

Cybersecurity Operations, AS

6.0 New Program/Certificate Proposal

Section I: Submission Information

Submission and Meeting Dates* [10/10/2021 for 10/9/2021 Meeting](#)

Faculty Proposer(s) * [Dr. Melinda Lyles](#)[Dr. Mary Myers](#)

Faculty Presenter* [Dr. Melinda Lyles](#)
[Dr. Mary Myers](#)

Hierarchy Owner (Department)*

Activity Log

Mary Myers
[+ 2. Department of Computer Science](#)

[2. Computer Science](#)

List of department/program faculty who support this proposal*

[Dr. Mary Myers](#)
[Dr. Roger Webster](#)
[Prof David Piro](#)

Section II: Effective Dates

Published Effective Date for approved action*

Activity Log

Mary Myers
[+ Fall 2022](#)

[Fall 2022](#)

Requested Effective Date for Exception*

Activity Log

Mary Myers

+ N/A

N/A

Reason for requesting exception to effective date*

N/A

Section III: Proposed Program/Certificate Information

New Program or Certificate Title*

Cybersecurity Operations, AS

Program/Certificate CIP code.*

Cybersecurity Operations CIP Number ~~1544040300~~ 1511100300

Career Cluster (AS and Certificate programs ONLY) *

Information Technology

Provide a summary of the program/certificate needs analysis.*

The Computer science Science department met with their advisory board over the course of the last year and the business leaders in the community all stated the need for a **cyber cybersecurity operations** degree. There is a shortage of employees in **cyber cyberbersecurity operations**, and students who complete the AS degree in **Cybersecurity Operations** will have skills for an entry level position.

As of 2016, the growth in this field was 28%, which is considered much faster than average. The median wage was \$92, 600. The federal government alone has cybersecurity openings in all 50 states. Creating a robust and sustainable **Cybersecurity Operations** program at Florida Southwestern State College will be an asset to the area.

Forty-one percent of FSW students are considered first generation students, which is higher than the 33% national average. We are also a designated Hispanic Serving Institution (HSI) with Hispanic/Latinos representing 35% of the student population. Studies have shown that HSI students at community colleges have a greater level of educational attainment in STEM fields as compared to universities. This provides a unique opportunity to provide an educational experience in the high-demand field of **Cybersecurity cybersecurity operations** to students who may not otherwise have access to a STEM education.

This **Cybersecurity Operations** AS degree will enable students to transition to the college's Bachelor of Applied Science in Information Systems Technology. Industry certifications are also aligned with the coursework, which will give students recognized credentials Currently, there are approximately 21, 000 open cybersecurity jobs in Florida, with the total current employed workforce at 47, 800, which is a 2: 1 supply/demand ratio (<https://www.cyberseek.org/heatmap.html>).

Justification for new program/certificate.*

As stated in the needs analysis, cybersecurity is an in-demand occupation. The decision to pursue this AS degree was discussed throughout the 2020-2021 academic year. We proposed the degree to our advisory board in April, 2021 and received extremely constructive feedback. There was consensus that the ~~Cyber~~ **Cybersecurity Operations** AS degree was best suited to the SW Florida job market, instead of the proposed Cybersecurity AS. The operations degree provides more in depth coursework in Network defense, which is where an entry level IT person would begin. We revised the curriculum and presented it to the board again in September, 2021. The changes were discussed and approved.

The K building is going to undergo a 7 million dollar renovation, and a Cyber Room is in the plans. Additionally, the Computer Science department is submitting a \$507, 000 NSF grant proposal to support development of the course content. It will be submitted the week of 10/10/2021 and the funds would be available in May, 2021. The first two terms are prerequisite classes that already exist, so faculty would have the entire fall semester to work on term 3 and then the spring semester to work on term 4. Should the department not receive the grant, we will still create the courses, but with much less support than the grant would provide.

The renovation and grant application are evidence of college-wide support for the program.

Briefly describe existing personnel and physical resources available to implement this new program/certificate.*

All current staff and adjuncts are qualified to teach subjects within the courses designed for Cybersecurity Operations.

The labs in K building are sufficient to begin this program. However, the college has received 7 million dollars to renovate K building and a Cyber room is in the plans. This will be an asset to the program.

Briefly describe any accreditation needed for this program/certificate.*

N/A

Briefly describe any industry certifications available for the student to take during or following completion of this program/certificate.*

CompTIA A+-Completion of courses CTS1131 and CTS1133

This core series includes expanded content on parts of the IT support role:

A General expansion of baseline security topics core to the IT support role, including

- Physical versus logical security concepts and measures
- Social engineering
- Malware detection and removal
- Devices hardening not just PCs, but devices in general.

Roles filled after completion of courses and Exam:

- Service Desk Analyst
- Help Desk Tech
- Technical Support Specialist
- Field Service Technician
- Associate Network Engineer
- Data Support Technician
- Desktop Support Administrator.

CompTIA Linux+-Completion of course ~~CTS2321~~ CTS 2321

This core course and Exam expands to **managing** Internet of Things (IoT) to services and virtual servers to enterprise cloud, cybersecurity, mobile and web administrative applications.

Roles filled after completion of course and Exam:

- Linux Administrator
- Technical Support Specialist
- Systems Administrator
- Network Administrator
- Web Administrator.

CompTIA Network+-Completion of course ~~ENT4000~~ CNT 1000

This core course and Exam expands upon IT infrastructure covering troubleshooting, configuring, and managing networks both wired and wireless.

Roles filled after completion of course and Exam:

- Junior Network Administrator
- Computer Technician
- Network Field Technician
- Help Desk Technician
- Junior System Engineer
- System Engineer
- Network Analyst.

CompTIA Security+-Completion of course ~~CTS2120~~ CTS 2120

This core course and Exam expands upon establishing core knowledge of any cybersecurity role and provides an intermediate-level job skillset.

Roles filled after completion of course and Exam:

- Security Administrator
- Systems Administrator
- Helpdesk Manager/ Analyst
- Network/ Cloud Engineer
- Security Engineer/ Analyst
- DevOps/ Software Developer
- It Auditors
- IT Project Manager.

EC-Council EDRP& E|CIH-Completion of course ~~CGS2814~~ CGS 2811

This core course and Exam expands upon the ability to understand the need to effectively handle post breach consequences and by reducing the impact of the incident, from both a financial and a reputational perspective.

Roles filled after completion of course and Exam:

- Incident Manager
- Disaster Recovery Manager

EC-Council C|ND-Certified Network Defender-Completion of courses ~~CTS1314~~ CTS 1314& ~~CTS2317~~ CTS 2317

This core course and Exam expands beyond the technological aspects of network security and focuses on the strategical domain with attention to adaptive and defense in depth security, framing network policies, achieving compliance, and the operational domain to implement decisions.

Roles filled after completion of course and Exam:

- Network Administrators
- IT Administrators
- Network Engineers
- Data Analysts
- Network Technicians.

EC-Council C|SA-Completion of course ~~CIS2772~~ CIS 2772

This core course and Exam expands upon proficiencies in performing entry-level and intermediate-level operations as a Tier I and Tier II within a Security Operations Center. Thorough fundamentals such as relaying the knowledge of log management and correlation, SIEM deployment, advanced incident detection, and incident response. Additionally, the candidate will learn to manage various SOC processes and collaborate with CSIRT at the time of need.

Roles filled after completion of course and Exam:

- SOC Analysts (Tier I and Tier II)
- Network Defense Analyst, Network Defense Technicians, Network Security Specialist, Network Security Operator, and any security professional handling network security operations
- Cybersecurity Analyst

Project the average enrollment for program/certificate core courses.*

The department asked AASPIRE to create a Program Enrollment: AS Network Systems Technology report. We estimate that the Cybersecurity Operations enrollment will mirror that. If you read the report, the changes that have been made in the Network Systems Technology AS degree (prerequisite changes, course content redesign) have already had a positive impact on enrollment. These changes are mirrored in the new degree.

We would estimate an initial enrollment of 30 students in a cohort, and will be marketing to increase that each AY. At this point, 30 is our best estimate.

Describe how this projection was determined.*

We modeled enrollment on the AS Network Systems Technology program.

Provide a summary of the salary levels that graduates of this program/certificate can expect to make.*

According to salary.com, the Median salary for an Entry Level Cyber Security Analyst with an AS degree in Fort Myers, FL is \$66, 213. 00.

<https://www.salary.com/tools/salary-calculator/entry-level-cyber-security-analyst/fort-myers-fl>

With 1-2 years experience and an AS degree, the median salary is \$71, 206. 00.

<https://www.salary.com/tools/salary-calculator/entry-level-cyber-security-analyst?edu=edlev3>

The Bureau of Labor Occupational Outlook Handbook lists the 2020 median pay of an Information Security Analyst (Bachelor's degree required) at \$103, 590. 00. Students who earn the Cybersecurity AS degree can continue on in the BAS in Information Systems Technology and easily reach this level. The job growth is 33%, with an expected addition of 47, 000 jobs between 2020 and 2030.

List similar programs (certificates) at other colleges and universities.*

Hillsborough Community College: Cybersecurity Operations AS

St. Petersburg College: Cybersecurity AS and Cybersecurity CCC

Miami Dade College: Cybersecurity AS

Section IV: Personnel and Resources needed

List any new faculty positions (both full time and adjunct) and the total annual expense for these positions.*

N/A

List any new staff positions (both full and part time) and the total annual expense for these positions. *

N/A

Describe the technology, facilities, laboratory, or other physical resources needed to support this program or certificate. *

The computer labs in K building will be used (K-105, K-129, K-127, and K-128). The K building is going to be renovated into an high-tech building, so the program will benefit from the new rooms and equipment.

Describe the library resources needed to support this program or certificate. *

The current resources are sufficient for the program. The chair worked with and Bill Shuluk to pull research on Gybersecurity, and they were able to use concluded that our existing resources will serve the program well.

List the estimated annual amount required for educational materials and supplies or other operating expenses for implementation of the new program or certificate. *

We will be using exisiting resources. The new courses will have a nominal course fee attached to offset any material costs or student supplies.

Identify the funding source(s) to be used for personnel and operating expenses. *

DEANBT-administrative budget (salaries) for SoBT

LAB021-student-related expenses

Section V: Attachments

List any additional proposals being submitted for the same meeting that are directly related to this New Program/Certificate proposal. *

~~CNT1000~~ CNT 1000-Computer Networking Essentials (Prerequisite Change)
Change/Outcomes Update) Change)

~~CTS1314~~ CTS 1314-Network Defense and Countermeasures I (New Course)

~~CTS2321~~ CTS 2321-Linux Internet Servers (Prerequisite Change)




~~CGS2811~~ CGS 2811-Disaster Recovery and Incident Response (Prerequisite
Change/Outcomes Update)

~~CTS2317~~ CTS 2317-Network Defense and Countermeasures II (New Course)

CET 2691-~~Lew~~ Laws and Legal Aspects of IT Security (New Course)

~~CIS2772~~ CIS 2772-Security Operations Center (New Course)

Steps for Cybersecurity Operations, AS

Originator	<i>Status: Approved</i>
Participants  Mary Myers 10/11/2021 10:58 AM	
▼	
Department Chair/Program Coordinator/Director	<i>Status: Approved</i>
Participants  Mary Myers 10/11/2021 10:58 AM	
▼	
Academic Dean	<i>Status: Approved</i>
Participants ▲ Academic Dean Committee - School of Business and Technology  Thomas Norman * 10/11/2021 1:34 PM	
▼	
Curriculum Coordinator and Advising	<i>Status: Restarted</i>
Participants ▲ Office of the Registrar and Advising Committee Jeffrey Peterman * ▲ Additional Participants	
▼	
Curriculum Coordinator and Advising	<i>Status: Restarted</i>
Participants ▲ Office of the Registrar and Advising Committee April Falso * Jeffrey Peterman * ▲ Additional Participants	
▼	
Curriculum Coordinator and Advising	<i>Status: Restarted</i>

Participants

▲ **Office of the Registrar and Advising Committee**

April Falso *

Jeffrey Peterman *


▲ **Additional Participants**

Curriculum Coordinator and Advising

Status: *Approved*

Participants

▲ **Office of the Registrar and Advising Committee**

 April Falso * 10/22/2021 11:11 AM

Office of Accountability (AASPIRE)

Status: *Approved*

Participants

▲ **Office of Accountability (AASPIRE) Committee**

 D'ariel Barnard * 10/25/2021 4:01 PM

Curriculum Committee

Status: *Approved*

Participants

▲ **Curriculum Committee**

[Curriculum Committee Nov. 5, 2021 meeting agenda](#)

  Sheila Seelau * 11/11/2021 10:00 PM

Provost

Status: *Approved*

Participants

▲ **Provost Committee**

 Eileen DeLuca * 11/15/2021 9:11 AM

Office of Accountability (AASPIRE)

Status: *Working*

Participants

▲ **Office of Accountability (AASPIRE) Committee**

D'ariel Barnard *

Office of the Registrar-Curriculum Coordinator

Status: *Incomplete*

Participants

April Falso

Attachments for Cybersecurity Operations, AS

1511100300-2122-Curriculum Frameworks.rtf (uploaded by Mary Myers, 10/8/2021 12:01 pm) **Information Security Analysts _ Occupational Outlook Handbook__ U.S. Bureau of Labor Statistics.pdf** (uploaded by Mary Myers, 10/8/2021 12:01 pm)
EntryLevelSalaries.pdf (uploaded by Mary Myers, 10/8/2021 12:23 pm) **21-04-01-AdvisoryCommittee-Minutes.pdf** (uploaded by Mary Myers, 10/8/2021 12:24 pm) **21-09-24 -AdvisoryCommittee-Minutes.pdf** (uploaded by Mary Myers, 10/8/2021 12:25 pm)
Frameworks Map-AS Cyber.xlsx (uploaded by Mary Myers, 10/8/2021 12:26 pm) **21-04-09_ ComputerScience-Minutes.pdf** (uploaded by Mary Myers, 10/9/2021 12:05 pm)
2021-03-05_ ComputerScience-Minutes.pdf (uploaded by Mary Myers, 10/9/2021 12:08 pm)
Cybersecurity Proposal Presentation for CS Department-March 2021.pptx (uploaded by Mary Myers, 10/9/2021 12:08 pm) **NSF Cybersecurity Grant Application 10-2021.pdf** (uploaded by Mary Myers, 10/10/2021 11:56 am)
AS Cybersecurity Operations Catalog Page 11-11-2021.docx (uploaded by Sheila Seelau, 11/11/2021 9:49 pm) **AS Cybersecurity Operations Degree Worksheet_2022-23 DRAFT 11-11-2021.docx** (uploaded by Sheila Seelau, 11/11/2021 9:49 pm)

Comments for Cybersecurity Operations, AS

Sheila Seelau	11/11/2021 10:00 pm Reply
New Program proposal for Cybersecurity Operations AS degree was accepted by unanimous vote of CC membership, 11/5/2021. This degree program will be added to the 2022-2023 catalog with an effective start date of Fall 2022.	
Sheila Seelau	11/11/2021 9:58 pm Reply
11/5/2021 Curriculum Committee meeting: New Course CIS 2772 changed prerequisite to CTS 1314 by approval of Mary Myers. This change was applied to the AS Cybersecurity Degree Worksheet draft dated 11/11/2021 and uploaded to Curriculog by CC Chair. This updated sheet should be passed on to Advising. Course sequencing plan was not affected by this change in prerequisite.	
D'ariel Barnard	10/25/2021 4:01 pm Reply
This new program will require a Substantive change notification letter for SACSCOC.	
Sheila Seelau	10/20/2021 2:30 pm Reply
10/20/21 - Uploaded for Mary Myers: Revised Catalog page and revised Degree Worksheet. Older drafts have been deleted. Reviewers: Please refer to the documents labeled "10-20-2021" for the 11/5/21 Curriculum Committee meeting.	
Sheila Seelau	10/18/2021 4:45 pm Reply
10/18/21 - Typos corrected, including CIP#. Replaced "Cybersecurity" with "Cybersecurity Operations" throughout to distinguish from similar Cybersecurity AS.	
Thomas Norman	10/11/2021 1:34 pm Reply
I support the proposal for this new degree program.	

Signatures for Cybersecurity Operations, AS

There are no signatures required on this proposal.

Crosslistings for Cybersecurity Operations, AS

Cybersecurity Operations, AS (parent proposal)

This proposal does not have any active crosslisted proposals.

Decision Summary for Cybersecurity Operations, AS

Office of Accountability (AASPIRE)	Status: <i>Working</i>				
Step Summary This step requires 100% approval from all participants to move forward. <table border="0" data-bbox="285 457 1344 611"><thead><tr><th data-bbox="285 457 941 493">Participants</th><th data-bbox="941 457 1344 493">Totals</th></tr></thead><tbody><tr><td data-bbox="285 514 941 583">▲ Office of Accountability (AASPIRE) Committee D'ariel Barnard *</td><td data-bbox="941 514 1344 583">Users Approved: 0 Users Rejected: 0</td></tr></tbody></table>		Participants	Totals	▲ Office of Accountability (AASPIRE) Committee D'ariel Barnard *	Users Approved: 0 Users Rejected: 0
Participants	Totals				
▲ Office of Accountability (AASPIRE) Committee D'ariel Barnard *	Users Approved: 0 Users Rejected: 0				

