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

Student Learning Outcomes

85% of the graduates of the NIU Master 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 complex business problem and decide whether or not it is amenable to a computer solution.
2. Demonstrate the ability to design a practical computer software system to solve a complex business problem.
3. Demonstrate the ability to design, implement, and integrate a family of computer programs that are correct, substantial, easy-to-use, efficient, and easily understood by other programmers.
4. Demonstrate the ability to test software systems for correct output.

I. Program Goals Relating to University Mission	II. Program Objectives/Learning Outcomes	III. Methods to Evaluate Effectiveness (See further description in Part IV)
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.	85% of the graduates of the NIU Master 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 complex business problem and decide whether or not it is amenable to a computer solution. 2. Demonstrate the ability to design a practical computer software system to solve a complex business problem. 3. Demonstrate the ability to design, implement, and integrate a family of computer programs that are correct, substantial, easy-to-use, efficient, and easily understood by other programmers. 4. Demonstrate the ability to test software systems for correct output.	A. Internship Assessment Survey, sent to employers by Computer Science. B. Internship Assessment Survey, sent to employers by Career Services C. University Alumni Survey. D. Graduating M.S. Candidate Survey. E. Capstone Project in CSCI 567. F. Comprehensive Examination.

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 Master's degree students 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 M.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. Collective results are used by faculty to evaluate and revise courses and content.
2. Internship Assessment Survey, sent to employers by Career Services.	Evaluations from on-site supervisors of Computer Science Master's degree students who accept Computer Science internships obtained through the Career Services. Some, but not all, of these students are included in Method F, above.	Direct, summative.	85% of the graduates with the M.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. Collective results are used by faculty to evaluate and revise courses and content.
3. Comprehensive Examination	Comprehensive examination over graduate curriculum, addressing breadth and depths of mastery.	Direct, summative.	85% of the graduates with the M.S. in Computer Science will be able to demonstrate outcomes 1, 2, 3, & 4 at a satisfactory or higher level.	Examination given each Fall, Spring, and Summer.	Department Master's Comprehensive Committee; faculty in each area of concentration write questions, grade exams, and evaluate overall results. Collective results are used by faculty to evaluate and revise courses and content.

4. University Alumni Survey	University Master's degree graduates are asked about their perceptions of how well the department prepared them for their careers.	Indirect, summative.	85% of the graduates with the M.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. Collective results are used by faculty to evaluate and revise courses and content.
5. Graduating M.S. Candidate Student Survey	Graduating computer science M.S. candidates 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 M.S. in Computer Science will be able to demonstrate outcomes 1, 2, 3, & 4 at a satisfactory or higher level.	At the end of every semester.	Near the end of every semester, the Graduate Secretary sends the survey to all graduating M.S. candidates. The results are compiled by the Assistant to the Chair. Collective results are used by faculty to evaluate and revise courses and content.
6. Capstone Project in CSCI 567	Projects in CSCI 567, the Analysis and Design/Software Engineering course, pull together many skills and serve as a capstone evaluation.	Direct, summative.	85% of the graduates with the M.S. in Computer Science will be able to demonstrate outcomes 1, 2, & 3 at a satisfactory or higher level.	Each semester.	CSCI 567 professors collect the data. Collective results are used by faculty to evaluate and revise courses and content.

Outcomes by Methods

Outcomes / Methods	1. Demonstrate the ability to evaluate and analyze a complex business problem and decide whether or not it is amenable to a computer solution.	2. Demonstrate the ability to design a practical computer software system to solve a complex business problem.	3. Demonstrate the ability to design, implement, and integrate a family of computer programs that are correct, substantial, easy-to-use, efficient, and easily understood by other programmers.	4. Demonstrate the ability to test software systems for correct output.
1. Internship Assessment Survey, sent to employers by Computer Science	X	X	X	X
2. Internship Assessment Survey, sent to employers by Career Services	X	X	X	X
3. Comprehensive Examination	X	X	X	X
4. University Alumni Survey	X	X	X	X
5. Graduating M.S. Candidate Survey	X	X	X	X
6. Capstone Project in CSCI 567	X	X	X	

V. Department's Response to Assessment Results

Faculty and the Graduate Studies Committee of the Department of Computer Science review the results of the various assessment instruments and discuss ways in which to change the curriculum to better achieve the stated goals. Based on this review, proposals are presented to appropriate faculty (often the entire faculty), to the Chair, and to the Advisory Committee (when appropriate) for implementation. 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 the past, such assessment measures have occasioned frequent changes in specific courses, in course requirements, in course offering patterns, and in the requirements for each of the three emphases. For example, the information gathered from the assessment program (particularly from Methods A, B, D and F) prompted the Department to consolidate the subject matter of existing courses (CSCI 562 and 563) to provide graduate students the opportunity for additional electives in object-oriented programming and design. This curriculum update was a direct result of assessment feedback. Another example is that the Department has initiated courses in .net programming, web services, security, and, most recently, mobile device programming, including a graduate certificate.

In all such deliberations, however, conflicting information and the costs associated with implementing recommended changes are thoroughly investigated. For example, a recommendation that the Department should include course work 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, course availability, the Department's teaching strengths, and related matters 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. This feedback is regularly used to revise the relevant processes, thus closing the feedback loop. For example, survey information gathered from graduating students has resulted in changes in the advising information that the Department makes available to all of its students.