Program Approval

I. General Information

A. Institution Emporia State University

B. Program Identification

Degree Level:	Bachelors
Program Title:	Cybersecurity
Degree to be Offered:	Bachelor of Science in Cybersecurity
Responsible Department or Unit:	School of Business & Technology
CIP Code:	11.1003
Modality:	Face-to-Face, Online, Hybrid
Proposed Implementation Date:	Fall 2026

Total Number of Semester Credit Hours for the Degree: 120

II. Clinical Sites: Does this program require the use of Clinical Sites? No

III. Justification

Protecting our digital infrastructure remains a top priority from regional to international levels. The State of Kansas suffered multiple notable breaches in 2024 and 2025 including the Connex Credit Union Data Breach, Atchison County Cyberattack, Sunflower Medical Group's Data Breach, the Kansas Judicial Branch Cyberattack, City of Wichita Cyberattack, Franklin County Ransomware attack, the Kansas State University Network disruption and the Jackson County Ransomware attack, among others. These attacks incur heavy global costs, as much as $1.2 trillion annually by the end of 2025 ("The True Cost of Cybercrime," 2025).

Kansas universities are filling the training gap by offering new programs typically housed in existing course offerings and engineering departments. Emporia State University developed this cybersecurity program from the ground up through consultation with industry experts to prepare our graduates to be ready for the workforce. The program steering committee includes cybersecurity experts from higher education, the US Military, DOD, CISA, HUD, NSA, Janus, Red Siege, Infosec, Enterprise KC, Akylade, and the State of Kansas. Courses are mapped to support certifications from CompTIA, LPIC, AWS, Cisco, and more. A student graduating from ESU's cybersecurity program will be well-prepared to take multiple professional certification exams, essential for landing a high-paying job in cybersecurity, information technology, or information systems. ESU's cybersecurity program utilizes intensive laboratory hours to provide hands-on experience with cyber-defense, software, hardware, and internship opportunities.

ESU's School of Business & Technology (SB&T) is uniquely invested and established in Cybersecurity. Funded by the National Institute of Standards and Technology (NIST), the SB&T Cybersecurity Research and Outreach Center (CyROC) was established in 2023 at Emporia State University. Since then, CyROC has laid the groundwork to support awareness of Cybersecurity and the Cybersecurity offerings at ESU. CyROC established a unique laboratory to provide students with experience with physical security protocols as well as space for continued professional training. CyROC established its presence in the community and supported research presented in conferences such as the Association for Information Systems' Americas Conference on Information Systems (AMCIS) and published research in major journals.

In addition, ESU's computer science department already established a concentration in cybersecurity and has two complementary graduate concentrations: an MBA (both traditional and an Accelerated Online Program) with a cybersecurity management concentration and an MSIT with a cybersecurity concentration. With the NIST grant, state support, and existing infrastructure, the cybersecurity degree at ESU has a unique footing to provide a well-grounded, experienced student to the Kansas workforce.

IV. Program Demand Market Analysis

In establishing demand for the program, ESU considered direct interest and investigated general market conditions. In a direct audit of potential demand, roughly 74% of ESU's Computer Science students indicated interest in a Cybersecurity pathway (37 of 50 students). Generally, from state to international levels, the demand for Cybersecurity positions is projected to far outpace supply.

As of 2024, there were ~5000 open cybersecurity positions in Kansas with demand spanning across multiple sectors, including health, aerospace, finance, and government with a projected growth of 32% from 2022 to 2032 (*Cybersecurity Supply And Demand Heat Map*, n.d.). Nationally, there are 715,000 current openings. Approximately 100,000 of those national jobs require security clearances (*Security Clearance Jobs - ClearanceJobs*, n.d.), which this program supports through alignment (and eventual certification from National Centers of Academic Excellence, or NCAE, and the Accreditation Board for Engineering and Technology, or ABET) to NSA/DHS CAE standards (*National Security Agency*, n.d.).

Kansas university cybersecurity enrollment has grown to about 350 students, not enough to fill the 5000+ (and growing) Kansas cybersecurity job openings. Of the three KBOR institutions with cybersecurity programs, Wichita State University (WSU) serves about 162 students, Kansas State (KSU) about 36, and The University of Kansas (KU) about 96 students in two degree paths. WSU began as an applied computing program; the cybersecurity concentration soon became the program most preferred by students, so WSU reconfigured the program to all cybersecurity. KSU's cybersecurity program is an extension of their engineering program with requisite requirements. Finally, KU has a BAS and BS built on their existing computer science offerings. These are robust offerings with computer science and engineering foundations. ESU fills a niche by providing an industry guided, industry certification focused degree specifically developed with the practical needs of cybersecurity as the program's foundation.

University	Degree	Department	Fall 2024 Enrollment	Program Start
University of Kansas (KU)	BS, Cybersecurity Engineering	Engineering	56*	2023
	BAS, Applied Cybersecurity	Professional Studies	40*	2022
Kansas State University (KSU)	BS, Cybersecurity	Engineering	36**	2022
Wichita State University (WSU)	BS, Cybersecurity	Engineering	162**	2018
Fort Hays State University	BA/BS in Information Networking and Communication (Cybersecurity Concentration)	Informatics		
Washburn	Certificate Programs		NA	2018

**Source - KU Web site **Correspondence with KBOR*

Of private universities, Friends University (enrollment, 32 students) & Rasmussen University offer a BS in Cybersecurity. National American University offers a BS in Information Technology with an emphasis in Cybersecurity Forensics.

V. Projected Enrollment for the Initial Three Years of the Program

Projected enrollment is based on interest in existing ESU computer science and IT programs by our students as well as analysis of historical growth of other Kansas programs. The state support we have from Kansas coupled with the successful implementation of CyROC and university infrastructure lends the ability to generously

recruit and retain students at the regional, state, and international levels. ESU's outreach includes preliminary agreements and articulations focused on community college, technical programs, and continuing education. We expect these agreements to support robust enrollment numbers and graduates within the first two years of offering the program.

Year	Total Headcount Per Year		Total Sem Credit Hrs Per Year	
	Full- Time	Part- Time	Full- Time	Part- Time
Implementation	30	6	900	90
Year 2	65	14	1950	210
Year 3*	98	23	2940	345

**Includes 7 Students Graduating from Program End of Year 2*

VI. Employment

The Bachelor of Science in Cybersecurity at ESU prepares students to flourish in information security roles such as Security Analysts, Penetration Testers, Security Engineers, Chief Information Security Officers (CISO), Security Software Developers, Incidents Responders, and Security Consultants. A degree in cybersecurity also prepares students for these in-demand positions: Network Administrator, Software Developer, Database Administrator, Cloud Engineer, Data Analyst, Threat Intelligence Analyst, and more (*Cybersecurity Supply And Demand Heat Map*, n.d.).

A graduate with a Bachelor of Science in Cybersecurity equipped with the certificates expected from ESU's program will be ready and qualified to serve as an Information Security Analysist. 2024 median pay for this position was $124,910 per year or about $60/hour. The typical entry-level position required a bachelor's degree with less than 5 years in a related occupation. In 2023, there were 180,700 jobs with a 33% industry growth rate. Between 2023 and 2033 there is a projected increase in available positions of 59,100 (*Bureau of Labor Statistics*, n.d.). While this is a cybersecurity degree, practical training and preparation for industry certifications means that the graduates of this program will be well-prepared for a variety of IT positions.

VII. Admission and Curriculum

A. Admission Criteria

Admission to the School of Business & Technology

Admission to the School of Business & Technology is required before enrolling in courses numbered 300 or above in the Bachelor of Science in Business classes (AC, BC, BU, EP, FI, IS, MG, and MK) for students pursuing a Bachelor of Science in Business, or a Bachelor of Science in Education, Business Education Teaching Field. If a student is placed on academic probation or in required withdrawal status, the student's admission to the School of Business & Technology will be rescinded.

Admission Requirements:

1. Cumulative grade-point average of 2.35, effective for students entering ESU, another four-year institution, or a community college for the first time as a full-time student in the Fall of 2008 and thereafter.
2. Completion of 51 hours.
3. Completion of the following courses:
   - AC 223 Financial Accounting
   - BC 103 Principles of Economics I
   - BU 102* Business Dynamics

- EG 101 Composition I
- EG 102 Composition II
- IS 213 Management Information Systems Concepts
- MA 110 College Algebra

**Based on a transcript review, students may have BU 102 waived by the Dean or designee. Transfer students who have BU 102 waived must take an additional 3 credit hours of 300 level business electives.*

B. Curriculum

Year 1: Fall **SCH = Semester Credit Hours**

Course #	Course Name	SCH: 15
EG 101	Composition I (SGE 010)	3
SP101	Public Speaking (SGE 020)	3
MA 110	College Algebra (SGE 030)	3
IS 110/113	Intro to Micro Computer Applications (SGE 070)	3
PO 330	International Relations (SGE050)	3

Year 1: Spring

Course #	Course Name	SCH: 15
EG 102	Composition II (SGE 010)	3
GB 100/101	Biology + Lab, GB 100/101 (SGE 040)	4
CY 270	Intro to Networks	4
CY 260	Intro to Programming	4

Year 2: Fall

Course #	Course Name	SCH: 16
SP 304	Communications and Emerging Technology (SGE 060)	3
BU 241	Personal Finance (SGE 050)	3
CY 363	Intro to Cybersecurity	3
CY 355	Linux Operating System	4
BU 255	Business Statistics	3

Year 2: Spring

Course #	Course Name	SCH: 16
MA 165	Basic Calculus	5
BU 102	Business Dynamics (SGE 070)	3
CY 365	Windows Security	4
CY 425	Cloud Computing	4

Year 3: Fall

Course #	Course Name	SCH: 16
IS 453	Business Intelligence	3
CY 424	Cyber Law	3
CY 366	Cybersecurity Analysis	3
CY 421	Ethical Hacking	4
HI 102	Modern Work Civilizations (SGE060)	3

Year 3: Spring

Course #	Course Name	SCH: 16
SO 342	Homeland Security	3
CY 430	Cybersecurity Resilience	3
CY 440	Cybersecurity Management	4
CY 370	Cybersecurity Scripting	4
AR 105	Art Appreciation (SGE 060)	2

Year 4: Fall

Course #	Course Name	SCH: 13
CY 552	Capstone I	3
CY 433	Cybersecurity Threat Intelligence	3
CY 367	Identity and Access Management	3
CY 411	Intrusion Detection	4

Year 4: Spring

Course #	Course Name	SCH: 13
CY 552	Capstone II	3
CY 410	Internship in Cybersecurity	3
CY 422	Cryptography	3
CY 431	Artificial Intelligence Security	4

Total Number of Semester Credit Hours ……. 120

VIII. Core Faculty

Note: * Next to Faculty Name Denotes Director of the Program, if applicable
FTE: 1.0 FTE = Full-Time Equivalency Devoted to Program

Faculty Name	Rank	Highest Degree	Tenure Track Y/N	Academic Area of Specialization	FTE to Proposed Program
*Sajedur Rahman	Associate Prof	PhD	Y	Information Systems	.25
Suraiya Akhter	Assistant Prof	PhD	Y	Computer Science	1
Darshana Shah	Assistant Prof	PhD	N	Computer Science	.25
Jaime Fuentes	Instructor	M.Ed.T	N	Educational Computer Technology/Computer Systems Technology	.5
Tommy Gober	Instructor	MS	N	Instructional Technology/Cybersecurity Certification Specialist	.5

Number of graduate assistants assigned to this program ……. [3]

IX. Expenditure and Funding Sources

A. EXPENDITURES	First FY	Second FY	Third FY
1. Personnel – Reassigned or Existing Positions			
Faculty	$ 313,500	$ 313,500	$ 313,500
Administrators *(other than instruction time)*	$ 250,000	$ 250,000	$ 250,000
Graduate Assistants	$ 17,600	$ 17,600	$ 17,600
Support Staff for Administration (*e.g., secretarial*)	$ 8,000	$ 8,000	$ 8,000
Fringe Benefits *(total for all groups)*	$ 167,105	$ 167,105	$ 167,105
Other Personnel Costs			
Total Existing Personnel Costs – Reassigned or Existing	$ 756,205	$ 756,205	$ 756,205
2. Personnel – New Positions			
Faculty	$ 240,000	$ 480,000	$ 480,000
Administrators *(other than instruction time)*			
Graduate Assistants	$ 17,600	$ 35,200	$ 35,200
Support Staff for Administration (*e.g., secretarial*)	$ 16,000	$ 16,000	$ 16,000
Fringe Benefits *(total for all groups)*	$ 73,514	$ 146,328	$ 146,328
Other Personnel Costs			
Total Existing Personnel Costs – New Positions	$ 347,114	$ 677,528	$ 677,528
3. Start-up Costs - One-Time Expenses			
Library/learning resources			
Equipment/Technology			
Physical Facilities: Construction or Renovation			
Other (Accreditation ABET)		$ 5,195	
Total Start-up Costs		$ 5,195	
4. Operating Costs – Recurring Expenses			
Supplies/Expenses	$ 2,600	$ 2,600	$ 2,600
Library/learning resources	$ 10,000	$ 10,000	$ 10,000
Equipment/Technology	$ 70,000	$ 70,000	$ 70,000
Travel	$ 25,000	$ 25,000	$ 25,000
Other (inc. Accreditation ABET)	$ 10,000	$ 10,000	$ 10,000
Total Operating Costs	$ 117,600	$ 117,600	$ 117,600
GRAND TOTAL COSTS	$ 1,220,919	$ 1,556,528	$ 1,551,333

B. FUNDING SOURCES *(projected as appropriate)*	Current	First FY (New)	Second FY (New)	Third FY (New)
Tuition		$ 182,883	$ 399,017	$ 606,838
Student Fees		$ 64,143	$ 139,943	$ 212,827
State Funds		$ 1,116,162	$ 1,116,162	$ 1,116,162
Other				
GRAND TOTAL FUNDING		$ 1,363,188	$ 1,655,122	$ 1,935,827
C. Projected Surplus/Deficit (+/-) (Grand Total Funding *minus* Grand Total Costs)		$ 142,269	$ 98,594	$ 384,494

X. Expenditures and Funding Sources Explanations

The $1.5M NIST-funded Cybersecurity Research and Outreach Center (CyROC) was established in 2023 at Emporia State University. Since then, CyROC has laid the groundwork to support awareness of Cybersecurity and the Cybersecurity offerings at Emporia State University. This included building a Cybersecurity lab to emulate a secure working environment and establishing a cyber range node with Enterprise KC. Continuing funding in excess of $1M/yearly is provided by the State of Kansas to expand cybersecurity education throughout the state.

A. Expenditures

1. Personnel – Reassigned or Existing Positions

The Cybersecurity program and CyROC employ 1 full-time administrator and two part-time support administrators. The two part-time support administrators are also engaged in the program as half-time instructors. Of existing positions, one student worker and one graduate assistant support CyROC and Cybersecurity program development.

2. Personnel – New Positions

The following table represents the growth plan for instructor, graduate assistant, and student worker support.

	Year 1	Year 2	Year 3	Total New Personnel
Faculty	2	2	0	4
Graduate Assistant	1	1	0	2
Student Worker	2	0	0	2

Faculty growth is to support increases in the number of courses that must be offered for student academic progress.

3. Start-up Costs – One-Time Expenses

Because of the federal NIST grant, much of the infrastructure necessary to support the Cybersecurity program already exists. The university is within capacity to offer state-of-the-art lab access in several classrooms**.** Start-up costs would include $5,195 in the second year to pursue ABET accreditation.

4. Operating Costs – Recurring Expenses

Recurring expenses include costs to maintain program outreach through CyROC. These funds support the overall growth of the ESU Tech + Cybersecurity offering as both an undergraduate program and professional development program. This includes maintaining the state-of-the art computer labs, subscriptions for virtual

training tools, research support, and travel support for professional development.

B. Revenue: Funding Sources

Principal start-up funding comes from state allocated funding in the form of a ~$1M allocation to support cybersecurity training in Kansas. Tuition is calculated on enrollment; however, ESU has flat rate tuition. Tuition estimates are derived from information retrieved from the KBOR Comprehensive Fee Schedule (KBOR, n.d.).

ESU Standard Tuition & Fees	
Flat Rate Tuition 12+ Hours	$2771
Campus activity fees (70.60/Hour)	$612*
Technology Fee ($11*15 hours)	$165
SB&T Fee ($13 * 15 hours)	$195
OER ($5)	$5

*Fee capped

Additional revenue sources will be sought by offering professional development through certification programs and grant awards.

C. Projected Surplus/Deficit

Projected surpluses by year:
Year 1 - $142,269
Year 2 - $98,594
Year 3 - $384,494

This program will not show losses, even from its first year of implementation. Surpluses from this program will expand professional development, offset state investment, and support cybersecurity and technology education / infrastructure for the State of Kansas.

XI. References

Bureau of Labor Statistics. (n.d.) *Information Security Analysts. U.S. Department of Labor. Retrieved August 5, 2025, from https://www.bls.gov/ooh/computer-and-information-technology/information-security-analysts.htm*

Cybersecurity Supply And Demand Heat Map. (n.d.). Retrieved August 5, 2025, from https://www.cyberseek.org/heatmap.html

Kansas Board of Regents. *(n.d.) Tuition & Fees Reports*. Retrieved August 14, 2025, from https://www.kansasregents.gov/data/system_data/tuition_fees_reports?highlight=WyJjb21wcmVoZW5zaXZlIiwiZmVlIiwic2NoZWR1bGUiXQ==

National Security Agency. (n.d.). *National Centers of Academic Excellence.* Retrieved August 5, 2025, from https://www.nsa.gov/Academics/Centers-of-Academic-Excellence/

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The True Cost of Cybercrime: Why Global Damages Could Reach $1.2 - $1.5 Trillion by End of Year 2025. (2025, March 13). *Cyber Defense Magazine*. https://www.cyberdefensemagazine.com/the-true-cost-of-cybercrime-why-global-damages-could-reach-1-2-1-5-trillion-by-end-of-year-2025/