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: ___BS in Computer Science_____ **Contact Name and Email** ___Jeff Kinne, jkinne@indstate.edu_____

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? If this is a graduate program, indicate the Graduate Student Learning Outcome* each outcome aligns with.	b. (1) What method(s)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?
1A - Basic Programming	MFT subscore for "Programming and Software Engineering"	Average MFT sub-score value above 50th percentile	3 of 13 graduating students took the CS MFT. The average overall percentile was 72.6 Sub-scores were not available because not enough students took the MFT.	Program director Jeff Kinne administers MFT, collects Exit Survey data, and emails results to program faculty.
	Programming quiz given in CS 202.	All students get at least one of 5 problems correct. Average score at least 2 out of 5.	15 (mostly sophomore) students took the programming quiz. 10 got at least one problem correct; the other 6 got at least one problem ½ correct. The average score was 1.8 out of 5.	
	Exit Survey question 6a	Average response on Exit Survey at or above "Mostly Mastered"	3 of 13 graduating students completed the Exit Survey. Of these all answered at or above "Mostly Mastered".	
1B - Programming Paradigms	MFT subscore for "Programming and Software Engineering"	Average MFT sub-score value above 50th percentile	MFT Sub-scores were not available because not enough students took the MFT.	

		Exit Survey question 6b	Average response on Exit Survey at or above "Mostly Mastered"	All answered at or above "Mostly Mastered".	
2A - Data Structures	MFT subscore for "Discrete Structures and Algorithms"		Average MFT sub-score value above 50th percentile	MFT Sub-scores were not available because not enough students took the MFT.	
	Exit Survey question 6c		Average response on Exit Survey at or above "Mostly Mastered"	All answered at or above "Somewhat Mastered". Average response was "Mostly Mastered".	
2B - Algorithms Analysis	MFT subscore for "Discrete Structures and Algorithms"		Average MFT sub-score value above 50th percentile	MFT Sub-scores were not available because not enough students took the MFT.	
	Exit Survey question 6d		Average response on Exit Survey at or above "Somewhat Mastered"	Average response was between Mostly and Somewhat Mastered.	
3A - Architecture	MFT subscore for "Systems (Architecture, Operating Systems, Networking, Database)"		Average MFT sub-score value above 50th percentile	MFT Sub-scores were not available because not enough students took the MFT.	
	Exit Survey question 6e		Average response on Exit Survey at or above "Mostly Mastered"	Average response was Mostly Mastered.	
3B - Operating Systems	The MFT subscore for "Systems (Architecture, Operating Systems, Networking, Database)"		Average MFT sub-score value above 50th percentile	MFT Sub-scores were not available because not enough students took the MFT.	
	Exit Survey question 6e		Average response on Exit Survey at or above "Mostly Mastered"	Average response was Mostly Mastered.	
3C - Programming Design in Specialized Areas	MFT subscore for "Systems (Architecture, Operating Systems, Networking, Database)"		Average MFT sub-score value above 50th percentile	MFT Sub-scores were not available because not enough students took the MFT.	
	Exit Survey questions 6g, 6h, 6i, 6j, and 6l		Average response on Exit Survey at or above	Average score was between Somewhat and Mostly	

		"Somewhat Mastered" for each question.	mastered for each question.	
3C - Advanced Algorithms and Theory	Exit Survey questions 6m, 6n, and 6o	Average response on Exit Survey at or above "Somewhat Mastered"	Average score was between Somewhat and Mostly mastered for each question.	

* 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.

The assessment plan has been in place for two years in its current form. Each year we have had difficulty getting students to take the exit survey and MFT. As a result, the program was modified (effective for fall 2016) to require a 1 credit senior seminar. The senior seminar will focus on final preparations for students to finish their degrees and apply for jobs. This will include taking the MFT and exit survey (among other things).

For 2015-2016, 3 out of 13 graduating students completed the exit survey and MFT. Because fewer than 5 students completed the MFT, sub-scores were not available. Students overall scores were very good, with an average percentile of 72.6. For the students who completed the exit survey, the average scores were at or above the desired level.

A basic programming quiz is given to all students at the end of CS 202 (which is normally in the 3rd semester of study). Students should have good basic programming skills by this point. Of the 16 students who took the programming quiz in 2015-2016, 10 of 16 completed at least

one problem completely correct. The program goal is that all students would complete at least one problem correct. Note that the same quiz has been given for the past 2 years, and instructors specifically DO NOT teach to the quiz. The results thus may be more pessimistic than the reality. Nonetheless, we would like to improve the basic programming skills of our students.

As a result of the assessment results on basic programming (both this year and in previous years), we are in the midst of evaluating the curriculum for the first 3 courses in the CS major (CS 151, 201, 202). Among other changes, the organization of the basic programming content is being rearranged. Moreover, we are looking into using a unified grading and assignment system for all courses so that students spend less time figuring out each professor's system, and more time working on the material. We are also considering setting minimal standards for the number and kind of programming assignments in the most important programming courses. We expect all of these changes to be decided upon by the fall of 2016, with many changes decided in time for rollout in the fall of 2016.

Outside of basic programming, the rest of the assessment results for the year were good. We will focus on trying to get a higher percentage of students to take the exit survey and MFT. The 1 credit senior seminar is being offered even though it is not yet required, and we hope to convince students it is worthwhile to enroll in to help them prepare for jobs.

Degree Program: BS in Computer Science   Date: 8.17.16

	Level 0 – Undeveloped	Level 1 – Developing	Level 2 – Mature	Level 3 – Exemplary
1. Student Learning Outcomes	☒ No outcomes are identified. (In the report itself) ☐ No Curriculum Map was provided.	☐ Outcomes were identified. ☐ Some of the outcomes are specific, measurable, student-centered, program-level outcomes. ☐ A Curriculum Map was provided.	☐ Outcomes are specific, measurable, student-centered, program-level outcomes. ☐ Outcomes at least indirectly support Foundational Studies Learning Outcomes or the Graduate Learning Goals. ☐ The Curriculum Map identifies where/to what extent each outcome is addressed. It identifies each topic, not outcome. ☐ At least one outcome was assessed in this cycle.	☐ Outcomes are specific, measurable, student-centered program-level outcomes that span multiple learning domains. ☒ Outcomes directly integrate with Foundational Studies Learning Outcomes or the Graduate Learning Goals. ☐ Outcomes reflect the most important results of program completion (as established by an accreditor or other professional organization). ☐ Learning outcomes are consistent across different modes of delivery (face-to-face and online.) ☐ Outcomes are regularly reviewed (and revised, if necessary) by the faculty and other stakeholders. ☐ 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. ☒ Two or more outcomes were

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

				☐ If a measure is used to assess more than one outcome, a clear explanation is offered to substantiate how this is effective.
3. Results	☐ No data are being collected. ☐ No information is provided about the data collection process. ☐ No results are provided. ☐ Students are meeting few of the performance standards set for them.	☐ Some data are being collected and analyzed. ☒ Some results are provided. ☐ Insufficient information is offered to demonstrate that data collection, analysis, and interpretation processes are valid. ☐ Students are achieving some of the performance standards expected of them.	☒ Data are being collected and analyzed. ☐ Results are provided. ☒ Some information is offered to demonstrate that data collection, analysis, and interpretation processes are valid and meaningful. ☐ Students generally are achieving the performance standards expected of them. ?	☐ 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. ☐ Students generally are achieving the performance standards expected of them and demonstrate continuous improvement on standards they have yet to achieve/achieve less well. ☐ 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	☐ No one is assigned responsibility for assessing individual measures. ☐ Assessment primarily is the responsibility of the program chair. ☐ No improvements (planned or actual) are identified. ☐ No reflection is offered about previous results or	☒ The same faculty member is responsible for collecting and analyzing most/all assessment results. ☐ It is not clear that results are shared with the faculty as a whole on a regular basis. ☐ Plans for improvement are provided, but they are not specific and/or do not clearly connect to the results.	☐ Multiple faculty members are engaged in collecting and analyzing results. ☒ Results regularly are shared with the faculty. ☒ The faculty regularly engages in meaningful discussions about the results of assessment. ☒ These discussions lead to the development of specific, relevant plans for improvement.	☐ All program faculty members are engaged in collecting and analyzing results. ☐ 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. ☐ Faculty and other important

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

COMMENTS
Strengths, Concerns, Recommendations for Improvement

1. **Learning Outcomes**
   The Student Learning Summary Report lists only the topics addressed, not the actual outcomes. This is easy to address, since the Outcomes Library includes them. In it, however, are several outcomes that use the vague verb "understand." Please replace these with more measurable verbs (apply, critique, evaluate…).

2. **Measures & Performance Goals**
   The program uses two key methods to assess students' achievement of the program's outcomes, the Major Field Test and an exit survey. (Why is there no direct assessment method for Advanced Algorithms?) Both are nicely aligned with their respective outcomes, and appropriate expectations for achievement are established.

3. **Results**
   Results for the exit survey met expectations, but owing to the small number of students who completed the Major Field Test, insufficient information is available about its results to determine whether students met the eight outcomes.

4. **Engagement & Improvement**
   Only one person is responsible for collecting and analyzing assessment results, but these are shared and discussed with the larger faculty and plans for improvement are developed. In this cycle, these plans focused on increasing the number of students who participate in assessment activities, reorganizing course content, and developing unified assignments. I look forward to learning more about the particulars of what assessment reveals about student learning: What do they know/what can they do well (and less well)? Is learning improving? Do results suggest that graduates are ready for graduate school or employment?

   Thanks!