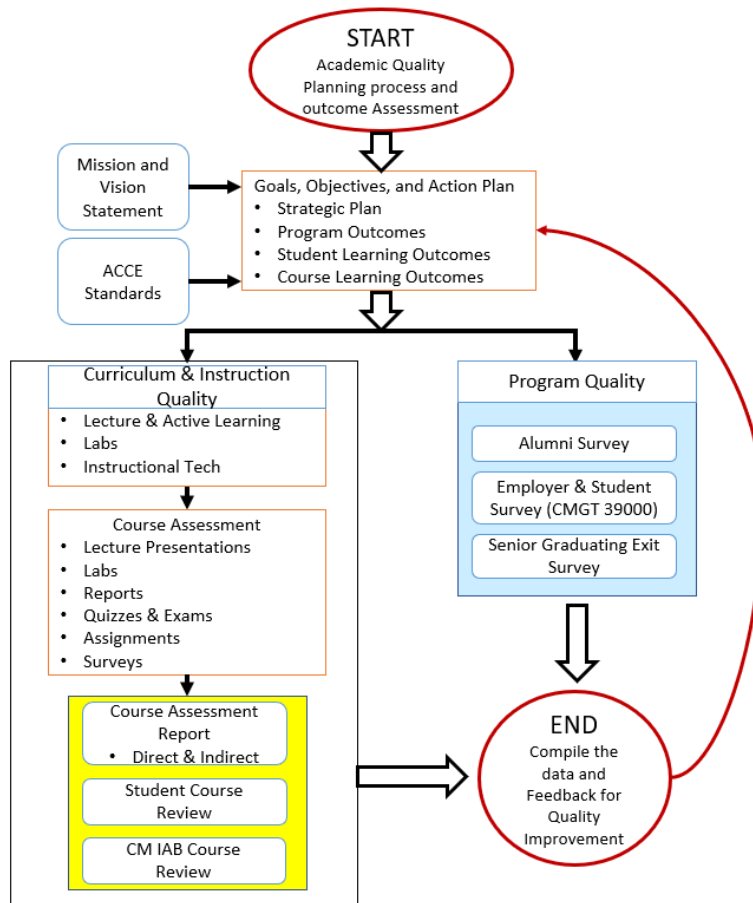# CM Assessment Plan

Description of the CM Program Quality Improvement Plan

The CM Quality Improvement Plan is a multi-cyclical process and begins with the Mission and Vision Statements of the University, the School, and the CM Program.

The CM Strategic Plan, Program Outcomes, Student Learning Outcomes, and Course Learning Outcomes are developed from the Mission and Vision Statements and the ACCE Standards.

CM course instructors "teach" the courses (Curriculum & Instruction) using a variety of instructional methods and techniques (lectures, labs, IT, etc.) to achieve the Course Learning Outcomes and the Student Learning Outcomes.

In an adjoining cycle (as shown in the below figure), members of the CM IAB review CM course syllabi, observe classroom instruction, and provide a written report to the Program Director and the course instructor. The purpose of the review is to ensure that the course content and instructional material are up-to-date with current industry standards. The scheduling of the CM IAB reviews follows the cycle described in the Assessment Implementation Plan.

Assessment occurs within the context of the curriculum (i.e., coursework). Various assessment methods and tools are used to collect data and measure student performance and including both direct and indirect methods. Direct methods include assignments, in-class work sessions, quizzes, exams, lab assignments, etc. Indirect methods are survey-based course evaluations.

Course Assessment Reports are generated by the course instructors based on the cycle described in the Assessment Implementation Plan. The Course Assessment Reports summarize, analyze, and evaluate all assessment data associated with the Course Learning Outcomes and the Student Learning Outcomes and develop a plan for course improvement and/or corrective action. The course assessment reports for the 1-20 Student Learning Outcomes are located in the Section 9.4 Achievement of SLOs folder.

The Program Director and CM Curriculum Committee evaluate the Course Assessment Reports and provide feedback to the course instructor, suggest course improvement, and develop plans for curricular updates.

Assessment Tools include Alumni Surveys, IUPUI CM Graduate Exit Surveys, Employer Evaluation Surveys (CMGT 39000), and Student Evaluation Surveys (CMGT 39000). All assessment data is compiled and shared with CM constituents and the public (except for proprietary information).

Evaluation of the course work and curriculum coupled with information obtained from the surveys provide the necessary feedback for any required updates to the Strategic Plan, Program Outcomes and Course Learning Outcomes, which flow back to Curriculum and Instruction.

Mission

The Construction Management Program provides an innovative and challenging curriculum in a "student-centered" learning environment to prepare our graduates for successful careers in the construction industry.

Program Outcomes (Objectives)

These outcomes/objectives describe the career and professional accomplishments that we expect our graduates to achieve early in their careers.

1. To develop and maintain a sustained program of continuing education and life-long learning.
2. To practice effective written and oral communication and successfully participate within an interdisciplinary team environment.
3. To demonstrate an ability to apply problem-solving skills and integrate technical knowledge.
4. To be an engaged construction professional who comprehends the ethical, social, environmental, and economic impacts of construction decisions and solutions.
5. To be engaged citizens who seek service and leadership roles in professional societies and organizations, as well as the community.

Program (Student) Learning Outcomes

Upon graduation from an accredited ACCE 4-year degree program, a graduate shall be able to:

1. Create written communications appropriate to the construction discipline.
2. Create oral presentations appropriate to the construction discipline.
3. Create a construction project safety plan.
4. Create construction project cost estimates.
5. Create construction project schedules.
6. Analyze professional decisions based on ethical principles.
7. Analyze construction documents for planning and management of construction processes.

8. Analyze methods, materials, and equipment used to construct projects.
9. Apply construction management skills as a member of a multi-disciplinary team.
10. Apply electronic-based technology to manage the construction process.
11. Apply basic surveying techniques for construction layout and control.
12. Understand different methods of project delivery and the roles and responsibilities of all constituencies involved in the design and construction process.
13. Understand construction risk management.
14. Understand construction accounting and cost control.
15. Understand construction quality assurance and control.
16. Understand construction project control processes.
17. Understand the legal implications of contract, common, and regulatory law to manage a construction project.
18. Understand the basic principles of sustainable construction.
19. Understand the basic principles of structural behavior.
20. Understand the basic principles of mechanical, electrical and piping systems.

ASSESSMENT TOOLS

Mission

The CM Mission Statement is reviewed on a five (5) year cycle which parallels the dates of the development of the Strategic Plans for the School of Engineering Technology and the CM Program. The next cycle for both Strategic Plans is 2018-2025 (2 years extension due to Covid-19). The Strategic Plan for the School was finalized at the end of May 2018 and was used to develop the CM Strategic Plan (2018-2025) as described in the previous section. The goal is to align the CM Strategic Plan with the initiatives of the Strategic Plan of the School.

The mission statement was reviewed by the faculty and the CM IAB. Very minor wording changes were suggested and incorporated into the current mission statement.

Program Outcomes (Objectives)

The CM Program Outcomes describe the career and professional accomplishments that we expect our graduates to achieve early in their careers. The basic philosophy of assessing post-graduates (alumni) is to measure their level of achievement related to the Program Outcomes. It is impossible to measure these achievements at the time of graduation.

The assessment tool used to measure the Program Outcomes is the Alumni Survey which is sent to alumni. In the survey, each respondent rates each of the five (5) Program Outcomes on "how well" they have achieved each outcome using a 5-point scale (Very Well, Good, Adequate, Fair, and Poor).

Results of the Alumni Survey and Program Outcomes (Objectives) are discussed in the Evaluation Methodology section of this report (page 13).

Program (Student) Learning Outcomes

The Program Learning Outcomes are the ACCE Student Learning Outcomes (1-20). Both Direct Measures and Indirect Measures are used to assess and evaluate Student Learning Outcomes (SLOs).

The Indirect Measure uses the ACCE Student Learning Outcome Survey (Graduating Senior Exit Survey) the results of which are reported in Section 3 - Indirect Measures (pages 17-18) and in the Evaluation Methodology section of this report (page 14). This survey is administered every semester.

Within each course syllabus, the Student Learning Outcomes are listed for that course. Specific (and appropriate) Course Learning Outcomes are aligned with the Student Learning Outcomes. Methods of Direct Assessment are also listed on the syllabi. Direct Measures of the Student Learning Outcomes are performed at the course level using a variety of assessment tools, such as: assignments, quizzes, exams, papers, lab exercises, and oral presentations. A listing of the Course Learning Outcomes associated with the Student Learning Outcomes is in Section 9.4 Achievement of SLOs folder.

An individual Student Learning Outcome Report is generated for each Student Learning Outcome by the course instructor (or instructors in the case of shared outcome assessment). The Student Learning Outcome Reports are found in Section 9.4 Achievement of SLOs folder.
These reports contain the results of the Indirect Measure, Direct Measures, Assessment of Student Work (using rubrics and grading criteria), and an Evaluation (Course Assessment Report). As described in the CM Assessment Implementation Plan, Student Learning Outcome assessment and evaluation are conducted. A typical 2.5-year cycle is modified due to the COVID-19 impact.

Results of the Student Learning Outcomes are discussed in the Evaluation Methodology section of this report.

Course Learning Outcomes
The Course Learning Outcomes are assessed by the course instructors. Not all Course Learning Outcomes are evaluated in the Course Assessment Reports, unless there is an issue. The Course Assessment Report is reviewed by the Program Director and the CM Curriculum Committee. The Course Learning Outcomes are reviewed during the CM IAB Course Reviews and may be discussed at CM Program meetings. Course Learning Outcomes are identified on every CM course syllabus. Relationship between the Course Learning Outcomes and the Student Learning Outcomes are shown in CLO vs SLO report in Section 9.4 Achievement of SLOs folder.

Other Assessment Tools

First Destination Survey
As described in Section 5-7, graduating seniors complete this survey which is administered through the Career Center and as a part of the graduating senior exit survey. The purpose of this survey is to track: post-graduation plans, type of employment, salaries, employers, and job titles. This survey is administered every semester.
The results of the First Destination Survey are discussed in Section 5.7 Student Placement.

Graduating Senior Exit Interviews and Surveys
The Graduating Senior Exit Interviews is administered by the CM IAB and consist of a written section and an oral interview (which is transcribed by the IAB interviewers) until Fall 2019. The survey was conducted via Canvas from Spring 2020 to Spring 2021 as a part of the Capstone class. Later, the survey format was revised using the university online survey platform called "Qualtrics" to conduct the exit interviews.

Examples and Results of the Graduating Senior Exit Interviews are presented in Appendix 2 - Senior Exit Interviews and Surveys of this report.

Course Assessment Reports
If necessary, the Course Assessment Reports were embedded in the Student Learning Outcome Reports. The Course Assessment Report summarizes, analyzes, and evaluates all assessment data associated with the Course Learning Outcomes and the Student Learning Outcomes and develop a plan for course improvement. Course Assessment Reports were required in those courses that

evaluated a Student Leaning Outcome. Student Learning Outcome Reports are found in Section 9.4 Achievement of SLOs folder.

Employer Evaluation Survey - CMGT 39000 (Internship)
The employers evaluate the interns who are taking the internship for credit (CMGT 39000). The Employer Evaluation Surveys from Summer of 2020, 2021, and 2022 are discussed in the Evaluation Methodology section of this report.

Student Evaluation Survey - CMGT 39000 (Internship)
The students evaluate their experiences with the internship that they are taking for credit (CMGT 39000). The Student Evaluation Surveys from Summer of 2020, 2021, and 2022 are discussed in the Evaluation Methodology section of this report.

CM IAB Course Reviews
Started from Fall 2018 semester, select CMGT courses were reviewed by a member of the CM IAB who had an interest and experience with the subject matter of that course. The assessments were meant to be formative and for use by the course instructors. The course reviews included an interview with the course instructor and a classroom visit during a lecture and/or lab. Selected CM IAB Course Reviews are shown in Appendix 3 in Section 9.5 Plan Implementation.

PERFORMANCE CRITERIA

Program Outcomes
Alumni will average 80% (a "Good" rating) on each of the five Program Outcomes on the Alumni Survey.

Program (Student) Learning Outcomes
For this initial accreditation, the performance criteria for the Indirect Measure was that an overall average of the total assessment (from the Direct Measures) for each Student Learning outcome should be at least 75%.

First Destination Survey
At least 90% of graduates will be meaningfully employed in the construction industry.

Graduating Senior Exit Interviews
For the graduate senior exit interview questions, a rating of at least 80% is expected. Qualtrics online survey by Indiana University Information Technology Services is used to conduct the survey. Input for every student (100%) is expected.

Course Assessment Reports
100% report submission and inclusion in the Student Learning Outcome Reports.

Employer Evaluation Survey - CMGT 39000 (Internship)
80% of the interns should receive an Outstanding or Above Average performance rating.

Student Evaluation Survey - CMGT 39000 (Internship)
80% of the interns should Strongly Agree or Agree that the internship experience was positive.

CM IAB Course Reviews

Since the course reviews are formative and for use by the course instructor, performance criteria were not developed as part of this assessment. Course Reviews are described in more detail in the Evaluation and methodology section.