PCCUA PROGRAM ASSESSMENT PLAN

Division/Department: Business and Information Systems
Degree Program: Information Systems Technology AAS
Semester/Year: 2024-2025 Academic Year

Mission Statement or Overview of Program

The Information Systems Technology degree is a two-year program designed to prepare students for entry-level computer maintenance, help desk, network technician jobs, and cybersecurity related fields. The curriculum focuses on the development of knowledge and skills in computer, network, and security technologies, as well as interpersonal skills in customer service and technical support needed to be successful within the industry. Depending on course selection, this program helps prepare students for industry recognized certification exams such as CompTIA A+, CompTIA Network +, CompTIA Security+, and CompTIA Linux+.

Program Student Learning Outcomes (PLOs)

PLO #1 (Reporting Year 1)	Assess operating systems using critical thinking skills, industry-standard tools, and best practices to demonstrate proper installation, configuration, maintenance, troubleshooting, and customer service.
PLO #2 (Reporting Year 1)	Detect, analyze, identify, and resolve security vulnerabilities, cyber threats, and breaches using appropriate software (tools, devices, and processes) to defend network infrastructures.
PLO #3 (Reporting Year 2)	Apply legal and ethical standards defined by federal, state, and local guidelines to provide integrity of data and network systems in information systems environments.
PLO #4 (Reporting Year 2)	Perform entry-level system administrator duties to analyze, diagnose, and repair common problems with network infrastructures including operating systems, Open Systems and Interconnection model, Transmission Control Protocol/Internet Protocol, and network servers.
PLO #5 (Reporting Year 3)	Demonstrate skills and techniques by using various scripting languages and databases to code data driven applications for web development.
PLO #6 (Reporting Year 3)	Perform skills needed to secure cloud-based infrastructure services, maintain and optimize cloud environments, manage and maintain servers including virtualization, and troubleshoot security issues related to cloud implementations
PLO # 7 (Reporting Year 3)	Demonstrate effective communication by using written and oral communication skills in a business professional manner for the information systems environment

PCCUA ASSESSMENT GUIDING QUESTIONS

Please respond based on the departmental discussion of the program assessment and how those outcomes reflect what students are learning and what needs to happen to improve student learning. You may provide this in a narrative or bulleted format. However, you must respond to each question and these responses should be based on your program assessment discussions. Please respond in red font.

Program Student Learning Outcomes

A. Are the intended educational (learning) outcomes for the program appropriate and assessed appropriately?
Yes. The outcomes are tied to real-world skills in operating systems, cybersecurity, networking, programming, and communication. Each PLO is measured through rubrics for lab projects, digital notebooks, case studies, exams, and projects. Benchmarks are set (usually 70% achievement or higher), and assessment data demonstrates consistent evaluation across multiple courses and semesters.

B. How are the faculty and students accomplishing the program's student learning outcomes?
Faculty use a mix of instructional strategies—virtualization, simulation, and lab projects—combined with real-world scenarios. Students demonstrate mastery by completing digital lab notebooks, coding projects, case studies, and oral/written presentations. Results show that students are achieving competencies in both technical and problem-solving skills through these structured activities.

C. How is the program meeting market/industry demands and/or preparing students for advanced study?
The curriculum aligns with industry certifications (CompTIA A+, Network+, Security+, Linux+, Cloud+). Students demonstrate readiness for IT positions such as network technician, help desk support, and cybersecurity specialist. Assessment data shows success rates in technical areas (e.g., PLO 2 averaged 95%) and students have successfully secured jobs or transferred to four-year programs.

D. Do course enrollments and program graduation/completion rates justify the required resources?
Yes. Enrollment is steady, and graduation has averaged 7–8 students over the past three years. Completion rates support continued investment in faculty and lab resources.

E. Based on the Program SLO's how well are students learning at the course and program level? Based on your assessment outcomes, how do you know this?
Students are learning effectively, with the program average across all outcomes at **82.5%**. Strongest performance was in cybersecurity (PLO 2, 95%), while outcomes related to communication and cloud/server management were weaker (PLO

6, 78.5%; PLO 7, 80.9%). Scores are based on graded lab notebooks, case studies, and projects, which reflect authentic skill application.

F. What are the changes you need to make to improved student learning?

- Increase hands-on, real-world scenarios tied to emerging technologies.
- Strengthen instructional rubrics with added clarity (screenshots, examples).
- Offer more examples and review opportunities for communication-based assignments.
- Encourage alumni or industry professionals to share experiences with students

G. What are the weak areas demonstrating a need for improvement?

- Written and oral communication (resume, cover letters, presentations).
- Cloud/server management fundamentals (Windows Domain, Active Directory, virtualization).
- Business concepts and terminology (e.g., ECON post-test was 68%)

H. What are the strengths identified through assessment?

- Strong technical performance in cybersecurity, networking, and operating systems.
- High pass rates on certification-aligned lab projects.
- Students excelled in problem-solving and applied technical labs (several areas above 90%)

Program Curriculum

A. Is the program curriculum appropriate to meet current and future market/industry needs and/or to prepare students for advanced study? Is that reflected in the assessment outcomes?
Yes. The curriculum incorporates certifications, industry feedback from advisory committees, and professional development. Student performance data reflects that most graduates are prepared for workforce entry and advanced study

B. Are program exit requirements appropriate?
Yes. Students must complete all curriculum requirements, ensuring they are prepared for entry-level IT roles.

C. Are students introduced to experiences within the workplace and introduced to professionals in the field?
Yes. Students participate in guest speaker sessions (virtual and in-person) and complete projects aligned with workplace scenarios.

D. Does the program promote and support interdisciplinary initiatives?
Not yet, but plans are in place to collaborate with other divisions to improve writing skills and spread cybersecurity awareness.

E. Does the program support the college STACC skill development expected of all PCCUA graduates? Explain how you know this through assessment.
Yes. Students complete activities that integrate critical thinking, cultural awareness, and social responsibility, measured through lab activities, case studies, and group projects

F. Does the program provide respect and understanding for cultural diversity as evidenced in the curriculum, in program activities, in assignment of program responsibly and duties; in honors, awards and scholarship recognition; in recruitment?
Yes. Curriculum includes units on disability awareness, accessible web design, and group work that fosters collaboration across diverse backgrounds

Budget Requests Forms
Are more resources needed. If so, has there been an effort to acquire these resources through the college budgeting process?
Currently, no additional equipment/resources are needed.

What program requests did you make for the next year which are tied to needs related to assessment outcomes?
Standard budget requests were submitted. The 4-year NSF Cybersecurity grant ended, a new grant proposal was submitted and rejected; however, we have reworked it and resubmitted it as a second chance grant with hopes that we will be approved.

DIVISION OF BUSINESS AND INFORMATION SYSTEMS

The Information Systems Technology degree is a two-year program designed to prepare students for a wide range of career opportunities as an Information Technology (IT) professional. The curriculum in this program will prepare students with the required skills and knowledge of the security technologies required for IT positions such as computer maintenance/repair technician, help desk specialist, network/support technician, programming/coding specialist, web developer, and cybersecurity-related fields. Other areas of focus within the curriculum prepare students with interpersonal skills in customer service and technical support needed to be successful within the industry.

Depending on course selection, this program will help prepare students for industry-recognized certification exams such as CompTIA ITF+, CompTIA A+, CompTIA Network +, CompTIA Security+, CompTIA Linux+, and Cloud+.

GOAL 1: Assess operating systems using critical thinking skills, industry standard tools, and best practices to demonstrate proper installation, configuration, maintenance, troubleshooting, and customer service.

Student Learning Outcome	Related Courses	Benchmark: Assessment Criteria	Assessment Tools	Assessment Results			Action Plan
				Result	Number of Students Achieved	Total Number of Students	
Students will demonstrate the skills required to install and configure Windows Servers for a business infrastructure.	ISYS 17303 (CT 173)	80% of the students will score 70% or higher on the Digital Lab Notebook.	Digital Lab Notebook-Rubric	88%	7	8	Continue using virtual lab activities to ensure students demonstrate the necessary skills.
Students will demonstrate the skills required to install and configure Linux Operating Systems.	ISYS 14333 (NT 143)	80% of the students will score 70% or higher on the Digital Lab Notebook.	Digital Lab Notebook-Rubric	79%	11	14	Update the rubrics for instructional strategies to include additional screenshots for challenge questions. Provide additional instruction on completing virtual labs and documenting lab processes.

Students will demonstrate the required skills in configuring and managing Windows Servers to utilize the appropriate protocols to provide end users in a Windows Domain environment with access to the necessary network services for business functions.	ISYS 17333 (NT 173)	80% of the students will score 70% or higher on the Digital Lab Notebook.	Digital Lab Notebook-Rubric	73%	8	11	Provide virtual lab activities that align with Comptia+ Cloud certification exam.
Students will demonstrate the required skills in supporting, configuring, and securing Operating System.	ISYS 13333 (NT 133)	80% of the students will score 70% or higher on the Digital Lab Notebook.	Digital Lab Notebook-Rubric	93%	13	14	Continue using Cengage and InfoSec virtual labs to allow students to configure and secure operating systems.
Students will demonstrate the required skills to configure the Windows Server Active Directory objects in a Windows Domain environment.	ISYS 16303 (NT 163)	80% of the students will score 70% or higher on the Digital Lab Notebook.	Digital Lab Notebook-Rubric	79%	11	14	Update the rubrics for instructional strategies to include additional screenshots for challenge questions. Provide additional instruction on completing virtual labs and documenting lab processes.
Students will demonstrate the required skills in installing and configuring computer hardware, software, operating systems, and drivers	ISYS 19303 (NT 193)	80% of the students will score 70% or higher on the Lab Projects.	Lab Projects-Rubric	86%	6	7	Continue to implement virtual lab and hands on lab assignments to help ensure students demonstrate the necessary skills.
Students will understand the basic terminology and concepts that apply to the business environment.	CPSI 16343 (CT 163)	80% of the students will score 70% or higher on the chapter tests.	Chapter Tests	Not Assessed			

Students will use logical analysis to apply a critical thinking approach to problem solving for information systems.	ISYS 17303 (CT 173)	80% of the students will score 70% or higher on Case Study Projects.	Case Study Projects	88%	7	8	Provide real-world scenarios in the classroom that require students to use logical analysis to determine the best problem-solving practice.
	CPSI 13343 (CT 233)	80% of the students will score 70% or higher on the Company Webpage project.	Company Web Project-Rubric	Not Assessed			
	CPSI 27343 (CT 273)	80% of the students will score 70% or higher on the Comprehensive Application Project.	Comprehensive Application Project	Not Assessed			
	CPSI 19343 (CT 293)	80% of the students will score 70% or higher on the Computer Case Study Projects.	Chapter Case Study Projects	80%	4	5	Provide extra programming examples to assist students in understanding the coding language.
	ISYS 19303 (NT 193)	80% of the students will score 70% or higher on the Case Study Questions.	Case Study Questions	86%	6	7	Use real world problem scenarios that require class discussion to help students better understand how to respond to, and solve those problems.
Total for Program Learning Outcome # 1 Average Assessment Results				**83.6%**			

GOAL 2: Detect, analyze, identify, and resolve security vulnerabilities, cyber threats and breaches using appropriate software (tools, devices, and processes) to defend network infrastructures.							
Student Learning Outcome	Related Courses	Benchmark: Assessment Criteria	Assessment Tools	Assessment Results			Action Plan
				Result	Number of Students Achieved	Total Number of Students	
Students will demonstrate the skills required to secure and defend computer desktops and networks against virus attacks, malware, and other intrusions in both business and home environments with the appropriate software tools and utilities.	ISYS 21303 (NT 213)	80% of the students will score 70% or higher on Lab Projects.	Lab Projects-Rubric	100%	12	12	Update the rubrics for instructional strategies to include additional screenshots for challenge questions.
Students will demonstrate the ability to utilize various open source technologies: Routing, Intrusion Detection and Prevention systems.	ISYS 12303 (CYS 123)	80% of the students will score 70% or higher on Lab Projects.	Lab Projects-Rubric	100%	5	5	Will make a demonstration video for explanation of lab platform
Students will demonstrate the necessary skills with various utilities and tools related to network security.	ISYS 13303 (CYS 133)	80% of the students will score 70% or higher on Lab Projects.	Lab Projects-Rubric	80%	4	5	Continue providing students with virtual lab assignments.
Students will develop skills in writing the required documentation related to reporting results of network foot printing and defensive measures.	ISYS 14303 (CYS 143)	80% of the students will score 70% or higher on Case Study Projects.	Case Study Projects-Rubric	100%	2	2	Provide additional resources that help student develop writing skills.
Total for Program Learning Outcome # 2 Average Assessment Results				**95%**			

GOAL 3: Apply legal and ethical standards defined by federal, state, and local guidelines to provide integrity of data and network systems in information systems environments.							
Student Learning Outcome	Related Courses	Benchmark: Assessment Criteria	Assessment Tools	Assessment Results			Action Plan
				Result	Number of Students Achieved	Total Number of Students	
Students will demonstrate the necessary skills required in creating, querying, and maintaining a database using Microsoft Access.	CPSI 27343 (CT 273)	80% of the students will score 70% or higher on Case Study Projects.	Case Study Projects-Rubric	73%	8	11	Implement additional lecture material to better assist students in understanding the concepts.
Students will demonstrate the necessary skills in programming methodology producing mathematically sound results as a result of programming decisions for business applications.	CPSI 16343 (CT 163)	80% of the students will score 70% or higher on Case Study Projects.	Case Study Projects-Rubric	86%	7	8	Provide more review on folder structure and creating Visual Studio Files; Add video lectures of programming concepts in Blackboard
Students will use modern scripting languages to develop utilities and programs for the information systems environment.	ISYS 10303 (CYS 103)	80% of the students will score 70% or higher on Application Problems.	Application Problems-Rubric	71%	5	7	Provide additional visual coding examples to show students examples of coding.
Students will understand the basic terminology and concepts that apply to the business.	ECON 21003 (ES 213)	70% of the students will score 70% or higher on the Posttest.	Post Test	68%	25	41	Offer online office hours and more videos to explain the material. Create more vocabulary assignments to familiarize students with the terminology.

Students will demonstrate the skills required to design web sites that adhere to the American Disabilities Act and accommodate the needs of a diverse audience.	CPSI 13343 (CT 233)	80% of the students will score 70% or higher on the Company Web Project.	Company Web Project-Rubric	79%	11	14	Have students turn in a draft of the web site in sections and provide feedback on the drafts. Note: some students did not complete project
	CPSI 26343 (CT 263)	80% of the students will score 70% or higher on the Objective Exams.	Objective Exams	90%	9	10	Will add more review assignments to help students prepare for unit exams.
Total for Program Learning Outcome # 3 Average Assessment Results				**77.8%**			

GOAL 4: Perform entry-level system administrator duties to analyze, diagnose, and repair common problems with network infrastructures including operating systems, Open Systems and Interconnection model, Transmission Control Protocol/Internet Protocol, and network servers.							
Student Learning Outcome	Related Courses	Benchmark: Assessment Criteria	Assessment Tools	Assessment Results			Action Plan
				Result	Number of Students Achieved	Total Number of Students	
Students will demonstrate the skills required to install and configure Windows Servers for a business infrastructure.	ISYS 17303 (CT 173)	80% of the students will score 70% or higher on the Digital Lab Notebook.	Digital Lab Notebook-Rubric	88%	7	8	Continue using hands on and virtual lab activities to ensure students demonstrate the necessary skills
Students will demonstrate the required skills of IPv4 and IPv6 addressing fundamentals, subnetting, network cabling, and troubleshooting network connectivity with software utilities.	ISYS 12333 (NT 123)	80% of the students will score 70% or higher on the Digital Lab Notebook.	Digital Lab Notebook-Rubric	67%	2	3	Update the rubric for instructional strategies to include additional screenshots for challenge questions.
Students will demonstrate the skills required to install and configure Linux Operating Systems.	ISYS 14333 (NT 143)	80% of the students will score 70% or higher on the Digital Lab Notebook.	Digital Lab Notebook-Rubric	79%	11	14	Implement more virtual lab assignments that allow students to install Linux OS, Update lab rubrics and review process for completing online labs.
Students will demonstrate the required skills in configuring and managing Windows Servers to utilize the appropriate protocols to provide end users in a Windows Domain environment with access to the necessary network services for business functions.	ISYS 17333 (NT 173)	80% of the students will score 70% or higher on the Digital Lab Notebook.	Digital Lab Notebook-Rubric	73%	8	11	Provide virtual lab activities that align with the CompTIA Cloud+ certification exam.

Students will demonstrate the skills required to manage and optimize cloud environments and manage and maintain servers.	ISYS 16303 (NT 163)	80% of the students will score 70% or higher on the Digital Lab Notebook.	Digital Lab Notebook-Rubric	71%	10	14	Continue to use virtual labs for students to gain knowledge and demonstrate working in the Windows Domain environment.
Students will demonstrate the skills required to digitally footprint network systems and defend against attacks to those systems.	ISYS 11303 (CYS 113)	80% of the students will score 70% or higher on the Lab Projects.	Lab Projects-Rubric	100%	7	7	Update lab rubrics to align with projects
Students will use logical analysis to apply a critical thinking approach to problem solving for business information systems.	ISYS 13303 (CYS 133)	80% of the students will score 70% or higher on the Case Study Projects.	Case Study Projects-Rubric	80%	4	5	Continue providing real-world problems that require logical analysis
Total for Program Learning Outcome # 4 Average Assessment Results				**79.7%**			

GOAL 5: Demonstrate skills and techniques by using various scripting languages and databases to code data driven applications for web development.							
Student Learning Outcome	Related Courses	Benchmark: Assessment Criteria	Assessment Tools	Assessment Results			Action Plan
				Result	Number of Students Achieved	Total Number of Students	
Students will demonstrate the required skills to design and code effective user-friendly web sites using modern web design software.	CPSI 13343 (CT 233)	80% of the students will score 70% or higher on a Company Web Project.	Company Web Project-Rubric	79%	11	14	Review folder structure and file naming practices so students understand the importance.
Students will demonstrate the required skills to design and code secure data driven websites using modern web design software.	CPSI 12443 (CT 1243)	80% of the students will score 70% or higher on the Digital Portfolio Project.	Digital Portfolio Project-Rubric	78%	7	9	Provide students with Additional coding examples that focus on security of websites.
Students will demonstrate the skills required to code in Java and JavaScript for computer and web applications.	CPSI 26343 (CT 263)	80% of the students will score 70% or higher on the Case Study Projects.	Case Study Projects-Rubric	90%	9	10	Will revise rubrics for grading assignments.
Total for Program Learning Outcome # 5 Average Assessment Results				**82.3%**			

GOAL 6: Perform skills needed to secure cloud-based infrastructure services, maintain and optimize cloud environments, manage and maintain servers including virtualization, and troubleshoot security issues related to cloud implementations							
Student Learning Outcome	Related Courses	Benchmark: Assessment Criteria	Assessment Tools	Assessment Results			Action Plan
				Result	Number of Students Achieved	Total Number of Students	
Students will demonstrate the required skills to configure the Windows Server Active Directory objects in a Windows Domain environment.	ISYS 16303 (NT 163)	80% of the students will score 70% or higher on the Digital Lab Notebook.	Digital Lab Notebook-Rubric	71%	10	14	Provide additional instruction that covers the virtual lab activities.
Students will demonstrate the skills required to manage and optimize cloud environments and manage and maintain servers.	ISYS 16303 (NT 163)	80% of the students will score 70% or higher on the Digital Lab Notebook	Digital Lab Notebook-Rubric	79%	11	14	Provide more instruction on the requirements of the digital notebook and how it serves as a digital portfolio.
Students will demonstrate the required skills in configuring and managing Windows Servers to utilize the appropriate protocols to provide end users in a Windows Domain environment with access to the necessary network services for business functions.	ISYS 17333 (NT 173)	80% of the students will score 70% or higher on the Digital Lab Notebook.	Digital Lab Notebook-Rubric	73%	8	11	Provide virtual lab activities that align with the CompTIA Cloud+ certification exam.

Students will demonstrate the skills to configure network settings between virtual machines, install and configure workstations, and understand physical to virtual machine conversion.	ISYS 17333 (NT 173)	80% of the students will score 70% or higher on the Digital Lab Notebook.	Digital Lab Notebook-Rubric	91%	10	11	Provide virtual lab assignments that provide management and configuration exercises.
Total for Program Learning Outcome # 6 Average Assessment Results				**78.5%**			

GOAL 7: Demonstrate effective communication by using written and oral communication skills in a business professional manner for the information systems environment.							
Student Learning Outcome	Related Courses	Benchmark: Assessment Criteria	Assessment Tools	Assessment Results			Action Plan
				Result	Number of Students Achieved	Total Number of Students	
Students will demonstrate professional business etiquette, dress, and behavior skills at a business etiquette event or Internship worksite.	BUSI 20103 (BAN 263)	90% of the students will score 80% or higher on the Business Etiquette and Networking Event rubric.	Business Etiquette and Networking Event – Rubric	76%	20	29	Provide networking examples and etiquettes for students to practice before events.
Students will demonstrate the ability to utilize the Internet to conduct research.	CPSI 10103 (CT 113)	80% of the students will score 70% or higher on the Internet Research Paper.	Internet Research Project-Rubric	80%	159	175	Show additional examples of research papers and complete at least one additional end of chapter activity to ensure students are aware of how to set up a research paper properly.

Students will communicate effectively in a written manner by typing and submitting clear and concise business professional documents.	BUSI 20103 (BAN 263)	75% of the students will score 70% or higher on Resume Job Search activity.	Resume/Job Search Unit	72%	21	29	Provide additional examples on resumes and cover letters for student to reference.
	ECON 21003 (ES 213)	80% of the students will score 80% or higher on a current events article.	Current Events Article #3	75%	26	41	Provide more guidelines on professional documents; allow students to revise assignment after meeting to discuss mistakes.
	ISYS 13333 (NT 133)	80% of the students will score 70% or higher on the Written Help Desk Scenario.	Written Help Desk Scenario	86%	12	14	Provide students classroom demonstrations that focus on composing professional documents.
Students will demonstrate oral communication skills by developing and presenting an individual/group presentation.	BUSI 20103 (BAN 263)	85% of the students will score 80% or higher on the Group PowerPoint presentation.	Group PowerPoint Presentation	65%	17	29	Provide additional resources/assistance to students while completing this project.
	ISYS 13333 (NT 133)	80% of the students will score 70% or higher on the Oral Help Desk Scenario Projects	Oral Help Desk Scenario Projects-Rubric	93%	13	14	Continue implementing individual/group projects.
Students will develop skills in writing the required documentation related to reporting results of network foot printing and defensive measures.	ISYS 14303 (CYS 143)	80% of the students will score 70% or higher on the Case Study Projects.	Case Study Project-Rubric	100%	2	2	Continue to have students research defensive measures as they are constantly changing.
Total for Program Learning Outcome # 7 Average Assessment Results				**80.9%**			
Total Program Outcomes for Information Systems Technology AAS				**82.5%**			