

**School of Engineering and Computing
2018 Outcomes Assessment**

			Demonstrate organizational and team skills needed to manage projects and processes.	Demonstrate organizational and team skills needed to manage projects and processes.	Indirect - Survey	The indirect assessment was made using student inputs. One test of the effectiveness of the teaching is measured in terms of the teaching evaluation provided by the students in each class. Each student is requested to complete a confidential assessment at the end of each course. Their assessment is based on a 5-point scale, with 5 being the best score. Three important summary measures include the following: • Student self-assessment of learning • Student assessment of instructor • Student assessment of instructor In this, ENM 603 course (both online and onground) will be assessed.	Student self-assessment of learning - 3.5 and above with good students' comments Student assessment of instructor - 3.5 and above with good students' comments GPA - Less than 3.5	Student self-assessment of learning - 4.0 and above with good students' comments Student assessment of instructor - 4.0 and above with good students' comments GPA - Less than 3.25	Findings for Demonstrate organizational and team skills needed to manage projects and processes.	Met	Approaching									
		Outcome 7	Communicate graduate level oral and writing skills.	Communicate graduate level oral and writing skills.	Direct - Student Artifact	The graduate level writing and research assignments are taught in many courses in listed below. However, they are mastered in the capstone (project) courses. • Introduction - ENM 600, ENM 601, ENM 602, ENM 603 • Develop - PME 601, PME 602, PME 602, ENM 604, SYE 601, SYE 603, TMG 640 • Mastered - ENM 607 A, ENM 607 B In the course level assessment, the students are assigned to work on a project that require detailed write up and oral presentation. Typically, this is done by a team based approach. Two to three members join together to complete the project. The outcome of this course also measures the program level outcomes. The "master" projects at the graduate level are intensive experiences in critical analysis and are designed to broaden students' perspectives and provide them with an opportunity to integrate tools and techniques, resources, organizational systems, and decision making processes (integration of course work) into their area of specialization. Typically, projects focus on the application of materials learned throughout the program to solve multi-faceted problems such as those students would encounter in their future post-academic employment. In these projects, students select project topics under the guidance of a faculty advisor, analyze the problem and formulate a detailed plan to reach a solution, perform necessary evaluations and/or experiments, identify and/or propose meaningful results and solutions, test the proposal to the extent possible, and prepare a detailed report and associated presentation. Projects can be done in teams or as individuals. The "front end" project	For Non Capstone Project: 80-80% (Class Average) For Capstone Project: Grade Target - S S = Satisfactory - Equivalent to a "C" (i.e., student met all requirements) Five months or less in completing the Capstone Project	For Non Capstone Project: 87- 100% (Class Average) For Capstone Project: Grade Target - H H = Honors - Equivalent to a "B" or better. Three months in completing the Capstone Project	Findings for Communicate graduate level oral and writing skills.	Met	Approaching									
			Communicate graduate level oral and writing skills.	Communicate graduate level oral and writing skills.	Indirect - Survey	The indirect assessment was made using student inputs. One test of the effectiveness of the teaching is measured in terms of the teaching evaluation provided by the students in each class. Each student is requested to complete a confidential assessment at the end of each course. Their assessment is based on a 5-point scale, with 5 being the best score. Three important summary measures include the following: • Student self-assessment of learning • Student assessment of instructor • Student assessment of instructor	Student self-assessment of learning - 3.5 and above with good students' comments Student assessment of instructor - 3.5 and above with good students' comments GPA - Less than 3.5	Ideal Target: Student self-assessment of learning - 4.0 and above with good students' comments Student assessment of instructor - 4.0 and above with good students' comments GPA - Less than 3.25	Findings for Communicate graduate level oral and writing skills.	Exceeded	Exceeded									
Department of Computer Science and Information Systems	Bachelor of Science in Computer Science	Outcome 6	Apply design and development principles in the construction of software systems.	CSC422 - database design Assignment/Tests/Project	Direct - Exam	Average student scores on questions in exams/assignments or project(s) related to design and development of a database system and queries.	75% of students will score 80% or better on rubric.	80% of students will score 85% or better on rubric.	Findings for CSC422 - database design Assignment/Tests/Project	Met	Approaching	X			X		X			
			Apply design and development principles in the construction of software systems.	CSC480 Capstone project	Direct - Student Artifact	Student capstone project requires a major software design and development activities. Student project will be evaluated by a faculty evaluating team on major aspects of software development cycle.	80% of students will score 85% or better on rubric.	90% of students will score 85% or better on rubric.	Findings for CSC480 Capstone project	Exceeded	Exceeded	X			X		X			
			Apply design and development principles in the construction of software systems.	CSC480 Capstone project	Indirect - Survey	Student survey in CSC 480; based on a 4-point Likert scale ranging from '0- weak' to '4- very good', where students do a self evaluation of how well they meet PLO 6 objectives and also rate different aspects of the BSCE program at NU.	80% of students will select '3-Good' or '4-very good'	100% of students will select '3-Good' or '4-very good'	Findings for CSC480 Capstone project	Not Met	Approaching	X			X		X			
		Outcome 7	Function effectively on teams to accomplish a common goal.	CSC422 - database design Project	Direct - Exam	Students will be required to study lecture notes/articles on essential elements of teamwork in a software development industry and will be tested on the topics.	80% of students receive score 2 or above on each of the two, 3 point questions on teamwork dynamics and communication exam	100% of students receive score 2 or above on each of the two, 3 point questions on teamwork dynamics and communication exam	Findings for CSC422 - database design Project	Not Met	Approaching	X			X			X		
			Function effectively on teams to accomplish a common goal.	CSC480 - Capstone Project: peer evaluation	Indirect - Other	Capstone project peer evaluation. A survey administered on the last day of class by instructor in which team members will evaluate other members on their performance in the team. Average of team members evaluations (in each category) is assigned to each student.	Receiving (average) 80% approval rating by team members on each category	Receiving (average) 90% approval rating by team members on each category	Findings for CSC480 - Capstone Project: peer evaluation	Exceeded	Exceeded	X			X			X		
			Function effectively on teams to accomplish a common goal.	CSC480 Capstone project	Direct - Exam	Students will be tested on topics related to teamwork in software development industry. The topics are covered in their software engineering textbooks and an article in a form of a handout.	80% of students receive score 2 or above on each of the two, 3 point questions on teamwork dynamics and communication exam	100% of students receive score 2 or above on each of the two, 3 point questions on teamwork dynamics and communication exam	Findings for CSC480 Capstone project	Not Met	Approaching	X			X				X	
Department of Computer Science and Information Systems	Bachelor of Science in Cybersecurity	CYB 211		Outcome 7	Direct - Exam	Scores from mid term and final exams.	80% of students will score 85% or better.	90% of students will score 85% or better on rubric.	Findings for Outcome 7	Exceeded	Approaching									
		CYB 212		Outcome 1	Direct - Student Artifact	Scores from Class Project.	80% of students will score 85% or better.	90% of students will score 85% or better.	Findings for Outcome 1	Exceeded	Exceeded									
		CYB 215		Outcome 7	Direct - Exam	Scores from mid term and final exams.	80% of students will score 85% or better.	90% of students will score 85% or better on rubric.	Findings for Outcome 7	Not Met	Moving Away									
				Outcome 7	Indirect - Survey	End of class survey given to CYB 215 students on-line via Blackboard.	4.0 - 4.2 score for Students Perception of Learning.	4.3 or better score for Students Perception of Learning.	Findings for Outcome 7	Met	Approaching									
		CYB 340		Outcome 1	Direct - Student Artifact	Scores from Class Project.	80% of students will score 85% or better.	90% of students will score 85% or better.	Findings for Outcome 1	Exceeded	Approaching									
				Outcome 1	Indirect - Survey	End of class survey given to CYB 340 students on-line via Blackboard.	4.0 - 4.2 score for Students Perception of Learning.	4.3 or better score for Students Perception of Learning.	Findings for Outcome 1	Exceeded	Exceeded									
Department of Computer Science and Information Systems	Bachelor of Science in Information Systems	Outcome 7	Demonstrate written and oral communication skills in a collaborative environment.	CIS 420A Project Proposal and Presentation	Direct - Student Artifact	Review BSIS capstone project class artifacts.	More than 80% of the students' presentation and/or document exceed 80% of the scores based on the rubric.	More than 90% of the students' presentation and/or document exceed 80% of the scores based on the rubric.	Findings for CIS 420A Project Proposal and Presentation	Exceeded	Exceeded	X			X			X		
			Demonstrate written and oral communication skills in a collaborative environment.	CIS 420B Project Presentation and Project Report	Direct - Student Artifact	Review BSIS capstone project class artifacts.	More than 80% of the students' presentation and/or document exceed 80% of the scores based on the rubric.	More than 90% of the students' presentation and/or document exceed 80% of the scores based on the rubric.	Findings for CIS 420B Project Presentation and Project Report	Met	Approaching	X			X				X	
			Demonstrate written and oral communication skills in a collaborative environment.	Exit survey at the end of the capstone class	Indirect - Survey	Assess the BSIS program based on students' exit survey.			Findings for Exit survey at the end of the capstone class	Met	Exceeded	X			X					X

