

PROGRAM ASSESSMENT PLANNING FORM

Program to be assessed:

Title: Cybersecurity
 Division: BCT Department: CIS Program Code: APCSCY

Type of Award: A.A. A.S. A.A.S.
 Cert. Adv. Cert. Post-Assoc. Cert. Cert. of Completion

Assessment plan:

Learning outcomes to be assessed	Assessment tool	When assessment will take place	Describe population to be assessed	Number of students to be assessed
Identify concepts, terminology, and attack vectors related to cybersecurity.	Cisco CCNA Security final exam	Every 3 years	All students CSS 210	All
Describe elements of cryptography.	Cisco CCNA Security final exam	Every 3 years	All students in CSS 210	All
Configure firewalls and switches to protect networks.	Cisco CCNA Security final exam	Every 3 years	All students in CSS 210	All

Scoring and analysis of assessment:

1. Indicate how the above assessment(s) will be scored and evaluated (e.g. departmentally developed rubric, external evaluation, other). Attach the rubric/scoring guide.

Assessment is performed using the results of the CSS 210 Network Perimeter Protection – CCNA Security final exam. This exam is provided by the Cisco Network Academy and is closely related to the industry certification exam for CCNA Security.

2. Indicate the standard of success to be used for this assessment.

70% of students will score 75% or higher.

3. Indicate who will score and analyze the data (data must be blind-scored).

Cisco will score the exam and department faculty will analyze the data.

Submitted by:

Name:  Date: 6/26/2018
 Dept. Chair:  Date: 7/18/2018
 Dean:  Date: 6-26-18

Please return completed form to the Office of Curriculum & Assessment, SC 257.

Program Information Report

Cybersecurity (APCSCY)

Associate in Applied Science Degree

Program Effective Term: Fall 2017

In this program, students are introduced to the skills and strategies needed to plan and carry out security measures to protect an organization's computer networks and systems. Students will learn networking and network security skills using server, infrastructure and perimeter technologies working in Linux operating systems, Cisco infrastructure and perimeter devices, and Microsoft operating systems.

Continuing Eligibility Requirements:

Minimum grade of "C" in all major courses

First Semester		(16 credits)
CIS 121	Linux/UNIX I: Fundamentals	4
CPS 120	Introduction to Computer Science	3
CPS 161 or	An Introduction to Programming with Java*	
CST 160 or	Computer Technology I	
CST 225	PC Networking	3
Elective	Writing Elective(s)**	3
Elective	Nat. Sci. Elective(s)	3-4
Second Semester		(16 credits)
CNT 206	Introduction to Networks	4
CNT 216	Routing and Switching Essentials	4
CSS 200	Introduction to Network Security - Security+	4
CSS 205	Essentials of Network Penetration Testing	4
Third Semester		(15 credits)
CIS 161	Introduction to PowerShell	4
CNT 201	Administering Microsoft Windows Client Operating Systems	3
CNT 211	Installing and Configuring Windows Server 2012	4
MTH 160	Basic Statistics	4
Fourth Semester		(16 credits)
CSS 201	Introduction to Cryptography	3
CSS 210	Network Perimeter Protection - CCNA Security	4
Elective	Arts/Human. Elective(s)	3
Elective	Speech Elective(s)***	3
Elective	Soc. Sci. Elective(s)	3

Minimum Credits Required for the Program: 63

Notes:

*CPS 161 is recommended for students who plan to transfer to a 4-year college. Students who have no programming experience should take both CPS 120 and CPS 161.

**Students planning to transfer to a 4-year college should take ENG 111; otherwise, student may consider ENG 107.

***Students should consider COM 101 or COM 225.

PROGRAM PROPOSAL FORM

- Preliminary Approval** – Check here when using this form for preliminary approval of a program proposal, and respond to the items in general terms.
- Final Approval** – Check here when completing this form after the Vice President for Instruction has given preliminary approval to a program proposal. For final approval, complete information must be provided for each item.

Program Name:	<u>AAS in Cybersecurity</u>		Program Code: <u>APCSCY</u> CIP Code: <u>11.1003</u>
Division and Department:	<u>BCT CISD/CISD</u>		
Type of Award:	<input type="checkbox"/> AA <input type="checkbox"/> AS <input checked="" type="checkbox"/> AAS <input type="checkbox"/> Cert. <input type="checkbox"/> Adv. Cert. <input type="checkbox"/> Post-Assoc. Cert. <input type="checkbox"/> Cert. of Comp.		
Effective Term/Year:	<u>Fall 2017</u>		
Initiator:	<u>Michael Galea/ John Trame</u>		
Program Features Program's purpose and its goals. Criteria for entry into the program, along with projected enrollment figures. Connection to other WCC programs, as well as accrediting agencies or professional organizations. Special features of the program.	<p>This program prepares students for entry-level jobs in the field of cyber security such as network technician, penetration tester, and information security administrator. For those students desiring to continue their studies this program also transfer to the Eastern Michigan University Information Assurance bachelor's degree program in Information Assurance.</p> <p>Students need an Academic Reading and Writing Levels of 6 and Academic Math Level 3</p> <p>This program includes a number of courses from the "Computer Systems and Networking" (APCSN) degree</p>		
Need Need for the program with evidence to support the stated need.	<p>According to Forbes, "the cybersecurity market is expected to grow from \$75B in 2015 to \$170B by 2020". Correspondingly job growth will trend with market growth. According to an analysis of a Bureau of Labor Statistics completed by Stanford University "more than 209,000 cybersecurity jobs in the U.S. are unfilled, and postings are up 74% over the past five years"</p> <p>The Bureau of Labor Statistics in their Occupational Outlook Handbook publication, dated December 2015, further states that median salary for the position of information security analysts was \$90,120 per year with an expected job growth of 18% between 2014 through 2024.</p>		
Program Outcomes/Assessment State the knowledge to be gained, skills to be learned, and attitudes to be developed by students in the program. Include assessment methods that will be used to determine the effectiveness of the program.	<u>Outcomes</u>	<u>Assessment method</u>	
	<ol style="list-style-type: none"> 1. Identify concepts, terminology, and attack vectors related to cybersecurity. 2. Describe elements of cryptography. 3. Configure firewalls and switches to protect networks, 	<ol style="list-style-type: none"> 1. CISCO CCNA Security Exam 2. CISCO CCNA Security Exam 3. CISCO CCNA Security Exam 	

Curriculum	First Semester		
	List the courses in the program as they should appear in the catalog. List minimum credits required. Include any notes that should appear below the course list.	CST 160 or CST 225	Computer Technology I or CST225 PC Networking
CPS 161 * or CPS 120		Intro to Java or Intro to Computer Science	3 - 4
CIS 121		Linux/Unix Fundamentals	4
		Natural Sciences	3 - 4
		Writing **	3
		Total	16-19
Second Semester			
CNT 206		Introduction to Networks	4
CNT 216		Routing and Switching Essentials	4
CSS 200		Introduction to Network Security (Security+)	4
CSS 205		Essentials of Network Penetration Testing	4
		Total	16
Third Semester			
CNT 201		Administering MS Windows Client Operating Systems	3
CNT 211		Installing and Configuring Windows Server	4
CIS 161		Introduction to PowerShell	4
MTH 160		Basic Statistics	4
		Total	15
Fourth Semester			
CSS 210	Network Perimeter Protection - CCNA Security	4	
CSS 201	Introduction to Cryptography	3	
	Social and Behavioral Sciences	3	
	Arts and Humanities	3	
	Speech ***	3	
	Total	16	
	Total Credits Required	63-66	
	* CPS 161 is recommended for students who plan to transfer to a 4-year college. Students who have no programming experience should take both CPS 120 and CPS 161.		
	** Students planning to transfer should take ENG 111, otherwise, students may consider ENG 107.		
	***Students should consider COM 101 Introduction to Speech or COM 225 Intercultural Communication.		

Budget	START-UP COSTS		ONGOING COSTS	
	Specify program costs in the following areas, per academic year:	Faculty	\$ 0 .	\$ 0 .
Training/Travel		0 .	0 .	
Materials/Resources		0 .	0 .	
Facilities/Equipment		0 .	0 .	
Other		0 .	0 .	
TOTALS:		\$.	\$.	

Program Description for Catalog and Web site	In this program, students are introduced to the skills and strategies needed to plan and carry out security measures to protect an organization's computer networks and systems. Students will learn networking and network security skills using server, infrastructure and perimeter technologies working in Linux operating systems, Cisco infrastructure and perimeter devices, and Microsoft operating systems.
Program Information	Accreditation/Licensure - None Advisors - Michael Galea/John Trame/James Lewis Advisory Committee - CIS Advisory Committee Admission requirements - Standard College-level Reading and Math Articulation agreements - Eastern Michigan University in development Continuing eligibility requirements - Minimum grade of "C" in major courses

Assessment plan:

Program outcomes to be assessed	Assessment tool	When assessment will take place	Courses/other populations	Number students to be assessed
Identify concepts, terminology, and attack vectors related to cybersecurity.	CISCO CCNA Security Exam	Fall 2019	All students in CSS 210	All students in CSS 210
Describe elements of cryptography.	CISCO CCNA Security Exam	Fall 2019	All students in CSS 210	All students in CSS 210
Configure firewalls and switches to protect networks,	CISCO CCNA Security Exam	Fall 2019	All students in CSS 210	All students in CSS 210

Scoring and analysis plan:

1. Indicate how the above assessment(s) will be scored and evaluated (e.g. departmentally-developed rubric, external evaluation, other). Attach the rubric.

Assessment is performed using the third-party CISCO CCNA Security Exam. Exams are completed online and scored using an answer key.

2. Indicate the standard of success to be used for this assessment.

70% of students score 75% or better

3. Indicate who will score and analyze the data.

Department Faculty will analyze the data.

REVIEWER	PRINT NAME	SIGNATURE	DATE
Department Chair/Area Director	Phil Geyer	<i>Phil Geyer</i>	1-25-17
Dean	Kimberly Hurns	<i>Kimberly Hurns</i>	1-25-17
Curriculum Committee Chair	David Wooten	<i>David J. Wooten</i>	3/9/17
Vice President for Instruction <input type="checkbox"/> Approved for Development <input type="checkbox"/> Final Approval	Kimberly Hurns	<i>Kimberly Hurns</i>	3/15/17
President	Rose Bellanca	<i>Rose Bellanca</i>	4/4/17
Board Approval			5/23/17

Done 6/14/17 MO