

**Assessment Plan**  
**College of Liberal Arts and Sciences**  
**Department of Computer Science**  
**B.S. in Computer Science**

# Student Learning Outcomes

85% of the graduates with the NIU Bachelor of Science in Computer Science will be able to perform the following at a satisfactory or higher level:

1. Demonstrate the ability to evaluate and analyze a straightforward business problem and decide whether or not it is amenable to a computer solution.
2. Demonstrate the ability to apply a practical computer software system to solve a straightforward business problem.
3. Demonstrate the ability to create individual computer programs that are correct, substantial, easy-to-use, efficient, and easily understood by other programmers.
4. Demonstrate the ability to test a computer program for correct output.

<b>I. Program Goals Relating to University Mission</b>	<b>II. Program Objectives/Learning Outcomes</b>	<b>III. Methods to Evaluate Effectiveness (See further description in Part IV)</b>
<p>The mission of the NIU Department of Computer Science is to prepare individuals for rewarding, successful, and interesting careers in industry, government, and nonprofit organizations. The Department is dedicated to providing students with the technical background and the analytical skills required to carry out analysis, design, coding, and testing of computer software.</p>	<p>85% of the graduates with the NIU Bachelor of Science in Computer Science will be able to perform the following at a satisfactory or higher level:</p> <ol style="list-style-type: none"> <li>1. Demonstrate the ability to evaluate and analyze a straightforward business problem and decide whether or not it is amenable to a computer solution.</li> <li>2. Demonstrate the ability to apply a practical computer software system to solve a straightforward business problem.</li> <li>3. Demonstrate the ability to create individual computer programs that are correct, substantial, easy-to-use, efficient, and easily understood by other programmers.</li> <li>4. Demonstrate the ability to test computer programs for correct output.</li> </ol>	<ol style="list-style-type: none"> <li>A. Internship Assessment Survey (sent to employers by Computer Science).</li> <li>B. Internship Assessment Survey (sent to employers by Career Services).</li> <li>C. University Alumni Survey.</li> <li>D. Graduating Senior Survey.</li> <li>E. Capstone project in CSCI 467, capstone course.</li> </ol>

#### IV. Description of Methods to Collect and Analyze Data

Method	Description	Type of Method	Target Performance Level	Timeline	Person Responsible
1. Internship Assessment Survey (sent to employers by Computer Science).	Evaluations from on-site supervisors of the Computer Science majors who register for academic credit for Computer Science internships. Some, but not all, of these students are included in Method B, below.	Direct, summative.	85% of the graduates with the B.S in Computer Science will be able to demonstrate outcomes 1, 2, 3, & 4 at a satisfactory or higher level.	Surveys are sent out every semester. Results are compiled in May for the prior Spring, Summer, and Fall semesters.	Near the end of every semester, the Graduate Secretary sends the survey to all internship supervisors. The internship advisor compiles statistical results and comments Faculty review results and determine if curriculum needs revision.
2. Internship Assessment Survey (sent to employers by Career Services).	Evaluations from on-site supervisors of Computer Science majors who accept Computer Science internships obtained through the Office of Cooperative Education. Some, but not all, of these students are included in Method A, above.	Direct, summative.	85% of the graduates with the B.S in Computer Science will be able to demonstrate outcomes 1, 2, 3, & 4 at a satisfactory or higher level.	Surveys are sent out every semester. Results are compiled in May for the prior Spring, Summer, and Fall semesters.	Career Services manages the survey and sends the Department the results. The internship advisor compiles statistical results and comments Faculty review results and determine if curriculum needs revision.
3. University alumni survey	University graduates are asked about their perceptions of how well the university and department prepared them for their careers.	Indirect, summative.	85% of the graduates with the B.S in Computer Science will be able to demonstrate outcomes 1, 2, 3, & 4 at a satisfactory or higher level.	One and five years after graduation.	Results are compiled by the university and delivered to the Department as available Faculty review results and determine if curriculum needs revision.

4. Graduating senior survey	Graduating computer science students are asked about their experiences in the Department of Computer Science and how well they think the program prepared them for their careers.	Indirect, summative.	85% of the graduates with the B.S in Computer Science will be able to demonstrate outcomes 1, 2, 3, & 4 at a satisfactory or higher level.	Near the end of every semester.	Near the end of every semester, the Graduate Secretary sends the survey to all graduating B.S. candidates. The results are compiled by the Assistant to the Chair. Faculty review results and determine if curriculum needs revision.
5. Capstone project in CSCI 467, capstone course.	A non-trivial team project demonstrates that students have the ability to analyze and design a computer solution for a business problem and implement this solution on an appropriate computing platform.	Direct, summative.	85% of the graduates with the B.S in Computer Science will be able to demonstrate outcomes 1, 2, & 3 at a satisfactory or higher level.	Each semester, in CSCI 467.	The team of professors teaching the course collectively evaluates the project deliverables as high pass, pass, low pass, and fail. Faculty review results and determine if curriculum needs revision.

## Outcomes by Methods

<b>Outcomes</b> <b>Methods</b>	1. Demonstrate the ability to evaluate and analyze a straightforward business problem and decide whether or not it is amenable to a computer solution.	2. Demonstrate the ability to apply a practical computer software system to solve a straightforward business problem.	3. Demonstrate the ability to create individual computer programs that are correct, substantial, easy-to-use, efficient, and easily understood by other programmers.	4. Demonstrate the ability to test a computer program for correct output.
1. Internship Assessment Survey (by Computer Science)	X	X	X	X
2. Internship Assessment Survey (by Career Services)	X	X	X	X
3. University Alumni Survey	X	X	X	X
4. Graduating Senior Survey	X	X	X	X
5. Capstone project in CSCI 467 capstone course	X	X	X	

## **V. Department's Response to Assessment Results**

Faculty and the Undergraduate Studies Committee review the various instruments and make recommendations to the Department as a whole as well as to individual faculty members, when necessary. Additionally, the Assessment Plan and Annual Update are posted on the internal Computer Science faculty website, so they are available to faculty at all times.

In all such deliberations, conflicting information and the costs associated with implementing recommended changes must be thoroughly investigated. For example, a recommendation that the Department should include coursework about an industry specific software package often has cost implications that make implementing such a recommendation impossible. Other recommendations must also be rejected because they address training issues not appropriate to an educational program.

The department also assesses student opinions of factors that are not directly attributable to learning outcomes. Obtaining students' perceptions about advising matters and the Department's teaching strengths has helped the Department to be more responsive to student needs and concerns, even though these perceptions are not actually directly related to learning outcomes.

The above feedback is regularly used to revise the relevant process, thus closing the feedback loop. For example, based upon faculty, student, employer, and industry contact feedback, the department has updated its curriculum with new mobile programming courses and developed a Mobile Programming Certificate.