

**DEPARTMENT OF TECHNOLOGY**

**PROGRAM ASSESSMENT PLAN**

**B.S. DEGREE IN CONSTRUCTION MANAGEMENT**



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**Department of Technology  
Program Assessment Plan  
B.S. Degree: Construction Management**

This Department of Technology Academic Quality Improvement Plan includes a description of learning outcomes, assessment measures, feedback and continuous improvement mechanisms, and record keeping procedures that guide the Construction Management program in continuous improvement. There are two components to the Construction Management program assessment: (1) Learning Outcomes Assessment and (2) Program Goals and Plan of Work. Annual assessment data is posted on the Department of Technology website: [www.tec.illinoisstate.edu](http://www.tec.illinoisstate.edu).

**Learning Outcomes Assessment**

The learning outcomes report, completed each year, is an aggregate summary of student progress toward meeting identified learning outcomes. The resulting data is reported in a dashboard format (see following page for an example of learning outcomes dashboard), which includes assessment data and a plan for improvement, as necessary. The learning outcomes for the program are reviewed each year for validation by the Construction Management program advisory board. Multiple data points are used to assess learning outcomes, as follows:

1. An **Employer Survey** seeks data on how well graduates performed in terms of intended learning outcomes. These surveys are conducted on a three-year cycle. (*Appendix A* presents an example of the employer follow-up survey).
2. The **Senior Exit Survey** solicits both quantitative and qualitative feedback about the extent to which learning outcomes were achieved. An example of the Senior Exit Survey is presented in *Appendix B*.
3. The University Assessment Services conducts the annual **Alumni Survey** and supplies this assessment data to the department. This survey includes questions on the intended learning outcomes for the program. A sample of the survey questions related to learning outcomes is included in *Appendix C*.
4. To assess learning outcomes, the Construction Management program faculty review the overall results of the graduating senior student's pre-professional certification exam.

Assessment data on learning outcomes receives oversight in the following ways. Specific learning outcome assessment data initially go to the Program Coordinator who is responsible for (a) documenting and reporting the results, (b) evaluating if the results conform to performance indicators, and (c) deciding, in conjunction with program faculty and advisory committee as appropriate, whatever corrective action needs to be taken. Corrective actions are documented in the learning outcomes assessment dashboard and filed on the Faculty Server. An annual assessment calendar is used to coordinate assessment and feedback events (See *Appendix E*).

## **Construction Management Learning Outcomes**

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 multidisciplinary 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

CM Learning Outcome Assessment Report 2016-17		Assessment Methods and Outcomes					Response/Action (2017-2018).
Learning Outcome (Developed from ACCE Standards)	AIC <sup>1</sup> Exam Fall 2016 & Spring 2017 (n=38)		Employer Survey <sup>2</sup> (n=8, no of graduates hired=44, 2016)	Senior Survey <sup>3</sup> (n=31, Fall 2016/ Spr 2017)	ISU Alum Survey		
	ISU Average	National Average					
1	Create written communications appropriate to the construction discipline.	75.3%	74%	Meets Expectation: 8 Below Expectation: 0 N/A:0	4.1	N/A	No action at this time. Objective and self-report measures all positive.
2	Create oral presentations appropriate to the construction discipline.	73.6%	73%	Meets Expectation: 6 Below Expectation: 1 N/A:0	4.1	N/A	No action at this time. Objective and self-report measures all positive.
3	Create a construction project safety plan.	76.4%	71.0%	Meets Expectation: 3 Below Expectation: 0 N/A:5	3.4	N/A	Faculty review & monitor. HSC 272 starts to require development of a safety plan for the class term project.
4	Create construction project cost estimates.	71.2%	72.0%	Meets Expectation: 7 Below Expectation: 0 N/A:1	4.1	N/A	No action at this time. Objective and self-report measures all positive.
5	Create construction project schedules.	73.9%	75.0%	Meets Expectation: 6 Below Expectation: 1 N/A:1	4.1	N/A	No action at this time. Objective and self-report measures all positive.

6	Analyze professional decisions based on ethical principles.	83.7%	80.0%	Meets Expectation: 6 Below Expectation: 0 N/A:2	4.5	N/A	No action at this time. Objective and self-report measures all positive.
7	Analyze construction documents for planning and management of construction processes.	74.8%	74.0%	Meets Expectation: 8 Below Expectation: 0 N/A:0	4.2	N/A	No action at this time. Objective and self-report measures all positive.
8	Analyze methods, materials, and equipment used to construct projects.	72.9%	72.0%	Meets Expectation: 8 Below Expectation: 0 N/A:0	4.2	N/A	No action at this time. Objective and self-report measures all positive.
9	Apply construction management skills as a member of a multidisciplinary team.	74.8%	76.0%	Meets Expectation: 7 Below Expectation: 1 N/A:0	4.4	N/A	No action at this time. Objective and self-report measures all positive.
10	Apply electronic-based technology to manage the construction process.	74.4%	72.0%	Meets Expectation: 4 Below Expectation: 2 N/A:2	4.2	N/A	Faculty review & monitor. More diverse computer software are planned to be introduced (BlueBeam Revu in TEC 325).
11	Apply basic surveying techniques for construction layout and control.	74.5%	74.0%	Meets Expectation: 4 Below Expectation: 0 N/A: 4	3.8	N/A	No action at this time. Objective and self-report measures all positive.
12	Understand different methods of project delivery and the roles and responsibilities of all constituencies involved in the design and construction process.	71.2%	71.0%	Meets Expectation: 7 Below Expectation: 0 N/A: 1	4.3	N/A	No action at this time. Objective and self-report measures all positive.
13	Understand construction risk management.	77.4%	76.0%	Meets Expectation: 5 Below Expectation: 0 N/A: 3	4.1	N/A	No action at this time. Objective and self-report measures all positive.

14	Understand construction accounting and cost control.	71.2%	70.0%	Meets Expectation: 6 Below Expectation: 1 N/A: 1	4.1	N/A	No action at this time. Objective and self-report measures all positive.
15	Understand construction quality assurance and control.	70.5%	70.0%	Meets Expectation: 8 Below Expectation: 0 N/A:0	4.1	N/A	No action at this time. Objective and self-report measures all positive.
16	Understand construction project control processes.	74.7%	75.0%	Meets Expectation: 5 Below Expectation: 1 N/A: 2	4.1	N/A	No action at this time. Objective and self-report measures all positive.
17	Understand the legal implications of contract, common, and regulatory law to manage a construction project.	71.6%	71.0%	Meets Expectation: 4 Below Expectation: 0 N/A: 4	4.2	N/A	No action at this time. Objective and self-report measures all positive.
18	Understand the basic principles of sustainable construction.	62.2%	61.0%	Meets Expectation: 5 Below Expectation: 0 N/A: 3	3.8	N/A	Faculty review & monitor. While the ISU average grade is higher than the national average, it is below than 70%. Requirement of TEC 394 is going to be proposed instead of an elective course.
19	Understand the basic principles of structural behavior.	67.4%	67.0%	Meets Expectation: 7 Below Expectation: 0 N/A: 1	4.2	N/A	Faculty review & monitor.
20	Understand the basic principles of mechanical, electrical and piping systems.	75.0%	74.0%	Meets Expectation: 6 Below Expectation: 0 N/A: 2	3.6	N/A	No action at this time. Objective and self-report measures all positive.

**Note**

1	Performance Criteria for American Institute of Constructors (AIC) Level 1 Exam	Action benchmark for Survey Data: < 3.5/5.0 scale		Action Benchmark for employer data: <75% "meets expectations" or above	
2	Benchmark: >70% /100% or exceed national average				
3	# of 'meets expectations'/# of 'below expectations'/# of 'N/A'	Scale	5		Well above average
4	Benchmark for Action for Survey Data < 3.5 on 5-pt. scale		4		Above average
5	nd = No Data		3		Avg
6	= Measure below benchmark		2		Below average

	Trigger for action = 2 or more measures below benchmark		1	Well below average	
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## **Program Goals and Plan of Work**

The Construction Management *Program Goals and Plan of Work*, consists of (a) the program mission, (b) program goals, (c) goal alignment with department, college, and university goals, (d) strategies for attaining goals, (e) an annual plan of work, and (f) a report assessing accomplishments (See an example of the *Program Goals and Plan of Work* document on the following page). An assessment of the *Program Goals and Plan of Work* is submitted to the Department of Technology Chair annually at the beginning of the academic year, after developing a plan of work, and to report on work completed from the previous academic year. Follow-up on the assessment of program outcomes data flows first to the Chairperson or Assistant Chairperson who is responsible for documenting and reporting the results in the Department of Technology Annual Assessment Report. As appropriate, results may be further disseminated to the faculty at large, and/or Advisory Committees for further action aimed at program improvement.

## **Construction Management Program Goals**

1. Provide students with high quality educational experiences that will develop technical and managerial knowledge, skills, and attitudes necessary for successful leadership roles in the building construction industry.
2. Continually improve the curriculum to meet or exceed the American Council for Construction Education national standards for BS programs in construction management.
3. Recruit and graduate high-quality individuals into the construction industry to support economic development in Illinois and throughout the United States.
4. Recruit students from underrepresented groups and prepare them for successful leadership and professional roles in the construction industry.
5. Provide students with educational experiences that will develop interpersonal and teamwork skills necessary to successfully function in professional leadership roles in the construction industry.
6. Provide service to the construction industry through applied research, consulting/workshops, and participation in professional organizations.
7. Development - Increase industry and alumni support of the CM program to develop funding for student involvement in professional events, scholarships, facility improvement, applied research beneficial to industry, and faculty professional development.

### Construction Management (CM) Mission, Goals, and Strategic Plan

The mission of the Construction Management program is to be a “first choice” provider and center for construction education.

<u>CM Goals</u>	<u>Goal Alignment</u>	<u>Strategies</u>	<u>Plan of Work for 2016-2017</u>	<u>Report on POW 2016-2017</u>
<p>1. <b>Student Learning Outcomes:</b> Continually improve the curriculum and provide students with high quality educational experiences that will develop technical and managerial knowledge and skills necessary for successful leadership roles in the construction industry.</p>	<p>[Educating Illinois 2013–2018]</p> <ol style="list-style-type: none"> <li>1. Provide a supportive and student-centered educational experience for high-achieving, diverse, and motivated students that promotes their success.</li> <li>2. Provide rigorous, innovative, and high-impact undergraduate and graduate programs that prepare students to excel in a globally competitive, culturally diverse, and changing environment.</li> </ol> <p>[CAST 2014-2018]</p> <ol style="list-style-type: none"> <li>1. CAST provides premier comprehensive undergraduate programs.</li> </ol> <p>[TEC]</p> <ol style="list-style-type: none"> <li>1. TEC will provide a premier undergraduate and graduate education.</li> </ol>	<ol style="list-style-type: none"> <li>a. Continuously improve the CM learning experiences for students and link program content closely to industry.</li> <li>b. Maintain an effective advisory board focused on continuous program improvement.</li> <li>c. Encourage a majority of graduating seniors to acquire industry credentials such as AC and OSHA 32 hours training.</li> <li>d. Continuously improve the curriculum in alignment with ACCE standards.</li> <li>e. Encourage faculty and industry board members to attend professional meetings and accreditation visits to learn the latest in industry and academia</li> </ol>	<ol style="list-style-type: none"> <li>a. Incorporate new construction paradigms, technologies, and methods into existing courses (Faculty).</li> <li>b. Explore/ operationalize international education opportunities that provide opportunities for students (Faculty).</li> <li>c. Utilize the AIC AC exam as part of assessment and host AIC exams in October and April (Faculty).</li> <li>d. Conduct employer and senior surveys (Cleary &amp; Shim).</li> <li>e. Provide research and unconventional learning opportunities to complement traditional education (Faculty).</li> <li>f. Arrange project tours and guest lectures (Faculty).</li> <li>g. Continue to evolve the Advisory Board to reflect the industry on a National and global scale representing industry insight that can guide the CM program to mold students best prepared to meet the challenges of today and adapt to the ever changing industry as they face the innovations of the future (Faculty).</li> <li>h. Explore new innovative curriculum, adaptable to the quick and dramatic changes in the industry and the revised ACCE outcomes for incorporation into next catalog (Faculty).</li> <li>i. Actively participate in ACCE meetings, committee/ accreditation activities. On a rotational basis, one faculty member annually to ACCE meeting for accreditation training (Shim &amp; CM Faculty).</li> </ol>	<ol style="list-style-type: none"> <li>a. Pull-planning was incorporated in TEC 229 (Cost Estimating and Project Planning) as a tool for implementation of the Lean construction (Shim); Introduced energy study using Green Building Analysis functions of Revit (Xie)</li> <li>b. Initiated a study abroad program: TEC 398 International Project Management (Xie)</li> <li>c. Two AIC exams were hosted and the results were incorporated in CM learning outcome assessment. (Faculty).</li> <li>d. Both employer survey (8 responses) and senior exit survey (31 responses) were conducted and incorporated in CM learning outcome assessment. (Cleary &amp; Shim).</li> <li>e. Supervised group of students including 1 CM student on a Innovative Consulting Community (ICC) project (Solanki); Introduced ‘Green Concrete’ project in TEC 292 for teaching sustainability concepts (Solanki); Introduced energy analysis and simulation to TEC 217 BIM class.</li> <li>f. Diverse jobsite tours occurred at multiple construction sites and operating buildings. Destihl Brewery, Normal, Normal Fire Department, Normal, Uptown Office building, Normal, BNWARD, TON Water Department, Old Chicago Post Office, Chicago, 150 N. Riverside Chicago (Cleary); Arranged guest speakers from National Precast Concrete Association in CMSA meeting and Geodecke in TEC 224 (Solanki); Arranged TEC 117 and TEC 217 site tour to 6 design-builders in Peoria on April 07, 2017, including River City Design Group, PCM+D, Design Solutions, Demonica Kemper Architects, Dewbery, and Farnsworth (Xie). Arranged TEC 224 site tour to Ramsey Geotechnical Engineering in Bloomington, IL, TEC 292 site tour to Prairie read-mix concrete plant in Normal, IL and TEC 327 site tour to American Buildings Corporation in ElPaso, IL (Solanki);</li> <li>g. The Advisory Board includes members from diverse backgrounds including regional/national contractors and representatives from different trades/sectors in the construction industry (Faculty)</li> </ol>

				<ul style="list-style-type: none"> <li>h. The CM curriculum is under revision according to new ACCE standards and change in the industry (Faculty).</li> <li>i. Attended annual ACCE meeting and got trained for accreditation (Shim); Participated in an accreditation visiting team as a member of training (Shim).</li> </ul>
<p>2. <b>Recruitment and Retention:</b> Recruit and graduate a diverse, high-quality cohort of individuals into the program to support the construction industry in economic development in Illinois and throughout the United States.</p>	<p>[Educating Illinois 2013–2018]</p> <ul style="list-style-type: none"> <li>1. Provide a supportive and student-centered educational experience for high-achieving, diverse, and motivated students that promotes their success.</li> </ul> <p>[CAST 2014-2018]</p> <ul style="list-style-type: none"> <li>1. CAST provides premier comprehensive undergraduate programs.</li> </ul> <p>[TEC]</p> <ul style="list-style-type: none"> <li>1. TEC will provide a premier undergraduate and graduate education.</li> </ul>	<ul style="list-style-type: none"> <li>a. Host career fairs and other promotional events.</li> <li>b. Promptly distribute job and internship opportunity announcements to students.</li> <li>c. Collaborate with other majors and RSO's.</li> </ul>	<ul style="list-style-type: none"> <li>a. Maintain community colleges-articulation agreements (Boser).</li> <li>b. Host two Construction Management career fairs during the year (Fall and Spring semesters), facilitated by the Career Center (Cleary &amp; Shim) and provide opportunities for employers to visit throughout the year (Faculty).</li> <li>c. Distribute information on jobs, internships, scholarship, and CMSA activities in a timely fashion (Faculty).</li> <li>d. Connect employers and alumni in CM fields and share job related information with students with current mass media such as Facebook and LinkedIn. (Cleary &amp; Shim)</li> <li>e. Make an advertising movie for ISU CM program and share it through CM webpage, and CM Facebook pages. (Shim &amp; Faculty).</li> </ul>	<ul style="list-style-type: none"> <li>a. Updated community colleges-articulation agreements as needed (Boser).</li> <li>b. A career fair was hosted both in Fall and Spring with over 40 employers and over 100 students at each. (Cleary &amp; Shim). Employers visited the campus for CMSA meetings, guest lecture, and career fair events.</li> <li>c. Distribute information on jobs, internships, scholarship, and CMSA activities in a timely fashion (Faculty).</li> <li>d. Job related information were shared with students through Facebook and LinkedIn (Cleary &amp; Shim).</li> <li>e. Some movie clips were recorded, but not in good quality. Advertising movie with acceptable quality is planned to be made (Shim &amp; Faculty).</li> </ul>

<p>3. <b>Professional Development:</b> Provide students with educational experiences necessary skills to successfully function in professional leadership roles in the construction industry and provide service to the construction industry through applied research, consulting/workshops, and participation in professional organization.</p>	<p>[Educating Illinois 2013–2018]</p> <ol style="list-style-type: none"> <li>1. Provide a supportive and student-centered educational experience for high-achieving, diverse, and motivated students that promotes their success.</li> <li>2. Provide rigorous, innovative, and high-impact undergraduate and graduate programs that prepare students to excel in a globally competitive, culturally diverse, and changing environment.</li> <li>3. Foster an engaged community and enhance the University’s outreach and partnerships both internally and externally.</li> </ol> <p>[CAST 2014-2018]</p> <ol style="list-style-type: none"> <li>1. CAST provides premier comprehensive undergraduate programs.</li> <li>2. CAST provides graduate education programs that have a state, national, and international reputation for excellence.</li> <li>3. CAST faculty and students will engage in high quality research and scholarship.</li> <li>4. CAST provides outreach initiatives that are mutually beneficial to the academic community and public/private sectors.</li> <li>6. CAST attracts, develops, and maintains meaningful relationships with internal and external constituencies.</li> </ol> <p>[TEC]</p> <ol style="list-style-type: none"> <li>1. TEC will provide a premier undergraduate and graduate education.</li> <li>3. Technology will provide professional service and outreach activities.</li> </ol>	<ol style="list-style-type: none"> <li>a. Maintain active student chapters that promote high levels of student interaction with industry.</li> <li>b. Tenure-Track/ Tenured faculty contribute at least 2 professional presentations and/or publications (including books, book chapters) annually.</li> <li>c. Provide industry workshops as appropriate (e.g. MCA, Laborers, Green Building training, etc.).</li> </ol>	<ol style="list-style-type: none"> <li>a. Facilitate student-led organizations and activities [CMSA: Cleary] <ul style="list-style-type: none"> <li>•CMSA Meetings - monthly</li> <li>•CMSA Executive Board Meetings - monthly.</li> <li>•CMSA field trips – 1or 2 per -year</li> <li>•MESA Meetings - monthly</li> <li>•GreenFluence Meetings – bi-monthly</li> <li>•MCAA Student Summit, Denver, CO (Cleary)</li> <li>•MCAA National Convention and Student Competition, San Diego, CA (if funding permitting) (Cleary)</li> <li>•ASC Region 3 Conference and Student Competition (Commercial/Design-Build/Electrical) in Downers Grove, IL. (Shim &amp; Xie)</li> <li>•NECA student competition (Cleary)</li> <li>•DOE Race to Zero student competition, Golden, CO (Boser &amp; Cleary)</li> <li>•NAHB Competition in Orlando, FL (Boser)</li> <li>•ACI student competition, Detroit, MI (Solanki)</li> </ul> </li> <li>b. Conduct applied research and professional development opportunities (CM Faculty).</li> <li>c. Connect with professional associations by attending their meetings (CM Faculty).</li> </ol>	<ol style="list-style-type: none"> <li>a. Student-led organizations and activities like CMSA were facilitated throughout the year (Cleary). <ul style="list-style-type: none"> <li>• CMSA Meetings - monthly</li> <li>• CMSA Executive Board Meetings - monthly.</li> <li>• CMSA field trips; November Bear Old Chicago Post Office/Clune 150 N. Riverside</li> <li>• MCA and NECA Meetings - monthly</li> <li>• Student Competition Meetings - monthly</li> <li>• GreenFluence Meetings - monthly</li> <li>• ASC Region 3 Conference and Student Competitions (Commercial, Design-Build, Electrical) in Downers Grove, IL. (Shim &amp; Xie)</li> <li>• NECA student competition – submitted proposal (Cleary)</li> <li>• DOE Race to Zero competition, 2 teams presented in Golden, CO. (Boser &amp; Cleary)</li> <li>• NAHB Competition in Orlando, FL (Boser)</li> <li>• ACI student competition, Detroit, MI (Solanki)</li> </ul> </li> <li>b. Conducted applied research and professional development activities (CM Faculty) <ul style="list-style-type: none"> <li>. 11 refereed journal articles, 9 refereed conference proceedings, and 2 poster presentations</li> </ul> </li> <li>a. Attended American Concrete Institute (ACI) Spring 2017 Convention – Driving Concrete Technology, March 26 – 30, 2017, Detroit, Michigan; Attended the 32nd International Conference on Solid Waste Technology and Management, March 19 – 22, 2017, Philadelphia, Pennsylvania (Solanki).</li> <li>b. Attended 2017 Design-Build Educators Workshop hosted by Design-Build Institute of America (DBIA) and Denver University (Xie).</li> <li>c. Provided BIM Fundamental Training to Land Engineers Company as Technology Transfer (Xie).</li> </ol> <ol style="list-style-type: none"> <li>c. Students attended meetings for professional associations; <ul style="list-style-type: none"> <li>• MCAA Student Summit, in Denver, CO (Cleary)</li> <li>• MCAA National Convention and Student Competition, San Diego, CA (Cleary)</li> <li>• NECA National Convention, Boston</li> <li>• NECA Illinois Chapter Meetings (Cleary)</li> <li>• ACI student chapter at ISU was created (Solanki)</li> <li>• MCA of Chicago, Membership and Emerging Leaders meetings</li> </ul> </li> </ol>
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<p>4. <b>Internal and External Funding Support:</b> Through a combination of internal and external resources, maintain the funding necessary to support CM Program activities.</p>	<p>[Educating Illinois 2013–2018] 3. Foster an engaged community and enhance the University’s outreach and partnerships both internally and externally. 4. Enhance institutional effectiveness by strengthening the organizational operation and enhancing resource development.  [CAST 2014-2018] 6. CAST attracts, develops, and maintains meaningful relationships with internal and external constituencies.</p>	<p>a. Promote and maintain multiple ways for industry to connect with and support the program.</p>	<p>a. Evolve CM Annual Industry Partnership program. (Faculty). b. Host the CMSA Golf Outing the last Friday of April to maintain personal connections with CM alumni and industry leaders with proceeds to support the CM endowments (Cleary). c. Monitor and promote CM Scholarships, both at TEC website and other regular and on-going scholarships (Solanki) d. Maintain ISU CM Alumni group on LinkedIn to keep alumni engaged and share job openings for experienced candidates (Cleary). e. Support CM Alumni group summer event (Alumni &amp; Faculty).</p>	<p>a. CM Industry Partnership had 59 partners for 2016-2017 (Faculty). b. Hosted the CMSA Golf Outing the last Friday of April to maintain personal connections with CM alumni and industry leaders with proceeds to support the CM endowments 36 foursomes participated (Cleary). c. Monitored and promoted CM Scholarships through e-mails, TEC website, student-shared drive and during classes. (Solanki) d. Maintained ISU CM Alumni group on LinkedIn to keep alumni engaged and share job openings for experienced candidates. CM program page developed on Facebook and has proved more successful interacting with Alums and current students. (Cleary). e. Support CM Alumni group summer event – Alumni were not able to organize an event this summer. (Alumni &amp; Faculty).</p>
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# Appendix A: Example of Employer Survey

## Construction Management Employer Survey

Page 1

### Construction Management Employer Survey

As part of our continuous quality improvement process and accreditation requirements, we would like to know your perceptions on how well prepared our Construction Management graduates.

If you are not the appropriate person to complete this survey, would you please forward the survey to the individual in your business who supervises or is knowledgeable about the performance of the ISU graduate?

This brief survey has two parts: (a) ratings of 11 individual competencies that graduates should demonstrate, and (b) an open ended section for your comments and suggestions. **Please complete a separate survey for each ISU Construction Management graduate** who has worked for your business for five (5) years or less. All responses are completely confidential. Anticipated time to complete the survey is less than 10 minutes.

Thank you very much for your feedback on the quality of our Construction Management graduates. Your input is very important to our program's success!

1. How long has the (or was the) ISU Construction Management graduate been employed by your business?
  - Less than 1 year
  - 2 years
  - 3 years
  - 4 years
  - 5 years

#### Instructions for questions 2 to 7:

**In the left-hand column is a listing of competencies (knowledge, skills, and attitudes) that should be demonstrated by graduates of the Construction Management program at Illinois State University (ISU). For each of the competencies, please indicate the level of preparation as:**

**Excellent - Good - Neutral - Fair - Poor - Not Applicable.**

2. The ISU graduate exhibits the ability to apply the fundamentals of business and management including accounting, finance, economics, business regulation, and contract law.\*

	Excellent	Good	Neutral	Fair	Poor	Not Applicable
Business & Management	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

3. The ISU graduate demonstrates knowledge of CM finance & accounting, contracts & law. (AIC exam category of budgeting, cost accounting, cost control and close out.\*

	Excellent	Good	Neutral	Fair	Poor	Not Applicable
Contracts & Law	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

4. The ISU graduate can apply knowledge of construction materials and methods including products, systems, and interface issues related to job site organization and the selection of assembly techniques and equipment.\*

	Excellent	Good	Neutral	Fair	Poor	Not Applicable
Materials, Methods & Plan Reading	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

5. The ISU graduate can interpret construction documents (blueprints and specifications) in order to perform such activities as quantity take-offs, cost estimates, quality control, and site layout.\*

	Excellent	Good	Neutral	Fair	Poor	Not Applicable
Construction Documents	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

6. The ISU graduate demonstrates knowledge of design fundamentals and associated mathematics in order to communicate with design professionals (architects and engineers), contribute to the planning phase of building projects, and solve practical construction problems.\*

	Excellent	Good	Neutral	Fair	Poor	Not Applicable
Design Fundamentals	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

7. The ISU graduate demonstrates knowledge and ability in surveying and building layout.\*

	Excellent	Good	Neutral	Fair	Poor	Not Applicable
Surveying Knowledge	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

8. The ISU graduate can interpret OSHA and other appropriate safety standards and develop/execute a construction safety plan that conforms to mandatory procedures, training, and record keeping requirements.\*

	Excellent	Good	Neutral	Fair	Poor	Not Applicable
OSHA Knowledge	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

9. The ISU graduate can prepare a project bid that includes quantity takeoffs, labor and equipment productivity factors, pricing based on historical costs, and overhead and profit.\*

	Excellent	Good	Neutral	Fair	Poor	Not Applicable
Project Bids	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>



10. The ISU graduate can develop, and be able to revise, an effective project plan and schedule that includes network diagramming, critical path, and resource allocation.\*

	Excellent	Good	Neutral	Fair	Poor	Not Applicable
Project Plans	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

11. The ISU graduate demonstrates an understanding of the concepts, roles, responsibilities, and procedures of project management and apply to ethics, project delivery systems, administrative systems and procedures, cost and time control\*

	Excellent	Good	Neutral	Fair	Poor	Not Applicable
Project Management	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

12. The ISU graduate can utilize industry-accepted software for project management, planning and scheduling, estimating, and design.\*

	Excellent	Good	Neutral	Fair	Poor	Not Applicable
Project Software	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

13. Additional comments, clarifications or suggestions for the ISU Construction Management program:

# Appendix B: Example of Senior Exit Survey

## Department of Technology Senior Survey (CM)

Page 1

### Department of Technology Senior Exit Survey

As part of our continuous quality improvement process, we would like to know your perception of how well we have performed as a department and as an academic degree program.

This brief survey has two parts: (a) ratings of general perceptions about the department and its quality, and (b) ratings on how well you achieved the intended learning outcomes for your major. Anticipated time to complete the survey is about 15 minutes.

Thank you very much for your feedback on the quality of the Department of Technology and its programs of study!

**Instructions for questions 1 to 17:**

**This section includes ratings of your perception about the Department of Technology and its quality.**

1. Faculty were helpful when I needed assistance.*	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
Faculty	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
2. Overall, the quality of instruction was excellent in TEC courses.*	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
Quality	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
3. I was treated fairly in my dealings with faculty.*	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
Fairness	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
4. Faculty were experts in their subject matter areas.*	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
Expertise	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
5. The department's computer resources met my needs.*	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
Computers	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
6. Overall, I was satisfied with the quality of laboratory equipment.*	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
Lab Equipment	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
7. Lab hours provided access to equipment to complete assignments.	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
Lab Access	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
8. I was able to get my into TEC courses in a timely manner.*	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
Course Schedule	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
9. TEC Advisement Office responded to my inquiries in a timely manner.*	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
Timely Advisement	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
10. My TEC advisor was knowledgeable of my academic plan.*	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
Advisement Expertise	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

□  
Q12

Please indicate how well your degree program prepared you to perform each of the following.



	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
I am able to create written communications appropriate to the construction discipline.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I am able to create oral presentations appropriate to the construction discipline.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I am able to create a construction project safety plan.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I am able to create construction project cost estimates.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I am able to create construction project schedules.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I am able to analyze professional decisions based on ethical principles.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I am able to analyze construction documents for planning and management of construction processes.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I am able to analyze methods, materials, and equipment used to construct projects.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I am able to apply construction management skills as a member of a multidisciplinary team.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I am able to apply electronic-based technology to manage the construction process.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I am able to apply basic surveying techniques for construction layout and control.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I am able to understand different methods of project delivery and the roles and responsibilities of all constituencies involved in the design and construction process.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I am able to understand construction risk management.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I am able to understand construction accounting and cost control.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I am able to understand construction quality assurance and control.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I am able to understand construction project control processes.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I am able to understand the legal implications of contract, common, and regulatory law to manage a construction project.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I am able to understand the basic principles of sustainable construction.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I am able to understand the basic principles of structural behavior.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I am able to understand the basic principles of mechanical, electrical and piping systems.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

## Appendix C: Example of Alumni Survey of Learning Outcomes

### 2011 Construction Management

**Page 1**

1. Please indicate how well the CM sequence prepared you to perform each skill.

	Well above average	Above average	Average	Below average	Well below average	N/A
Apply the fundamentals of business and management including accounting, finance, economics, business regulation, and contract law.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Apply knowledge of construction materials and methods including products, systems, and interface issues related to job site organization and the selection of assembly techniques and equipment.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Interpret construction documents (blueprints and specifications) in order to perform such activities as quantity take-offs, cost estimates, quality control, and site layout.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Demonstrate knowledge of design fundamentals in order to communicate with design professionals (architects and engineers), contribute to the planning phase of design-build projects, and solve practical construction problems.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

**Page 2**

2. Please indicate how well the CM sequence prepared you to perform each skill.

	Well above average	Above average	Average	Below average	Well below average	N/A
Interpret OSHA and other appropriate safety standards and	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

develop/execute a construction safety plan that conforms to mandatory procedures, training, and record-keeping requirements.						
Prepare a project bid that includes quantity takeoffs, labor and equipment productivity factors, pricing based on historical costs, and overhead and profit.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Develop, and be able to revise, an effective project plan and schedule that includes network diagramming, critical path, and resource allocation.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Demonstrate an understanding of the concepts, roles, responsibilities, and procedures of project management and as applied to ethics, project delivery systems, administrative systems and procedures, cost and time control, site analysis, value engineering, job site and office documentation, quality control philosophies and practices.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Utilize industry-accepted software for project management, planning and scheduling, estimating, and design.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

## Appendix D: Annual Assessment & Reporting Calendar

Date	Activity	Accountable
As appropriate by course schedule	IDEA student ratings of instruction (November and April).	Secretary
As appropriate	Share assessment data with program and/or program advisory committees	Program Coordinator
As appropriate	Faculty Retreat - Review annual assessment data and establish improvement priorities.	Chair
April	Conduct TEC Senior Student Exit Survey in each capstone course.	Advisor
April	Organize follow-up survey of employers (minimum 3-year cycle)	Asst Chair & Secretary
April	Mail pre-survey letter to alumni.	Secretary
June	TEC Senior Student Exit Survey results and Employer Survey results distributed to faculty.	Advisor, Asst. Chair
July 30	Alumni data distributed to coordinators	Asst. Chair
August	Coordinators meeting to discuss new assessment data and review assessment process	Asst. Chair
September/October	Organize and conduct scheduled Peer Teaching Observations.	Asst. Chair
November 15	Program Coordinators submit the annual <i>Learning Outcomes Report</i>	Program Coordinator
November 15	Program Coordinators submit the annual <i>Program Goals Report and Plan of Work</i>	Program Coordinator
December 30	Submit annual TEC Assessment Report to the University Assessment Services (UAS)	Asst. Chair
December 30	Department of Technology Annual Report and Consolidated Annual Budget Report	Chair