

CM Program Assessment Results and Implementation 2013-2014

The Construction Management program has developed an academic quality assurance plan. The objective of the plan is to continuously examine our CM program for the purpose of improving the services we provide, improving student learning and achieving/maintaining excellence in construction education, research and service as required by the mission statements of both the University of Cincinnati and the Construction Management Program.

We start the quality assurance process by defining/reviewing the CM program mission and educational objectives. Based on the mission and educational objectives, we identify expected student learning outcomes. We then define assessment method for each learning outcome. We collect data (**assessment input**) from the various assessment methods to assess whether we are achieving our learning outcomes. We analyze the data and provide feedback to our stakeholders. Based on the analysis of data, we implement changes (**assessment output**) where needed, we monitor changes, compare results and use information in the following planning cycle.

We obtain our **assessment input** from our various stakeholders (students, employers, faculty members and alumni) as described in this table:

Stakeholder	Assessment Method
Students	Course Evaluations Co-op Student Survey CM Capstone Project
Employers	Co-op Employer Survey Industrial Advisory Board Feedback CM Graduate Employment Information Survey CM Capstone Project Students Competitions
Faculty members	Faculty/ Staff Feedback through faculty meetings Curriculum Mapping CM Capstone Project
Alumni	Alumni Survey

Assessment output (outcomes) consists of conclusions and recommended changes that result from the data collected. Implementing the outputs may be as simple as the instructor implementing it in the next class. We do our major review of curriculum, program mission, educational objectives and student learning outcomes every three years. By repeating the assessment cycle every 3 years, we ensure the continuous improvement of our program.

The CM program Chair together with the CM Faculty analyze the results obtained from our various assessment methods (as listed in previous table) and determine what changes need to be executed to improve the program. These changes could be to the content of the curriculum, staffing, facilities, and even to the mission statement, educational objectives and program learning outcomes. In some cases, the changes are easy to implement, while in other instances the proposed changes are to be implemented over a period of time or through a series of steps.

CM Program Strengths

The data from all assessment instruments indicate that our program strengths are:

1. Interdisciplinary learning: The CM program is housed in the Department of Civil/Architectural Engineering and Construction management. The program offers 3 undergraduate degrees all serving the construction industry. Many of the courses are shared among CM, AE and CVE students, which enables assignment of multidisciplinary team projects and make CM students better understand the “language” of the engineers and designers. This makes our students better prepared for the “real world.”
2. Co-op: Our cooperative education program, founded in 1906 as the first of its kind, places engineering students in paid internships around the globe where employers provide valuable practical experience and important industry relationships.
3. Core required courses supplemented by advanced dual level electives to allow students to focus on specific industry sectors.
4. Active students’ groups that have been successful in winning local/regional and national student competitions.

Summary of our Most Recent Assessment Cycle 2013-2014

The most recent assessment cycle was completed during the academic year 2013-2014. The assessment methods described previously were used. The following sections summarize the results.

a. Student evaluation

Student evaluations of teaching effectiveness in general are high. There is a strong acknowledgement by students on the value and importance of our senior capstone courses. There are a few poor evaluations for some professors in some courses. The Program Chair is working with these professors to improve course content, delivery and effectiveness.

b. Advisory Board/ Industry Feedback

Through its committee structure and regular meetings, the CM advisory board helps in reviewing the curriculum to ensure it provides our graduates with the skills and knowledge they need to be successful in the construction Industry. In Fall 2013, the CM Faculty and advisory board have surveyed the local construction industry on the most important skills required for the success of Construction Managers. Results of the survey have shown that we need to have less “design-oriented” courses and more “construction-oriented” courses. The CM faculty worked with the Advisory board to develop a new curriculum that will be implemented starting in Fall 2015. The new curriculum incorporates several new construction oriented courses including:

1. Construction Methods
2. Construction Productivity and Field Supervision
3. Construction Quality and Safety Management
4. MEP systems for constructors
5. Lean Construction (Elective)

c. Student Competitions

Our CM students are heavily involved in regional and national CM student competitions. They compete every year in several categories of the Associated Schools of Construction (ASC) Student Competitions (commercial, heavy/civil, preconstruction, etc.). They also compete in the annual Ohio Contractors Association (OCA) Estimating Competition and in the annual Associated Builders and Contractors (ABC)'s Student Construction Management Competition. In 2014, UC founded a regional competition for freshmen and sophomore students, dubbed the “New Builder’s Competition,” which consists of simpler projects in the areas of commercial construction, heavy/civil, and interior fit-ups. Although a large percentage of students participate in these competitions, we do not consider student competitions as a complete assessment method since not all students participate in them. We use the competition to benchmark our programs against other CM programs. The following is a partial list of the awards they have received during the last 3 years:

2013-2014 Academic Year:

- ABC National Competition
 - 1st Place Overall National Champions
 - 3rd Place Safety
 - 3rd Place Estimating
- OCA Competition
 - 2nd Place Overall
- ASC Competition – Region 3
 - 1st Place Heavy Civil Division
- New Builder’s Competition
 - 1st Place Heavy Civil

1st Place Interior Fit-up
2nd & 3rd Place Commercial Construction

2012-2013 Academic Year:

ABC National Competition
1st Place Estimating
OCA Competition
1st Place Overall
ASC Competition – Region 3
1st Place Design Build Division
2nd Place Commercial Construction Division
2nd Place Preconstruction Division

2011-2012 Academic Year:

ABC National Competition
1st Place Overall National Champions
1st Place Project Management & Scheduling
1st Place Estimating
2nd Place Safety
ASC Competition – Region 3
1st Place Heavy Civil Division
2nd Place Commercial Construction Division

d. Recruitment

In the 2013-2014 academic year the CM faculty and industry advisors worked together to develop a plan to increase recruitment efforts for the CM program in the interest of improving both the quality and quantity of students in the program, which had experienced a drop in enrollment following structural changes within the University and a recession in the construction industry. The plan focuses recruitment efforts on three fronts: 1) Incoming freshmen, 2) transfers from within UC, and 3) Transfers from outside programs.

Incoming Freshmen

We have worked with the college recruiting office to ensure that students interested in related majors (such as Civil Engineering or Architecture) are also offered information about the CM program. Once a student applies and is offered admission, we also ensure that they are encouraged to accept the offer by numerous points of contact, including letters and phone calls from current students, key members of industry, and faculty. These efforts were instituted in the 2013-2014 academic year and have resulted in an almost 50% increase in freshmen enrollment.

Internal Transfers

We have worked with CEAS students with undecided majors to ensure that they are aware of the CM program. Faculty, advisors, industry, and current students visit these undecided majors

in one of their freshmen courses to encourage them to consider careers in CM. As a result, over 20 new students have elected to join the CM program. Most of these transfers enter the program as Sophomores.

External Transfers

Faculty, advisors, industry, and current students have made visits to local 2-year construction programs at Cincinnati State and Sinclair Community College. The committee is also working to streamline and clarify the transfer process.

The following chart summarizes enrollment goals for the CM program as a result of these efforts through the academic year 2018-2019, which represents our steady-state enrollment goal:

	AY 2013/14	AY 2014/15	AY 2015/16	AY 2016/17	AY 2017/18	AY 2018/19
Freshmen	23	30	30	30	30	30
Sophomore	34	43	50	50	50	50
Pre-Junior	33	39	53	60	60	60
Junior	46	33	39	53	60	60
Senior	30	46	33	39	53	60
Total	166	191	205	232	253	260