans in the Fall 2020 to reevaluate and update the minor (24 credit hrs.) also.

For this program outcome, success is also determined by the continued successful accreditation and/or re-accreditation of the CM program by the three accrediting agencies. The CM program was successfully re-accredited in 2016 by ATMAE for six years. In 2019, the CM program was also granted a conditional accreditation by ABET through to Fall 2021. CM was also accredited by ACCE with outstanding scores in Fall 2019 for 6 full years. All CM graduates were able to get employment offers with 90 days of graduation and this is also a testament to the program's viability.

SACs Coordinator-Musibau Shofuluwe

Date:

Department Chair-Alesia Ferguson

Date