Program Information Report

Principles of Cybersecurity (CTCYS)
Certificate
Program Effective Term: **Fall 2016**

High Demand Occupation   High Skill Occupation   High Wage Occupation

This program is designed to meet the emerging demand for highly skilled cybersecurity professionals within the information technology industry and business community. This certificate program provides an in-depth examination of cybersecurity technology with an emphasis on executing a vulnerability analysis of an organization network and network hardening. The student will be trained to use various tools to analyze networks for vulnerabilities and secure networks through the application of various defense mechanisms including firewalls, intrusion detection and Virtual Private Networks (VPN).

Applying for Admission to the Program:
In order to meet the requirements of the market for jobs in network security, students should have professional or educational experience in network and system administration.

Program Admission Requirements:
Students must have basic knowledge of Linux, Windows, working at the command line of any operating system and networking.

Continuing Eligibility Requirements:
Students must maintain a grade of "C" or better in the program requirements.

Major Requirements		Credits
CNT 206	Internetworking I - Fundamentals	4
CNT 216	Routing and Switching Essentials	4
CSS 200	Introduction to Network Security - Security+	4
CSS 205	Essentials of Network Penetration Testing	4
CSS 210	Network Perimeter Protection - CCNA Security	4

Minimum Credits Required for the Program: **20**

PROGRAM CHANGE OR DISCONTINUATION FORM

Program Code: ~~CTFCS~~ Program Name: **Principles of Cybersecurity**

CTCYS

Division Code: **BCT**   Department: CIS

Effective Term: 2016-01**7**

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): CIS121/CNT201_____
- ☒ Add course(s): CSS205, *CSS210*_____
- ☒ Program title (title was <u>Foundations of Computer Security</u>)
- ☒ 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 <u>attached page from the catalog</u>.

Rationale for proposed changes or discontinuation:

The existing certificate requirements did not include the prerequisite courses. Courses were included that were not pertinent to the discipline. The description also had some inaccuracies.

Financial/staffing/equipment/space implications:

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

The CIS department was consulted.

Signatures:

Reviewer	Print Name	Signature	Date
Initiator	Michael Galea	*[signature]*	11-23-2015
Department Chair	John Trzme	*[signature]*	12/14/2015
Division Dean/Administrator	Kimberly Hurns	*[signature]*	11-23-15
Vice President for Instruction	Michael A. Nearon	*[signature]*	1/25/16
President			

Do not write in shaded area. Entered in: Banner _2/2/16_ C&A Database_✓_ Log File _____ Board Approval _NA_

Please submit completed form to the Office of Curriculum and Assessment and email an electronic copy to sjohn@wccnet.edu for posting on the website.

logged 12/16/15   *VMP*

Foundations of Computer Security (CTFCS)

Certificate

Current Program

Description

In this introductory program, students will develop the basic knowledge and skills that will qualify them for admission into the Network Security Advanced Certificate program. Students will receive an introduction to the principles of information assurance and will acquire basic skills in network and system administration.

Admissions Requirements

-An Academic Math Level of 3
-Students must also be experienced at installing and configuring computers and be comfortable with working at the computer command line with DOS.

Applying for Admission to the Program

In order to meet the requirements of the market for jobs in network security, students should have significant professional or educational experience in network and system administration and advanced courses in network and system security.

Continuing Eligibility

Students must maintain a grade of "C" or better in the program requirements.

Contact Information

Division: Business/Computer Technologies
Department: Computer Instruction Dept
Advisors: Michael Galea
John Trame

Requirements
(Items marked in orange are available online.)

Major/Area Requirements

Class	Title	Credits
CIS 121	Linux/UNIX I, Fundamentals	4
CNT 201	Administering Microsoft Windows Client Operating Systems	3
CNT 206	Internetworking I - Fundamentals	4
CNT 216	Internetworking II - Routers	4
CSS 200	Introduction to Network Security	4
Total		**19**

Principles of Cybersecurity

> **Description:**
>
> This program is designed to meet the emerging demand for highly-skilled cybersecurity professionals within the information technology industry and business community. This certificate program provides an in-depth examination of cybersecurity technology with an emphasis on executing a vulnerability analysis of an organization network and network hardening. The student will be trained to use various tools to analyze networks for vulnerabilities and secure networks through the application various defense mechanisms including firewalls, intrusion detection. and Virtual Private Networks (VPN).   *of*

Admission Requirements:

Students must have basic knowledge of Linux, Windows, working at the command line of any Operating System, and networking.

Applying for Admission to the Program

In order to meet the requirements of the market for jobs in network security, students should have ~~significant~~ professional or educational experience in network and system administration ~~and advanced courses in network and system security.~~

Continuing Eligibility

Students must maintain a grade of "C" or better in the program requirements.

Contact Information

Division:	Business/Computer Technologies
Department:	Computer Instruction Dept
Advisors:	Michael Galea
	John Trame

Add:
CSS205 Essentials of   4 *CSS 200*
Penetration Testing
CSS210 Perimeter Security   4 *No level1*
                                Lvl 11 CN2 206
                                CNT 216

Requirements

(Items marked in orange are available online.)

Major/Area Requirements

Class	Title		Credits
~~CIS 121~~	~~Linux/UNIX I Fundamentals~~		~~4~~
~~CNT 201~~	~~Administering Microsoft Windows Client Operating Systems~~		~~3~~
CNT 206	Internetworking I - Fundamentals	*No level 1 puregs*	4 ✓
CNT 216	Internetworking II - Routers	*CNT 206 C*	4
CSS 200	Introduction to Network Security	*No level 1 puregs*	4
Total			**20**

Program Information Report

CTFCS

School of Information Technology

The School of Information Technology gathers the diverse areas that make up the computer technology of today. From basic programming languages to systems development through networking, these programs provide the core of information technology. Develop skills in computer networking or programming in the growing field of applied information technology.

Washtenaw Community College offers programs at several levels for students who want to begin new careers, or advance in their existing careers. The first level is the certificate, which can vary from nine to thirty-six credits, depending on the field. Certificates generally prepare students for entry-level jobs.

After completing a certificate, students can progress to the next level, the advanced certificate. The credit hours required for these programs also vary. This type of certificate provides a more specialized level of skill development, and often allows students to upgrade their positions at their places of employment.

The next level, an Associate in Applied Science, is available for some programs. For some career fields, it is possible to earn a certificate, an advanced certificate, and an Associate in Applied Science degree in the same field. In these cases, the credit hours from the certificate and advanced certificate can be applied to the credit hours needed for the Associate in Applied Science degree.

Alternatively, students can earn an AAS in Occupational Studies by completing a certificate, an advanced certificate (if it exists) and General Education requirements.

Computer Security

Program Information Report

Foundations of Computer Security (CTFCS)
Certificate
Program Effective Term: Fall 2015

High Demand Occupation   High Skill Occupation   High Wage Occupation   ·

In this introductory program, students will develop the basic knowledge and skills that will qualify them for admission into the Network Security Advanced Certificate program. Students will receive an introduction to the principles of information assurance and will acquire basic skills in network and system administration.

Applying for Admission to the Program:
In order to meet the requirements of the market for jobs in network security, students should have significant professional or educational experience in network and system administration and advanced courses in network and system security.

Program Admission Requirements:
-An Academic Math Level of 3
-Students must also be experienced at installing and configuring computers and be comfortable with working at the computer command line with DOS.

Continuing Eligibility Requirements:
Students must maintain a grade of "C" or better in the program requirements.

Major/Area Requirements		
CIS 121	Linux/UNIX I: Fundamentals	4
CNT 201	Administering Microsoft Windows Client Operating Systems	3
CNT 206	Internetworking I - Fundamentals	4
CNT 216	Internetworking II - Routers	4
CSS 200	Introduction to Network Security	4

Minimum Credits Required for the Program: **19**

PROGRAM CHANGE OR DISCONTINUATION FORM

Program Code: CTFCS **Program Name:** Foundations of Computer Security

Effective Term
F'15

Division Code: BCT   **Department:** CISD

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 a separate sheet.

3. Check the boxes below for each type of change being proposed. Changes to courses, discontinuing a course, new courses as part of the proposed program change, must be approved separately using a Master Syllabus for should be submitted at the same time as the program change form.

Requested Changes:

☐ Review
☒ Remove course(s): ___CSS 180, CSS 205, CNT 211___
☐ Add course(s): _____
☐ Program title (title was _____)
☐ Description
☐ Type of award
☐ Advisors
☐ Articulation information

☐ Program admission requirements
☐ Continuing eligibility requirements
☐ Program outcomes
☐ Accreditation information
☐ Discontinuation (attach program discont plan that includes transition of students for phasing out courses)
☐ Other_____

Show all changes on the <u>attached page from the catalog</u>.

Rationale for proposed changes or discontinuation:

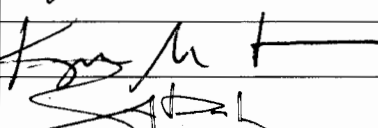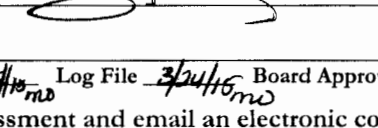Changes in industry requirements. Moving CSS 205 to advanced certificate.

Financial/staffing/equipment/space implications:

None

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

None

Signatures:

Reviewer	Print Name	Signature	
Initiator	Mike Galea		
Department Chair	John Trame		
Division Dean/Administrator	Kimberly Hurns		
Vice President for Instruction	William Abernethy		3/23/15
President			

Do not write in shaded area. Entered in: Banner 3/24/15 mu C&A Database 3/24/15 mu Log File 3/24/15 mu Board Approval N/A

Please submit completed form to the Office of Curriculum and Assessment and email an electronic copy to sjohn(posting on the website.

mo logged 3/11/15 s/v

ACADEMICS

Foundations of Computer Security (CTFCS)

Certificate   2013 - 2014

Description

In this introductory program, students will develop the basic knowledge and skills that will qualify them for admission
Advanced Certificate program. Students will receive an introduction to the principles of information assurance and v
and system administration.

Admissions Requirements

-An Academic Math Level of 3
-Students must also be experienced at installing and configuring computers and be comfortable with working at the c
DOS.

Applying for Admission to the Program

In order to meet the requirements of the market for jobs in network security, students should have significant profes:
in network and system administration and advanced courses in network and system security.

Continuing Eligibility

Students must maintain a grade of "C" or better in the program requirements.

Contact Information

Division:	Business/Computer Technologies
Department:	Computer Instruction Dept
Advisors:	Michael Galea, John Trame

Requirements

Major/Area Requirements

Class	Title	Credits
CIS 121	Linux/UNIX I: Fundamentals	4
CNT 201	Administering Microsoft Windows Client Operating Systems	3
CNT 206	Internetworking I - Fundamentals _CST 225 (level 2)_	4
~~CNT 211~~	~~Installing and Configuring Windows Server 2012~~ _CSI 225_ _per MG 3/12/15_	✗
CNT 216	Internetworking II - Routers	4
~~CSS 100~~	~~Computer Security I~~	~~4~~
CSS 200	Introduction to Network Security	4
~~CSS 205~~	~~Essentials of Network Penetration Testing~~	~~4~~
Total		**31**

Total Credits Required: ~~31~~ _credits_
_19_

PROGRAM CHANGE OR DISCONTINUATION FORM

Program Code: CTFCS **Program Name:** Foundations of Computer Security   **Effective Term: 201009**

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): _____
- ☒ Add course(s): CSS 205 Computer Security III_____
- ☐ 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 <u>attached page from the catalog</u>.

Rationale for proposed changes or discontinuation:

Course added to correct error in program requirements. Addition of course will also align certificate with Computer Security Associate Degree (APCSS) in which CSS 205 Computer Security III is required.

RECEIVED 10 MAR 11 A9 :56 DEAN OF BUSINESS WASHTENAW COMMUNITY COLLEGE

Financial/staffing/equipment/space implications:

None

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

N/A

Signatures:

Reviewer	Print Name	Signature	Date
Initiator	Neil Gudsen	*[signature]*	2-25-10
Department Chair	Clarence Hasselbach	*[signature]*	3-9-10
Division Dean/Administrator	Rosemary Wilson	*[signature]*	3/12/10
Vice President for Instruction		*[signature]*	4-1-10
President	Larry Whitworth		

Do not write in shaded area. Entered in: Banner_____ C&A Database_____ Log File 3/16/10 Board Approval_____

Please submit completed form to the Office of Curriculum and Assessment and email an electronic copy to posting on the website.   for

Washtenaw Community College.
Certificates and Degrees.
http://www4.wccnet.edu/academicinfo/creditofferings/programs/degree.php?code=CTFCS

Foundations of Computer Security (CTFCS)
Certificate

2010- 2011 (handwritten)

Program requirements shown below are for catalog year: ~~2009~~ ~~2010~~ [Change Year]

Description:
In this introductory program, students will develop the basic knowledge and skills that will qualify them for admission into the Network Security Advanced Certificate program. Students will receive an introduction to the principles of information assurance and will acquire basic skills in network and system administration.

Contact Information:
Division: Business and Computer Technologies
School: School of Information Technology
Department: Computer Instruction
Advisors: Michael Galea, John Trame

Admission Notes:
In order to meet the requirements of the market for jobs in network security, students should have significant professional or educational experience in network and system administration and advanced courses in network and system security. ~~Prior experience in law enforcement or the attainment of a bachelor's degree in criminal justice, information assurance or related areas is advised for individuals wishing to pursue careers in computer forensics. In order to practice computer forensics in the State of Michigan, individuals must be licensed as private investigators or qualify for an exemption under statutes pertaining to the licensure of private investigators.~~

Admission Requirements:
-An Academic Math Level of 3
-Students must also be experienced at installing and configuring computers and be comfortable with working at the computer command line with DOS.

Continuing Eligibility:
Students must maintain a grade of "C" or better in the program requirements.

Major/Area Requirements
30 (handwritten)
(~~20~~ Credits)

CIS 121	Linux/UNIX I: Fundamentals	3
CNT 201	Administering Microsoft Windows XP Professional	3
CNT 206	Internetworking I - Fundamentals	4
CNT 211	Administering and Managing Microsoft Windows Server Active Directory	4
CNT 216	Internetworking II - Routers	4
CSS 180	Computer Security I	4
CSS 200	Computer Security II	4

CSS 205 Computer Security III 4 (handwritten)

Minimum Credits Required for the Program:
30 ~~26~~ Credits

This website is for informational purposes only and is not to be construed as a binding offer or contract between WCC and the student. The information presented here is believed accurate, but is NOT guaranteed and is subject to change without notice.

For official information, see an Advisor.

PROGRAM CHANGE OR DISCONTINUATION FORM

Computer

Program Code: CTFCS **Program Name:** Foundations of   Security   **Effective Term:** Fall 2010
Certificate

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):   CSS 205, CIS 286, CNT 221
☒ Add course(s):   CNT 206, CNT 216, CNT 201
☒ Program title (was **Information Assurance)**
☒ 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 <u>attached page from the catalog</u>.

Rationale for proposed changes or discontinuation: The Foundations of Computer Security Certificate is intended to support the Network Security Advanced Certificate. This revision includes essential skills in routing and switching. This revision no longer supports Computer Forensics (now Data Recovery and Analysis) advanced certficiate and degree programs.

Financial/staffing/equipment/space implications:
No new investment in staffing, equipment or space is required.

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

Signatures:

Reviewer	Print Name	Signature	Date
Initiator	Michael Galea		
Department Chair	Clarence Hasselbach		
Division Dean/Administrator	Rosemary Wilson		3/27/09
Vice President for Instruction	Roger Palay		4/3/09
President	Larry Whitworth		

Do not write in shaded area. Entered in: Banner _____ — C&A Database 4/6 Log File 4/1/08 Board Approval _____
4/6

Please submit completed form to the Office of Curriculum and Assessment and email an electronic copy to sjohn@wccnet.edu for posting on the website.

Program Information Report

School of Information Technology

The School of Information Technology gathers the diverse areas that make up the computer technology of today. From basic programming languages to systems development through networking, these programs provide the core of information technology. Develop skills in computer forensics or learn how to run a successful e-business, the growing field of applied information technology is waiting for you.

Washtenaw Community College offers programs at several levels for students who want to begin new careers, or advance in their existing careers. The first level is the certificate, which can vary from nine to thirty-six credits, depending on the field. Certificates generally prepare students for entry-level jobs.

After completing a certificate, students can progress to the next level, the advanced certificate. The credit hours required for these programs also vary. This type of certificate provides a more specialized level of skill development, and often allows students to upgrade their positions at their places of employment.

The next level, an Associate in Applied Science, is available for some programs. For some career fields, it is possible to earn a certificate, advanced certificate, and an Associate in Applied Science degree in the same field. In these cases, the credit hours from the certificate and advanced certificate can be applied to the credit hours needed for the Associate in Applied Science degree.

Alternatively, students can earn an AAS in Occupational Studies by completing a certificate, advanced certificate and General Education requirements.

Computer Security and Forensics

Become part of the growing field of computer system security and forensics.

Foundations of Computer Security (CTFCS)
Certificate
Program Effective Term: Fall 2009

In this introductory program, students will develop the basic knowledge and skills that will qualify them for admission into the Data Recovery and Analysis advanced certificate program. Students will receive an introduction to the principles of information assurance and will acquire basic skills in network and system administration.

Applying for Admission to the Program:
In order to meet the requirements of the market for jobs in network security, students should have significant professional or educational experience in network and system administration and advanced courses in network and system security. Prior experience in law enforcement or the attainment of a bachelor's degree in criminal justice, information assurance or related areas is advised for individuals wishing to pursue careers in computer forensics. In order to practice computer forensics in the State of Michigan, individuals must be licensed as private investigators or qualify for an exemption under statutes pertaining to the licensure of private investigators.

Program Admission Requirements:
-An Academic Math Level of 3
-Students must also be experienced at installing and configuring computers and be comfortable with working at the computer command line with DOS.

Continuing Eligibility Requirements:
Students must maintain a grade of "C" or better in the program requirements.

Major/Area Requirements		(26 credits)
CIS 121	Linux/UNIX I: Fundamentals	3
CNT 201	Administering Microsoft Windows XP Professional	3
CNT 206	Internetworking I - Fundamentals	4
CNT 211	Administering and Managing Microsoft Windows Server Active Directory	4
CNT 216	Internetworking II - Routers	4
CSS 180	Computer Security I	4
CSS 200	Computer Security II	4

Minimum Credits Required for the Program: **26**

Program Code:
~~CTDAS~~ CTIA

Program Name:
Information Assurance

Effective Term:
200409

Directions:

1. Attach the current program listing from the WCC catalog 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 Course Syllabus Form, but should be submitted at the same time as the program change form.

Requested Changes:

☐ Remove _____ course(s)
☐ Add _____ course(s)
☐ Total credits: Current credits_____ After changes _____
☒ Title (title was <u>Data Assurance</u>_____)
☐ Description

☐ Advisors
☐ Articulation information
☐ Program admission requirements
☐ Continuing eligibility requirements
☐ Program outcomes
Other _____

Show all changes on the attached page from the catalog.

Rationale for proposed changes:
Align title to industry standards.

Financial/staffing/equipment/space implications:

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

Signatures:

Reviewer	Print Name	Signature	Date
Program Change Initiator	JAMES LEWIS	James Lewis By MerNudson	4/19/04
Department Chair	PHILIP GEYER	Phil Geyer	4/19/04
Division Dean/Administrator	Rosemary Wilson	Rosemary Wilson	4/21/04
Vice President for Instruction		Roger M Palay	4/30/04

Please submit completed form to the Office of Curriculum and Articulation Services.

Office of Curriculum & Articulation Services

Processed . . .

Program Change Form 8-2003

Access Program File

4/30 for

MAY 06 2004

Office of Curriculum & Articulation Services

Copied and Returned

Information Assurance (CTIA)
Certificate

Program Effective Term: Fall 2004

The Data Assurance program provides comprehensive instruction for students who wish to develop a career as a computer security professional, a field within the IT industry and business community in which there is a critical shortage of qualified personnel. With this program, students will develop the required knowledge and skills about information, computer, and network security. The student will become well-versed concerning issues in IT security awareness, data confidentiality, basic network security planning, network security technology, network security organization, and the legal and ethical issues associated with computer systems security. Students receive hands-on training in the methods, techniques, and tools for preventing network attacks. This program is a prerequisite for the Network Security Advanced Certificate programs.

Program Admission Requirements:
Students must have a minimum COMPASS Algebra score of 46 or complete MTH 097 with a grade of "C" or better.

Major/Area Requirements   (22 credits)

CIS 121	Linux/UNIX Fundamentals	3
CNT 211	Administering and Managing Microsoft Windows 2003 Server	4
CSS 180	Computer Security for PC's	4
CSS 200	Information Assurance I	4
CSS 205	Information Assurance II	4
CIS 286 or	UNIX Systems Administration	
CNT 221	Implementing a Windows Server 2003 Network Infrastructure	3

Minimum Credits Required for the Program: **22**

PROGRAM CHANGE FORM

CTDAS

Program Code:	Program Name:	Effective Term:
CYCSS1	Data Assurance	200409

Directions:

1. Attach the current program listing from the WCC catalog 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 Course Syllabus Form, but should be submitted at the same time as the program change form.

Requested Changes:

☐ Remove _____ course(s)
☒ Add _2_ course(s)
☒ Total credits: Current credits _16_ After changes _23_
☒ Title (title was Computer Systems Security I _____)
☒ Description

Show all changes on the attached page from the catalog.

☐ Advisors
☐ Articulation information
☐ Program admission requirements
☐ Continuing eligibility requirements
☐ Program outcomes
Other   Change to Certificate Level Program

Rationale for proposed changes:

For Academic year 2004-2005, this certificate will emphasizes entry level skills in data (information) assurance and will be changed from an advanced certificate program to a certificate program. New course CSS 180 PC Systems Security is a being added into this certificate to create a low level access point into the security curriculum at WCC. The course will allow students with little prior computer experience to develop PC based hardware/networking/security skills to a level that will be sufficient for more rigorous computer security coursework. CIS 121 Linux/Unix Fundamentals will also be required in order to give students requisite skills on that platform. Also, students will be given an option of taking Unix System Administration or Windows Administration courses.

Financial/staffing/equipment/space implications:

See NSF Grant Budget detail, attached.

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

NA

Signatures:

Reviewer	Print Name	Signature	Date
Program Change Initiator	James Lewis	James Lewis / KB	12/19/03
Department Chair	Philip Geyer	Philip Geyer	12/19/03
Division Dean/Administrator	Rosemary Wilson		12/19/03
Vice President for Instruction	Roger Palay	Roger M. Palay	1/26/04

Office of Curriculum & Articulation Services

Program Change Form 8-2003

Access Program File _2/10_   Log _2/10_   Copied and Returned _____

Computer Systems

Data Assurance (CTDAS)
Certificate

Program Effective Term: Fall 2004

The Data Assurance program provides comprehensive instruction for students who wish to develop a career as a computer security professional, a field within the IT industry and business community in which there is a critical shortage of qualified personnel. With this program, students will develop the required knowledge and skills about information, computer, and network security. The student will become well-versed concerning issues in IT security awareness, data confidentiality, basic network security planning, network security technology, network security organization, and the legal and ethical issues associated with computer systems security. Students receive hands-on training in the methods, techniques, and tools for preventing network attacks. This program is a prerequisite for the Network Security Advanced Certificate programs.

Program Admission Requirements:
Students must have a minimum COMPASS Algebra score of 46 or complete MTH 097 with a grade of "C" or better

Major/Area Requirements   (22 credits)

Course	Title	Credits
CIS 121	Linux/UNIX Fundamentals	3
CNT 211	Administering and Managing Microsoft Windows 2003 Server	4
CSS 180	Computer Security for PC's	4
CSS 200	Essentials of Computer Security	4
CSS 205	IT and Data Assurance	4
CIS 286 or	UNIX Systems Administration	
CNT 221	Implementing a Windows Server 2003 Network Infrastructure	3

Minimum Credits Required for the Program: **22**

DATA ASSURANCE

Major/Area Requirements   **(16 Credits)**

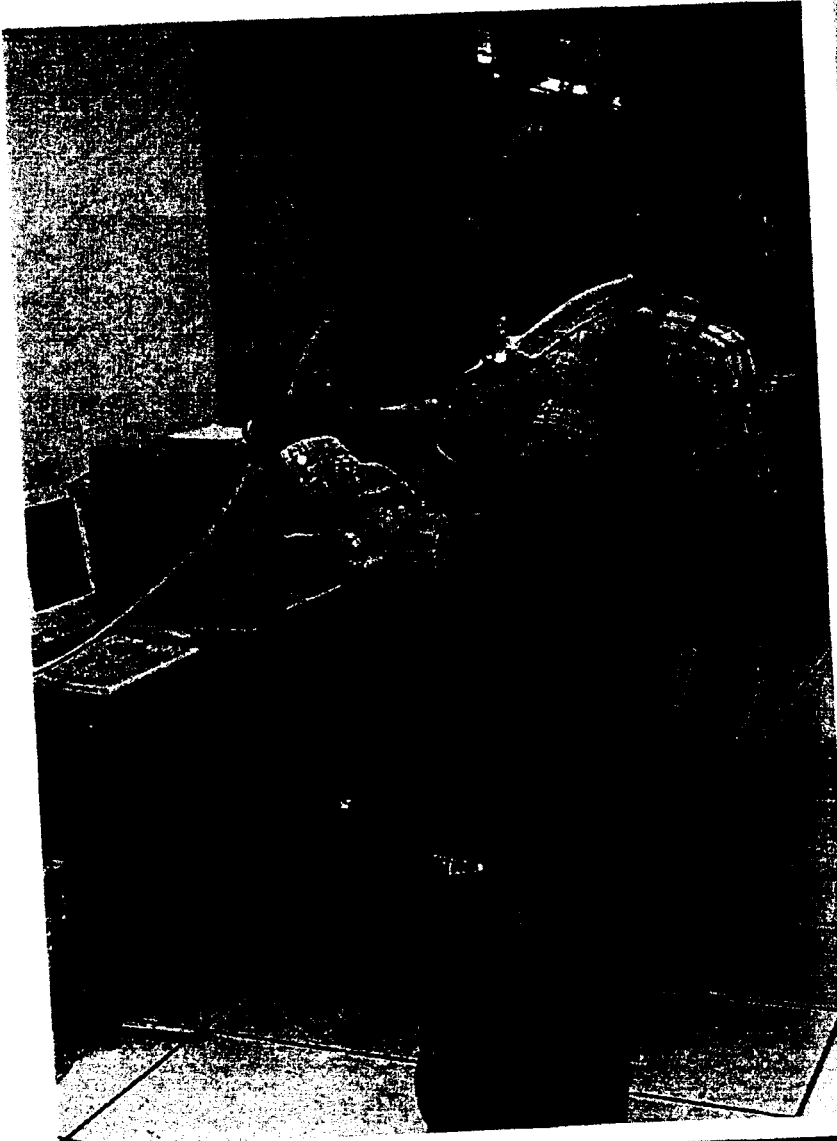CSS 180   PC SYSTEM SECURITY   4
CIS 286   UNIX Systems Administration   3-4
OR
CNT 211   ADMINISTERING MS WINDOWS SERVER
                 Administering Microsoft Windows 2000 Server   4
CSS 200   Essentials of Computer Security   4
CSS 205   IT and Data Assurance   4
+ CIS 121   LINUX/UNIX FUNDAMENTALS   3

Total Credits Required for the Program: Credits

(23)

22

or { CIS 286   4cr
   { CNT 221   3cr

Computer Systems Security I (CVCSS1)

The [redacted] program provides comprehensive instruction for students who wish to develop a career as a computer security professional—a field within the IT industry and business community in which there is a critical shortage of qualified personnel. With this program, students will develop the required knowledge and skills about information, computer, and network security. The student will become well-versed concerning issues in IT security awareness, data confidentiality, basic network security planning, network security technology, network security organization, and the legal and ethical issues associated with computer systems security. Students receive hands-on training in the methods, techniques, and tools for preventing network attacks.

[redacted]

gram completion requires: [redacted] knowledge.

[redacted] 101, Linux/Unix Fundamentals with a minimum grade of "C" or equivalent knowledge.

[redacted] with a minimum grade of "C" or equivalent knowledge.

STUDENTS MUST HAVE A MINIMUM COMPASS ALGEBRA SCORE OF 46 OR COMPLETE MTH 097 WITH A GRADE OF "C" OR BETTER.

PROGRAM APPROVAL DOCUMENT (PAD)

Program Name: Computer Systems Security I Advanced Certificate _____   Program Code:

Division: BCT _____   Department: CISD _____   CIP Code:

Type of Award: ☐A.A.   ☐A.S.   ☐A.A.S.   ☐ Certificate   ☐ Certificate   ☒ Advanced   ☐ Post/Cert
                                                              of Completion   Certificate

Is this an occupational program eligible for Perkins Funding? ☒yes   ☐no   Effective Year:_____

Program Features
Provide a general description of the program's purpose and general goals. State the criteria for entry into the program, along with projected enrollment figures. Explain any connection to other WCC programs, as well as accrediting agencies or professional organizations. Note any special features of the program, such as jobs for which the student will be prepared, as well as potential career paths.

Washtenaw Community College is member of a consortium of seven colleges that have applied for a NSF grant for the development of a standardized computer security curriculum and for the development of regional and local security centers.

The Computer Systems Security I Advanced Certificate is part of a series of two certificates and a degree program under the grant.

WCC has run two sections of CSS 200 Essentials of Computer Security during the Winter 2003 term. This course will be the first course of this certificate. Using CSS 200 as a baseline for enrollments, it is expected that initially two sections of each class included in this certificate will run each semester for a total of 48 students. Due to the high demand for trained computer security professionals, it is anticipated that enrollments may gradually increase from the baseline to a maximum of no more than 72 per semester.

While specific salaries cannot be guaranteed, salaries for trained computer security professionals are expected to be relatively high, with new workers making in the range of from $40,000 to $60,000/year and experienced computer security professionals making from $60,000 and up.

Need
State the need for the program and provide evidence to support the stated need.

With Homeland Security being a high national priority, the certificate is of timely and vital interest to the IT and business communities. It is estimated that $12.3 billion was spent to clean up damage from computer viruses in 2001 alone. Additionally, in a recent survey of the Computer Security Institute, it was determined that 85% of the companies surveyed detected security breaches and 64% suffered financial losses because of such breaches.

According to PostNewsweek Tech Media, 2001, a serious deficit in the number of skilled computer security workers exists and will continue to exist into the future. The proposed certificate and the goals and objectives of the grant are designed to address the critical shortage of qualified computer security professionals. (See Regional IT Security and Data Assurance Center grant proposal attached).

Computer Systems Security I Advanced Certificate

This program surveys issues in IT security awareness and data confidentiality. It also provides students with the basics of network security planning, network security technology, network security organization and the legal and ethical issues associated with network security. Students will also get hands-on training in the methodologies, techniques, and tools for preventing network attacks

Program Admission Requirements:

-ELE 225A or equivalent knowledge
-CIS 121 Linux/Unix Fundamentals with a minimum grade of C or equivalent knowledge
-CNT 201 with a minimum grade of C or equivalent knowledge.

Major/Area Requirements:	Credits
CSS 200 Essentials of Computer Security	4
CIS 286 Unix System Administration	3
CNT 211 Administering Microsoft Windows 2000 Server	4
CSS 205 IT and Data Assurance	4
Total program credits	15

Outcomes
State the overall knowledge to be gained, skills to be learned, and attitudes to be developed by students who participate in this program.

Students will survey issues in IT security awareness and data confidentiality in the program. They also will be provided with the basics of network security planning, network security technology, network security organization, and the legal and ethical issues associated with network security. Students will also get hands-on training in the methodologies, techniques and tools for preventing network attacks.

Curriculum
List the sequence of courses in the program by semester, including credit hours, co- and pre-requisites.

Course ID   Title   Credit   Contact Hours   Pre-requisites/Co-requisites

CSS 200 Essentials of Computer Security   4 cr   4 contact hours   Pre-requisites: ELE 225A, CIS 121, CNT 201
CIS 286 Unix System Administration   3 cr   3 contact hours   Pre-requisites: CIS 121
CNT 211 Administering Microsoft Windows 2000 Server   4 cr   4 contact hours   Pre-requisites: CNT 201
CSS 205 IT and Data Assurance   4 cr   4 contact hours   Pre-requisites: CSS 200

Credits required to complete the program: 15

Assessment
Describe the assessment process that will be used to determine the effectiveness of the program.
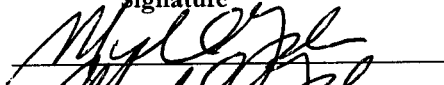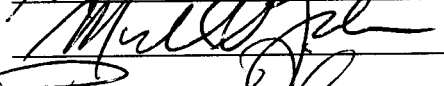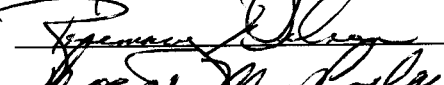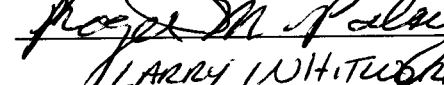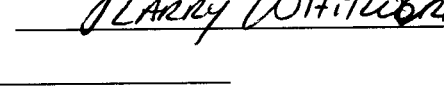
Standard exams will be developed for courses across all sections of classes. Exams for CSS 200 and CSS 205 will be standard across all sections of these classes taught by schools in the grant consortium.

Budget
Specify program costs in the following areas, per academic year, including any start-up costs: faculty, training, travel, materials, resources, facilities, equipment, and any other costs.

All start up and program costs are to be provided for by grant funding.

Approximate costs will include: Acquisition of Cisco routers for on campus labs   (startup) $30,000
Faculty travel to Chicago, Il., Madison, WI., and Grove Heights, MN for 3 training and meeting sessions annually for 3 faculty:

	Lodging	$ 2700.
	Plane	$ 4050

Approval Recommended:	Print Name	Signature	Date
Program Initiator:	Michael Ganza		4/8/03
Dept. Chair/Director:	Michael Ganza		4/8/03
Dean/Administrator:	Rosemary Wilson		4/8/03
VP of Instruction:			4/8/03
President:	Gary Whitworth	Larry Whitworth	4/8/03
Date of Board Approval:			

Needs Assessment

This page to be completed only by those programs seeking Perkins funding. The need study is required to obtain state approval for occupational programs program.

Staff or firm that conducted the need study   ICARD/EMU

Term during which the study was conducted: July 1998

Geographic area to be served by the program: Cities: Ann Arbor, Ypsilanti
Counties: Washtenaw

Number of employers surveyed: 53

Number of skilled persons, in the geographical area, currently employed and/or receiving on-the-job training in the occupation for which the program could provide training.

	Full-Time Employees	Part-Time Employees
Currently employed	1923	Not Available
Receiving On-the-Job Training	Appr 550	Not Available

List employment opportunities in the local market area and the State of Michigan: projected number of full-time and part-time positions within one year and in five years.

	Local Area				Michigan			
	One Year		Five Years		One Year		Five Years	
	Full-time	Part-time	Full-time	Part-time	Full-time	Part-time	Full-time	Part-time
For Certificate Holders	50% Growth	50% Growth	Not Available	Not Available	50% Growth	50% Growth	Not Available	Not Available
For Degree Holders	50% Growth	50% Growth	Not Available	Not Available	50% Growth	50% Growth	Not Available	Not Available
Limited Course Work	Not Available	Not Available	Not Available	Not Available	Not Available	Not Available	Not Available	Not Available

Expected starting hourly wage rate (excluding benefits) in the geographical area to be served for:

Certificate holders $ 20 (Approx)   Associate Degree holders $30/hr (Approx)

Check only one: Within this geographical region:
☒ Job opportunities are projected to be available for no less than 75% of the projected program enrollees in a year.

☐ At least 90% of the projected program enrollees will be employed persons from the proposed program area who desire upgrading within this occupation.

A student interest survey indicated that_____ individuals are interested in pursuing this program area:

     Total number surveyed _____

     Number interested in an associate degree _____

     Number interested in a certificate _____

     Number interested in limited coursework _____

List the educational opportunities available for students interested in this program that are within the geographic area currently served by the college.

Institution	Program	Location
None		

Advisory Committee
List the names, titles, and organizational affiliations of members of the advisory committee that has been selected to advise the college on the development and implementation of this occupational program. Include the committee's program recommendations.

Ron Murphree – Network Engineer, Compernica Network/Network Two

David Bigalke – Web Security Coordinator, Ford Motor Company

Frank Carlismo – Network Engineer, University of Michigan

Kurt Hilliger – Network Engineer, University of Michigan

Terry Weedock – Computer Security Consultant

Douglas Cox – Data Assurance and Security Officer. University of Michigan Hospital.

The committee recommends adoption of a computer security curriculum. See minutes of advisory committees, attached.

Proposed name of program: <u>Computer Systems Security I Advanced Certificate</u>

Faculty/initiator(s): <u>Michael Galea</u>

Division: <u>BCTD</u>   **Department:** <u>CISD</u>   **Estimated start-up term:** <u>Fall 2003</u>

Type of program: ☐ A.A. ☐ A.S. ☐ A.A.S. ☐ Certificate of Completion ☐ Certificate ☒ Advanced Certificate ☐ Post Associate Certificate

Describe the program briefly, including the need for the program and the benefits it will offer to students.

Washtenaw Community College is member of a consortium of seven colleges that have applied for a NSF grant for the development of a standardized computer security curriculum and for the development of regional and local security centers.

The Computer Systems Security I Advanced Certificate is part of a series of two certificates and a degree program under the grant.

With Homeland Security being a high national priority, the certificate is of timely and vital interest to the IT and business communities. It is estimated that $12.3 billion was spent to clean up damage from computer viruses in 2001 alone. Additionally, in a recent curvey of the Computer Security Institute, it was determined that 85% of the companies surveyed detected security breaches and 64% suffered financial losses because of such breaches.

According to PostNewsweek Tech Media, 2001, a serious deficit in the number of skilled computer security workers exists and will continue to exist into the future.The proposed certificate and the goals and objectives of the grant are designed to address the critical shortage of qualified computer security professionals.

Identify the resources (faculty, facilities, equipment) that will be needed to start and to maintain the program.

It is expected that the grant will be approved and that the grant will provide funding for creation of a standard computer security lab at WCC. Lab equipment will consist of various Cisco routers configured into an isolated network at WCC. Additionally, the grant will provide funding for a special computer security lab at a regional security center Moraine Valley Community College in Palos Hills, Illinois to be used to conduct remote "virtual" computer security training sessions.

Lab assignments and instructional materials are to be developed primarily by Inver Hills Community College in Grove Heights, Minnesota.

List the courses that the progam will require.

    Existing   Need modification   New

CSS 200 Essentials of Computer Security – Exists. Needs minor changes to instructional objectives to align course with curriculum under grant proposal.

CIS 286 Unix System Administration – Exists. No modifications needed.

CNT 211 Administering Microsoft Windows 2000 Server – Exits. No modifications needed.

CSS 205 IT and Data Assurance – New course.

Signatures:

Department Chair/Director: _____ Date: _____4-8-03_____

Dean(s)/Administrator: _____ Date: _____4-8-03_____

~~Executive~~ Vice President of Instruction:

    ☒ Approved for development of PAD (Program Approval Document)

    ☐ Returned for additional review/development of PPAF (details attached)

    ☐ Not approved

    Signature: _____ Date: _____4/8/03_____

Preliminary Program Approval Form/ Original 9-25-91/ Revised 11-21-00(mlh)

Copies: IAC: _____ **, Curriculum Committee:** _____

Copies: President's Staff, Faculty/Initiator, Department Chair/Director, Dean/Administrator, Curriculum Files

Computer Systems Security I Advanced Certificate

This program surveys issues in IT security awareness and data confidentiality. It also provides students with the basics of network security planning, network security technology, network security organization and the legal and ethical issues associated with network security. Students will also get hands-on training in the methodologies, techniques, and tools for preventing network attacks

Program Admission Requirements:

-ELE 225A or equivalent knowledge
-CIS 121 Linux/Unix Fundamentals with a minimum grade of C or equivalent knowledge
-CNT 201 with a minimum grade of C or equivalent knowledge.

Major/Area Requirements:	Credits
CSS 200 Essentials of Computer Security	4
CIS 286 Unix System Administration	3
CNT 211 Administering Microsoft Windows 2000 Server	4
CSS 205 IT and Data Assurance	4
Total program credits	15