




Executive Memorandum 23-035

December 20, 2023

From: Stephen Perez, President  _____

Subject: Approval of the New Minor in Cybersecurity

Upon the recommendation of the Academic Senate and with the concurrence of the Provost, I approve the new Minor in Cybersecurity within the Department of Computer Science, College of Engineering, Computer Science, and Construction Management. The new minor will require 29-30 units and will be effective fall 2024.

Policy Title:	EM 23-035 Minor in Cybersecurity
Contact:	Department of Computer Science
Supersedes:	
Revision:	
Enabling Legislation or Executive Order:	

New Minor Signature Form

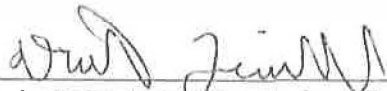
Minor Name: Cybersecurity

Department Contact(s) w/phone #(s):

David Zeichick - 530-592-6001

Required Signatures

The Department of Computer Science
has reviewed and approved this new minor



Chair, Department Curriculum Committee

May 4, 2023
Date


Department Chair

5-4-2023
Date

The College of ECC
has reviewed and approved this new minor


Chair, College Curriculum Committee

Aug 29, 2023
Date


College Dean

Aug 29, 2023
Date

Send signature page with proposal attached to Curriculum Services at zip 128

Curriculum Review Completed

9/26/23
Date



Note: The department will be notified of the dates for EPPC and Academic Senate review.

Proposal for a New Minor

- I. Minor in Cybersecurity
- II. Fall 2024
- III. Computer Science Department
- IV. Currently, and for the foreseeable future, there is a high demand for cybersecurity professionals. Students with both a technical degree, such as Computer Science or Computer Information Systems, and a background in cybersecurity will be sought after by companies desperate for this talent. Additionally, many grant opportunities are available for schools recognized as a cybersecurity Center of Excellence (CAE) by the NSA. To be granted this recognition, the school must have either a minor or certificate program in cybersecurity. Chico State is experiencing a downturn in enrollment, and adding a cybersecurity minor could attract students interested in this lucrative field.
 - A. Relation of the minor to the [University Strategic Plan](#).
 - Chico State will be known as a preeminent university solving the unprecedented challenges of the 21st century. Cybersecurity is a known challenge of this century. Training a skilled cybersecurity workforce is a top priority for the country and the world.
 - B. Identify other closely related curricula currently offered by the campus.
 - The only somewhat related minor is the minor in Computer Science. Adding the cybersecurity minor will provide another route of study for computer science students.
 - Explain how current programs do not meet the proposed minor's objectives.
 - a. There aren't any other programs on campus that focus primarily on cybersecurity.
 - C. Student demand for the minor.
 - Usr0, the student-run cybersecurity club on campus, has over 30 members, demonstrating a strong interest in the field.
 - Historically, students have scored exceptionally well in the National Cyber League competition, coming in first, second, and third place out of thousands of competitors nationwide.
 - Several students every year are getting jobs in the cybersecurity field.
- V. Resources
 - A. List the faculty members for the required courses in the minor by
David Zeichick
Assistant Professor
Tenure Track
PhD in Information Assurance
June, 2020 from Nova Southeastern
Served as the Information Security Officer and as a Security Analyst for Chico State from 2008 until 2020.

- B. List the faculty members for the elective courses in the minor by
 - Kevin McGown
Associate Professor, tenured, PhD
 - Zhaohong Wang
Associate Professor, tenured, PhD
 - Aaron A Johnson
Lecturer, MBA
- C. List the resources needed to sustain the program for the first five years, including cost and funding source.
 - [David Zeichick](#) will advise
 - Facilities: no extra rooms
 - Library resources: IEEE Journal access
 - Equipment: none
 - Specialized material: none
- D. Additional support resources required, including source of support.
 - none

VI. Curriculum

Required 3 out of the 4 (9 or 10 units)

- CINS 448
- CINS 548- fall
- CSCI 546- spring
- [EECE 537](#)- smart device security course
 - Prerequisite: [CSCI 111](#) and [EECE 237](#) or equivalent for all majors; [EECE 344](#) or equivalent for computer, electrical/electronic, and mechatronic engineering majors; CSCI 440 or equivalent for CSCI and CINS majors.
- One of the following: (3)
 - [Math 317](#)- Cryptography
 - Prerequisite: CSCI 111; MATH 217 or MATH 330W
 - [MINS 536](#)- computer security class(es)
 - CSCI 490- Capstone
 - CINS 490- Capstone
 - EECE 490B
- Prerequisites (17)
 - 111, 211, 217 (11)
 - 220/237/221 (3)
 - CSCI/EECE 446/MINS 346(3)

A. Complete catalog copy, including admission and completion requirements.

Cybersecurity Minor

Total Units Required: 29-30

Overview

The Minor in Cybersecurity is designed to provide students with cybersecurity skills, which can be an advantage for job seeking and career building, as well as a source of personal enrichment.

Course Requirements for the Minor

The following courses, or their approved transfer equivalents, are required of all candidates for this minor.

Course	Title	Units
CSCI 111	Programming and Algorithms I	4
CSCI 211	Programming and Algorithms II	4
CSCI/MATH 217	Discrete Mathematics	3
One of the following <ul style="list-style-type: none">● CINS 220● CSCI 221● EECE 237	PCs and Peripherals Assembly Language Programming Embedded Systems Development	3 3 3

<p>One of the following:</p> <ul style="list-style-type: none"> ● CSCI/EECE446 ● MINS346 	<p>Intro to Computer Networks and Network Management</p> <p>Data Communications and Networking</p>	<p>3</p> <p>3</p>
<p>Three of the following:</p> <ul style="list-style-type: none"> ● CINS448 ● CINS548 ● CSCI546 ● EECE537 	<p>Computer Security</p> <p>Advanced Computer Security</p> <p>Network Forensics</p> <p>Smart Device Security</p>	<p>3</p> <p>3</p> <p>3</p> <p>4</p>
<p>One of the following:¹</p> <ul style="list-style-type: none"> ● MATH317 ● MINS536 ● CSCI 490 ● CINS 490 ● EECE 490B 	<p>Cryptography</p> <p>Security and Privacy Issues in Information Technology</p> <p>CSCI Capstone²</p> <p>CINS Capstone²</p> <p>Engineering Economics and Project Implementation²</p>	<p>4</p> <p>3</p> <p>3</p> <p>3</p> <p>4</p>
<p>Total</p>		<p>29-30</p>
<p>1 If EECE 537 (four units) is taken above, choose a three unit course so as not to exceed 30 units in the minor.</p> <p>2 Capstone course must be on a cybersecurity problem or topic</p>		



MEMORANDUM

To: Dr. David Zeichick

From: Jodi Shepherd

Date: September 19, 2023

Subject: Library support for new minor Cybersecurity from the Department of Computer Science

This memo outlines the current holdings in the Meriam Library which support this proposal in relation to our physical holdings, however, the Meriam Library does not have an Engineering Librarian who has the background nor expertise in the field of Computer Science nor Engineering. Thus, we continue to be unable to fully meet the needs of the college, this minor, and engineering students. A librarian hire, directly supporting this minor and the entire College of Engineering is needed to truly provide adequate support to the department and to this minor.

The Meriam Library holds just under 5,000 titles (print and ebooks) in the area of Cybersecurity. The library also subscribes to 88 journals related to Cybersecurity and subscribes to one journal for Computer Science.

Databases which cover Computer Science literature include:

- Academic Search
- Compendex
- Ebsco
- IEEE Xplore
- JSTOR
- Math SciNet
- Oxford
- Proquest
- Science Direct
- SpringerLink
- Wiley Online Library

While additional funding may be necessary to support the new Cybersecurity minor, students have access to Interlibrary Services that provide services and resources to distance learners as well as obtain materials not owned by the library. Also, please note that the Department of Computer Science receives an annual book budget to purchase new library materials that could be used to fill in any gaps in book coverage as the program takes shape.

Subject: RE: Proposed Minor in Cyber Security
Date: Monday, February 27, 2023 at 2:16:36 PM Pacific Standard Time
From: Arash Negahban
To: David R Zeichick

Hi David,

Yes. I approve.

We also offer MINS 546 that uses AWS (in case a you're also interested in a Cloud Computing class.) If you need more information, I'd be happy to connect you with the course instructor.

Thanks,
Arash

From: David R Zeichick <dzeichick@csuchico.edu>
Sent: Monday, February 27, 2023 1:40 PM
To: Arash Negahban <anegahban@csuchico.edu>
Subject: Re: Proposed Minor in Cyber Security

I realize that Tyson sent you something similar several months ago. This is our revised proposal.

From: David R Zeichick <dzeichick@csuchico.edu>
Date: Monday, February 27, 2023 at 1:35 PM
To: Arash Negahban <anegahban@csuchico.edu>
Subject: Proposed Minor in Cyber Security

Arash,

I am working on creating a proposal for a Minor in Cybersecurity. This minor would include the option to include a couple MINS class, specifically MINS 346 and MINS 536. Can I get your approval to add them to the list of classes for the minor?

Here is what we are proposing for classes:

- **Classes:**
 - Required 3 out of the 4 (9 or 10 units)
 - CINS 448
 - CINS 548- fall
 - CSCI 546- spring
 - EECE 537- smart device security course
 - Prerequisite: CSCI 111 and EECE 237 or equivalent for all majors; EECE 344 or equivalent for computer, electrical/electronic, and mechatronic

engineering majors; CSCI 440 or equivalent for CSCI and CINS majors.

- One of the following: (3)
 - Math 317- Cryptography
 - Prerequisite: CSCI 111; MATH 217 or MATH 330W
 - MINS 536- computer security class(es)
 - CSCI 499- independent study
 - EECE 499
- Prerequisites (17)
 - CSCI 111, CSCI 211, 217 (11)
 - 220/237/221 (3)
 - CSCI/EECE 446 (3) or MINS 346 (3)