

Summary Report of Construction Program Objectives

Program Objectives Results, Analysis and Actions Taken:

The four Construction program objectives describe the career and professional accomplishments that the program is preparing graduates to achieve after graduation, and they are as follows:

- Objective I - Leadership in Construction: Graduates understand the need for teamwork, communication skills, integrity, good citizenship, and service. They have the needed knowledge to become leaders in the construction industry.
- Objective II -Professional Achievement: Graduates have the needed understanding of ethical responsibilities, certification, the necessity for continuing education, and contemporary issues required for placement and career advancement.
- Objective III – Globalization: Offer programs to ensure that graduates have the needed awareness of global construction issues and cultures to help them thrive in an emerging world market.
- Objective IV - Industry Partnerships: Partner with the construction profession to offer an innovative program that promotes cultural diversity and responds to the needs of the profession and society in the areas of sustainability, infrastructure, and emerging technology.

Indirect measures were used to assess the Construction program objectives through the use of surveys disseminated to our Advisory Board, Employers and Alumni, as these constituents would have knowledge of the skills of our alums, at least a few years after graduation. The survey questions are mapped to the objectives. The individual responses are entered and then aggregated for all respondents by constituency group and overall. If the average score for a program objective falls below the predetermined threshold (average score < 4.0/5.0), construction program improvements and corrective actions are discussed by the faculty with input from the advisory board.

The table below provides a comparison of the indirect assessment of each of the four construction program objectives in 2023 as compared to the scores achieved in our last accreditation cycle in 2016.

Objective	2016 Average Indirect Assessment Score	2023 Average Indirect Assessment Score
I. Leadership in Construction	4.0	4.1
II. Professional Achievement	4.1	4.0
III. Globalization	3.6	3.7
IV. Industry Partnership	3.9	4.0

For three of the four objectives, the assessment scores equaled or exceeded the threshold of 4.0. The program objective on Globalization fell below the threshold. To respond to this deficiency, a study abroad course is being taught in London in January 2024. A “Convergence” course is being offered on the topic of Sustainability, co-taught by two faculty, one from the College of Business and one from the College of Engineering (Dr. Schattler, Chair of CEC).

Our industry partners provided the following input related to the Construction program mission and objectives:

Mission

- Emphasize collaboration, people skills, and being holistic with the community to help it grow; students need to have community awareness.
- Promote diversity and actively promote the trades.
- The current mission statement is all encompassing.
- The mission statement is still relevant.

Construction Program Objectives

- Technology and Innovation, Productivity, and People Skills are important and should be specifically mentioned in the objectives. They will also help with recruiting.
- Consider focusing on production and where materials are being produced.
- Incorporate sustainability and renewable projects.
- Incorporate instilling business acumen.

The CEC department will continue to discuss the results of our objective assessment with our constituents to develop further strategies for improvement.

Recently, the CEC Department made modifications programs which are effective in the Fall 2023 semester including modifications to our Construction Major, the addition of a Construction Minor and the addition of a 4+1 program leading to graduate degree. Details of these program changes are highlighted below.

Construction Major Modifications

A summary of recent Construction curricular changes effective in the Fall 2023 semester as a result of our continuous improvement process for accreditation included:

- CON 206 Surveying – increase from 2 hrs to 3 hrs & from CE to CON designation
- CON 372 Construction Methods Improvement – Updated & expanded Productivity content
- CON 388 Contract Administration – 3 hrs & Integrates Contracts & Claims/Change Orders
- CON 492 Construction Project Controls – new course to cover construction accounting and cost control, risk management & project control process
- CON 470 & 471 reorganized from CON 487 & 498
 - CON 470 Design of Steel & Wood Structures – emphasis on formwork & temporary structures
 - CON 471 Concrete & Masonry Structures – covers masonry materials and construction
- CON 493 Senior Project Planning – increased from 1 hr to 2 hrs

Construction Minor

A construction minor was created for Civil Engineering majors and for non-majors. A summary of the construction minor requirements are as follows:

Civil Engineering Majors - 17 hrs.

- CON 132: Construction Graphics - 2 hrs. (Required in CE Major)
- CON 262: Mechanical and Electrical Systems - 3 hrs.
- CON 270: Construction Materials and Methods - 3 hrs.
- CON 326 Construction Estimating - 3 hrs. (Required in CE Major)
- CON 388: Contract Administration - 3 hrs. (Technical Elective in CE Major)
- CON 392: Construction Scheduling - 3 hrs. (Technical Elective in CE Major)

Other majors - 15 hrs.

- CON 100: Introduction to Construction - 1 hr.
- CON 132: Construction Graphics - 2 hrs.
- CON 262: Mechanical and Electrical Systems - 3 hrs.
- CON 270: Construction Materials and Methods - 3 hrs.
- CON 314: Principles of Construction Project Management - 3 hrs.
- CON 388: Contract Administration - 3 hrs.

Completion Requirements: Students must achieve a minimum GPA of 2.00 in all CON courses.

4+1 BSC / MSCE

Effective in Fall 2023, the CEC Department launched a 4+1 program in Construction - A Bachelor of Science in Construction (BSC), leading to a Master's degree (MSCE) Master of Science in Civil Engineering (with Construction Management emphasis). Both degrees may be earned in a five-year period by dual counting 9 hours in the undergraduate and graduate programs.

Students admitted to the graduate program pursuing an MSCE degree as an undergraduate as stipulated above will need to complete 30 semester hours of graduate course work with 9 hours dual-counted in

the BSC program. A minimum of 18 hours will be in CON designated courses; the remaining hours may include courses from other related departments, such as the College of Business. Students are required to pass a comprehensive examination during the last semester of their graduate program.

Undergraduates will apply for graduation for their bachelor's degree in the semester that they will achieve 126 credit hours and complete all undergraduate degree requirements. Following graduation with the BSC degree, students are considered graduate students. Students who are admitted to the 4 + 1 BSC/MSCE program will have up to nine graduate hours taken during the final year of the bachelor's degree dual counted for the BSC and MSCE Degrees. In the student's senior year of their undergraduate program, they will take:

- 2 graduate courses, 6 hours of 500-level Construction courses, and
- 1 graduate course, 3 hours of 500-level courses in Business Management.

In the remaining two semesters in the MSCE program, the graduate student will take:

- 12 hours of graduate courses in the first semester of Year 5
- 9 hours of graduate courses in the second semester of Year 5, plus the comprehensive exam

Summary

With all these new curricular modifications, minor additions, and 4+1 program additions, the CEC department offers a variety of educational options for students in construction. We will continue to strive for excellence while making continuous improvements to our programs to adapt to the changing needs of society and the profession.