

Student Learning Summary Form AY2015-16

Due to your dean by June 1

Due from dean to assessment office by June 15

Degree Program Name: Construction Management

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Before you complete the form below, review your outcomes library and curriculum map to ensure that they are accurate and up to date. If not, you may submit a new version along with this summary.

Part One

a. What learning outcomes did you assess this year?	b. (1) What method(s) did you use to determine how well your students attained the outcome? (2) In what course or other required experience did the assessment occur?	c. What expectations did you establish for achievement of the outcome?	d. What were the actual results?	e. (1) Who was responsible for collecting and analyzing the results? (2) How were they shared with the program's faculty?
11. Apply basic surveying techniques for construction layout and control.	CNST 420, Construction Surveying: J. Eckerle provided two student field books and five examples of student homework. The grading scale was 0-100.	The average score must exceed 75/100.	The average of the samples was 82.	The instructor of CNST 420: Joe Eckerle. The construction faculty reviewed the student work on November 3, 2015 and the results were recorded in Minutes 6.
11. Apply basic surveying techniques for construction layout and control.	A Senior Survey was administered to seniors in the Senior Seminar course asking how well they learned each outcome.	The Survey used a Likert scale of 1-4 (4 is high). An average score of 3.00 or greater indicates achievement.	The average score was 3.46. Outcome achieved.	The instructor for the Senior Seminar course collected the data and Lee Ellingson analyzed the data. Results were discussed among faculty on January 7 and recorded in Minutes 10.
12. Understand different methods of project delivery and the roles and responsibilities of all constituencies involved in the design and construction process.	CNST 480, Construction Capstone: D. McNabb provided two student capstone projects.	Expectations need to be established.	Faculty agreed that CNST 480 is not the appropriate course to assess this outcome.	The instructor of CNST 201, Contract Documents, will be responsible for collecting student data in future.
12. Understand different methods of project delivery and the roles and responsibilities of all constituencies involved in the	A Senior Survey was administered to seniors in the Senior Seminar course asking how well they learned each outcome.	The Survey used a Likert scale of 1-4 (4 is high). An average score of 3.00 or greater indicates achievement.	The average score was 3.54. Outcome achieved.	The instructor for the Senior Seminar course collected the data and Lee Ellingson analyzed the data. Results were discussed among faculty

design and construction process.				on January 7 and recorded in Minutes 10.
13. Understand construction risk management.	CNST 485, Government Contracting: W. Baker provided Student HW. The grading scale was 0-100.	The average score must exceed 75/100.	The average score was 86/100. Outcome achieved.	The instructor of CNST 485: W. Baker. The construction faculty reviewed the student work on November 10, 2015 and the results were recorded in Minutes 7. Baker is creating new assignments that will better address the outcome.
13. Understand construction risk management.	A Senior Survey was administered to seniors in the Senior Seminar course asking how well they learned each outcome.	The Survey used a Likert scale of 1-4 (4 is high). An average score of 3.00 or greater indicates achievement.	The average score was 3.46. Outcome achieved.	The instructor for the Senior Seminar course collected the data and Lee Ellingson analyzed the data. Results were discussed among faculty on January 7 and recorded in Minutes 10.
14. Understand construction accounting and cost control.	CNST 330, Construction Accounting, Finance and Safety: L. Ellingson provided tests and HW. The grading scale was 0-100.	The average score must exceed 75/100.	The average score was 78/100. Outcome achieved.	The instructor of CNST 330: L. Ellingson. The construction faculty reviewed the student work on November 3, 2015 and the results were recorded in Minutes 6.
14. Understand construction accounting and cost control.	A Senior Survey was administered to seniors in the Senior Seminar course asking how well they learned each outcome.	The Survey used a Likert scale of 1-4 (4 is high). An average score of 3.00 or greater indicates achievement.	The average score was 3.08. Outcome achieved.	The instructor for the Senior Seminar course collected the data and Lee Ellingson analyzed the data. Results were discussed among faculty on January 7 and recorded in Minutes 10.
15. Understand construction quality assurance and control.	CNST 450, Construction Project Management: W. Baker said he has been lecturing about the outcome but has not been formally assessing it.	No documents were available.	Formal assessment was postponed to the next semester.	The instructor of CNST 450: W. Baker. Baker is creating assignments that will directly assess the outcome. (See Minutes 7)
15. Understand construction quality assurance and control.	A Senior Survey was administered to seniors in the Senior Seminar course asking how well they learned each	The Survey used a Likert scale of 1-4 (4 is high). An average score of 3.00 or greater indicates achievement.	The average score was 3.23. Outcome achieved.	The instructor for the Senior Seminar course collected the data and Lee Ellingson analyzed the data. Results

	outcome.			were discussed among faculty on January 7 and recorded in Minutes 10.
16. Understand construction project control processes.	CNST 480, Construction Capstone: D. McNabb did not understand exactly what "project control processes" meant. No data was provided.	Establishing expectations was postponed.	It was agreed that CNST 330, 304, and 314 would better address the outcome.	Ellingson, Baker, and McNabb will investigate what other CM programs are using for the evidence. Ellingson will update the Map accordingly.
16. Understand construction project control processes.	A Senior Survey was administered to seniors in the Senior Seminar course asking how well they learned each outcome.	The Survey used a Likert scale of 1-4 (4 is high). An average score of 3.00 or greater indicates achievement.	The average score was 3.31. Outcome achieved.	The instructor for the Senior Seminar course collected the data and Lee Ellingson analyzed the data. Results were discussed among faculty on January 7 and recorded in Minutes 10.
17. Understand the legal implications of contract, common, and regulatory law to manage a construction project.	CNST 485, Government Contracting: W. Baker provided student quizzes about construction law.	The average score must exceed 75/100.	The average score was 81/100. It was agreed that more student data is needed. Baker will create more assignments in CNST 485 addressing this outcome.	The instructor of CNST 485: W. Baker. The construction faculty reviewed the student work on March 30, 2016 and the results were recorded in Minutes 15.
17. Understand the legal implications of contract, common, and regulatory law to manage a construction project.	A Senior Survey was administered to seniors in the Senior Seminar course asking how well they learned each outcome.	The Survey used a Likert scale of 1-4 (4 is high). An average score of 3.00 or greater indicates achievement.	The average score was 3.23. Outcome achieved.	The instructor for the Senior Seminar course collected the data and Lee Ellingson analyzed the data. Results were discussed among faculty on January 7 and recorded in Minutes 10.
18. Understand the basic principles of sustainable construction.	CNST 306, Commercial Design and Construction: L. Ellingson Provided student examples of one quiz and a major test	The average score must exceed 75/100.	The average score was 75/100. The outcome was barely achieved.	The instructor of CNST 306: L. Ellingson. The construction faculty reviewed the student work on March 30, 2016 and the results were recorded in Minutes 15.
18. Understand the basic principles of sustainable construction.	A Senior Survey was administered to seniors in the Senior Seminar course asking how well they learned each outcome.	The Survey used a Likert scale of 1-4 (4 is high). An average score of 3.00 or greater indicates achievement.	The average score was 3.54. Outcome achieved.	The instructor for the Senior Seminar course collected the data and Lee Ellingson analyzed the data. Results were discussed among faculty on January 7 and recorded in

				Minutes 10.
19. Understand the principles of structural behavior.	CNST 318, Statics and Strength of Materials, and CNST 418, Temporary Structures: J. Eckerle provided student work from many tests and assignments. However, class average scores were not provided.	The average score must exceed 75/100.	Average scores exceeded 75/100. However, it was agreed that in future, average scores for the entire class must be provided for each assignment.	The instructor of CNST 306: L. Ellingson. The construction faculty reviewed the student work on March 30, 2016 and the results were recorded in Minutes 15.
19. Understand the principles of structural behavior.	A Senior Survey was administered to seniors in the Senior Seminar course asking how well they learned each outcome.	The Survey used a Likert scale of 1-4 (4 is high). An average score of 3.00 or greater indicates achievement.	The average score was 3.31. Outcome achieved.	The instructor for the Senior Seminar course collected the data and Lee Ellingson analyzed the data. Results were discussed among faculty on January 7 and recorded in Minutes 10.
20. Understand the basic principles of mechanical, electrical and plumbing systems.	CNST 213, Environmental Control Systems: L. Ellingson provided examples of student work and grade statistics for all assignments and test for the course.	The average score must exceed 75/100.	The average score was 77/100. The outcome was achieved.	The instructor of CNST 330: L. Ellingson. The construction faculty reviewed the student work on March 30, 2016 and the results were recorded in Minutes 15.
20. Understand the basic principles of mechanical, electrical and plumbing systems.	ECT 369: Electrical Construction: D. Malooley provided examples of tests.	The average score must exceed 75/100.	Average scores were 74, 83, 87, and 78. Outcome achieved. However, it was agreed that in future D. Malooley must provide more statistics about class averages.	The instructor of ECT 369: D. Malooley. The construction faculty reviewed the student work on March 30, 2016 and the results were recorded in Minutes 15.
20. Understand the basic principles of mechanical, electrical and plumbing systems.	A Senior Survey was administered to seniors in the Senior Seminar course asking how well they learned each outcome.	The Survey used a Likert scale of 1-4 (4 is high). An average score of 3.00 or greater indicates achievement.	The average score was 3.54. Outcome achieved.	The instructor for the Senior Seminar course collected the data and Lee Ellingson analyzed the data. Results were discussed among faculty on January 7 and recorded in Minutes 10.

* See <https://www2.indstate.edu/graduate/forms/review.pdf>.

If you would like to report on more than three outcomes, place the cursor in the last cell on the right and hit "tab" to add a new row.

Notes

- a. Use your outcomes library as a reference.
- b. Each outcome must be assessed by at least one direct measure (project, practica, exam, performance, etc.). If students are required to pass an examination to practice in the field, this exam must be included as one of the measures. At least one of the outcomes must use an indirect measure (exit interview, focus group, survey, etc.). Use your curriculum map to correlate outcomes to courses.
- c. Identify the score or rating required to demonstrate proficiency (e.g., Students must attain a score of “3” to be deemed proficient; at least 80% of students in the program will attain this benchmark.”
- d. Note what the aggregate level of proficiency actually was and the number of students included in the cohort or sample (e.g., “85% of the 25 students whose portfolios were reviewed met the established benchmark).
- e. This may be a specific individual, a position (e.g., assessment coordinator), or a group such as the department assessment committee. Minutes should reflect that results are shared with members of the department at least annually.

Part Two

In no more than one page, summarize 1) the discoveries assessment has enabled you to make about your students’ learning, the curriculum, departmental processes, and/or the assessment plan itself; 2) the changes and improvements you have made or will make in response to these discoveries and/or the coordinator’s feedback on the previous summary; and 3) what your assessment plan will focus on in the coming year.

If you would like to reference any supporting materials (departmental meeting minutes, detailed assessment results, etc.), please provide the URL at which they can be found.

Discoveries

Students *believe* they are learning the twenty outcomes. This statement is based on the Senior Survey that students submitted. The survey was a required component of the Senior Seminar course, so all 13 construction students submitted the survey in fall 2015. The survey was based on a Likert scale with the following values: Strongly Agree (4), Agree (3), Disagree (2), and Strongly Disagree (1). The average score for all 20 outcomes was 3.40, which is between agree and strongly agree. The lowest score was 3.08 for “Understand construction accounting and cost control.” The highest score was 3.62 for “Create construction project cost estimates.”

It is important for faculty to bring grade statistics for the entire class when reviewing learning outcomes. Samples of student work are necessary, but they typically provide too small a sample to make accurate inferences.

A direct measure for the entire program would be helpful. A test similar to the American Institute of Constructors (AIC) Associate Constructor exam could be created by the CM Program.

A focus group of the CM Advisory Board identified the following common themes:

- Members of the Advisory Board are concerned that new construction management graduates in general lack skills in writing, oral communication, relationship building, and to a lesser extent, applying mathematical skills to real work projects. They are equally concerned that new employees lack character traits they believe are essential—e.g., persistence, honesty, motivation, and humility.
- The Board recognizes and laments external constraints that appear to limit the Program’s ability to expand the curriculum to provide students with greater depth of study in construction management and work against the Program’s ability to hire faculty members who have extensive experience in the field but have not earned a PhD.
- The Board praised the Program’s faculty for continuously striving to improve the Program.

CNST 480, Construction Capstone, is not the best course to assess Outcome 12, *Understand different methods of project delivery and the roles and responsibilities of all constituencies involved in the design and construction process*. CNST 201, Construction Documents, would be better.

CNST 450, Construction Project Management, is not the best course to assess Outcome 13, *Understand construction risk management*. CNST 485, Government Contracting, would be better.

It is not clear to the CM faculty what student assignments best assess project control processes. (Outcome 16)

More assignments are needed to properly assess Outcome 17, *Understand the legal implications of contract, common, and regulatory law to manage a construction project*.

Improvements

Faculty will bring grade statistics for the entire class to the assessment review meeting as well as examples of student work.

Faculty will create a senior exit exam, which addresses all twenty learning outcomes. The test will be required in the capstone course.

CNST 201, Construction Documents, will be used to assess Outcome 12, *Understand different methods of project delivery and the roles and responsibilities of all constituencies involved in the design and construction process.*

CNST 485, Government Contracting, will be used to assess Outcome 13, *Understand construction risk management.* The instructor will provide more assignments addressing this outcome.

Ellingson and McNabb will attend the mid-year meeting of the American Council of Construction Education in Atlanta in July. They will verify what other CM programs use to assess Outcome 16, *Understand construction project control processes.*

W. Baker will provide more assignments to CNST 485 that address Outcome 17, *Understand construction risk management.*

W. Baker will provide more assignments to CNST 450 that address Outcome 15, *Understand construction quality assurance and control.*

W. Baker will provide quizzes to CNST 450 that address Outcome 13, *Understand construction risk management.*

Looking Ahead

Fall 2016

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.

Spring 2017

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 an effective member of a multi-disciplinary team.
10. Apply electronic-based technology to manage the construction process.

Student Learning Summary Report Rubric :: Office of Assessment & Accreditation :: Indiana State University

Degree Program: BS in Construction Management Date: 7.26.16

	Level 0 – Undeveloped	Level 1 – Developing	Level 2 – Mature	Level 3 – Exemplary
1. Student Learning Outcomes	<input type="checkbox"/> No outcomes are identified.	<input checked="" type="checkbox"/> Outcomes were identified <input checked="" type="checkbox"/> Some of the outcomes are specific and measurable. <input type="checkbox"/> Some of the outcomes are student-centered. <input type="checkbox"/> A Curriculum Map was provided.	<input type="checkbox"/> Outcomes are specific, measurable, student-centered program outcomes. <input checked="" type="checkbox"/> Outcomes at least indirectly support Foundational Studies Learning Outcomes or the Graduate Learning Goals. <input type="checkbox"/> The Curriculum Map identifies where/to what extent each outcome is addressed. <input type="checkbox"/> At least one outcome was assessed in this cycle.	<input type="checkbox"/> Outcomes are specific, measurable, student-centered program outcomes that and span multiple learning domains. <input type="checkbox"/> Outcomes directly integrate with Foundational Studies Learning Outcomes or the Graduate Learning Goals. <input checked="" type="checkbox"/> Outcomes reflect the most important results of program completion (as established by an accreditor or other professional organization). <input type="checkbox"/> Learning outcomes are consistent across different modes of delivery (face-to-face and online.) <input type="checkbox"/> Outcomes are regularly reviewed (and revised, if necessary) by the faculty and other stakeholders. <input checked="" type="checkbox"/> The Curriculum Map identifies where/to what extent each outcome is addressed and offers evidence that students have sufficient opportunity to master the associated learning outcomes. <input checked="" type="checkbox"/> Two or more outcomes were

				assessed in this cycle.
<p>2. Measures & Performance Goals</p>	<input type="checkbox"/> No measures are provided. <input type="checkbox"/> No goals for student performance are identified.	<input type="checkbox"/> Measures are provided, but some are vague and/or do not clearly assess the associated outcomes. <input type="checkbox"/> Measures are primarily indirect. <input checked="" type="checkbox"/> Measures include course and/or assignment grades, but there is no evidence that grades are calibrated to the outcomes. <input type="checkbox"/> Performance goals are identified, but they are unclear or inappropriate.	<input type="checkbox"/> At least one direct measure was provided for each outcome. <input checked="" type="checkbox"/> Some information is provided to suggest that measures are appropriate to the outcomes being assessed. <input type="checkbox"/> Measures include course and/or assignment grades, and general information is provided to indicate that grades are calibrated to the outcomes. <input checked="" type="checkbox"/> Clear and appropriate standards for performance are identified. <input type="checkbox"/> Mechanisms (rubrics, checklists, criterion-referenced exams, etc.) were provided.	<input checked="" type="checkbox"/> Multiple measures were provided, and a majority are direct. <input type="checkbox"/> Detailed information is provided to show that measures are appropriate to the outcomes being assessed. <input type="checkbox"/> Measures include course and/or assignment grades, and specific evidence is provided to demonstrate that grades are calibrated to the outcomes. <input type="checkbox"/> Clear and appropriate standards for performance are identified and justified. <input type="checkbox"/> If students are required to pass a certification or licensure exam to practice in the field, this was included as a measure. <input checked="" type="checkbox"/> Measures assess some high impact practices (internships, capstone course projects, undergraduate research, etc.) <input type="checkbox"/> Some measures allow performance to be gauged over time, not just in a single course. <input type="checkbox"/> Mechanisms (rubrics, checklists, criterion-referenced exams, etc.) were provided that demonstrate that the measure provides clear evidence of what students know/can do.

				<input type="checkbox"/> If a measure is used to assess more than one outcome, a clear explanation is offered to substantiate how this is effective.
3. Results	<input type="checkbox"/> No data are being collected. <input type="checkbox"/> No information is provided about the data collection process. <input type="checkbox"/> No results are provided. <input type="checkbox"/> Students are meeting few of the performance standards set for them.	<input type="checkbox"/> Some data are being collected. <input type="checkbox"/> Some data are being analyzed. <input type="checkbox"/> Some results are provided. <input type="checkbox"/> Insufficient information is offered to demonstrate that data collection, analysis, and interpretation processes are valid. <input type="checkbox"/> Students are achieving some of the performance standards expected of them.	<input checked="" type="checkbox"/> Data are being collected and analyzed. <input checked="" type="checkbox"/> Results are provided. <input checked="" type="checkbox"/> Some information is offered to demonstrate that data collection, analysis, and interpretation processes are valid and meaningful. <input checked="" type="checkbox"/> Students generally are achieving the performance standards expected of them.	<input type="checkbox"/> Clear, specific, and complete details about data collection, analysis, and interpretation of results are provided to demonstrate the validity and usefulness of the assessment process. <input type="checkbox"/> Students generally are achieving the performance standards expected of them and demonstrate continuous improvement on standards they have yet to achieve/achieve less well. <input type="checkbox"/> If students are required to pass a certification or licensure exam to practice in the field, the pass rate meets the established benchmark.
4. Engagement & Improvement	<input type="checkbox"/> No one is assigned responsibility for assessing individual measures. <input type="checkbox"/> Assessment primarily is the responsibility of the program chair. <input type="checkbox"/> No improvements (planned or actual) are identified. <input type="checkbox"/> No reflection is offered about previous results or	<input type="checkbox"/> The same faculty member is responsible for collecting and analyzing most/all assessment results. <input type="checkbox"/> It is not clear that results are shared with the faculty as a whole on a regular basis. <input type="checkbox"/> Plans for improvement are provided, but they are not clear and/or do not clearly connect to the results.	<input checked="" type="checkbox"/> Multiple faculty members are engaged in collecting and analyzing results. <input type="checkbox"/> Results regularly are shared with the faculty. <input type="checkbox"/> The faculty regularly engages in meaningful discussions about the results of assessment. <input type="checkbox"/> These discussions lead to the development of specific, relevant plans for improvement.	<input type="checkbox"/> All program faculty members are engaged in collecting and analyzing results. <input checked="" type="checkbox"/> Faculty regularly and specifically reflect on students' recent achievement of performance standards and implement plans to adjust activities, performance goals, outcomes, etc. according to established timelines. <input checked="" type="checkbox"/> Faculty and other important

	plans.	<input type="checkbox"/> Little reflection is offered about previous results or plans.	<input type="checkbox"/> Improvements in student learning have occurred as the result of assessment.	<p>stakeholders reflect on the history and impact of previous plans, actions, and results, and participate in the development of recommendations for improvement.</p> <input type="checkbox"/> Continuous improvement in student learning occurs as the result of assessment.	<input checked="" type="checkbox"/> Outcomes and results are easily accessible to stakeholders on/from the program website.	<input checked="" type="checkbox"/> Assessment is integrated with teaching and learning.
Overall Rating	<input type="checkbox"/> Level 0 – Undeveloped	<input type="checkbox"/> Level 1 - Developing	<input checked="" type="checkbox"/> Level 2 – Mature	<input type="checkbox"/> Level 3 – Exemplary		

COMMENTS

Strengths, Concerns, Recommendations for Improvement

1. Learning Outcomes

I do recognize that you are at the mercy of your accreditor, but too many of these learning outcomes are too vague—i.e., all of those that begin “the student will understand...” Since we cannot measure what students understand, we need to identify specific verbs that will allow us to clarify our expectations and create appropriate assessment methods. So if possible, revise some of these so that instead of “understand,” they use verbs such as describe, summarize, analyze, identify, compare, etc.

2. Measures & Performance Goals

You use two measures to assess each of the ten outcomes listed in this report. The indirect measure is a self-assessment survey; the direct methods include several tests, quizzes, homework assignments, but also a high-impact project in a capstone course (that was not assessed, unfortunately). Generally your expectations for performance are clear. I would like to see more evidence demonstrating the direct connection between the measures and the outcomes. For example, what does a field book require students to do? What checklists or rubrics or keys are you using to identify the traits you’re looking for in each assignment so that, for example, a student who earns an 82 on the field book knows exactly what she does well and less well?

3. Results

Three of the assessment methods were not implemented, but the results on those that were all are positive. Several N’s are missing. The results would be more meaningful to me if I knew more about what the various assignments entail and how they are scored. Feel free to include any supporting materials in the Blackboard site.

4. Engagement & Improvement

While you are responsible for assessment in your program, a number of faculty are involved in collecting the data that you analyze and share with them and with your advisory board (you even reference minutes!). In Part One and Part Two you do an excellent job of identifying solutions for the concerns you identify; in particular, I think the comprehensive exam will go a long way toward helping you understand what your seniors do and do not know. But most of these concerns/plans focus on the assessment plan itself. I would like to hear more about any concerns you have with student learning and how you plan to ameliorate them. If you agree with your board’s assessments, for instance, have you considered how you might help students improve their communication and math skills? Last, is there evidence that overall, your students are satisfying all program outcomes? Do they demonstrate continuous improvement?

Thanks for sharing this information about your assessment program. I know you work hard to satisfy the accreditor’s requirements, and I look forward to learning more next year!