Quality Improvement Plan

Construction Management Program
Department of Applied Engineering and Technology
College of Science, Engineering, Technology, & Math
Eastern Kentucky University
May 2022

1.0 Program Mission Statement

The CM degree program goal is to educate, mentor, and inspire students so that each graduate is prepared for a career of professional excellence and service to the construction industry.

2.0 Educational Unit Strategic Plan

The purpose of this strategic plan is to outline the systematic and sustained efforts needed to enable the degree program to fulfill its mission.

2.1 Goals to Achieve Program Mission

The following goals are intended to guide the direction of the construction management program in meeting its mission. The construction management program will aim to:

A. *Improve the Construction Management curriculum by involving members of industry and integrating actual industry projects, through presentations, site visits, and field trips.*
B. *Increase the program student pass rate of the American Institute of Constructor's exam to the national average.*
C. *Increase the number of certifications and industry training programs students obtain prior to graduation. Current certification opportunities include 30-hour OSHA Construction Safety Training, LEED Green Associate, and a Land Surveying Certificate.*
D. *Maintain high job placement of graduating students.*
E. *Improve the academic and professional development of the program faculty.*
F. *Increase student membership in the AGC student chapter.*
G. *Earn national recognition of excellence for the program periodically.*

2.2 Review of Resources and External Factors

The status of the degree program shall be reviewed annually by the faculty during the Assurance of Learning Day held University-wide in late September. Available resources and support, as well as external factors affecting the program shall be considered.

The status of the degree program shall be reviewed annually by the executive committee of the Industrial Advisory Board of the program. Meeting minutes and notes from biannual IAB meetings as well as the results of an annual industry survey are collected, evaluated against the program goals to identify and implement the necessary improvements. Available resources and support, as well as external factors affecting the program shall be considered.

2.3 Updating of the Strategic Plan

The strategic plan shall be reviewed and updated periodically. Input from the faculty, Industry Advisory Board, and the students through the AGC student chapter will be considered during the review and updating of the strategic plan. Input from the Industrial Advisory Board will be collected using an annual survey and direct feedback from the IAB members during the biannual meeting. Input from students is collected via an annual exit survey students complete as part of the Capstone (CON499). The program coordinator is responsible for collecting the input, and the program faculty review and update the strategic plan and implement the necessary improvements.

3.0 Program Assessment Plan

The intent of the Assessment Plan is to provide the framework to provide evidence of the program's effectiveness in preparing construction practitioners.

3.1 Program Mission Statement

As stated in Section 1.0, the mission statement is:

The CM degree program goal is to educate, mentor, and inspire students so that each graduate is prepared for a career of professional excellence and service to the construction industry.

3.2 Degree Program Objectives

In order to meet its mission and goals as outlined in the strategic plan, the construction management program faculty shall:

1. *Improve the Construction Management curriculum by involving members of industry and integrating actual industry projects: through presentations, site visits, and facility tours.*
2. *Increase the program student pass rate of the American Institute of Constructor's exam to the national average.*
3. *Increase the number of certifications and industry training programs students obtain prior to graduation. Current certification opportunities include 30-hour OSHA Construction Safety Training, LEED Green Associate, and a Land Surveying Certificate.*
4. *Maintain high job placement of graduating students.*
5. *Improve the academic and professional development of the program faculty.*
6. *Increase student membership in the AGC student chapter.*
7. *Earn national recognition of excellence for the program periodically.*

3.3 Program Student Learning Outcomes

Upon graduation from the EKU Construction Management 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.*

3.4 Assessment Tools

Degree Program Objectives

1. *Course improvement will be assessed by tracking and seeking continual improvement with the amount of industry professionals involved in the following courses: Introduction to Construction (Con 121), Materials & Methods I & II (Con 201, Con 202) Estimating (Con 325), Project Organization & Supervision (Con 425), Sustainable Construction (Con 428), & Capstone (Con 499). Instructors will report on the number of presentations, presentation topics, site visits, and speaker/site contact information every semester on the Presentation/Site Visit Tracking excel spreadsheet in the common google drive. This will help the program to assess the diversity and exposure of students enrolled in the CM curriculum to various industry professionals and specializations throughout the curriculum. Industry feedback will be incorporated into the classes by use of Industry (IAB) Survey (See Appendix B). This data will be tracked using an excel spreadsheet and the survey administered through Qualtrics. Both these measures will be assessed during the Fall Assurance of Learning Day.*
2. *The pass rate of students taking the American Institute of Contractor's exam will be improved by continued incorporation of the exam material into the classroom content. Focus areas of the exam will be incorporated in relevant courses curricula in a gradual and systematic way. The progress will be assessed by examining the annual update in each relevant course curriculum. Given current low passing rates, an initial benchmark of 25% passing shall be set and raised by 10% until a 75% passing rate is maintained on a continual basis. Progress toward this benchmark will be tracked using The AIC Exam Result Tracker excel spreadsheet in the common google drive.*
3. *The number of professional certifications obtained by our graduating students will be tracked through senior exit self-report surveys. The certification opportunities include Land Surveying Certificate, OSHA 30-hour certificate, and LEED Green Associate accreditation. The surveys will be administered in the Capstone course using an electronic survey method. Results will be compiled and tracked at the program level using Qualtrics and an excel spreadsheet. A text version of the survey can be found in Appendix A: Senior/Alumni Survey.*
4. *High levels of student job placement will be assessed through the senior exit survey given at the end of the capstone course. An additional survey will be sent out to alumni on a yearly basis to inquire about job placement. The survey will be administered electronically and tracked through an excel spreadsheet. A text version of the survey can be found in Appendix A: Senior/Alumni Survey The data will be collected by the Con 499 faculty in the*

Spring Semester. Data will be compiled in the Student Employment Excel Spreadsheet.

5. *The improvement of the academic and professional development of the faculty will be assessed by tracking faculty publications, presentations, and professional development activities in both technical and educational paths. This will be tracked using an excel spreadsheet in the common google drive.*
6. *The number of student members in the AGC Student Chapter will be tracked and recorded on an ongoing basis. This will be tracked using an excel spreadsheet in the common google drive.*
7. *The national awards for the program will be tracked on an ongoing basis. This will be tracked using an excel spreadsheet in the common google drive.*

Student Learning Outcomes

Each SLO from section 3.3 will be evaluated with one direct and one indirect assessment tool. It is anticipated that after a few cycles of assessing and evaluating, these assessment tools will remain the same from year to year.

The direct assessment tool will be a whole or part of an assignment or examination that is part of a course grade. If a group project is used, group member involvement will be assessed.

The indirect measure will be either the AIC exam, completed by students as part of the grade for Capstone (CON499) as applicable to the SLO, or an industry survey given to recent graduates and alumni of the program to rate their ability for each SLO based on a scale of 1 to 7. See Appendix C: SLO Assessment Survey

3.5 Performance Criteria

Degree Program Objectives

1. *The following courses will have the following benchmarks for industry involvement and diversity:*
    a. *Capstone Course (Con 499) will have at least five different speakers from varying sections of industry.*
    b. *Introduction to Construction (Con 121) will have at least five different speakers from varying sections of industry.*
    c. *Materials & Methods I (Con 201)– shall have at least 2 different sub-contractors from the construction industry and one site visit.*
    d. *Materials & Methods II (Con 202) will have at least two subcontractors present (one from masonry, one from concrete), one site visit, and two facility tours to masonry and concrete manufacturers.*
    e. *Construction Estimating (Con 325) shall have at least one presentation from an industry estimator.*

f. *Project Organization & Supervision (CON 425) shall have at least industry presentation*
g. *Sustainable Construction (Con 428) – shall have at least one presentation from industry on sustainable construction, and one site visit for a LEED building tour.*

2. *The results of the student AIC exam at EKU will be compared to the national averages on a semester basis. This data is provided direct from the AIC exam results. Every academic year, an increase of 10% passing rate will be sought compared to the previous year for continual improvement. Low-scoring areas of the test will be identified, and content will be emphasized in the corresponding classes.*
3. *The ratio of certifications/students shall be tallied from the senior exit surveys on a semester basis. The benchmark shall be a 1/1 ratio and will be assessed once a year during the Assurance of Learning Day.*
4. *At least 90% of graduating students will be placed within nine months of graduation. This will be assessed in our first year Senior Survey (Appendix A).*
5. *The program will publish at least two conference or journal papers per academic year and participate in at least 2 professional development courses.*
6. *The ratio of AGC student membership/student body should be at least 40% with 5% increases on a yearly basis.*
7. *The program will earn a national award at least once every three years through participating in the ASC Region 3 Student Competitions for Concrete Estimation and Construction Pre-Planning.*

Student Learning Outcomes

The minimum performance criteria for each direct assessment shall be 70% of the students attaining a 70%.

The minimum performance criteria for each indirect assessment shall be either 70% of the students attaining a 70% for the AIC exam or 70% SLO rating for each SLO on the industry survey.

For a Table outlining the assessment process and performance criteria for both Student Learning Outcomes and Program Objectives, see Appendix D: Performance Evaluation and Tracking Table.

3.6 Evaluation Methodology

Degree Program Objectives

The program faculty will collect and disseminate to the Program Coordinator the Degree Program Objective Assessments at the end of every semester. These will be discussed and compiled at Assurance of Learning Day. Per discussion among the program faculty on the annual Assurance of Learning Day, trends and improvement areas will be identified through examination of the data by the program faculty and an action plan will be developed to implement the necessary changes by the program faculty.

Student Learning Outcomes

Individual faculty will collect and analyze the data for the direct assessment measures they are assigned. If a particular SLO falls below the performance criteria, the faculty member will recommend an action to improve student performance, or if the performance criteria are met, the faculty member will recommend ways to ensure compliance. Recommending a lowering of the performance threshold is not acceptable. Data and recommendations will then be forwarded to the program coordinator, who will lead a discussion of the SLO evaluations at Assurance of Learning Day.

3.7 Review of Assessment Plan

The assessment plan for both Degree Program Objectives and Student Learning outcomes shall be reviewed annually by the faculty during the Assurance of Learning Day held university-wide in late September. Appropriateness of the objectives, outcomes, assessment tools, performance criteria, and evaluation methodology shall all be examined by the faculty. An action plan should be developed by the program coordinator to list the required changes (if needed) that faculty should implement accordingly. These actions/changes should later be evaluated on the next Assurance of Learning Day

3.8 Updating of the Assessment Plan

The assessment plan shall be reviewed and updated every five years. Input from the faculty, Industry Advisory Board, and the students through the AGC Student Chapter will be considered during the review and updating of the assessment plan, especially the formulation of the student learning outcomes (SLOs).

4.0 Assessment Implementation Plan

This assessment implementation plan is intended to ensure that the program is making progress in achieving its mission, objectives, and learning outcomes.

4.1 Assessment Cycle

Due to SACS COC accreditation, direct and indirect assessment tools will be used each year for each SLO. The data will be compiled for each SLO by the assigned faculty member. All SLO assessments will be discussed at the Assurance of Learning Day in September of the following year. Per discussion with the program faculty on the annual Assurance of Learning Day, trends and improvement areas will be identified through examining the data by the program faculty and an action plan will be developed to implement the necessary changes by the program faculty.

4.2 Analysis of Data Collected

The analysis of the SLO assessment data will be conducted by the faculty member when compiling the data to be discussed during the Assurance of Learning Day. Results of this analysis will be kept by the program coordinator.

4.3 Changes Implemented

Changes implemented by the program during Assurance of Learning Day will be recorded and kept by the program coordinator.

4.4 Documentation of Results, Analysis, and Changes Implemented

Results of the assessment tools, analysis of the data, and changes implemented as a result of the assessment evaluation will be compiled by the program coordinator and placed on the construction management program website as part of the ACCE Public Disclosures document. A summary of actions taken for poor performance will be kept for at least 5 years.

4.5 Review of Assessment Implementation Plan

The assessment implementation plan and appropriateness of the process shall be reviewed annually by the faculty during the Assurance of Learning Day held university-wide in late September.

4.6 Updating of the Assessment Plan

The assessment plan shall be reviewed and updated annually. Input from the faculty, Industrial Advisory Board, and the students through the SCA will be considered during the review and updating of the assessment plan, especially the appropriateness of the direct assessment tools being used. Input from the Industrial Advisory Board will be collected using an annual survey and direct feedback from the IAB members during the biannual meeting. Input from students is collected via an annual exit survey (See Appendix A: Senior Survey) students complete as part of the Capstone (CON499).

APPENDIX A: Senior/Alumni Survey

Senior Survey

Text Version: To be administered using survey design and logic in Qualtrics. Survey will be administered to students in the Con 499 course at end of semester and to recent graduates 1 year after graduation. Post 1-year alumni will be given a similar survey (Alumni Survey: with altered language on employment history) annually through 5 years post-graduation.

The Construction Management program at Eastern Kentucky University attempts to keep track of placement data for graduating seniors. This data is used to report on the viability of the program, as determined by the industry's willingness to hire its graduates, and to recruit future students into the program. The data collected is kept **confidential** and is used for the following purposes: to determine an average starting salary per calendar year; to determine who is hiring EKU CM graduates; and to determine how many graduates are being hired out of each graduating class. While providing this data is not mandatory, it would be appreciated if you would provide as much data as you feel appropriate.

1. Graduation year/semester: _____

2. Have you been hired? _____

    a. If you have been hired, how did you find the position? _____
    b. What will be your position/title? _____
    c. For what company will you be working? _____
    d. What will be your starting salary?

    - Base Salary:_____Bonus:_____
    - Allowances:_____Per Diem:_____
    - Benefits:_____Misc:_____

3. Please provide a long-term email address where we may contact you regarding alumni affairs and continued involvement with the CM program at EKU.

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4. Which of the following professional certifications/accreditations do your currently have?
    a. LEED Green Associate
    b. OSHA 30-hour certification
    c. Land Surveying Certificate
    d. Other: _____
    e. Other: _____
    f. Other: _____
    g. Other: _____

h. Other: _____
i. Other: _____
j. Other: _____
k. None.

5. Do you plan on earning any certifications/accreditations in the next six months?
    a. Yes
    b. No

6. Which of the following professional certifications/accreditations do you plan to obtain in the next six months?
    a. LEED Green Associate
    b. OSHA 30-hour certification
    c. Land Surveying Certificate
    d. Other: _____
    e. None.

Alumni Survey

To be given to students, years 2-5 post-graduation

The Construction Management program at Eastern Kentucky University attempts to keep track of placement data for program alumni. This data is used to report on the viability of the program, as determined by the industry's willingness to hire its graduates, and to recruit future students into the program. The data collected is kept **confidential** and is used for the following purposes: to determine an average starting salary per calendar year; to determine who is hiring EKU CM graduates; and to determine how graduates' careers progress post-graduation. While providing this data is not mandatory, it would be appreciated if you would provide as much data as you feel appropriate.

1. Graduation year/semester: ____Auto-Import Data_____

2. At graduation, you indicated you were working for _____. Are you still working for the same employer?
    a. If yes, has your job title or responsibilities changed?
    b. If no, are you currently working?

        f. How did you find the position? _____
        g. What is your position/title? _____
        h. For what company are you working? _____
        i. What is your current salary
        - Base Salary:_____Bonus:_____
        - Allowances:_____Per Diem:_____

- Benefits:_____Misc:_____

3. Which of the following professional certifications/accreditations do your currently have?
    a. LEED Green Associate
    b. OSHA 30-hour certification
    c. Land Surveying Certificate
    d. Other: _____
    e. Other: _____
    f. Other: _____
    g. Other: _____
    h. Other: _____
    i. Other: _____
    j. Other: _____
    k. None.

4. Do you plan on earning any certifications/accreditations in the next six months?
    a. Yes
    b. No

5. Which of the following professional certifications/accreditations do you plan to obtain in the next six months?
    a. LEED Green Associate
    b. OSHA 30-hour certification
    c. Land Surveying Certificate
    d. Other: _____
    e. None.

APPENDIX B: Industry (IAB) Survey

EKU CM IAB Survey

Text Version: To be administered using survey design and logic in Qualtrics. Survey will be administered to IAB members on a yearly basis. Survey will be further developed in Qualtrics to decrease the number of qualitative answers for easy data collection and increased response rates.

1) Name & Company:

2) How long have you been on the IAB?

3) What are the strengths of the CM Program?

4) What are the weaknesses of the CM Program?

5) What are some challenges you see in the industry that the CM program needs to and can address?

6) How can the CM Program continue to grow?

7) Suggestions you may have to improve the CM program.

8) How can we encourage continued contributions to the CM Program?

9) How can the CM space be improved?

10) Any recommendations on how to improve the Annual CM banquet?

11) What would we be embarrassed about, if one of our students did not know after graduating from EKU's CM program?

APPENDIX C: Student SLO Survey

Text Version: To be administered using survey design and logic in Qualtrics. Survey will be administered to graduating seniors in the Con 499 Capstone Course. This survey will be combined with the Senior Survey for administration and to minimize the number of surveys given to students to ensure high rates of response.

SLO Assessment Survey
B.S. Construction Management (15.0101)

Please respond to the following statements regarding the B.S. degree program in Construction Management. **(Please place all responses on assessment answer sheet attached.)** Please rank the items from not good to good, checking the box that best fits. If the item does not pertain to work you have done at EKU, then check N/A

Program

Strongly Disagree — Neutral — Strongly Agree

1	2	3	4	5	6	7	N/A	Item
								Grading standards for courses in the department were fair.
								Adequate facilities for courses in my major were provided by the department
								Adequate equipment for courses in my major were provided by the department
								The program faculty care about student learning.

Learning Outcomes

Please check the box that corresponds to how well the Construction Management Program has helped you to achieve the learning outcome.

Very Poor — Neutral — Very Well

1	2	3	4	5	6	7	N/A	Learning Outcome
								Create written communications appropriate to the construction discipline.
								Create oral presentations appropriate to the construction discipline.
								Create a construction project safety plan.
								Create a construction project cost estimate.
								Create construction project schedules.
								Analyze professional decisions based on ethical principles.
								Analyze construction documents for planning and management of construction processes.
								Analyze methods, materials, and equipment used to construct projects.
								Apply construction management skills as an effective member of a multi-disciplinary team.
								Apply electronic based technology to manage the construction process.
								Apply basic surveying techniques for construction layout.

Learning Outcomes - Continued
Please check the box that corresponds to how well the Construction Management Program has helped you to achieve the learning outcome.

Very Poor			Neutral			Very Well		
1	**2**	**3**	**4**	**5**	**6**	**7**	**N/A**	**Learning Outcome**
								Understand different methods of project delivery and the roles and responsibilities of all constituencies involved in the design and construction process.
								Understand construction risk management.
								Understand construction accounting and cost control.
								Understand construction quality assurance and control.
								Understand construction project control processes.
								Understand the legal implications of contract, common, and regulatory law to manage a construction project.
								Understand the basic principles of sustainable construction.
								Understand the basic principles of structural behavior.
								Understand the basic principles of mechanical, electrical, and plumbing systems.
								The ability to think critically.

Comments about Program: _____

_____

_____

_____

_____

_____

Comments about Professors: _____

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_____

_____

_____

Comments about Coursework: _____

APPENDIX D: Performance Evaluation and Tracking Table for ACCE QIP

	Degree Program Objectives	Benchmark	Collection Interval	Party Responsible for Collecting	Method of Data Collection	Name of Data File	Location
1	CON 499: Number of Industry Speaker Presentations	5	End of Every Semester	Instructor of Record	Observation	Presentation/Site Visit Tracking	Google Drive
	CON 121: Number of Industry Speaker Presentations	5	End of Every Semester	Instructor of Record	Observation	Presentation/Site Visit Tracking	Google Drive
	CON 201: Number of Industry Speaker Presentations	2	End of Every Semester	Instructor of Record	Observation	Presentation/Site Visit Tracking	Google Drive
	CON 201: Number of **Site Visits**	**1**	End of Every Semester	Instructor of Record	Observation	Presentation/Site Visit Tracking	Google Drive
	CON 202: Number of Industry Speaker Presentations	2	End of Every Semester	Instructor of Record	Observation	Presentation/Site Visit Tracking	Google Drive
	CON 202: Number of **Site Visits**	**1**	End of Every Semester	Instructor of Record	Observation	Presentation/Site Visit Tracking	Google Drive
	CON 202: Number of **Manufacturer Facility Tours**	**2**	End of Every Semester	Instructor of Record	Observation	Presentation/Site Visit Tracking	Google Drive
	CON 325: Number of Industry Speaker Presentations	1	End of Every Semester	Instructor of Record	Observation	Presentation/Site Visit Tracking	Google Drive
	CON 425: Number of Industry Speaker Presentations	1	End of Every Semester	Instructor of Record	Observation	Presentation/Site Visit Tracking	Google Drive
	CON 428: Number of Industry Speaker Presentations	1	End of Every Semester	Instructor of Record	Observation	Presentation/Site Visit Tracking	Google Drive
2	Pass rate of AIC Exam	25%	End of Every Semester	Program Coordinator	AIC Exam Result Analysis	AIC Exam Result Tracker	Google Drive
	Identification of Areas for Curriculum Improvement		Fall Semester AOL Day	Program Faculty	AIC Exam Result Analysis	AIC Exam Result Tracker	Google Drive
3	Ratio of industry certifications/students	1:1	Con 499: Spring Semester	Instructor of Record for CON 499, Qualtrics Survey	Electronic Survey	Graduate Certification Tracker	Google Drive
4	Job Placement: current students	90%	Con 499: Spring Semester	Instructor of Record for CON 499, Qualtrics Survey	Electronic Survey	Student Employment Excel spreadsheet	Google Drive
	Job Placement: 1 year out	90%	Every Summer	Program Coordinator	Electronic Survey	Student Employment Excel spreadsheet	Google Drive
	Job Placement: 2-5 years post-graduation	90%	Every Summer	Program Coordinator	Electronic Survey	Student Employment Excel spreadsheet	Google Drive
5	Professional Development of faculty	2 papers, 2 CE(PD)	Every Summer	Program Faculty	Self-Report	Faculty Performance Tracker	Google Drive

6	Student AGC Chapter Membership	40%+	Every Summer	Student Chapter Advisor	Report	Student Success Tracker	Google Drive
7	National Award	Every 3 years	Every Third Summer	Program Coordinator	Self-Report	Student Success Tracker	Google Drive
	Student Learning Outcomes	**Benchmark**	**Collection Interval**	**Party Responsible for Collecting**	**Method of Data Collection**	**Name of Data File**	**Location**
	SLO 1-20 Indirect	70% SLO Rating	Con 499: Spring Semester	Instructor of Record for CON 499, Qualtrics Survey	Student SLO Survey	Student SLO Indirect	Google Drive
	Direct Assessment	70% SLO Rating	Every Semester	Instructor of Record	Student Work	Student SLO Folders	Google Drive
	Industry Assessment	N/A	Every Summer	Program Coordinator	Industry IAB Survey	Industry IAB Survey Tracker	Google Drive