Program Change Request

Date Submitted: 10/06/25 7:18 pm

Viewing: CYBER-EM1 : Cybersecurity BS, Computer Science Emphasis Area

Last approved: 05/21/24 3:28 pm

Last edit: 11/17/26 12:10 pm

Changes proposed by: Cezary Janikow (janikowc)

Catalog Pages Using this Program

Cybersecurity BS, Computer Science Emphasis

Initiator:	Name:	Cezary Janikow	Phone: 6352
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Program Code	CYBER-EM1		

In Workflow

1. **S003100 Chair**
2. **Curricular Alignment Check**
3. **Academic Affairs Program Preapproval**
4. **SA_S Assoc Dean**
5. **SA_S Dean**
6. **Senate C&I**
7. **Senate C&I Editing**
8. **FacultySenate**
9. Academic Affairs
10. Registrar Programs

Approval Path

1. 02/02/26 2:13 pm Cezary Janikow (janikowc): Approved for S003100 Chair
2. 02/27/26 9:55 am Keeta Holmes (holmeskm): Approved for Curricular Alignment Check
3. 03/03/26 2:00 pm Betsy Sampson (sampsone): Approved for Academic Affairs Program Preapproval
4. 09/22/26 9:57 am Wendy Olivas

(olivasw): Approved for SA_S Assoc Dean
5. 09/22/26 9:57 am Wendy Olivas (olivasw): Approved for SA_S Dean
6. 10/12/26 10:29 am Ambrose Kidd (kidd): Approved for Senate C&I
7. 10/12/26 2:27 pm Ambrose Kidd (kidd): Approved for Senate C&I Editing
8. 10/13/26 2:21 pm Betsy Sampson (sampsone): Rollback to Senate C&I Editing for FacultySenate
9. 11/10/26 11:42 am Betsy Sampson (sampsone): Approved for Senate C&I Editing

History

1. Jan 27, 2021 by Betsy Sampson (sampsone)
2. Jan 26, 2022 by Cezary Janikow (janikowc)
3. May 21, 2024 by Cezary Janikow (janikowc)

To be completed by Academic Affairs

Title	Cybersecurity BS, Computer Science Emphasis Area
Program Type	Degree Program

College/School	
Department	
Academic Level	Undergraduate
CIP Code	111003 - Computer and Information Systems Security/Auditing/Information Assurance.
Effective CAT	2025-26 ~~2023-24~~

Program Requirements and Description as it will appear in the bulletin.

Emphasis Area Requirements

In addition to the 24 credit hours of core required coursework, the B.S. Cybersecurity degree with Computer Science emphasis requires 52-54 ~~51-53~~ credit hours of emphasis-specific course work. Thus, candidates for the B.S. in Cybersecurity degree with Computer Science emphasis must complete a major program of 76-78 ~~75-77~~ (24 core + 52-54 ~~51-53~~ emphasis-specific) credit hours of required courses.

For the Computer Science emphasis all general degree requirements from the College of Arts and Science apply.

Course Number	Title	Hours
CMP SCI 1000	Computer Science Experiences	1
MATH 1320	Introduction to Probability and Statistics	3
MATH 1100	Basic Calculus	3-5
or MATH 1800	Analytic Geometry and Calculus I	
MATH 3000	Discrete Structures	3
CMP SCI 2261	Object-Oriented Programming	3
CMP SCI 3010	Web Full Stack Development	3
CMP SCI 3130	Design and Analysis of Algorithms	3
CMP SCI 3260	C/C++ for Advanced Programming	3
CMP SCI 3780	Software Security	3
CMP SCI 4700	Computer Forensics	3
CMP SCI 4730	Computer Networks and Communications	3
CMP SCI 4732	Introduction to Cryptography for Computer Security	3
CMP SCI 4760	Operating Systems	3
CMP SCI 4782	Information Security	3
CMP SCI 4794	Introduction to Internet of Things	3

Course Number	Title	Hours
Electives		**9**
Choose three of the following:		
PHIL 1160	Critical Thinking (MOTR PHIL 101)	
PHIL 2254	Business Ethics	
CRIMIN 1100	Introduction to Criminology and Criminal Justice	
CRIMIN 3310	Computers in Criminal Justice	
CMP SCI 3990	Undergraduate Internship	
CMP SCI 4020	Introduction to Android Apps: Android Fundamentals	
CMP SCI 4220	Introduction to iOS Programming and Apps	
CMP SCI 4222	iOS Apps	
CMP SCI 4300	Introduction to Artificial Intelligence	
CMP SCI 4500	Introduction to the Software Profession	
CMP SCI 4610	Database Management Systems	
CMP SCI 4750	Introduction to Cloud Computing	
CMP SCI 4792	Introduction to Mobile Computing, Networking, and Security	
~~INFSYS 3858~~	~~Advanced Security and Information Systems~~	
INFSYS 3898	Seminar in Information Systems	
Other electives upon approval of Computer Science chair		
Total Hours		52-54

If other departments are affected by this proposal, please secure "sign-offs" and indicate for each department the following:

Department	Contact Person	Phone #	Objections
Information Systems	Dinesh Mirchandani		No

Program Learning Outcomes

Learning Outcomes
Understand and Describe the Confidentiality, Integrity, and Availability security objectives and key security principles that enable the development of security mechanisms
Demonstrate an understanding of physical, data link, network, transport, and application layers of data networking and identify potential information security pitfalls at each layer
Describe important secure software development principles and common web application security vulnerabilities
Describe common applications of cryptographic, network, application, and systems security defense mechanisms to improve information security
Understand the role of systematic information security risk management in fostering information security within organizations and the role of management and control frameworks such as NIST Special Publications and ISO 27000 series standards in doing so.

Attachments

This program will be developed with the intention of delivery in the following delivery modes (choose all that apply)

UMSL Online (50-74% of program coursework offered online)
Missouri Online (75% or more of program coursework offered online and participates in Missouri Online)

Justification for request:

We reviewed our courses and programs with IS&T and concluded that InfSys 3858 overlaps with Cmp Sci 4782. Both sides agreed to remove the other course from electives.
We are also adding Cmp Sci 1000 as this is required of other departmental BS programs to be more uniform.

Program Reviewer Comments

Betsy Sampson (sampsone) (10/13/26 2:21 pm): Rollback: Credit hours in the descriptive portion of the degree program need to be reviewed.

Key: 677