Program Information Report

Science, Computer Technology, Engineering & Math

Cybersecurity (APCSCY)

Associate in Applied Science Degree

Program Effective Term: **Fall 2020**

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.

Articulation:
Eastern Michigan University, BS degree

Copies can be obtained from the Counseling Office, a program advisor, or from the Curriculum and Assessment Office Web site: http://www.wccnet.edu/curriculum/articulation/levelone/colleges/.

Continuing Eligibility Requirements:
Minimum grade of "C" in all major courses

First Semester		(14 credits)
CIS 121	Linux/UNIX I: Fundamentals	4
CNT 201	Administering Microsoft Windows Client Operating Systems	3
CNT 206	Introduction to Networks	4
Elective	Writing Elective(s)*	3

Second Semester		(15 credits)
CNT 216	Routing and Switching Essentials	4
CPS 141	Introduction to Programming Using Python	4
CSS 200	Introduction to Network Security - Security+	4
Elective	Speech/Comp. Elective(s)	3

Third Semester		(16 credits)
CSS 205	Essentials of Network Penetration Testing	4
CSS 210	Network Perimeter Protection - CCNA Security	4
CNT 211 or	Installation, Storage, and Compute - Windows Server 2016	
CNT 223 or	Networking with Windows Server 2016	
CNT 224	Identity with Windows Server 2016	4
MTH 160	Basic Statistics	4

Fourth Semester		(17 credits)
CNT 290	Network Forensics	4
CSS 225	Cybersecurity Operations - CCNA Cyber Ops	4
Elective	Arts/Human. Elective(s)	3
Elective	Nat. Sci. Elective(s)	3
Elective	Soc. Sci. Elective(s)	3

Minimum Credits Required for the Program: **62**

Notes:

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

Received C&A 2/6/20

WASHTENAW COMMUNITY COLLEGE

PROGRAM CHANGE OR DISCONTINUATION FORM

Program Code: **Program Name: Associate in Applied Science Cybersecurity (APCSCY)**

Effective Term: Fall 2020

Division Code: **Department:** Computer Science and Information Technologies

Directions:

1. Attach the current program listing from the WCC catalog or Web site and indicate any changes to be made.
2. Draw lines through any text that should be deleted and write in additions. Extensive narrative changes can be included on a separate sheet.
3. Check the boxes below for each type of change being proposed. Changes to courses, discontinuing a course, or adding new courses as part of the proposed program change, must be approved separately using a Master Syllabus form, but should be submitted at the same time as the program change form.

Requested Changes:

- ☐ Review
- ☒ Remove course(s): CSS 201, CIS 161, MTH 160
- ☒ Add course(s): CSS 225, CNT 290, MTH 160*
- ☐ Program title (title was _____)
- ☐ Description
- ☐ Type of award
- ☐ Advisors
- ☐ Articulation information
- ☐ Program admission requirements
- ☐ Continuing eligibility requirements
- ☐ Program outcomes
- ☐ Accreditation information
- ☐ Discontinuation (attach program discontinuation plan that includes transition of students and timetable for phasing out courses)
- ☐ Other _____

Show all changes on the attached page from the catalog.

Rationale for proposed changes or discontinuation:

An entire course in cryptography is not necessary to cover the content required for this degree. This was confirmed by the Cybersecurity advisory board that met in March of 2019. A replacement course of CSS 225 (Cyber Operations) was recommended as a replacement. Security Analyst is one of the top entry level jobs available for our students, which is the focus of the CSS 225 course.

CIS 161 (Powershell) is one of three scripting languages that are offered/taught in our program. It is also covered in the Microsoft Classes (CNT 201 and 211). With the addition of CPS 141 (Python) last year, the Cybersecurity program contained 2 scripting classes plus the additional scripting content being taught in the Microsoft and Linux courses. This is redundant and not necessary. Python is the preferred scripting language for cybersecurity and crosses over multiple platforms (Linux/Microsoft).

CNT 290 (Network Forensics) is an important part of Cybersecurity. While it deals with events after a breach has occurred, it is relevant to the Cybersecurity profession and degree as offered here at WCC. It is also a required knowledge unit/criteria in the Center of Academic Excellence designation through NSA.

MTH 160 (Statistics) is required for students articulating to Eastern Michigan University's Information Assurance program. Students not articulating can take a general education math course.

Financial/staffing/equipment/space implications:

CSS 225 can be taught by Cyndi Millns or John Trame in any computer lab
CNT 290 is taught by James Lewis in Forensics Lab (Currently TI149)

List departments that have been consulted regarding their use of this program.

n/a

BEHN BCT DIVISION FEB 5'20

Signatures:

Reviewer	Print Name	Signature	Date
Initiator	Cyndi Millns	Cyndi Millns	2-4-2020
Department Chair	Cyndi Millns	Cyndi Millns	2-4-2020
Division Dean/Administrator	Eva Samulski	Eva Samulski	2-5-2020
Please submit completed form to the Office of Curriculum and Assessment (SC 257). Once reviewed by the appropriate faculty committees we will secure the signature of the VPI and President.			
Vice President for Instruction	Kimberly Hurns		3/2/2020
President	Rose B. Bellanca		

Do not write in shaded area. Entered in: Banner _____ C&A Database 3-9-20 Log File 3-9-20 Board Approval _____

Reviewed by C&A Committees
2/20/20

DEAN BCT DIVISION FEB 5'20

Program Information Report

Cybersecurity (APCSCY)

Associate in Applied Science Degree

Program Effective Term: **Fall 2019**

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		(15 credits)
CIS 121	Linux/UNIX I: Fundamentals	4
CNT 206	Introduction to Networks	4
CNT 216	Routing and Switching Essentials	4
Elective	Writing Elective(s)*	3

Second Semester		(14 credits)
CNT 201	Administering Microsoft Windows Client Operating Systems	3
CNT 211 or	Installation, Storage, and Compute - Windows Server 2016	
CNT 223 or	Networking with Windows Server 2016	
CNT 224	Identity with Windows Server 2016	4
CPS 141	Introduction to Programming Using Python	4
Elective	Natural Sciences Elective(s)	3

Third Semester		(16 credits)
CIS 161	Introduction to PowerShell	4
CSS 200	Introduction to Network Security - Security+	4
CSS 205	Essentials of Network Penetration Testing	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/Comp. Elective(s)**	3
Elective	Soc. Sci. Elective(s)	3

Minimum Credits Required for the Program: **61**

Notes:

**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.*

WASHTENAW COMMUNITY COLLEGE

PROGRAM CHANGE OR DISCONTINUATION FORM

Program Code: APCSCY **Program Name: Associates in Applied Science in Cybersecurity**

Effective Term: ~~Winter~~ Fall 2019

Division Code: BCT **Department:** CIS

Directions:

1. Attach the current program listing from the WCC catalog or Web site and indicate any changes to be made.
2. Draw lines through any text that should be deleted and write in additions. Extensive narrative changes can be included on a separate sheet.
3. Check the boxes below for each type of change being proposed. Changes to courses, discontinuing a course, or adding new courses as part of the proposed program change, must be approved separately using a Master Syllabus form, but should be submitted at the same time as the program change form.

Requested Changes:

- ☐ Review
- ☒ Remove course(s): _CPS120, CPS161, CST225, CST160
- ☒ Add course(s): _____CPS141, CNT 223, CNT 224
- ☐ Program title (title was _)
- ☐ Description
- ☐ Type of award
- ☐ Advisors
- ☐ Articulation information
- ☐ Program admission requirements
- ☐ Continuing eligibility requirements
- ☐ Program outcomes
- ☐ Accreditation information
- ☐ Discontinuation (attach program discontinuation plan that includes transition of students and timetable for phasing out courses)
- ☐ Other _____

Show all changes on the attached page from the catalog.

Rationale for proposed changes or discontinuation:

The courses being removed are no longer relevant for Cybersecurity. In addition, they no longer transfer to EMU either as ~~either~~ direct transfer or as elective. The python language has become important in Cybersecurity for a number of reasons. Many "exploits" are now written in python. We have consulted with EMU faculty and they support this change. This will make it easier for students to transfer to their 4-year program.

Financial/staffing/equipment/space implications:

None

List departments that have been consulted regarding their use of this program.

Discussed with and approved by CIS department.

Signatures:

Reviewer	Print Name	Signature	Date
Initiator	Mike Galea/Cyndi Millns	Mike Galea / Cyndi Millns	11/12/2018
Department Chair	Phil Geyer	Phil Geyer	11/14/2018
Division Dean/Administrator	Eva Samulski	Eva Samulski	11-15-18
Vice President for Instruction	Kimberly Hurns		11/27/18

Do not write in shaded area. Entered in: Banner _____ C&A Database 2/4/19 Log File 2/4/19 Board Approval _____

Please submit completed form to the Office of Curriculum and Assessment (SC 257).

Curriculum Chair Lisa Veasey Lisa Veasey 1/16/19

Summary of changes:

1. Remove CST225 or CST160
2. Remove CPS120 or CPS161
3. Add CPS141
4. Change CNT211 to CNT211 or 223or 224 ← added courses
5. Reorder sequence

Marked Up Sequence

First Semester

Class		Title	Minimum Credits
CIS 121		Linux/UNIX I: Fundamentals	4
~~CPS 120~~	~~or~~	~~Introduction to Computer Science~~	
~~CPS 161~~		~~An Introduction to Programming with Java *~~	3
~~CST 160~~	~~or~~	~~Computer Technology I~~	
~~CST 225~~		~~PC Networking~~	~~3~~
Elective(s)		Writing/Composition **	3
~~Elective(s)~~		~~Natural Sciences~~	3
CNT206		Introduction to Networks	4
CNT216		Routing and Switching Essentials	4
Total			~~16~~ 15

Second Semester

Class	Title	Minimum 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
CPS 141	An Introduction to Programming with Python	4
CNT 201	Administering Microsoft Windows Client Operating Systems	3
CNT211	Installation, Storage, and Compute - Windows Server 2016 OR	~~4~~
CNT223	Networking with Windows Server 2016 OR	~~4~~
CNT224	Identity with Windows Server 2016	4
Elective(s)	Natural Sciences	3

Total	~~16~~ ~~14~~

Third Semester

Class	Title	Minimum Credits
CIS 161	Introduction to PowerShell	4
~~CNT 201~~	~~Administering Microsoft Windows Client Operating Systems~~	~~3~~
~~CNT 211~~	~~Installation, Storage, and Compute - Windows Server 2016~~	~~4~~
CSS200	Introduction to Network Security - Security+	4
CSS205	Essentials of Network Penetration Testing	4
MTH 160	Basic Statistics	4
Total		~~15~~ 16

Fourth Semester

Class	Title	Minimum Credits
CSS 201	Introduction to Cryptography	3
CSS 210	Network Perimeter Protection - CCNA Security	4
Elective(s)	Arts and Humanities	3
Elective(s)	Writing/Composition or Communication ***	3
Elective(s)	Social and Behavioral Science	3
Total		16

Total Credits Required
~~63~~ 61

Footnotes

~~*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.

First Semester

Class	Title	Minimum Credits
CIS 121	Linux/UNIX I: Fundamentals	4
CNT 206	Introduction to Networks	4
CNT 216	Routing and Switching Essentials	4
Elective(s)	Writing/Composition **	3
Total		**15**

Second Semester

Class	Title	Minimum Credits
CPS 141	An Introduction to Programming with Python	4
CNT 201	Administering Microsoft Windows Client Operating Systems	3
CNT 211 or 223 or 224	*Windows Server courses*	4
Elective(s)	Natural Sciences	3
Total		**14**

Third Semester

Class	Title	Minimum Credits
CIS 161	Introduction to PowerShell	4
CSS 200	Introduction to Network Security - Security+	4
CSS 205	Essentials of Network Penetration Testing	4
MTH 160	Basic Statistics	4
Total		**16**

Fourth Semester

Class	Title	Minimum Credits
CSS 201	Introduction to Cryptography	3
CSS 210	Network Perimeter Protection - CCNA Security	4
Elective(s)	Arts and Humanities	3
Elective(s)	Writing/Composition or Communication ***	3
Elective(s)	Social and Behavioral Science	3
Total		**16**
Total Credits Required		**61**

APCSCY

WCC General Education Requirements
Effective Fall 2018

Associate degree programs were updated to meet the revised WCC general education requirements below.

Course Distribution Requirements

Associate degree students must complete courses from each of six General Education content areas. The requirements vary, depending on which degree is being earned. The number of general education credit hours required for each degree is as follows.

	AA	AS	AAS
Writing/Composition	3-4 credits	3-4 credits	3-4 credits
2nd Writing/Composition or Communication	3-4 credits	3 credits	3 credits
Mathematics	3-4 credits	3-4 credits	3-4 credits
Natural Sciences [1]	7-8 credits	7-8 credits	3-4 credits
Social & Behavioral Science [2]	6 credits	6 credits	3 credits
Arts and Humanities [3]	6 credits	6 credits	3 credits
General Education Electives to reach 30 credits	0-2 credits	0-2 credits	N/A
Minimum	30 credits	30 credits	18 credits

[1] Two courses in Natural Science including one with laboratory experience (from two disciplines)
[2] From two disciplines
[3] From two disciplines

Program Information Report

Cybersecurity (APCSCY)

Associate in Applied Science Degree

Program Effective Term: Fall 2018

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 or	Introduction to Computer Science	
CPS 161	An Introduction to Programming with Java*	3
CST 160 or	Computer Technology I	
CST 225	PC Networking	3
Elective	Writing Elective(s)**	3
Elective	Nat. Sci. Elective(s)	3

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	Installation, Storage, and Compute - Windows Server 2016	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/Comp. 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.*

Done 1/18/18 NW

WASHTENAW COMMUNITY COLLEGE
GENERAL EDUCATION REVISION AAS PROGRAM CHANGE FORM 2018-2019

Due December 8, 2017

Program Code: APCSCY	**Program Name:** Cybersecurity
Division Code: BCT	**Department:** CIS

This form is to be used only for General Education Revision Program Changes for Associate in Applied Science (AAS) programs. Any other program changes should be submitted separately using a standard Program Change Form.

Directions:

1. Review each general education area under **Requested Changes** below and respond as needed.
2. Attach the semester program layout showing the current program listing from the WCC catalog.
   a. Indicate any changes to be made on the semester layout.
   b. Draw a line through any courses that should be removed on the semester layout.
   c. Write in any courses that need to be added on the semester layout.
3. Submit this form and semester program layout to the Office of Curriculum and Assessment (SC 257).

Current General Education Requirements AAS	
Writing	3-4 credits
Speech	3 credits
Mathematics	3 - 4 credits
Natural Sciences	3 - 4 credits
Social & Behavioral Sciences	3 credits
Arts & Humanities	3 credits
Critical Thinking	0 credits
Computer & Information Literacy	3 credits
Total	21-24 credits

Revised General Education Requirements 2018-2019 AAS	
English Composition	3 - 4 credits
2nd Course in English Composition or one course in Communication	3 - 4 credits
Mathematics	3 - 4 credits
Natural Sciences	3 - 5 credits
Social & Behavioral Sciences	3 credits
Arts & Humanities from	3 credits
Total	18 credits

Please review each General Education Area in the chart below, and record the needed changes in the chart and on the attached semester program layout.

REQUESTED CHANGES	
	General Education Area
	English Composition – The requirement for one writing/English composition course remains the same. No changes will be made unless specifically requested below. (Use Writing Elective or ENG 111)
	Optional Change: None
	2nd Course in English Composition or one course in Communication WCC previously required both a second composition/writing course and a communication course. Your options are: 1. Allow students to select any course that meets composition/writing or communication (*recommended*). 2. Require students to take a specific composition course (identify course below and on semester layout). 3. Require students to take a specific communication course (identify course below and on semester layout).
	Requested Change: None - We will still require a speech class

	Mathematics – The requirement for one mathematics course remains the same. However, the courses that meet the MTA requirement have changed slightly. See the course listing for details
	Optional Change: none
	Natural Sciences - The requirement for one natural science course remains the same. No changes will be made unless specifically requested below.
	Optional Change: none
	Social & Behavioral Sciences – The requirement for one social and behavioral science course remains the same. No changes will be made unless specifically requested below.
	Optional Change: none
	Arts & Humanities – The requirement for one arts and humanities course remains the same. No changes will be made unless specifically requested below. (Note: A department can designate a COM course as a requirement here. The same course cannot be counted in two areas.)
	Optional Change: none
	Computer and Information Literacy The requirement for computer and information literacy has been removed. Your options are: 1. Continue to require a specific computer course. If a specific course is required in your program, we will leave it there. If you previously used "Computer and Information Literacy Course," you will need to specify either a specific course or a list of courses from which to choose. 2. Remove the computer and information literacy course if the program will still meet the minimum of 60 credit hours. 3. Remove the computer and information literacy course and replace the course with elective or other credits as needed to meet the minimum of 60 credit hours.
	Required Change: none – Not listed as a separate requirement

Reviewer	Print Name	Signature	Date
Initiator	Phil Geyer	Phil Geyer	12-7-17
Department Chair	Phil Geyer	Phil Geyer	12-7-17
Division Dean/ Administrator	Eva Samulski	Eva Samulski	12-12-17
Vice President for Instruction			1/9/18

Office use only

Entered in: ☒ Banner 1/18/18 ☒ C&A Database 1/18/18 ☐ Log File

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:	AAS in Cybersecurity	**Program Code:**
Division and Department:	~~CISD~~/CIS BCT	APCSCY
Type of Award:	☐ AA ☐ AS ☒ AAS ☐ Cert. ☐ Adv. Cert. ☐ Post-Assoc. Cert. ☐ Cert. of Comp.	
Effective Term/Year:	Fall 2017	**CIP Code:**
Initiator:	Michael Galea/ John Trame	11.1003

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.	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. Students need an Academic Reading and Writing Levels of 6 and Academic Math Level 3 This program includes a number of courses from the "Computer Systems and Networking" (APCSN) degree
Need Need for the program with evidence to support the stated need.	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" 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.

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.	Outcomes 1. Identify concepts, terminology, and attack vectors related to cybersecurity. 2. Describe elements of cryptography. 3. Configure firewalls and switches to protect networks,	Assessment method 1. CISCO CCNA Security Exam 2. CISCO CCNA Security Exam 3. CISCO CCNA Security Exam

Curriculum

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.

First Semester		
CST 160 or CST 225	Computer Technology I or CST225 PC Networking	3 - 4
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

Specify program costs in the following areas, per academic year:

	START-UP COSTS	ONGOING COSTS
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	Phil Geyer	1-25-17
Dean	Kimberly Hurns	Kimberly Hurns	1-25-17
Curriculum Committee Chair	David Wooten	David J. Wooten	3/9/17
Vice President for Instruction ☐ Approved for Development ☐ Final Approval	Kimberly Hurns	Kimberly Hurns	3/15/17
President	Rose Bellanca	Rose B Bellanca	4/4/17
Board Approval			5/23/17

Done 6/14/17 MO