SOUTHERN ILLINOIS UNIVERSITY EDWARDSVILLE

Department of Construction

Undergraduate Program Quality Assessment Plan

March 2017

I. Introduction and Definition of Terms

The program quality assessment plan of the Department of Construction identifies the process for measuring the continuous improvement of the program. As a first step, the Department has identified specific outcomes that must be present to indicate academic quality. These indicators of success must be measurable and must provide relevant data to allow the Department to monitor progress, quantify the impact of program changes, and make decisions regarding needed program modifications. The second step involves the regular collecting, synthesizing, and analyzing of data on the indicators of success. The third step is reflecting on and learning from the data as a department faculty. The fourth and final step involves implementing program changes in response to organizational learning, and repeating the cycle following the changes.

Definition of Terms

- *Educational objectives:* Expectations of the capabilities of graduates of the construction management degree program
- *Learning outcomes:* Knowledge and skills that students should attain by completion of the construction management degree program to meet the expectations outlined by educational objectives.
- *Assessment instruments*: Tools used to assess how well learning outcomes are met (Instruments used: rubrics, alumni and employer surveys, senior exit interviews, AIC exam performance, industry focus groups)

Educational Objectives

The objectives of the Construction Department are consistent with those of Southern Illinois University Edwardsville and the School of Engineering. The University vision is

to be recognized nationally as a premier metropolitan university, known for the excellence of its programs and the development of professional and community leaders. To achieve its goals, the University has set long-range goals, the achievement of which will help students become lifelong learners and effective leaders in their professions and communities. The vision of the School of Engineering is to be a partnership of faculty, students, staff, alumni and other professionals who work together to provide the highest quality education and maintain innovative resources that support the technical growth and economic development of this region. The Department of Construction strives to be the preferred choice of students in Illinois and the St. Louis metropolitan region for baccalaureate education in the construction management discipline, educating its students to assume positions leading to increasing managerial responsibility for technical and business activities in a wide variety of firms and agencies which plan and execute construction projects or specialize in project delivery.

In order to produce students able to enter the construction industry and perform well, it is necessary to address all the inputs to undergraduate education, including the academic program, students, faculty, and the faculty workplace and student learning environment. The goals, objectives, and indicators for success of these inputs are provided in this plan. By working toward these goals and objectives, and reviewing the results of the indicators, the Department will continuously improve its ability to produce students who are well qualified to meet the needs of the construction industry and enjoy success in their careers.

II. Performance Indicators or Assessments

To determine if the inputs applied to the educational process are producing the desired outputs, it is necessary to identify the characteristics that graduates of the Construction program should possess, including mastery of the appropriate body of knowledge, technical skills, interpersonal skills, problem-solving skills, and professional ethics. The Educational Objectives are that graduates of the program will:

1. Include ethical, societal, and global considerations when making construction business decisions.

2. Be able to express ideas effectively through both written and oral communication.
3. Be able to understand and interpret the language of the industry, both symbolic and written.
4. Be able to recognize and solve problems involving construction materials, methods, systems, processes, and delivery methods.

To achieve the educational objectives the measureable learning outcomes listed in Table II-1 have been identified.

Table II-1: Learning Outcomes

Learning Outcomes
Students will:
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.

Table II-2 demonstrates the mapping from educational objectives to learning outcomes of the program. Table II-3 maps the SIUE Objectives for the Baccalaureate Degree to the program learning objectives.

Table II-2: Mapping of Educational Objectives to Learning Outcomes

Educational Objectives	**Learning Outcomes**
Students will:	**Students will:**
1. Include ethical, societal, and global considerations when making construction business decisions.	6. Analyze professional decisions based on ethical principles.
2. Be able to communicate effectively in written and oral form	1. Create written communications appropriate to the construction discipline.
	2. Create oral presentations appropriate to the construction discipline.

3. Be able to understand and interpret the language of the industry, both symbolic and written	7. Analyze construction documents for planning and management of construction processes.
4. Be able to recognize and solve problems involving construction materials, methods, systems, processes, and delivery methods	3. Create a construction project safety plan.
	4. Create construction project cost estimates.
	5. Create construction project schedules.
	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.

Table II-3: Map of learning objectives to SIUE BS Objectives

SIUE's Objectives for the Baccalaureate Degree		**Program Student Learning Outcomes ***	**Performance indicator or measure**	**When the measure is assessed**	**Program Target**
Analytic, Problem Solving, and	Information Literacy	1, 2, 3, 8, 10, 16, 17	*	**	70

Decision Making Skills	Quantitative Literacy	7, 4, 5, 8, 13, 14, 16, 19, 20	*	**	70
	Ability to understand and interpret written and oral text	6, 7, 3, 15, 16, 17	*	**	70
	Ability to recognize, develop, evaluate, and defend or attack hypotheses	6, 13, 15, 16, 17	*	**	70
Oral and Written Communication Skills	Written Communication	1, 3, 5, 7, 16	*	**	70
	Oral Communication	2, 9	*	**	70
Foundation in Liberal Arts and Sciences		9, 12, 16	*	**	70
Value of Diversity		6, 9, 12	*	**	70
Scientific Literacy		8, 10, 11, 18, 19, 20	*	**	70
Ethics		6, 17	*	**	70
Preparation in an Academic Discipline		1 - 20	*	**	70
* see Table III-3 Assessment Plan and Appendix 7					
** see Table III-2 Schedule					

III. Description of Program's Assessment Procedures and Process

A. Assessment Methods Used and methods for measurement

Data collected at the departmental level include course evaluation forms, senior exit surveys and senior exit interviews, evaluation of the Senior Assignment, results of American Institute of Constructors Fundamentals (Level I) examination, Alumni Surveys, Employer Surveys, and results of senior examinations issued to all seniors in CNST 452, and learning outcomes assessment results.

1. Student Questionnaire on Outcomes Assessment

In conjunction with student evaluations of teaching at the conclusion of each course, the Department of Construction also includes a survey of each course's performance with respect to educational objectives. These surveys are summarized and analyzed in annual assessment meetings. See Appendix 1 for an example questionnaire.

2. Senior Exit Surveys and Senior Exit Interviews

At or near the end of each semester, faculty members meet with graduating seniors and solicit their views on the attainment of educational outcomes as determined by the Department of Construction. A survey form developed by the department faculty is used to assess the student's recognition of various desired educational outcomes in each course taught by the Department, and a record of the verbal comments made by students will also be kept. Students are encouraged to write comments they do not wish to share verbally. The results of this survey are be reviewed by the Department Chair, and the results presented to the faculty at the close of each semester. Consideration of departmental response to student identifications of program deficiencies is addressed annually at a faculty meeting prior to the start of the following fall semester. Records are maintained by the Department of Construction, including copies of the assessment form, original copies of student responses, and a summary of the department response to the results. See Appendix 2 for an example survey and questionnaire.

3. Evaluation of Senior Assignment

U.S. News & World Report has recognized SIUE six out of the past seven years for its Senior Capstone integrative learning experience required by all seniors prior to graduation. SIUE is regularly one of only 15 universities nationally recognized in this category, which includes Harvard, MIT, Duke, Princeton, and the University of Chicago. The senior assignment in construction management, which is included in the CNST 452 Construction Management and Senior Assessment class, requires students to define and implement a construction-related project that will demonstrate their proficiency in the educational outcomes established by the department. These projects are evaluated by

a team of judges at the conclusion of each semester. See Appendix 3 for an example outcomes evaluation form.

4. American Institute of Constructors Fundamentals Examination

The Department of Construction encourages graduating seniors to sit for the AIC Level I examination, offered in April and November on the campus of SIUE. In 2010, the Department instituted a requirement that all students in the senior assignment class, CNST 452, must take a proxy AIC exam. This exam was created by the Department, and modeled on the AIC Level 1 exam. Students may then take the AIC exam if they choose. Results of both examinations for SIUE students are made available to the faculty by the Department Chair and discussed at annual assessment meeting prior to the beginning of the fall semester. See Appendix 4 for an example performance report.

5. Alumni Surveys

The Department Chair obtains the results of alumni surveys conducted by the Office of Institutional Research for the cohort of graduates one year, five years and nine years out for review and discussion at a regular faculty meeting. The results will be discussed and areas of program weakness, as identified by responding graduates, will be considered for any appropriate curricular changes or other response. The Department also uses focus groups and online surveys to solicit input from alumni. See Appendix 5 for an example alumni survey.

6. Employer Surveys

The Department surveys employers of its graduates on a regular, five-year basis to solicit input on identified strengths and weaknesses of recent graduates, and considers appropriate curricular changes or other response. See Appendix 6 for an example employer survey.

7. Learning Outcomes Assessment

The learning outcomes data are collected every semester as appropriate based on the outcome assessment plan as shown in Appendix 7.

A. ***Continuous Quality Improvement***

Data collected through the assessment procedure is reviewed by the program faculty as shown in Tables III-1 and III-2. Table III-2 provides a schedule showing when each learning outcome performance measure will be evaluated by the program. Table III-1demonstrates how learning outcomes are assessed and analyzed using the performance indicators in the listed program courses.

During the review process, the faculty considers both outcomes showing success and outcomes showing a need for improvement. After reviewing the assessment results, the program faculty decide whether to continue to monitor benchmarks/ outcomes/goals and make no changes; monitor the results and investigate causes in order to make changes if needed when more information is available to make that decision; or make changes as appropriate, implement them and then monitor the performance indicators to see if the changes made improved the issue. The entire review process is documented in the program's annual performance report.

Table III-1. Learning Outcomes Performance Indicators/Measures

	Outcome																			
Where Assessed	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
CNST 120																				
CNST 210	x	x						x							x			x		
CNST 241																				
CNST 264											x									
CNST 301								x							x					
CNST 321																				x
CNST 332																				x
CNST 341							x													
CNST 351						x													x	

CNST 353										x										
CNST 403					x											x				
CNST 411																	x			
CNST 451				x																
CNST 452		x							x			x	x	x						
CNST 470			x																	
Capstone project	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
Senior exam	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
AIC Exam	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
Exit interviews	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
Employer survey	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
Alumni survey	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x

Table III-2. Assessment schedule

Course	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
CNST 120																				
CNST 210	Yr 1	Yr 1						Yr 2							Yr 3			Yr 3		
CNST 241																				
CNST 264											Yr 2									
CNST 301								Yr 2							Yr 3					
CNST 321																				Yr 3
CNST 332																				Yr 3
CNST 341							Yr 1													
CNST 351						Yr 1													Yr 3	
CNST 353										Yr 2										
CNST 403					Yr 1											Yr 3				
CNST 411																	Yr 3			
CNST 451				Yr 1																
CNST 452		Yr 1							Yr 2			Yr 2	Yr 2	Yr 2						
CNST 470			Yr 1																	
Senior exam	Every yr	Every yr	Every yr	Every yr	Every yr	Every yr	Every yr	Every yr	Every yr	Every yr	Every yr	Every yr	Every yr	Every yr	Every yr	Every yr	Every yr	Every yr	Every yr	Every yr
AIC Exam	Every yr	Every yr	Every yr	Every yr	Every yr	Every yr	Every yr	Every yr	Every yr	Every yr	Every yr	Every yr	Every yr	Every yr	Every yr	Every yr	Every yr	Every yr	Every yr	Every yr
Exit interviews	Every yr	Every yr	Every yr	Every yr	Every yr	Every yr	Every yr	Every yr	Every yr	Every yr	Every yr	Every yr	Every yr	Every yr	Every yr	Every yr	Every yr	Every yr	Every yr	Every yr
Employer survey	Yr 2	Yr 2	Yr 2	Yr 2	Yr 2	Yr 2	Yr 2	Yr 2	Yr 2	Yr 2	Yr 2	Yr 2	Yr 2	Yr 2	Yr 2	Yr 2	Yr 2	Yr 2	Yr 2	Yr 2
Alumni survey	Yr 2	Yr 2	Yr 2	Yr 2	Yr 2	Yr 2	Yr 2	Yr 2	Yr 2	Yr 2	Yr 2	Yr 2	Yr 2	Yr 2	Yr 2	Yr 2	Yr 2	Yr 2	Yr 2	Yr 2

Appendix 1: STUDENT QUESTIONNAIRE ON OUTCOMES ASSESSMENT

SIUE Department of Construction
STUDENT QUESTIONNAIRE ON OUTCOMES ASSESSMENT
COURSE: _____

This questionnaire has been prepared to assess the outcomes we wish to achieve for the Construction Management program. Not all the outcomes listed below are applicable to every course. For each of the questions below, please indicate your assessment of the outcomes you attained by taking this course by circling the appropriate numerical rating from 1 to 5. If you feel a particular outcome is not applicable to the course, circle NA.

STUDENT QUESTIONNAIRE ON OUTCOMES ASSESSMENT						
As a result of this course I am able to:	Strongly Disagree	Neither agree Nor Disagree		Strongly Agree		Not applicable
Question	1	2	3	4	5	NA
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.						

Appendix 2: Senior Exit Surveys and Senior Exit Interviews

SOUTHERN ILLINOIS UNIVERSITY EDWARDSVILLE
SCHOOL OF ENGINEERING
DEPARTMENT OF CONSTRUCTION

SENIOR EXIT INTERVIEWS QUESTIONNAIRE – Part I

Date:

Name: _____

Anticipated date of graduation _____ (SEMESTER) _____ (YEAR)

Permanent Address (Where you may be contacted after graduation)

_____

_____

Email address (how you can be contacted after graduation—e.g. non-SIUE account)

_____

Did you have any work experience in construction while you were an undergraduate?

Yes ( ) No ( )

If yes, please provide the name of the company or agency and periods of employment.

_____

_____

Did you engage in any projects or competitions? Yes ( ) No ( )

If yes, please provide details and faculty sponsor.

_____

_____

_____

Post-graduation plans

_____ I am seeking employment

_____ I have secured employment

Number of job offers received _____

If you've accepted employment to begin upon graduation, please provide the information below.

Title or position _____

Name of company _____

Work email address _____

Address _____

_____

Salary ($ / month) _____

If you've been accepted for graduate study, please provide the information below:

Name of graduate program _____

University _____

SOUTHERN ILLINOIS UNIVERSITY EDWARDSVILLE
SCHOOL OF ENGINEERING
DEPARTMENT OF CONSTRUCTION

SENIOR QUESTIONNAIRE – Part II

Date:

Anticipated Date of Graduation:

Please rate the faculty that you had in each of the following areas at SIUE.

	Very Good	Good	Acceptable	Poor	Very Poor	N/A
Math & Science						
Humanities & Soc. Sci						
Engineering Courses Outside your dept.						
Business Courses Outside your dept.						
Construction Courses						

Comments or Suggestions:

Please rate the academic advisement that you received after declaring your major.

Very Good _____ Good _____ Acceptable _____ Poor _____ Very Poor _____

Comments or Suggestions:

If you had any co-op or internship experience, please rate its importance as part of your overall educational program.

Very Important _____ Moderately Important _____ Unimportant _____ No Such Experience _____

Comments or Suggestions:

If you engaged in any independent study or undergraduate research, please rate its importance as part of your overall educational program.

Very Important	Moderately Important	Unimportant	No Such Experience
_____	_____	_____	_____

Comments or suggestions:

Please indicate your degree of satisfaction with the education that you received at SIUE.

Very Satisfied	Somewhat Satisfied	Somewhat Dissatisfied	Very Dissatisfied
_____	_____	_____	_____

What did you like most about your Construction Department Experience at SIUE?

What could be done to improve the SIUE experience for future Construction students?

Any additional comments:

SIUE
Department of Construction
STUDENT QUESTIONNAIRE ON OUTCOMES ASSESSMENT

SENIOR QUESTIONNAIRE – Part III

Anticipated Date of Graduation: _____ Current Semester and Year: _____

This exit questionnaire has been prepared to assess the outcomes we wish to achieve for the Construction Management program. For each of the questions below, please indicate your assessment of the outcomes you attained in this program by circling the appropriate numerical rating from 1 to 5. If you feel a particular outcome is not applicable, circle NA.

STUDENT QUESTIONNAIRE ON OUTCOMES ASSESSMENT						
As a result of this degree program, I am able to:	Strongly Disagree	Neither agree Nor Disagree		Strongly Agree		Not applicable
Question	1	2	3	4	5	NA
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.						

SIUE
Department of Construction
STUDENT QUESTIONNAIRE ON OUTCOMES ASSESSMENT

SENIOR QUESTIONNAIRE – Part IV

Please add additional comments about your assessment of the educational outcomes you attained, including suggestions for improvement of how these outcomes are achieved.

As a result of this degree program, I am able to:

OUTCOME	COMMENTS
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.	

Supplemental Senior Exit Interview Questions

1. **How did you become interested in construction as a college major?**

2. **Did you ever participate in middle or high school competitions designed to interest students in construction or technical careers? If so, please list.**

3. **How did you learn about SIUE Construction Management program?**

4. **Would you recommend the program to friends or family? Why or why not?**

5. Suggestions

Appendix 3: Senior Assignment Outcomes Assessment

SIUE Department of Construction
SENIOR ASSIGNMENT OUTCOMES ASSESSMENT
Current Semester and Year: _____

Student Name(s)_____

SENIOR ASSIGNMENT OUTCOMES ASSESSMENT						
Through the Senior Assignment the student(s) demonstrated the following outcome:	Did not meet expectations		Met expectations	Exceeded expectations		Not applicable
Question	1	2	3	4	5	NA
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.						

	Did not meet expectations		Met expectations	Exceeded expectations		Not applicable
Question	1	2	3	4	5	NA
Overall, did this meet Senior Assignment expectations?						

Appendix 4: American Institute of Constructors Fundamentals Examination

AIC - Constructor Certification Commission

School Report - Learning Outcome Scores
(Graduating Seniors)

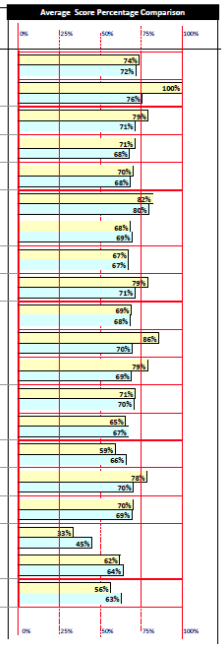
Southern Illinois Univ - Edwardsville (IL002)

CQE Level 1 - Construction Fundamentals - November 2015

	Your School Candidates	National Candidates
Number of Candidates Tested:	1	532
Number of Candidates Passed:	1	264
Number of Candidates Failed:	0	268

Learning Outcomes Score Summaries

		School Average	National Average
01	Create written communications	74%	72%
02	Create oral presentations	100%	76%
03	Create a construction project safety plan	79%	71%
04	Create construction project cost estimates	71%	68%
05	Create construction project schedules	70%	68%
06	Analyze decisions based on ethical principles	82%	80%
07	Analyze construction documents for planning	68%	69%
08	Analyze methods, materials, and equipment	67%	67%
09	Apply construction management skills as team member	79%	71%
10	Apply electronic-based technology to manage process	69%	68%
11	Apply basic surveying technology for layout	86%	70%
12	Understand different project delivery methods	79%	69%
13	Understand Construction risk management	71%	70%
14	Understand construction accounting & cost control	65%	67%
15	Understand construction quality assurance & control	59%	66%
16	Understand construction project control processes	78%	70%
17	Understand the legal implications of contracts	70%	69%
18	Understand the principles of sustainable construction	33%	45%
19	Understand the principles of structural behavior	62%	64%
20	Understand the principles of MEP	56%	63%



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Appendix 5: Alumni Survey

Survey of Baccalaureate graduates

I.I graduated from the SIUE Department of Construction

- Between 2010 and 2015
- Between 2000-2009
- Between 1990-1999
- Prior to 1990

2. Employer role

- General contractor/CM
- Specialty contractor
- Owner/owner representative
- Other

3. Major type of work (select all that apply)

- Commercial
- Heavy/highway
- Industrial
- Residential

4. Construction volume of my organization (for recent year)

- Over $500 million
- $100-499 million
- $50-99 million
- Less than $50 million

5. I am able to:

	Strongly Disagree	Neither agree Nor Disagree		Strongly Agree		Not applicable
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.						
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11. Apply basic surveying techniques for construction layout and control.						
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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.						

6. I have SIUE Dept. of Construction alumni in my company (please answer Q7 if so)

- Alumni from less than 3 years ago
- Alumni from more than 3 years ago
- Both

6. SIUE Dept. of Construction alumni in my company are able to

	Strongly Disagree	Neither agree Nor Disagree		Strongly Agree		Not applicable
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.						

8. Please provide us with suggestions for improvement of SIUE Construction Management graduates.

Appendix 6: Employer survey

Employer survey

1. Role

- ○ General contractor/CM
- ○ Specialty contractor
- ○ Owner/owner representative
- ○ Other

2. Major type of work (select all that apply)

- ☐ Commercial
- ☐ Heavy / highway
- ☐ Industrial
- ☐ Residential

3. Construction volume of my organization (for recent year)

- ○ Over $500 million
- ○ $100 - 499 million
- ○ $50 - 100 million
- ○ Less than $50 million

4. Number of SIUE Construction Management graduates employed

5. My organization currently employs SIUE Construction Management alumni who have graduated

- ○ Within the past five years
- ○ Over five years ago
- ○ Both

6. SIUE Construction alumni at my organization demonstrate the ability to

	Strongly Disagree	Neither agree Nor Disagree		Strongly Agree		Not applicable
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.						

7. Please provide us with suggestions for improvement of SIUE Construction Management graduates.

Appendix 7: Outcomes assessment plan:

Outcome	Outcome will be assessed by:
1. Create written communications appropriate to the construction discipline.	Written reports submitted in CNST 210 and senior project documentation in CNST 452.
2. Create oral presentations appropriate to the construction discipline.	Project presentation in CNST 210 and senior project presentation in CNST 452.
3. Create a construction project safety plan.	Assignment in CNST 470.
4. Create construction project cost estimates.	Assignment in CNST 451.
5. Create construction project schedules.	Assignment in CNST 403.
6. Analyze professional decisions based on ethical principles.	Assignment in CNST 351.
7. Analyze construction documents for planning and management of construction processes.	Assignment in CNST 341.
8. Analyze methods, materials, and equipment used to construct projects.	Assignments in CNST 210 and 301.
9. Apply construction management skills as a member of a multi-disciplinary team.	Senior assignment in CNST 452.
10. Apply electronic-based technology to manage the construction process.	Exam in CNST 353.
11. Apply basic surveying techniques for construction layout and control.	Performance in CNST 264.
12. Understand different methods of project delivery and the roles and responsibilities of all constituencies involved in the design and construction process.	Performance in CNST 452.
13. Understand construction risk management.	Performance in CNST 452.
14. Understand construction accounting and cost control.	Performance in CNST 452.
15. Understand construction quality assurance and control.	Assignments in CNST 210 and 301.
16. Understand construction project control processes.	Exam in CNST 403.
17. Understand the legal implications of contract, common, and regulatory law to manage a construction project.	Exam in CNST 411.
18. Understand the basic principles of sustainable construction.	Assignment in CNST 210.
19. Understand the basic principles of structural behavior.	Performance in CNST 351.
20. Understand the basic principles of mechanical, electrical and piping systems.	Exams in CNST 321 and 332.
All learning outcomes.	Capstone course, senior exam, AIC exam, exit interviews, employer survey, and alumni survey.