

FY 2016 Enrollment:234; Graduates: 39

Bachelor of Science in Information Technology

Program Educational Objectives

Program Educational Objectives (PEOs) are broad statements that describe what graduates are expected to attain within a few years of graduation. Program Educational Objectives are based on the needs of the program's constituencies.

PEO 1: Apply general and discipline-specific concepts and methodologies to identify, analyze, and solve technical problems in the information technology discipline.

PEO 2: Demonstrate an individual desire and commitment to remain technically current with, and adaptive to, changing technologies through continuous learning and self-improvement.

PEO 3: Demonstrate independent thinking, function effectively in team-oriented settings, and maintain a high level of performance in a professional/industrial environment.

PEO 4: Communicate effectively in a professional/industrial environment.

PEO 5: Perform ethically and professionally in business, industry and society.

PEO 6: Attain increasing levels of responsibility and leadership in the information technology field.

Program / Student Learning Outcomes: What Will I Learn?

Select an outcome statement to see the related measures and results.

Graduates of the Bachelor of Science in Information Technology will be able to:

1. [Apply knowledge of computing and mathematics for problem solving in the field of information technology.](#)
2. [Demonstrate the ability to identify and analyze user needs to define and create appropriate computing requirements and solutions.](#)
3. [Demonstrate the ability to effectively select, evaluate, and integrate information technologies-based solutions in a user environment.](#)
4. [Demonstrate the ability to participate effectively in groups or team projects.](#)
5. [Demonstrate an ability to understand professional, ethical and social responsibilities, including the impacts of culture, diversity, and interpersonal relations.](#)
6. [Demonstrate proficiency in communicating technical information in formal reports, documentation, and oral presentations to users and information technology professionals.](#)
7. [Demonstrate the ability to identify and analyze the impacts of information technologies and computing on public, organizations, and individuals.](#)
8. [Demonstrate the ability to identify and apply current and emerging technologies and tools for information technologies solutions.](#)
9. [Demonstrate expertise in the core information technologies, including web technologies, database management and security, object-oriented programming, computer architecture, systems architecture, operating systems, networking, and system administration.](#)
10. [Demonstrate the ability to analyze computing and information security requirements and risks, and apply the appropriate tools and techniques to protect organizational data assets in an ethically responsible manner.](#)
11. [Demonstrate the ability to apply best practices and standards for information technology applications.](#)
12. [Demonstrate the ability to assist in the creation of an effective project plan.](#)

13. Demonstrate a commitment to professional development and to continue to engage in lifelong learning.

Assessment Methodology

Metrics, Assessments, and Levels of Achievement

The table below provides a brief overview of the measures selected to assess program outcomes for the Bachelor of Science in Information Technology program. Assessment of program outcomes includes both direct and indirect measures. Benchmarks have been established to differentiate between three levels of program outcome achievement (highly achieved, meets standard, and needs improvement). These three levels of achievement are color coded and used in the section below to indicate the level of achievement for each measure, for each learning outcome.

Metric Type	Direct Measures		Indirect Measures	
	Capstone Course	Course-Embedded	Exit Alumni Survey	One-Year Post-graduation Alumni Survey
Assessments				
Metrics	The percentage of the IT 495 students who receive a grade of 2 (out of 3) or higher on the Capstone Rubric for the designated program outcome.*	The percentage of the students who receive a grade of B or higher on two selected course embedded assessments that measure the related program outcome.	The mean of the graduates' perceptions of their achievement of the related program outcomes (on a 6-pt Likert-type scale).	The mean of the graduates' perceptions of their achievement of the related program outcomes (on a 6-pt Likert-type scale).
Highly Achieved	≥ 85%		Mean ≥ 5%	
Meets Standard	70 - 84%		4.0 - 4.99	
Needs Improvement	< 70%		Mean < 4	

Note: The results of the one-year post-graduation survey are used as a reference to provide a longitudinal perspective on students' attainment of program (student) outcomes.

**IT 495 was revised to incorporate new rubrics for the assessment of the student portfolios prior to the start of the Spring 2016 term. Data from Spring 2016 is not included in the direct measures because the new rubrics were not comparable. The new data was reviewed separately. Although, the capstone exam remained the same, resulting in a larger sample size than what is seen in the direct measures.*

Key:

Result
N

Program Outcome Achievement Results

May 2015 Term to March 2016 Term

Program / Student Learning Outcome 1

Apply knowledge of computing and mathematics for problem solving in the field of information technology.

Direct Measure		Indirect Measure	
Capstone Rubric IT 495 Integrated Technology Assessment	93%	Exit Survey	5.62
	n = 29		n = 8
M8A2 Final Exam in TECH 205 Discrete Structures	67%	One-Year Survey	5.14
	n = 61		n = 7
M3A1 Programming Assignment 3 in IT 210 Object Oriented Programming	92%		
	n = 61		

Program / Student Learning Outcome 2

Demonstrate the ability to identify and analyze user needs to define and create appropriate computing requirements and solutions.

Direct Measure		Indirect Measure	
Capstone Rubric IT 495 Integrated Technology Assessment	97%	Exit Survey	5.50
	n = 29		n = 8
M5A1 Textbook Assignment in IT 350 Business Data Communications	90%	One-Year Survey	5.43
	n = 31		n = 7
M5A1 Programming Assignment in IT 210 Object Oriented Programming	97%		
	n = 58		

Program / Student Learning Outcome 3

Demonstrate the ability to effectively select, evaluate, and integrate information technologies-based solutions in a user environment.

Direct Measure		Indirect Measure	
Capstone Rubric IT 495 Integrated Technology Assessment	97%	Exit Survey	5.50
	n = 29		n = 8
M7A1 Research Paper in IT 360 Operating Systems	97%	One-Year Survey	5.29
	n = 38		n = 7
M8A1 Project in IT 390 Project Management	100%		

n=29

Program / Student Learning Outcome 4

Demonstrate the ability to participate effectively in groups or team projects.

Direct Measure		Indirect Measure	
Capstone Rubric IT 495 Integrated Technology Assessment	93%	Exit Survey	5.75
	n = 30		n = 8
M8A1 Team Project in IT 350 Business Data Communications	90%	One-Year Survey	5.43
	n = 30		n = 7
M8A2 Team Analysis Project in IT 418 Software Systems Analysis and Design	100%		
	n = 18		

Program / Student Learning Outcome 5

Demonstrate an ability to understand professional, ethical and social responsibilities, including the impacts of culture, diversity, and interpersonal relations.

Direct Measure		Indirect Measure	
Capstone Rubric IT 495 Integrated Technology Assessment	93%	Exit Survey	5.75
	n = 29		n = 8
M8A2 Hands-on Lab Exercise in IT 380 Overview of Computer Security	100%	One-Year Survey	5.43
	n = 16		n = 7

M6A1 Assignment in IT 390 Project Management	84%
	n = 32

Program / Student Learning Outcome 6

Demonstrate proficiency in communicating technical information in formal reports, documentation, and oral presentations to users and information technology professionals.

Direct Measure		Indirect Measure	
Capstone Rubric IT 495 Integrated Technology Assessment	97%	Exit Survey	5.50
	n = 29		n = 8
M2A1 Assignment in IT 390 Project Management	100%	One-Year Survey	5.29
	n = 36		n = 7
M8A1 Final Project Report in IT 321 Computer Systems Architecture	100%		
	n = 42		

Program / Student Learning Outcome 7

Demonstrate the ability to identify and analyze the impacts of information technologies and computing on public, organizations, and individuals.

Direct Measure		Indirect Measure	
Capstone Rubric IT 495 Integrated Technology Assessment	97%	Exit Survey	5.50
	n=29		n=8
M1A2 Hands-on Lab Exercise in IT 380 Overview of Computer Security	83%	One-Year Survey	5.57
	n=23		n = 7

M7A1 Problem Assignment in IT 370 Database Management Systems	78%
	n=32

Program / Student Learning Outcome 8

Demonstrate the ability to identify and apply current and emerging technologies and tools for information technologies solutions.

Direct Measure		Indirect Measure	
Capstone Rubric IT 495 Integrated Technology Assessment	93%	Exit Survey	5.38
	n=29		n=8
M6A2 Hands-on activity in IT 350 Business Data Communications	90%	One-Year Survey	5.29
	n=31		n=7
M8A1 Database Project Report in IT 370 Database Management Systems	90%		
	n=31		

Program / Student Learning Outcome 9

Demonstrate expertise in the core information technologies including web technologies, database management and security, object-oriented programming, computer architecture, systems architecture, operating systems, networking, and system administration.

Direct Measure		Indirect Measure	
Capstone Rubric IT 495 Integrated Technology Assessment	100%	Exit Survey	5.38
	n=29		n=8
M7A1 Programming Assignment in IT 210 Object Oriented Programming	92%	One-Year Survey	5.00
	n=53		n=7
	92%		

M3A1 Problem Assignment in IT 370 Database Management Systems

n=38

Program / Student Learning Outcome 10

Demonstrate the ability to analyze computing and information security requirements and risks, and apply the appropriate tools and techniques to protect organizational data assets in an ethically responsible manner.

Direct Measure		Indirect Measure	
Capstone Rubric IT 495 Integrated Technology Assessment	97%	Exit Survey	5.50
	n = 29		n = 8
M8A3 Research Paper in IT 380 Overview of Computer Security	100%	One-Year Survey	5.43
	n = 20		n = 7
M3A1 Textbook Assignment in IT 350 Business Data Communications	91%		
	n = 33		

Program / Student Learning Outcome 11

Demonstrate the ability to apply best practices and standards for information technology applications.

Direct Measure		Indirect Measure	
Capstone Rubric IT 495 Integrated Technology Assessment	97%	Exit Survey	5.62
	n = 29		n = 8
M6A1 Textbook Assignment in IT 350 Business Data Communications	58%	One-Year Survey	5.43
	n = 31		n = 7

M7A1 Lab in IT 418 Software Systems Analysis and Design	100%
	n=20

Program / Student Learning Outcome 12

Demonstrate the ability to assist in the creation of an effective project plan.

Direct Measure		Indirect Measure	
Capstone Rubric IT 495 Integrated Technology Assessment	100%	Exit Survey	5.50
	n = 29		n = 8
M7A1 Term Project in IT 390 Project Management	97%	One-Year Survey	5.43
	n = 33		n = 7
M3A1 Project Scope Statement in IT 390 Project Management	91%		
	n = 35		

Program / Student Learning Outcome 13

Demonstrate a commitment to professional development and to continue to engage in lifelong learning.

Direct Measure		Indirect Measure	
Capstone Rubric IT 495 Integrated Technology Assessment	93%	Exit Survey	5.50
	n = 30		n = 8
M8D2 Assignment in IT 370 Database Management Systems	76%	One-Year Survey	5.43
	n = 33		n = 7

M8D1 Final Essay in IT 371 Web Design and Development	100%
	n = 2

Capstone Exam Results

A comprehensive capstone examination has been administered to all baccalaureate degree students at the conclusion of the IT 495 Integrated Technology Assessment since May 2011. The capstone examination consists of 120 objective questions that assess the most common and most important topics and skills in seven core content areas within the College's baccalaureate degree electrical engineering technology curriculum.

From May 2015 term to March 2016 term, the total number of students who took the capstone exam was 40. The mean score on each of the program's core content areas is shown below:

- 56.9% - Object Oriented Programming
- 87.3% - Databases
- 80.3% - Operating Systems
- 81.2% - Computer Architecture
- 71.2% - Data Communications and Networking
- 78.2% - Network Security
- 84.8% - Project Management