Lumpkin College of Business and Technology
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June 9, 2021

Dr. John V Cabage
Program Coordinator, Construction Management

RE: Year 2 Program Assessment Review

Documents submitted and reviewed:
1) Program Assessment Plan (xls file)
2) CMG Final Report Year 2 (doc file)

Evaluated Aspects of Program Assessment	**Stage of Maturity** (Beginning, Developing, Acceptable, Exemplary)
A. Student Learning Outcomes	Sufficient (see comments)
B. Measurement Tools and Assignments	Exemplary
C. Data Collection and Integrity	Exemplary
D. Expectations and Results	Developing
E. Discussion and Analysis	Developing
F. Use of Assessment Results for Program Improvement	Beginning
G. Faculty Engagement in Assessment	Developing

Summary of Assessment Evaluation:
The CMG program has the advantage of being a candidate for ACCE accreditation, which prescribes the necessary learning outcomes and informs some required elements such as two measures for each SLO with at least one being a direct measure. The Coordinator, faculty, and advisory board have engaged in developing a plan that involves 14 courses in the program in the assessment process, indicating a breadth from formative to summative results should result when data collection and analysis begins. I commend the program for the excellent progress made in this Year 2 report.

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Melody L. Wollan

Academic Program	Construction Management
Evaluation Point	Year 2 (AY 2020) of 4
Program-level Accreditation	None
Academic Years in Reporting Cycle	AY19 - AY23
Reviewer Name, Title	Melody Wollan, LCBT Associate Dean

A. Student Learning Outcomes (SLO)

Specific statements that articulate the discipline-specific content, skills, and/or dispositions students should gain or improve through engagement in the program

• SLO does not specify what group of students will achieve mastery of it, and/or at what point(s) in their progression through the program they will do so. • SLO contains only imprecise verbs (e.g., "know," "understand"), and thus is difficult to measure. • SLO is too broad or vague to guide the assessment process.	• SLO is clear about what group of students will achieve mastery of it (e.g., majors, students in the program), but not at what point in their progression through the program they will do so. • SLO contains action verbs that reflect an inadequate depth of knowledge for the program. • SLO contains a general description of the content knowledge, skills, and/or dispositions to be measured, but the description is not discipline-specific.	• SLO is clear about what group of students will achieve mastery of it, and at what point in their progression through the program they will do so (e.g., "seniors," "graduates"). • SLO contains precise, measurable, and observable verbs that reflect an appropriate depth of knowledge for the program. • SLO contains a discipline-specific description of the content knowledge, skills, and/or dispositions that students will demonstrate.	• A reasonable number of SLOs are identified — enough to adequately accomplish the mission of the program while still being manageable to assess on an annual basis. • Overall SLOs reflect appropriate level of expectation for the program type/level. • Overall SLOs stated in student-centered terms, reflecting what students should know, do, and/or think as they engage in the program of study.
BEGINNING ☐	DEVELOPING ☐	ACCEPTABLE ☐	EXEMPLARY ☐

Comments:	The CMG program has been accepted for candidacy in the American Council for Construction Education (ACCE). There is a maximum time period of five years until they complete their self-study report and have an accreditation visit. The 20 Student Learning Outcomes identified by ACCE are required per ACCE Document 103B, 3.1.5 Student Learning Outcomes, on page 12 of the 10/21/2019 revised "Standards and Criteria for the Accreditation of Bachelors Degree Construction Education Programs". As such, the EIU CMG program has adopted these SLOs and these are determined to be SUFFICIENT.

B. Measurement Tools and Assignments

Description of the measurement tool and the associated assignment, how they align with the SLO, and their validity

• SLO is assessed with only indirect measure(s) (i.e., surveys). • No information is provided about how the measurement tool(s) and assignment(s) relate to the SLO.	• SLO is assessed with direct measure(s) (i.e., objective tests, rubrics). • General description is provided of the measurement tool(s) and assignment(s). • General information is provided about how the measurement tool(s) and assignment(s) relate to the SLO.	• Detailed description of measurement tool(s) and its alignment with the SLO is provided. This includes: ○ for an objective test measurement tool, individual questions are identified and valid to the SLO (or element of the SLO), and expected levels of mastery are indicated; ○ for an analytic rubric measurement tool, each trait is mapped to the SLO (or element of the SLO) and each level details expectations. • Detailed description of the assignment(s) and alignment with the SLO is provided. This includes: ○ for an objective test assignment, representative test items are described to indicate relevance to the SLO and the expected level of mastery; ○ for a performance-based assignment evaluated with an analytic rubric, the assignment prompt is described to indicate relevance to the SLO and the expected level of mastery. • Measurement tool(s) will provide a direct/observable result and are appropriate to the SLO and the level of mastery expected. • Assignment(s) are appropriate to the SLO and the level of mastery expected.	• Direct measures may be supplemented with indirect measures. • Includes both formative and summative measures. • A description of the development process for the measurement tool(s) and assignment(s) is included to illustrate their appropriateness to the SLO.
BEGINNING ☐	DEVELOPING ☐	ACCEPTABLE ☐	EXEMPLARY ☒

Assessment Methods: What type of assessment methods does the program use?	☒ **Direct Measures** Measures that require students to demonstrate knowledge and skills. Provide tangible, visible, and self-explanatory evidence of what students have and have not learned. Actual student behavior or work is measured or assessed		☒ **Indirect Measures** Assessments that measure opinions or thoughts about student's knowledge, skills, attitudes, learning experiences, perceptions of services received or employers' opinions. Do not measure students' performance directly	
Measurement Tools: What type of measurement tools does the program use?	☒ **Objective Test** Measure that has right or wrong answers and can be quickly and unambiguously scored by anyone with an answer key.	☒ **Analytic Rubrics** Measures that are subjective for performance-based assignments. Resembles a grid with criteria for student project listed in the leftmost column and with all levels of performance listed across the top row. The cells within the center contain descriptions of what specified criteria look like for each level of performance. Each of the criteria is scored individually	☐ **Surveys** Measures for collecting data from a pre-defined group of respondents to gain information and insights on a topic of interest	☒ **Other** Could include a holistic rubric (single scale with all criteria being considered together), or a checklist (only two performance levels possible and no descriptions included).

Comments: It is noted that in the ACCE Standards (Document 103b, page 10, 3.1.6, Revised 4/15/2020), evaluation is required of "each SLO by a minimum of two assessment methods, at least one of which must be direct". SLO 6.2 appears to be an evaluation of both a paper AND a presentation given rubrics identified. All other SLOs are measured with multiple direct measures (with exception of 9.2). The course, rubric or evaluation instrument, and performance measures are defined and excellent. In numerous SLOs, rubrics are university-level supplied, while others utilize program-specific rubrics created by the CMG committee or external documents applicable to the field.

C. Data Collection and Integrity

When measurement tools are applied, to whom, at what point in the program, and how the program ensures consistency across multiple administrations of the tools and assignments (reliability)			
• It is unclear how the information provided relates to this assessment cycle.	• Information is provided about the data collection process in this cycle, but not enough to generate confidence in the findings (e.g., sample size is too small, student motivation conditions are inconsistent, rubric is not normed with raters, etc.) • Process will provide limited information for guiding instruction and curriculum.	• Enough information is provided about administration of the measurement tool and data collection process to generate confidence in the findings. This includes: ○ adequate student population targeted with an assignment and measurement tool; ○ sufficient sample size for statistically significant results (especially if different than the student population), with a rationale for representative sampling (if appropriate); ○ consistent student motivation conditions across multiple administrations of the assignment and measurement tool; • Process will provide useful information for guiding instruction and curriculum.	• Information provided demonstrates that data collection occurs throughout the curriculum and involves multiple faculty members. • Information is included about how data are collected and responsibility is shared among faculty members. • An ongoing, inclusive, systematic process is in place for collecting data to make decisions and improve learning within the program, appropriate to the program's internal and external constituencies.
BEGINNING ☐	DEVELOPING ☐	ACCEPTABLE ☐	EXEMPLARY ☒
Comments:	Data is intended to be collected from courses across the entire program – from both CMG and EGT 2000-, 3000- and 4000-level courses. As such, both formative and summative data is being collected. Given the breadth of courses involved in assessment (14), numerous faculty are involved in data collection with shared responsibility.		

D. Expectations and Results SLO have clearly identified expectations that reflect size and maturity of the program. Clear and concise illustration/presentation of data collected. Includes narrative or table/figure with sample size, count, averages, percentages, and ranges as appropriate to the assessment tool			
• No expectations are presented, or it is unclear how the expected results relate to the SLO. • No results are presented, or it is unclear how the results relate to the SLO.	• Expectations and results are presented and relate to the SLO, but a lack of specificity does not allow useful conclusions to be drawn. • Presentation is insufficiently detailed; only overall student scores or averages are presented.	• Expectations and results are presented by SLO. • Tables and graphs effectively communicate results, including sample size, count, averages, percentages, and ranges, as appropriate to the measurement tool. • For objective tests, results are presented according to items or groups of items connected to a SLO. • For rubrics, results are presented according to rubric trait and level, including counts and percentages. • Results include all applicable locations and/or delivery modes.	• Expectations and results are easily understood, as well as their implications. • Results are presented for all locations and/or delivery modes showing an equivalent level of rigor and detail.
BEGINNING ☐	DEVELOPING ☒	ACCEPTABLE ☐	EXEMPLARY ☐
Comments:	The current assessment plan calls for an acceptable level of performance "At least 70% of the students will score 70% or better" on direct measures; for the single indirect measure it is "Favorable Rating of Performance by Peer for 80% of the students". While simplistic, given that the program is just collecting assessment data in Year 3, I believe this is a reasonable expectation at the level of program maturity. As data is collected and evaluated, I would encourage program faculty to consider revising expectation of results to include aspirational (such as "at least 50% of students will score 85% or better") or other mechanism that reflects differing level of results from program activities. It is noted that data collection had not taken place at the time of this report.		

E. Discussion and Analysis

Explains the meaningfulness of the data presented (interpretation of results) with a clear, complete, and succinct analysis focusing on the interpretation of and reflection on the assessment data

• No interpretation is attempted, or the interpretation does not relate to the SLO and/or the results.	• Interpretation is attempted, relates to the SLO and/or results, but the interpretation is either: ○ insufficient to support programmatic decisions, ○ not aligned with the program's previous action plans, ○ offering excuses for results rather than thoughtful interpretations leading to improvements in student learning.	• Interpretation is aligned with the program's SLOs. • Interpretation is explained in terms of the desired levels of student performance and is based on student achievement of those levels. • Interpretation is justified through current disciplinary standards, previous results and/or benchmarks. • Interpretation includes how courses, experiences, and/or the assessment process might have affected results. • Interpretation indicates the appropriate collaboration and consensus of multiple internal stakeholders (e.g., program faculty, committees, staff, and/or students). • Interpretation is detailed enough to justify programmatic decisions concerning changes in instruction and/or curriculum.	• Interpretation directly addresses the program's SLOs and action plans. • Interpretation addresses past trends in student performance, as appropriate. • Strengths and weaknesses in student learning are easily identified. • New findings are compared to past trends, as appropriate. • Interpretation identifies possible areas of improvement, thus initiating future actions.
BEGINNING ☐	DEVELOPING ☒	ACCEPTABLE ☐	EXEMPLARY ☐
Comments:	There was no data collected at this time. The program has provided a list of curricular actions but none of these were "as a result of reflecting on the student learning outcomes data" (question 1) or "improvements (or declines) observed/measured in student learning" (question2). This is a reflection of the maturity of the program and being in the beginning stages of assessment. The program faculty have identified future activities and goals to evaluate that involves implementing the assessment plan.		

F. Use of Assessment Results for Program Improvement

Strategies planned and/or in progress for program improvement; actions designed to improve instruction and curriculum; rationale for action is based on data and analysis of results

• No actions proposed for the next cycle. • Proposed actions are not based on the data captured through the assessment process. • Proposed actions are unrelated to the improvement of the educational program, and	• The connection between proposed actions, results/discussion, and/or SLOs is not clear. • Proposed actions are too broad or vague to guide the improvement of the educational program and student learning. • Proposed actions do not demonstrate evidence of input from more than one person.	• Proposed actions are directly connected to the SLOs. • Proposed actions are data-driven, directly related to the results/discussion. • Proposed actions focus on the improvement of the educational program and student learning. If modifications are made to the assessment process, they are data-driven. • Proposed actions contain a process for evaluating their effectiveness. • Proposed actions demonstrate evidence of input from multiple internal stakeholders.	• Proposed actions are specifically detailed, including who will be responsible for implementation, approximate dates of implementation, and notes about where in the curriculum and in what specific

therefore student learning.	• Proposed actions pertain only to assessment plan changes (process/measure only).	• Carryover actions from the previous cycle are noted. • If a SLO is not addressed by any proposed actions, justification is given for maintenance of ongoing curriculum and instruction.	classes they will occur.
BEGINNING ☒	DEVELOPING ☐	ACCEPTABLE ☐	EXEMPLARY ☐
Comments:	N/A at this time.		

G. Faculty Engagement in Assessment

Faculty engagement individually and collectively in the assessment process such as review of the outcomes data, revisions and updates to assessment plan, and reaffirmation of SLOs.

• Assessment is done primarily by program coordinator/assistant chair. • Data is primarily collected in capstone activities.	• The assessment reporting and analytical processes are conducted by the program coordinator or assistant chair with data being collected by faculty. • Faculty review outcomes and resulting data at least once per year.	• The program has an organized systematic plan in which all faculty participate in at least one stage of assessment. • Analysis of results informs faculty decision-making related to curricular and program improvements. • Faculty review outcomes and resulting data at least once per year collectively, but those discussions influence other program discussions made throughout the year.	• Program faculty are highly engaged throughout the assessment process as demonstrated at all stages. • Faculty recommend interventions and participate in revising assessment activities for continuous program improvement.
BEGINNING ☐	DEVELOPING ☒	ACCEPTABLE ☐	EXEMPLARY ☐
Comments:	There is documentation that the program has involved Unit A and Unit B faculty, as well as Advisory Board members at the time that this report was submitted. Advisory Board members are focusing on industry needs; faculty are "work(ing) out assessment and rubric details". As such, I am encouraged by the planning and development of the assessment process in CMG at this time.		

Year 2 Report

Construction Management
Student Learning Outcomes (SLOs) for Academic Programs

Please list all of the student learning outcomes for your program as articulated in the assessment plan.

1. Create written communications appropriate to the construction discipline.
2. Create oral presentations appropriate to the construction discipline
3. Create a Construction Safety Plan
4. Create Construction Cost Estimates
5. Create Construction Project Schedules
6. Analyze Professional Decisions based upon 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 construction processes.
11. Apply basic surveying techniques for construction layout and control.
12. Understand different method of project delivery and the roles and responsibilities of all constituents involved in the design and construction process.
13. Understand construction risk management.
14. Understand construction accounting and cost control.
15. Understand quality assurance and control.
16. Understand construction control process.
17. Understand the legal implications of contract, common, and regulatory law to manage a construction project.
18. Understand the principles of sustainable construction.
19. Understand the principles of structural behavior.
20. Understand the basic principles of mechanical, electrical, and piping systems.

Overview of Measures/Instruments

A preliminary draft table of the Outcomes mapped to individual classes and rubrics with performance measures and expected results is provided. Additionally, mapping to EIU University objectives is included. These items were initially reviewed by the Dean's office and are in the process of being reviewed by CMG Faculty and Industrial Advisory Board. These are expected to be complete in final form by the end of Fall Semester 2020.

Eastern Illinois University CMG Program Student Outcomes Assessment Table by ACCE Outcomes

This is the data collection plan for compliance with ACCE accreditation outcomes. The individual instructor is responsible for collecting this data and transmitting the data to the Program Coordinator every semester within a week of the instructor's last final examination and before leaving campus. The Program Coordinator will assemble the data within a binder (maybe online file system) and transmit to the Chair, Dean's Office, and VPAA's office as warranted.

Data collection is required for construction management core classes only as the core classes collectively meet all ACCE requirements. Other courses, required and elective, reinforce these outcomes.

ACCE Learning Outcomes (1,2,3) and Substantiating Event (1.1, 1.2, 1.3)	*Class Where Collected with Class Description*	*Rubric or Other Evaluation Instrument*	*Performance Measures*	*Acceptable Performance Level and Expectation of Results*	*Direct or Indirect Assessment?*
1. Create written communications appropriate to the construction discipline.					
1.1 Creation of Technician-level Lab Reports	EGT 2004G - Material Science and Evaluation	CMG committee-approved technician-level lab report instructions.	Written Technician Lab Report	At least 70% of the students will score 70% or better.	Direct
1.2 Preparation of Professional Laboratory Reports	CMG 2013 - Soil, Concrete, and Paving Testing	CMG committee-approved professional-level lab report instructions.	Written Professional Lab Report	At least 70% of the students will score 70% or better.	Direct
1.3 Development of a written Job Hazard Safety Analysis	EGT 2773 - Safety for Engineers and Technical Professionals	In compliance with OSHA and other governmental safety standards.	Written Job Hazard Safety Analysis	At least 70% of the students will score 70% or better.	Direct
1.4 Development of a Sustainability Construction Work Plan Meeting LEED of Green Globes Protocols	CMG 3833 - Sustainable Buildings	LEED and Green Globes published standards.	Work Plan	At least 70% of the students will score 70% or better.	Direct
1.5 Create a Project Safety Plan	CMG 4243 - Construction Management Capstone	In compliance with OSHA and other government and industry safety standards.	Written Project Safety Plan	At least 70% of the students will score 70% or better.	Direct
2. Create oral presentations appropriate to the construction discipline					
2.1 Present finding regarding the student-developed subdivision layout.	CMG 3213 - Site Surveying and Planning	EIU Speaking and Listening Rubric and CMG-committee-approved evaluation forms	Oral Individual Presentation	At least 70% of the students will score 70% or better.	Direct
2.2 Present Group Development of a Passive Heating and Lighting System Design	CMG 3603 - Mechanical Systems Residential and Commercial	EIU Speaking and Listening Rubric and CMG-committee-approved evaluation forms	Oral Group Presentation	At least 70% of the students will score 70% or better.	Direct
2.3 Presentation of Findings of a LEED or Green Globes Sustainable Construction Work Plan	CMG 3833 - Sustainable Buildings	EIU Speaking and Listening Rubric and CMG-committee-approved evaluation forms	Oral Group Presentation	At least 70% of the students will score 70% or better.	Direct
2.4 Presentation of Findings of a Group Cost Estimate for a Small Commercial Project	CMG 4223 - Construction Cost Estimating	EIU Speaking and Listening Rubric and CMG-committee-approved evaluation forms	Oral Group Presentation	At least 70% of the students will score 70% or better.	Direct
2.5 Presentation of Findings for a Design-Build Project as Part of a Charrette	CMG 4243 - Construction Management Capstone	EIU Speaking and Listening Rubric and CMG-committee-approved evaluation forms	Oral Group Presentation	At least 70% of the students will score 70% or better.	Direct

ACCE Learning Outcomes (1,2,3) and Substantiating Event (1.1, 1.2, 1.3)	*Class Where Collected with Class Description*	*Rubric or Other Evaluation Instrument*	*Performance Measures*	*Acceptable Performance Level and Expectation of Results*	*Direct or Indirect Assessment?*
3. Create a Construction Safety Plan					
3.1 Development of a Written Site Safety Work Pl	EGT 2773 - Safety for Engineers and Technical Professionals	In compliance with OSHA and other government and industry safety standards.	Written Project Safety Plan Assignment	At least 70% of the students will score 70% or better.	Direct
3.2 Create a Project Safety Plan	CMG 4243 - Construction Management Capstone	In compliance with OSHA and other government and industry safety standards.	Written Project Safety Plan Assignment	At least 70% of the students will score 70% or better.	Direct
4. Create Construction Project Cost Estimates.					
4.1 Development of detailed Material, Labor, and Equipment Take-off Estimates using Excel.	CMG 4223 - Construction Cost Estimating	RS Means or MasterFormat Template	Develop Detailed Estimate	At least 70% of the students will score 70% or better.	Direct
4.2 Develop a Preliminary Estimate in the Development of a Sustainable Building Project	CMG 3833 - Sustainable Buildings	CMG-committee-approved and IAB Education Task Force-approved Format	Develop a Preliminary Estimate	At least 70% of the students will score 70% or better.	Direct
4.3 Create an Estimate and Develop a Project Bid for a Design-Build Project	CMG 4243 - Construction Management Capstone	CMG-committee-approved and IAB Education Task Force-approved Format	Develop an Conceptual Estimate and Project Proposal	At least 70% of the students will score 70% or better.	Direct
4.4 Develop a Risk-based Estimate based upon Monte Carlo Analytical Techniques	CMG 4023 - Construction Risk Management	CMG-committee-approved and IAB Education Task Force-approved Format	Develop a Risk-based Estimate and Monte Carlo Simulation	At least 70% of the students will score 70% or better.	Direct
5. Create Construction Project Schedules					
5.1 Develop Project Schedule using Microsoft Project demonstrating a mastery of understanding precedence and their impact upon Project Time Scheduling	EGT 3414 - Engineering Technology Project Management	Rubric developed by Certified Master Project Manager or Professional Engineer	Develop Project Schedule	At least 70% of the students will score 70% or better.	Direct
5.2 Relate Take-off Estimating to Project Scheduling	CMG 4243 - Construction Management Capstone	RS Means or MasterFormat Template	Develop Line-based Project Schedule	At least 70% of the students will score 70% or better.	Direct
5.3 Develop an Advanced Project Schedule using Resource Leveling Techniques and Monte Carlo Analysis	CMG 4243 - Construction Management Capstone	CMG-committee-approved and IAB Education Task Force-approved Format	Develop Risk-based Schedule with Resource Leveling	At least 70% of the students will score 70% or better.	Direct
6. Analyze Professional Decisions based upon ethical principles.					
6.1 Write a short paper balancing ethics, safety, productivity, and business objectives within the realm of a construction project.	EGT 2773 - Safety for Engineers and Technical Professionals	EIU Writing and Critical Reading Rubric	Written Short Paper	At least 70% of the students will score 70% or better.	Direct
6.2 Prepare a short paper and presentation examining risk and rewards associated with ethical decision-making.	CMG 4023 - Construction Risk Management	EIU Writing and Critical Reading and Speaking and Listening Rubrics	Written Short Paper	At least 70% of the students will score 70% or better.	Direct

ACCE Learning Outcomes (1,2,3) and Substantiating Event (1.1, 1.2, 1.3)	*Class Where Collected with Class Description*	*Rubric or Other Evaluation Instrument*	*Performance Measures*	*Acceptable Performance Level and Expectation of Results*	*Direct or Indirect Assessment?*
7. Analyze Construction Documents for planning and management of construction processes					
7.1 Prepare a set of facility prints including floor plans, elevations, and details using 3-dimensional software.	CMG 2223 - Print Reading and Building Informational Modeling	Standards set by CMG-committee with consultation with Education Task Force of Construction Management IAB	Detailed Project Prints	At least 70% of the students will score 70% or better.	Direct
7.2 Develop a site-specific safety plan drawing using CAD, Sketch-up, Photoshop or other digital methods to illustrate a logical progression of safe construction events.	EGT 2773 - Safety for Engineers and Technical Professionals	In compliance with OSHA and other government and industry safety standards.	Site-specific Site Safety Plan Drawing	At least 70% of the students will score 70% or better.	Direct
7.3 Analyze construction or facility prints while developing a logical activity progression plan.	EGT 3414 - Engineering Technology Project Management	Rubric developed by Certified Master Project Manager or Professional Engineer	Logical Activity Progression Plan	At least 70% of the students will score 70% or better.	Direct
7.4 Using a set of construction plans, develop a scale model of the foundations and structural components of a multi-story building.	CMG 3023 - Formwork and Building Processes	Standards set by CMG-committee with consultation with Education Task Force of Construction Management IAB	Scale Group Model Project	At least 70% of the students will score 70% or better.	Direct
7.4 Development of detailed Material, Labor, and Equipment Take-off Estimates using Excel.	CMG 4223 - Construction Cost Estimating	RS Means or MasterFormat Template	Detailed Estimate	At least 70% of the students will score 70% or better.	Direct
7.5 Create a preliminary estimate and schedule for a commercial building using construction documents.	CMG 4243 - Construction Management Capstone	Standards set by CMG-committee with consultation with Education Task Force of Construction Management IAB	Preliminary Estimate	At least 70% of the students will score 70% or better.	Direct
8. Analyze methods, materials and equipment used to construct projects.					
8.1 Analyze materials such as steel, plastic, concrete, wood, ceramic, and composite identifying their physical and chemical behavior under environmental stressors.	EGT 2004G - Material Science and Evaluation	ASTM and Other Materials Specifier Standards	Objective Test Questions	At least 70% of the students will score 70% or better.	Direct
8.2 Conduct advanced analysis of soil, pozzolanic concrete, and asphaltic concrete for use as construction materials.	CMG 2013 - Soil, Concrete, and Paving Testing	CMG committee-approved professional-level lab report instructions.	Written Professional Lab Report	At least 70% of the students will score 70% or better.	Direct
8.3 Construct a building project using equipment, tools, and trade workmanship.	CMG 2253 - Construction Equipment and Materials	Standards set by CMG-committee with consultation with Education Task Force of Construction Management IAB	Physical Building Project	At least 70% of the students will score 70% or better.	Direct
8.4 Write a Short Paper examining the selection of equipment and their use on heavy construction project.	CMG 3023 - Formwork and Building Processes	EIU Writing and Critical Reading Rubric	Written Short Paper	At least 70% of the students will score 70% or better.	Direct
8.5 Present findings of an investigation either for construction or manufacturing assigning resources using LEAN techniques.	EGT 3414 - Engineering Technology Project Management	Rubric developed by Certified Master Project Manager or Professional Engineer	Either Written Paper or Oral Presentation	At least 70% of the students will score 70% or better.	Direct
8.6 Present finding of an investigation using either sustainable active or passive mechanical systems in the built environment.	CMG 3603 - Mechanical Systems Residential and Commercial	EIU Speaking and Listening Rubric and CMG-committee-approved evaluation forms	Oral Individual or Group Presentation	At least 70% of the students will score 70% or better.	Direct
8.7 Present alternate methods of material selection and construction practices to enhance project sustainability.	CMG 4243 - Construction Management Capstone	Standards set by CMG-committee with consultation with Education Task Force of Construction Management IAB	Written Comprehensive Proposal	At least 70% of the students will score 70% or better.	Direct

ACCE Learning Outcomes (1,2,3) and Substantiating Event (1.1, 1.2, 1.3)	*Class Where Collected with Class Description*	*Rubric or Other Evaluation Instrument*	*Performance Measures*	*Acceptable Performance Level and Expectation of Results*	*Direct or Indirect Assessment?*
9. Apply construction management skills as a member of a multi-disciplinary team.					
9.1 Construct a building project as part of a group activity.	CMG 2253 - Construction Equipment and Materials	Standards set by CMG committee with consultation with Education Task Force of Construction Management IAB	Physical Building Project	At least 70% of the students will score 70% or better.	Direct
9.2 Participate in a survey party while conducting laboratory assignments.	CMG 3213 - Site Surveying and Planning	Peer Evaluation Form approved by CMG committee	Survey Crew Laboratory Assignment	Favorable Rating of Performance by Peer for 80% of the Students	Indirect
9.3 Present a summary of group findings as part of group mechanical/electrical systems design.	CMG 3603 - Mechanical Systems Residential and Commercial	EIU Speaking and Listening Rubric and CMG-committee-approved evaluation forms	Group Presentation	At least 70% of the students will score 70% or better.	Direct
9.4 Participate within a Charrette examining a sustainability project from the perspective of many stakeholders.	CMG 3833 - Sustainable Buildings	Peer Evaluation Form approved by CMG committee	Charrette Group Work	Favorable Rating of Performance by Peer for 80% of the Students	Indirect
10. Apply electronic-based technology to manage construction process					
10.1 Develop Project Schedule using Microsoft Project demonstrating a mastery of understanding precedence and their impact upon Project Time Scheduling	EGT 3414 - Engineering Technology Project Management	Rubric developed by Certified Master Project Manager or Professional Engineer	Microsoft Project Scheduling	At least 70% of the students will score 70% or better.	Direct
10.2 Develop an Advanced Project Schedule using Resource Leveling Techniques and Monte Carlo Analysis	CMG 4243 - Construction Management Capstone	Standards set by CMG committee with consultation with Education Task Force of Construction Management IAB	Advanced Project Scheduling	At least 70% of the students will score 70% or better.	Direct
11. Apply basic surveying techniques for construction layout and control.					
11.1 Layout a building structure and stake horizontal curves.	CMG 3213 - Site Surveying and Planning	Standards set by CMG committee with consultation with Education Task Force of Construction Management IAB	Layout of Building	At least 70% of the students will score 70% or better.	Direct
11.2 Calculate cut and fill requirements for a roadway project.	CMG 3213 - Site Surveying and Planning	Standards set by CMG committee with consultation with Education Task Force of Construction Management IAB	Objective Assignment	At least 70% of the students will score 70% or better.	Direct
11.3 Understand error determination and precision as it pertains to surveying.	CMG 3213 - Site Surveying and Planning	Standards set by CMG committee with consultation with Education Task Force of Construction Management IAB	Objective Test Questions	At least 70% of the students will score 70% or better.	Direct
12. Understand different methods of project delivery and the roles and responsibilities of all constituents involved in the design and construction process.					
12.1 Understand the division of labor and resources on a job site.	CMG 2253 - Construction Equipment and Materials	Standards set by CMG committee with consultation with Education Task Force of Construction Management IAB	Objective Test Questions	At least 70% of the students will score 70% or better.	Direct
12.2 Understand the best contractual methods to develop a sustainable building. Explain how stakeholders are included within the process.	CMG 3833 - Sustainable Buildings	Standards set by CMG committee with consultation with Education Task Force of Construction Management IAB	Objective Test Questions	At least 70% of the students will score 70% or better.	Direct
12.3 Comprehend each contract type and the risk associated as it relates to the client, contractor, subcontractor, and other stakeholders.	CMG 4023 - Construction Risk Management	Standards set by CMG committee with consultation with Education Task Force of Construction Management IAB	Objective Test Questions	At least 70% of the students will score 70% or better.	Direct

ACCE Learning Outcomes (1,2,3) and Substantiating Event (1.1, 1.2, 1.3)	*Class Where Collected with Class Description*	*Rubric or Other Evaluation Instrument*	*Performance Measures*	*Acceptable Performance Level and Expectation of Results*	*Direct or Indirect Assessment?*
13. Understand construction risk management.					
13.1 Identify risk sources and impact.	CMG 4023 - Construction Risk Management	Standards set by CMG committee with consultation with Education Task Force of Construction Management IAB	Objective Test Questions	At least 70% of the students will score 70% or better.	Direct
13.2 Evaluate risk sensitivity and risk attitude as it pertains to construction management.	CMG 4023 - Construction Risk Management	Standards set by CMG committee with consultation with Education Task Force of Construction Management IAB	Objective Homework Assignment	At least 70% of the students will score 70% or better.	Direct
13.3 Create statistical mathematic models to evaluate project risk and exposure.	CMG 4023 - Construction Risk Management	Standards set by CMG committee with consultation with Education Task Force of Construction Management IAB	Excel Sheet Statistical Modelling	At least 70% of the students will score 70% or better.	Direct
13.4 Develop a project Quality Assurance plan and describe how it impacts construction risk.	EGT 4843 - Statistical Quality and Reliability	EIU Writing and Critical Reading Rubric	Written Short Paper	At least 70% of the students will score 70% or better.	Direct
14. Understand construction accounting and cost control.					
14.1 Development of detailed Material, Labor, and Equipment Take-off Estimates using Master Format Guidelines.	CMG 4223 - Construction Cost Estimating	RS Means or MasterFormat Template	Detailed Estimate	At least 70% of the students will score 70% or better.	Direct
14.2 Develop a Project Cost Control plan based upon learned business and financial practices.	CMG 4243 - Construction Management Capstone	Standards set by CMG committee with consultation with Education Task Force of Construction Management IAB	Project Cost Control Plan	At least 70% of the students will score 70% or better.	Direct
15. Understand quality assurance and control.					
15.1 Develop a project Quality Assurance plan for a construction project and describe how it impacts construction risk.	EGT 4843 - Statistical Quality and Reliability	Standards set by CMG committee with consultation with Education Task Force of Construction Management IAB	Project Quality Assurance Plan	At least 70% of the students will score 70% or better.	Direct
15.2 Develop a project specific QA/QC Plan for a commercial project.	CMG 4243 - Construction Management Capstone	Standards set by CMG committee with consultation with Education Task Force of Construction Management IAB	Commercial Project QA/QC Plan	At least 70% of the students will score 70% or better.	Direct
16. Understand construction control process.					
16.1 Understand the construction control process within construction.	CMG 4223 - Construction Cost Estimating	Standards set by CMG committee with consultation with Education Task Force of Construction Management IAB	Objective Test Questions	At least 70% of the students will score 70% or better.	Direct
16.2 Develop a construction control plan for a commercial project.	CMG 4243 - Construction Management Capstone	Standards set by CMG committee with consultation with Education Task Force of Construction Management IAB	Written Construction Control Plan	At least 70% of the students will score 70% or better.	Direct
17. Understand the legal implications of contract, common, and regulatory law to manage a construction project.					
17.1 Understand relevant ethical principles and values from the perspectives of various stakeholders as they relate to contractual and legal implications.	BUS 2750 - Legal and Social Environment of Business	Standards set by School of Business	Objective Homework or Test Questions	At least 70% of the students will score 70% or better.	Direct
17.2 Analyze through case studies the legal implications of contract, common, and regulatory law as it pertains to the construction industry.	CMG 4023 - Construction Risk Management	EIU Speaking and Listening Rubric and CMG-committee-approved evaluation forms	Oral Individual or Group Presentation	At least 70% of the students will score 70% or better.	Direct

ACCE Learning Outcomes (1,2,3) and Substantiating Event (1.1, 1.2, 1.3)	*Class Where Collected with Class Description*	*Rubric or Other Evaluation Instrument*	*Performance Measures*	*Acceptable Performance Level and Expectation of Results*	*Direct or Indirect Assessment?*
18. Understand the principles of sustainable construction.					
18.1 Development of a Sustainability Construction Work Plan Meeting LEED of Green Globes Protocols	CMG 3833 - Sustainable Buildings	LEED and Green Globes published standards.	Work Plan	At least 70% of the students will score 70% or better.	Direct
18.2 Develop value added alternated to support green initiatives as part of a design-build project.	CMG 4243 - Construction Management Capstone	Standards set by CMG committee with consultation with Education Task Force of Construction Management IAB	Project Value-added Plan	At least 70% of the students will score 70% or better.	Direct
19. Understand the principles of structural behavior.					
19.1 Understand the concepts of force, force distribution, stress, strain and how to apply mathematical models to assess material sufficiency.	CMG 2953 - Statics and Strength of Materials	Standards set by CMG committee with consultation with Education Task Force of Construction Management IAB	Objective Homework or Test Questions	At least 70% of the students will score 70% or better.	Direct
19.2 Understand force flow within a building, foundations, lateral bracing, and construction techniques as they apply to building construction.	CMG 3023 - Formwork and Building Processes	Standards set by CMG committee with consultation with Education Task Force of Construction Management IAB	Objective Homework or Test Questions	At least 70% of the students will score 70% or better.	Direct
20. Understand the basic principles of mechanical, electrical, and piping systems.					
20.1 Develop heating cooling requirement for a building envelope. Size appropriate passive and cooling system requirements.	CMG 3603 - Mechanical Systems Residential and Commercial	Standards set by CMG committee with consultation with MCA and NECA	System Design Problem	At least 70% of the students will score 70% or better.	Direct
20.1 Determine DMV and supply piping requirements within a building.	CMG 3603 - Mechanical Systems Residential and Commercial	Standards set by CMG committee with consultation with MAC and NECA	Piping Design Problem	At least 70% of the students will score 70% or better.	Direct
20.3 Understand the function of electrical systems within a commercial building.	CMG 3603 - Mechanical Systems Residential and Commercial	Standards set by CMG committee with consultation with MCA and NECA	Objective Homework or Test Questions	At least 70% of the students will score 70% or better.	Direct

Eastern Illinois University CMG Program Student Outcomes Assessment Table by EIU Learning Objectives

EIU Learning Objectives (side border) and Goals (1, 2, 3, etc.)	Substantiating Event or Activity	Class Where Collected with Class Description	Rubric or Other Evaluation Instrument	Performance Measures	Acceptable Performance Level and Expectation of Results	Direct or Indirect Assessment
Critical Thinking	**1. Asking essential questions and engaging diverse perspectives**					
	A. Participate within a Charrette examining a sustainability project from the perspective of many stakeholders.	CMG 3833 - Sustainable Buildings	Peer Evaluation Form approved by CMG committee	Charrette Group Work	Favorable Rating of Performance by Peer for 80% of the Students	Indirect
	B. Analyze through case studies the legal implications of contract, common, and regulatory law as it pertains to the community stakeholders and the construction industry.	CMG 4023 - Construction Risk Management	Standards set by CMG committee with consultation with Education Task Force of Construction Management IAB	Objective Homework Assignment	At least 70% of the students will score 70% or better.	Direct
	2. Seeking and gathering data, information, and knowledge from experience, texts, graphics, and media.					
	A. Conduct advanced analysis of soil, pozzolanic concrete, and asphaltic concrete for use as construction materials	CMG 2013 - Soil, Concrete, and Paving Testing	CMG committee-approved professional-level lab report instructions.	Written Professional Lab Report	At least 70% of the students will score 70% or better.	Direct
	B. Development of detailed Material, Labor, and Equipment Take-off Estimates using Master Format	CMG 4223 - Construction Cost Estimating	RS Means or MasterFormat Template	Detailed Estimate	At least 70% of the students will score 70% or better.	Direct
	3. Understanding, interpreting, and critiquing relevant data, information, and knowledge.					
	A. Analyze materials such as steel, plastic, concrete, wood, ceramic, and composite identifying their physical and chemical behavior under environmental stressors.	EGT 2004G - Material Science and Evaluation	ASTM and Other Materials Specifier Standards	Objective Test Questions	At least 70% of the students will score 70% or better.	Direct
	B. Develop heating cooling requirement for a building envelope. Size appropriate passive and cooling system requirements.	CMG 3603 - Mechanical Systems Residential and Commercial	Standards set by CMG committee with consultation with MCA and NECA	System Design Problem	At least 70% of the students will score 70% or better.	Direct
	4. Synthesizing and integrating data, information, and knowledge to infer and create new insights.					
	A. Prepare a set of facility prints including floor plans, elevations, and details using 3-dimensional software.	CMG 2223 - Print Reading and Building Informational Modeling	Standards set by CMG-committee with consultation with Education Task Force of Construction	Detailed Project Prints	At least 70% of the students will score 70% or better.	Direct
	B. Development of a written Job Hazard Safety Analysis	EGT 2773 - Safety for Engineers and Technical Professionals	In compliance with OSHA and other governmental safety standards.	Written Job Hazard Safety Analysis	At least 70% of the students will score 70% or better.	Direct
	5. Anticipating, reflecting upon, and evaluating implications of assumptions, arguments, hypotheses, and conclusions.					
	A. Prepare a short paper and presentation examining risk and rewards associated with ethical decision-making.	CMG 4023 - Construction Risk Management	EIU Writing and Critical Reading and Speaking and Listening Rubrics	Written Short Paper	At least 70% of the students will score 70% or better.	Direct
	B. Present alternate methods of material selection and construction practices to enhance project sustainability.	CMG 4243 - Construction Management Capstone	Standards set by CMG-committee with consultation with Education Task Force of Construction Management IAB	Written Comprehensive Proposal	At least 70% of the students will score 70% or better.	Direct
	6. Creating and presenting defensible expressions, arguments, positions, hypotheses, and proposals.					
	A. Development of a Sustainability Construction Work Plan Meeting LEED of Green Globes Protocols	CMG 3833 - Sustainable Buildings	LEED and Green Globes published standards.	Work Plan	At least 70% of the students will score 70% or better.	Direct
	B. Identify risk sources and impact upon project and society.	CMG 4023 - Construction Risk Management	Standards set by CMG committee with consultation with Education Task Force of Construction	Objective Test Questions	At least 70% of the students will score 70% or better.	Direct

EIU Learning Objectives (side border) and Goals (1, 2, 3, etc.)	Substantiating Event or Activity	Class Where Collected with Class Description	Rubric or Other Evaluation Instrument	Performance Measures	Acceptable Performance Level and Expectation of Results	Direct or Indirect Assessment
Writing and Critical Reading	**1. Creating documents appropriate for specific audiences, purposes, genres, disciplines, and professions.**					
	A. Preparation of Professional Laboratory Reports	CMG 2013 – Soil, Concrete, and Paving Testing	CMG committee-approved professional-level lab report instructions.	Written Professional Lab Report	At least 70% of the students will score 70% or better.	Direct
	B. Development of a Written Site Safety Work Plan	EGT 2773 – Safety for Engineers and Technical Professionals	In compliance with OSHA and other government and industry safety standards.	Written Project Safety Plan Assignment	At least 70% of the students will score 70% or better.	Direct
	2. Crafting cogent and defensible applications, analyses, evaluations, and arguments about problems, ideas, and issues.					
	A. Present findings of an investigation either for construction or manufacturing assigning resources using LEAN techniques.	EGT 3414 – Engineering Technology Project Management	Rubric developed by Certified Master Project Manager	Either Written Paper or Oral Presentation	At least 70% of the students will score 70% or better.	Direct
	B. Prepare a short paper and presentation examining risk and rewards associated with ethical decision-making.	CMG 4023 – Construction Risk Management	EIU Writing and Critical Reading and Speaking and Listening Rubrics	Written Short Paper	At least 70% of the students will score 70% or better.	Direct
	3. Producing documents that are well-organized, focused, and cohesive.					
	A. Write a short paper balancing ethics, safety, productivity, and business objectives within the realm of a construction project.	EGT 2773 – Safety for Engineers and Technical Professionals	EIU Writing and Critical Reading Rubric	Written Short Paper	At least 70% of the students will score 70% or better.	Direct
	B. Prepare a short paper and presentation examining risk and rewards associated with ethical decision-making.	CMG 4023 – Construction Risk Management	EIU Writing and Critical Reading and Speaking and Listening Rubrics	Written Short Paper	At least 70% of the students will score 70% or better.	Direct
	4. Using appropriate vocabulary, mechanics, grammar, diction, and sentence structu					
	A. Write a Short Paper examining the selection of equipment and their use on heavy construction project.	CMG 3023 – Formwork and Building Processes	EIU Writing and Critical Reading Rubric	Written Short Paper	At least 70% of the students will score 70% or better.	Direct
	B. Develop a project Quality Assurance plan and describe how it impacts construction risk.	EGT 4843 – Statistical Quality and Reliability	EIU Writing and Critical Reading Rubric	Written Short Paper	At least 70% of the students will score 70% or better.	Direct
	5. Understanding, questioning, analyzing, and synthesizing complex textual, numeric, and graphical sources.					
	A. Development of detailed Material, Labor, and Equipment Take-off Estimates using Excel.	CMG 4223 – Construction Cost Estimating	RS Means or MasterFormat Template	Develop Detailed Estimate	At least 70% of the students will score 70% or better.	Direct
	B. Develop a Risk-based Estimate based upon Monte Carlo Analytical Techniques	CMG 4023 – Construction Risk Management	CMG-committee-approved and IAB Education Task Force-approved Format	Develop a Risk-based Estimate and Monte Carlo Simulation	At least 70% of the students will score 70% or better.	Direct
	6. Evaluating evidence, issues, ideas, and problems from multiple perspectives.					
	A. Participate within a Charrette examining a sustainability project from the perspective of many stakeholders.	CMG 3833 – Sustainable Buildings	Peer Evaluation Form approved by CMG committee	Charrette Group Work	Favorable Rating of Performance by Peer for 80% of the Students	Indirect
	B. Presentation of Findings for a Design-Build Project as Part of a Charrette	CMG 4243 – Construction Management Capstone	EIU Speaking and Listening Rubric and CMG-committee-approved evaluation forms	Oral Group Presentation	At least 70% of the students will score 70% or better.	Direct
	7. Collecting and employing source materials ethically and understanding their strengths and limitations.					
	A. Understand relevant ethical principles and values from the perspectives of various stakeholders as they relate to contractual and legal implications.	BUS 2750 – Legal and Social Environment of Business	Standards set by School of Business	Objective Homework or Test Questions	At least 70% of the students will score 70% or better.	Direct
	B. Analyze through case studies the legal implications of contract, common, and regulatory law as it pertains to community stakeholders and the construction industry.	CMG 4023 – Construction Risk Management	EIU Speaking and Listening Rubric and CMG-committee-approved evaluation forms	Oral Individual or Group Presentation	At least 70% of the students will score 70% or better.	Direct

EIU Learning Objectives (side border) and Goals (1, 2, 3, etc.)		Substantiating Event or Activity	Class Where Collected with Class Description	Rubric or Other Evaluation Instrument	Performance Measures	Acceptable Performance Level and Expectation of Results	Direct or Indirect Assessment?
Speaking and Listening		6.1 Write a short paper balancing ethics, safety, productivity, and business objectives within the realm of a construction project.	EGT 2773 – Safety for Engineers and Technical Professionals	EIU Writing and Critical Reading Rubric	Written Short Paper	At least 70% of the students will score 70% or better.	Direct
		6.2 Prepare a short paper and presentation examining risk and rewards associated with ethical decision-making.	CMG 4023 – Construction Risk Management	EIU Writing and Critical Reading and Speaking and Listening Rubrics	Written Short Paper	At least 70% of the students will score 70% or better.	Direct
	2. Adapting formal and impromptu presentations, debates, and discussions to their au						
		A. Present finding of an investigation using either sustainable active or passive mechanical systems in the built environment.	CMG 3603 – Mechanical Systems Residential and Commercial	EIU Speaking and Listening Rubric and CMG-committee-approved evaluation forms	Oral Individual or Group Presentation	At least 70% of the students will score 70% or better.	Direct
		B. Presentation of Findings of a Group Cost Estimate for a Small Commercial Project	CMG 4223 – Construction Cost Estimating	EIU Speaking and Listening Rubric and CMG-committee-approved evaluation forms	Oral Group Presentation	At least 70% of the students will score 70% or better.	Direct
	3. Developing and organizing ideas and supporting them with appropriate details and evidence.						
		A. Present finding regarding the student-developed subdivision layout.	CMG 3213 – Site Surveying and Planning	EIU Speaking and Listening Rubric and CMG-committee-approved evaluation forms	Oral Individual Presentation	At least 70% of the students will score 70% or better.	Direct
		B. Presentation of Findings of a Group Cost Estimate for a Small Commercial Project	CMG 4223 – Construction Cost Estimating	EIU Speaking and Listening Rubric and CMG-committee-approved evaluation forms	Oral Group Presentation	At least 70% of the students will score 70% or better.	Direct
	4. Using effective language skills adapted for oral delivery, including appropriate vocabulary, grammar, and sentence structure.						
		A. Presentation of Findings of a LEED or Green Globes Sustainable Construction Work Plan	CMG 3833 – Sustainable Buildings	EIU Speaking and Listening Rubric and CMG-committee-approved evaluation forms	Oral Group Presentation	At least 70% of the students will score 70% or better.	Direct
		B. Presentation of Findings for a Design-Build Project as Part of a Charrette	CMG 4243 – Construction Management Capstone	EIU Speaking and Listening Rubric and CMG-committee-approved evaluation forms	Oral Group Presentation	At least 70% of the students will score 70% or better.	Direct
	5. Using effective vocal delivery skills, including volume, pitch, rate of speech, articu						
		A. Present a summary of group findings as part of group mechanical/electrical systems design.	CMG 3603 – Mechanical Systems Residential and Commercial	EIU Speaking and Listening Rubric and CMG-committee-approved evaluation forms	Group Presentation	At least 70% of the students will score 70% or better.	Direct
		B. Present finding regarding the student-developed subdivision layout.	CMG 3213 – Site Surveying and Planning	EIU Speaking and Listening Rubric and CMG-committee-approved evaluation forms	Oral Individual Presentation	At least 70% of the students will score 70% or better.	Direct
	6. Employing effective physical delivery skills, including eye contact, gestures, and m						
		A. Presentation of Findings of a LEED or Green Globes Sustainable Construction Work Plan	CMG 3833 – Sustainable Buildings	EIU Speaking and Listening Rubric and CMG-committee-approved evaluation forms	Oral Group Presentation	At least 70% of the students will score 70% or better.	Direct
		B. Presentation of Findings of a Group Cost Estimate for a Small Commercial Project	CMG 4223 – Construction Cost Estimating	EIU Speaking and Listening Rubric and CMG-committee-approved evaluation forms	Oral Group Presentation	At least 70% of the students will score 70% or better.	Direct
	7. Using active and critical listening skills to understand and evaluate oral communica						
		A. Analyze through case studies the legal implications of contract, common, and regulatory law as it pertains to community stakeholders and the construction industry.	CMG 4023 – Construction Risk Management	EIU Speaking and Listening Rubric and CMG-committee-approved evaluation forms	Oral Individual or Group Presentation	At least 70% of the students will score 70% or better.	Direct
		B. Presentation of Findings for a Design-Build Project as Part of a Charrette	CMG 4243 – Construction Management Capstone	EIU Speaking and Listening Rubric and CMG-committee-approved evaluation forms	Oral Group Presentation	At least 70% of the students will score 70% or better.	Direct

EIU Learning Objectives (side border) and Goals (1, 2, 3, etc.)	Substantiating Event or Activity	Class Where Collected with Class Description	Rubric or Other Evaluation Instrument	Performance Measures	Acceptable Performance Level and Expectation of Results	Direct or Indirect Assessment?
Qualitative Reasoning	**1. Performing basic calculations and measurements.**					
	A. Construct a building project using equipment, tools, and trade workmanship.	CMG 2253 - Construction Equipment and Materials	Standards set by CMG committee with consultation with Education Task Force of Construction Management IAB	Physical Building Project	At least 70% of the students will score 70% or better.	Direct
	B. Participate in a survey party while conducting laboratory assignments.	CMG 3213 - Site Surveying and Planning	Peer Evaluation Form approved by CMG committee	Survey Crew Laboratory Assignment	Favorable Rating of Performance by Peer for 80% of the Students	Indirect
	2. Applying quantitative methods and using the resulting evidence to solve problems.					
	A. Creation of Technician-level Lab Reports	EGT 2004G - Material Science and Evaluation	CMG committee-approved technician-level lab report instructions	Written Technician Lab Report	At least 70% of the students will score 70% or better.	Direct
	B. Understand the construction control process within construction.	CMG 4223 - Construction Cost Estimating	Standards set by CMG committee with consultation with Education Task Force of Construction Management IAB	Objective Test Questions	At least 70% of the students will score 70% or better.	Direct
	3. Reading, interpreting, and constructing tables, graphs, charts, and other representations of quantitative material.					
	A. Develop a Risk-based Estimate based upon Monte Carlo Analytical Techniques	CMG 4023 - Construction Risk Management	CMG committee-approved and IAB Education Task Force-approved Format	Develop a Risk-based Estimate and Monte Carlo Simulation	At least 70% of the students will score 70% or better.	Direct
	B. Develop an Advanced Project Schedule using Resource Leveling Techniques and Monte Carlo Analysis	CMG 4243 - Construction Management Capstone	CMG-committee-approved and IAB Education Task Force-approved Format	Develop Risk-based Schedule with Resource Leveling	At least 70% of the students will score 70% or better.	Direct
	4. Critically evaluating quantitative methodologies and data.					
	A. Analyze materials such as steel, plastic, concrete, wood, ceramic, and composite identifying their physical and chemical behavior under environmental stressors.	EGT 2004G - Material Science and Evaluation	ASTM and Other Materials Specifier Standards	Objective Test Questions	At least 70% of the students will score 70% or better.	Direct
	B. Conduct advanced analysis of soil, pozzolanic concrete, and asphaltic concrete for use as construction materials.	CMG 2013 - Soil, Concrete, and Paving Testing	CMG committee-approved professional-level lab report instructions.	Written Professional Lab Report	At least 70% of the students will score 70% or better.	Direct
	5. Constructing cogent arguments utilizing quantitative material.					
	A. Create a preliminary estimate and schedule for a commercial building using construction documents.	CMG 4243 - Construction Management Capstone	Standards set by CMG committee with consultation with Education Task Force of Construction Management IAB	Preliminary Estimate	At least 70% of the students will score 70% or better.	Direct
	B. Develop a project Quality Assurance plan and describe how it impacts construction risk.	EGT 4843 - Statistical Quality and Reliability	EIU Writing and Critical Reading Rubric	Written Short Paper	At least 70% of the students will score 70% or better.	Direct
	6. Using appropriate technology to collect, analyze, and produce quantitative materi					
	A. Analyze materials such as steel, plastic, concrete, wood, ceramic, and composite identifying their physical and chemical behavior under environmental stressors.	EGT 2004G - Material Science and Evaluation	ASTM and Other Materials Specifier Standards	Objective Test Questions	At least 70% of the students will score 70% or better.	Direct
	B. Conduct advanced analysis of soil, pozzolanic concrete, and asphaltic concrete for use as construction materials.	CMG 2013 - Soil, Concrete, and Paving Testing	CMG committee-approved professional-level lab report instructions.	Written Professional Lab Report	At least 70% of the students will score 70% or better.	Direct

EIU Learning Objectives (side border) and Goals (1, 2, 3, etc.)	Substantiating Event or Activity	Class Where Collected with Class Description	Rubric or Other Evaluation Instrument	Performance Measures	Acceptable Performance Level and Expectation of Results	Direct or Indirect Assessment?
Responsible Citizenship	**1. Engaging with diverse ideas, individuals, groups, and cultures.**					
	A. Write a short paper balancing ethics, safety, productivity, and business objectives within the realm of a construction project.	EGT 2773 - Safety for Engineers and Technical Professionals	EIU Writing and Critical Reading Rubric	Written Short Paper	At least 70% of the students will score 70% or better.	Direct
	B. Participate within a Charrette examining a sustainability project from the perspective of many stakeholders.	CMG 3833 - Sustainable Buildings	Peer Evaluation Form approved by CMG committee	Charrette Group Work	Favorable Rating of Performance by Peer for 80% of the Students	Indirect
	2. Applying ethical reasoning and standards in personal, professional, disciplinary, and civic contexts.					
	A. Understand relevant ethical principles and values from the perspectives of various stakeholders as they relate to contractual and legal implications.	BUS 2750 - Legal and Social Environment of Business	Standards set by School of Business	Objective Homework or Test Questions	At least 70% of the students will score 70% or better.	Direct
	B. Analyze through case studies the legal implications of contract, common, and regulatory law as it pertains to community stakeholders and the construction industry.	CMG 4023 - Construction Risk Management	EIU Speaking and Listening Rubric and CMG-committee-approved evaluation forms	Oral Individual or Group Presentation	At least 70% of the students will score 70% or better.	Direct
	3. Participating formally and informally in civic life to better the public good.					
	A. Present a summary of group findings as part of group mechanical/electrical systems design.	CMG 3603 - Mechanical Systems Residential and Commercial	EIU Speaking and Listening Rubric and CMG-committee-approved evaluation forms	Group Presentation	At least 70% of the students will score 70% or better.	Direct
	B. Participate within a Charrette examining a sustainability project from the perspective of many stakeholders.	CMG 3833 - Sustainable Buildings	Peer Evaluation Form approved by CMG committee	Charrette Group Work	Favorable Rating of Performance by Peer for 80% of the Students	Indirect
	4. Applying knowledge and skills to new and changing contexts within and beyond the classroom.					
	A. Participate within a Charrette examining a sustainability project from the perspective of many stakeholders.	CMG 3833 - Sustainable Buildings	Peer Evaluation Form approved by CMG committee	Charrette Group Work	Favorable Rating of Performance by Peer for 80% of the Students	Indirect
	18.2 Develop value added alternated to support green initiatives as part of a design-build project.	CMG 4243 - Construction Management Capstone	Standards set by CMG committee with consultation with Education Task Force of Construction Management IAB	Project Value-added Plan	At least 70% of the students will score 70% or better.	Direct

Improvements and Changes Based on Assessment

1. Provide a short summary (1-2 paragraphs or bullets) of any curricular actions (revisions, additions, and so on) that were approved over the past two years as a result of reflecting on the student learning outcomes data. Are there any additional future changes, revisions, or interventions proposed or still pending?

There were no curricular activities within the last two years. In the future, the math department has cancelled the required MAT 1330. As a result, there is anticipated that a course revision for EGT 1303 will be forthcoming to enhance the material not covered by losing this course. This will drop our total credit hours below 120 and an additional third elective will be required to meet the total hour standard.

Also, during this time period, we have been accepted as a candidate program for ACCE accreditation. CM Faculty, CM IAB members, and EIU administration have developed Quality Improvement Standards (attached) to meet ACCE accreditation requirements. In addition, work has been initiated as part of a strategic plan to allocate resources for the university to enhance laboratory space, develop recruiting and engagement activities, and provide leadership in academics. The plan will also provide objective mapping and assessment procedures, academic analytic measurement processes, data analysis practices, and data reporting procedures to ensure the constant improvement of the program. These plans are currently in progress and are expected to be completed by the end of Spring Semester 2021.

Following the plan development, data will be collected, tested and analyzed to determine progress in obtaining program objectives. Following that, the data will be used to provide ACCE with a self-assessment study. This is expected to be complete by December 2021. It is expected that a visiting team will arrive in Spring of 2022 to finalize the accreditation process.

2. Please provide a brief description or bulleted list of any improvements (or declines) observed/measured in student learning. Be sure to mention any intervention made that has not yet resulted in student improvement (if applicable).

Measures for student learning during the pandemic are difficult. Data collection without a plan is impossible for consistency. Once the plans are in place, valid data will be collected, analyzed, and examined for program improvement.

3. Using the form below, please document annual faculty and committee engagement with the assessment process (such as the review of outcomes data, revisions/updates to assessment plan, and reaffirmation of SLOs).

History of Annual Review		
Date of Annual Review	**Individuals/Groups who Reviewed Plan**	**Results of the Review (i.e., reference proposed changes from #1 above, revised SLOs, etc...)**
10/15/2020	Austin Cheney	
	John Cabage	Attendees developed tactical items for the three
	J C Foley	strategic focus areas. These are to combined with
	David Melton	four other task force meeting and a final CM
	Susan Meacham	strategic plan developed. Standardization of syllabi
	Logan Cannady	was discussed. Objective assessment and
	Scott Gossett	measurement was discussed. It was agreed that two
	Dan Ordos	additional meetings were required to finalize the
	Ed Thomas	curriculum map. These will occur over the next month.

Formal annual reviews were not conducted in the manner suggested by the table at this time. The first official review for the mapping content occurred on October 15, 2020 which was a collaborative meeting with faculty and IAB members. From the meeting two additional meetings are scheduled. The IAB is to look at the applicability of the course map with industry needs and the second will be a faculty meeting to work out assessment and rubric details. All this mapping and assessment will be examined by an ACCE-assigned mentor familiar with the accreditation process.