

Centers of Academic Excellence in Cyber Defense Education (CAE - CDE)

We did it – You can do it too!



Agenda

- Get a Mentor
- Get Organized
- Get Help
- My experience



Get a Mentor

- Work with watcom.com (Tosha Amos) to get into the Application Assistance Program
- Pays a \$5,000 stipend to the school representative
- Assigns a mentor to work 1-on-1 with you
- You will have regular meetings with your mentor to ensure you are on track
- Mentor will do a site visit to ensure that you have buy-in from your administration – College President








Get Organized

- Literally over 100 different documents that need to be collected, organized and submitted
 - Course outlines, syllabi, instructor resumes, curriculum paths, program descriptions, student enrollment data, student transcripts, completed student course papers, projects, test questions, articulation agreements, agreements with high schools, college security policies, etc.
- If you don't get organized, it will eat you alive.
- Can seem overwhelming – how do you eat an elephant?
 - Break it into bit sized pieces
- Set milestones and a timeline – work with your mentor to set these

Get Organized – Cont'd

- Get started early – it will take you longer than you think
- Set aside a certain time each week to work on it
- Must submit a document for each criteria – You will end up with 40 – 50 individual documents
- Use the file system to help organize major criteria, then sub folders for each sub criteria
- Use a consistent format for your submission documents

File System

Name	Date modified	Type	Size
 1 - Curriculum	2/27/2020 9:44 PM	File folder	
 2 - Student Skill Dev	12/15/2018 11:53 AM	File folder	
 3 - Cyber Center	7/27/2019 2:21 PM	File folder	
 4 - Faculty	3/30/2019 10:49 AM	File folder	
 5 - Other Courses	4/1/2019 2:56 PM	File folder	
 6 - Institutional Security Plan	3/17/2019 9:17 PM	File folder	
 7 - Outreach	3/28/2019 10:39 AM	File folder	

 **Criteria**

Name	Date modified	Type
 7a - Faculty Involvement in Sharing Experience	3/24/2019 6:40 PM	File folder
 7b - Articulation Agreements	3/17/2019 9:58 PM	File folder
 7c - Transfer of Credit or Partnerships - High School	3/21/2019 12:04 PM	File folder
 7d - Support to the CAE community	3/24/2019 6:30 PM	File folder
 7e - Community Outreach	4/21/2019 12:55 PM	File folder
 7f - Business - Industry Collaborations	4/21/2019 12:53 PM	File folder

Criteria Number

Cover Page for Each Criteria

Sierra College

2a – CIS 65

Computer Network Fundamentals

Requirements

- Provide syllabi of CD courses that require papers, presentations, projects, test questions – highlight assignments EXCEPT lab - requirement – courses must be used to map to the KUs
- Courses requiring papers/projects/presentations/test questions must have been taught within the last 3 years
- Courses requiring papers/projects/presentations/test questions must be a part of the CD curriculum path as identified in the application

Course syllabus for CIS 65. Class assignments are highlighted.

Contents of the document

Get Help












- Start at the top – Must get buy-in and support from the president of your college
 - You will need that clout to get things done
- Must get support from your IT department – CIO
 - Will require that security policies are in place, dedicated cybersecurity staff
- Registrar – Copies of student transcripts, program enrollment numbers
- Articulation officer – Articulation agreements/ Dual enrollment agreements

Get Help – Cont'd

- Web services – Cyber Center Page, events page, social media
- You'll need support from other departments
 - Cyber content in non-IT classes
- Must have assistance from the instructors that teach the classes you're using
 - Copies of syllabi, exams, labs, faculty outreach, KU mapping*

Knowledge Unit (KU) Mappings

- One of the biggest and most challenging area
- Mapping the required Knowledge Areas to the content in the courses in your program
- Hundreds of KU mappings
- If possible, have the instructors who teach the courses do the mapping

Progress	Knowledge Units (KUs)
	* Foundational - Cybersecurity Foundations (CSF) (Core)
	* Foundational - Cybersecurity Principles (CSP) (Core)
	* Foundational - IT Systems Components (ISC) (Core)
	* Non-Technical Core - Cyber Threats (CTH)
	* Technical Core - Basic Cryptography (BCY)
	* Technical Core - Basic Networking (BNW)
	* Technical Core - Basic Scripting and Programming (BSP)
	* Technical Core - Network Defense (NDF)
	* Technical Core - Operating Systems Concepts (OSC)
	Cyber Crime (CCR)
	Intrusion Detection/Prevention Systems (IDS)

← 9 topics – 6 Outcomes

Topic: 4. Common Network Devices and their role in the network. (Routers, Switches, Hosts, VPNs, Firewalls)

Justification for Selected KU Item

Justification

N/A

Course(s) Mapped to Selected KU Topic

CIS 0065 - Computer Network Fundamentals

Major Topics/Objectives for CIS 0065

Chapter 1 - Introduction to Networking (Major Topic)

Chapter 7 - Virtualization and Cloud Computing (Major Topic)

Chapter 9 - Network Risk Management (Major Topic)

Chapter 10 - Security in Network Design (Major Topic)

Describe various networking hardware devices and the most common physical topologies (Objective)

Secure network connections using encryption protocols (Objective)

Identify people, technology, and malware security risks to a network (Objective)

Describe tools used to evaluate the security of a network (Objective)

Configure devices on a network for increased security (Objective)

Describe the functions and features of various network security devices (Objective)

Explain the available options in network access control methods (Objective)

Describe and differentiate the devices and services used to support communications in data networks and the Internet. (Objective)

My Experience

- Predecessor had an unsuccessful attempt – 2nd try
- 10 month process from start to submission
- I worked alone
- 100's of hours of work
- Was paid a stipend
- Mentor – Joe Murdock – Red Rocks CC



**National Centers of Academic Excellence in
Cyber Defense Education**

9800 Savage Road
Ft. Meade, MD 20755-6804



Sierra College
Prof. Shawn Monsen
5000 Rocklin Road
Rocklin, California 95677-3337

9 September 2019

Prof. Monsen:

I am pleased to inform you that the National Security Agency and the Department of Homeland Security have designated Sierra College as a National Center of Academic Excellence in Cyber Defense Education (CAE-CDE) through academic year 2024.

Your ability to meet the increasing demands of the program criteria will serve the nation well in contributing to the protection of the National Information Infrastructure. The National Cyber Strategy, September 2018, addresses the critical shortage of professionals with cybersecurity skills and highlights the importance of higher education as a solution to defending America's cyberspace. "A highly skilled cybersecurity workforce is a strategic national security advantage." "The United States Government will continue to invest in and enhance programs that build the domestic talent pipeline, from primary through postsecondary education." Education is the key to promoting these ideals.

Certificates will be presented at a designation ceremony. Details on ceremony location were sent in your congratulations email. We appreciate your participation in this program and look forward to seeing you at the ceremony.