



PROGRAM FORM

Catalog Year: 2020 - 2021
Curriculum Committee Approval: 12/05/2019
Governing Board Approval: 01/14/2020

School(s)
 Higher Education Center at Otay Mesa

Date
 05/01/2019

Name of Program
 Cyber-Forensic

Originator
 Michael Speyrer

Program/Certificate Type
 Associate in Science

Co-Contributor(s)
 Tom Luibel

NEW PROGRAM

Program Rationale

The Cyber-Forensic Program meets the CTE requirement. The Cyber field is projected nationally (U.S.) to have 1 million jobs over the next ten years. This program will contain a work experience component that will give the student training with the companies that are in the Cyber field and enhance their chances for employment.

		INSTRUCTIONAL OFFICE USE ONLY	
Omar Orihuela	Date	Approved by:	Date
School Dean	08/30/2019		
Ronald Ungar		Curriculum Committee	12/05/2019
Department Chair	05/07/2019		
		Governing Board	01/14/2020
		Chancellor's Office	
Articulation Officer	11/29/2019		
		Catalog Effective Year	2020 - 2021
Faculty Curriculum Committee Co-Chair			
Curriculum Committee Co-Chair / Vice President of Academic Affairs			

PROGRAM CHECKLIST

REQUIRED INFORMATION FOR NEW PROGRAMS

1. * Short Overview

A. Program Description:

Designed to provide students with the knowledge and tools to understand how to secure networks, operating systems, and programs function. Emphasis is placed on developing the theoretical and practical skills needed to maintain security on mission-critical data and systems. Designed to meet the training needs of government and industry employees. Covers a variety of information forensic/security disciplines which include both information technology forensic/security training to support and design systems that are safe from cyber-attacks. Prepares students for industry certifications employing work-based learning through participation in internships and externships during the program.

B. General assessment of the need:

Job projections for Cyber trained people over the next ten years are currently estimated to 1 million jobs. Currently both public and private sectors are in need of the trained people.

C. Program outcome:

The program outcomes will be measured by attendance, degrees and students attaining jobs in the field of study.

D. Typical core courses/ total approximate hours

2. * Relation to College Mission

This program will enhance the mission of SWC CTE programs. The students will finish this program and be able to gain employment. The deciding factor that makes this cyber program different is the work experience model.

3. Budget Implications

A. Facilities:

Room 541 and 544 are Pre-wired as a computer classroom. A strong work force grant was requested for all equipment for the lab classroom and if funded handle any facilities costs.

B. Staff:

This program will use current full time and part time instructors to start. As the program grows, additional full time instructors will be requested through FHP.

C. Equipment:

Room 541 and 544 are Pre-wired as a computer classroom. A strong work force grant was requested for all equipment for the lab classroom and if funded handle any facilities costs.

D. Cost/ benefit analysis:

This program will increase the college full time students by 60 per year.

4. Staffing Requirements

A. Retrain:

No training is needed

B. New contract:

Additional faculty will be hired through FHP as the program grows and develops into a fall/spring semester start time.

C. Part - time:

Part time faculty from AJ department and CIS department will handle opening the cyber program.

D. Share existing:

Faculty from the AJ department and the CIS department will staff the classes to open the program.

5. * Curriculum

A. Available:

Most of curriculum for this program is already written. Classes from other programs are being used. Additional classes that were needed are already written and being Pre-launched in curricunet.

B. Expansion of existing curriculum:

Several AJ and CIS classes will be added, since past AJ and CIS classes were already full.

C. Needs to be developed:

None

6. * Perceived Student Market

A. Anticipated enrollment:

30 students will start in the Fall 2020. This group will have a pathway to finish in two years. Each semester after the Fall 2020 will have 30 students enrolled. In Spring 2022, the first 30 students will graduate. After this, spring 2023, 60 students will graduate.

B. Target population:

Target population will be Prior veterans, AJ students and CIS students. This population will reflect SWC goals and objectives to promote the CTe philosophy.

C. Articulation with existing transfer colleges:

7. * **Source of Data**

A. Ad Hoc advisory committee:

The AJ departments advisory committee made this program is first priority. Additionally, THE CTE committee rated this as it second funding priority this year.

B. Industry provided data:

Job projections for Cyber trained people over the next ten years are currently estimated to 1 million jobs. Currently both public and private sectors are in need of the trained people.

C. Labor market statistics:

The following summarizes key findings from this data brief: --Cyber security-related occupations are increasing by 4% over the next five years, and nearly 1,800 job openings will be available annually due to new job growth and replacement need. --Over the past 12 months, there were 2,989 online job postings related to cyber security in Los Angeles and Orange Counties. --Three other related program recommendation requests were received between January and September 2018 from regional community colleges. --Thirteen colleges in the region have programs closely related to cyber security. --Between 2014 and 2017, community colleges in the region conferred an average of 305 awards annually (associate degrees and certificates) in related training programs. There were also 2,264 total job postings associated with the cyber security keyword search. Table 3. Cyber Security Job Postings (San Diego County) Occupation 2016 Job Postings Cyber Security: Analyst 338 Cyber Security: Ethical Hacking 12 Cyber Security: Computer Forensics 59 The most common job title in the employer job postings was Systems Engineer (122 job postings). Table 4 breaks down the top job titles for each keyword phrase. Table 4. Top Job Titles (San Diego County) 2016 Job Postings: Analyst 2016 Job Postings: Ethical Hacking 2016 Job Postings: Computer Forensics Title # Title # Title # Security Analyst 52 Linux Instructor 3 Cyber Security Specialist 13 Systems Analyst 31 Systems Engineer 2 Security Engineer 9 Information Security Analyst 19 Software Development Engineer 2 Security Analyst 8 Information Assurance Analyst 13 Security Engineer 2 Cyber Incident/Forensics Analyst 3 Data Architect 10 Cybersecurity Engineer 1 Incident Response Consultant 3 Most frequently sought skills included information assurance, systems engineering and LINUX.

D. Four - year colleges and universities:

Currently Grand Canyon University has an interest with taking our students after graduation into their program.

8. **Additional Information as Appropriate**

*The above information is required for State approval. The items with an asterisk will be reviewed by the Curriculum Committee.

Cyber-Forensic

Career/Technical (Major Code: 02707) Associate in Science

Designed to provide students with the knowledge and tools to understand how to secure networks, operating systems, and programs function. Emphasis is placed on developing the theoretical and practical skills needed to maintain security on mission-critical data and systems. Designed to meet the training needs of government and industry employees. Covers a variety of information forensic/security disciplines which include both information technology forensic/security training to support and design systems that are safe from cyber-attacks. Prepares students for industry certifications employing work-based learning through participation in internships and externships during the program.

Sequence of courses for A.S. Degree.

CIS 160	<i>Digital Information Systems, the Individual and Society</i>	3
CIS 178	<i>Introduction to Cybersecurity</i>	3
AJ 166	<i>Principles of Investigation</i>	4
AJ 156	<i>Legal Aspects of Evidence</i>	3
CIS 169	<i>Cybersecurity Analysis</i>	3
CIS 177	<i>Introduction to Information Systems Security</i>	3
CIS 179	<i>Computer Forensics Fundamentals</i>	3
CIS 182	<i>Python Programming for Security Analysis and Penetration Testing</i>	3
AJ 288	<i>Forensic Computer Investigation</i>	3
CIS 290	<i>Work Experience CIS Applications I</i>	2 - 4
Total units		30 - 32