CYBERSECURITY ASSESSMENT PLAN
School of Information Technology
2026

Program Educational Objectives:

The program educational objectives (PEO) of the cybersecurity program are as follows:

1. Be a successful practitioner in cybersecurity-related field or accepted into a graduate program
2. Engage in professional development through continuing education, professional organizations, or experience
3. Be characterized by effective leadership skills and high standards of ethics.
4. Live and work as contributing, well-rounded members of society.

Student Outcomes:

At the time of graduation, a student in our Cybersecurity program will be able to:

1. Analyze a complex computing problem and to apply principles of computing and other relevant disciplines to identify solutions.
2. Design, implement, and evaluate a computing-based solution to meet a given set of computing requirements in the context of the program's discipline.
3. Communicate effectively in a variety of professional contexts.
4. Recognize professional responsibilities and make informed judgments in computing practice based on legal and ethical principles.
5. Function effectively as a member or leader of a team engaged in activities appropriate to the program's discipline.
6. Apply security principles and practices to the environment, hardware, software, and human aspects of a system.
7. Analyze and evaluate systems with respect to maintaining operations in the presence of risks and threats.

Relationship of Student Outcomes to Program Educational Objectives

The table below summarizes the relationship between student outcomes and program educational objectives:

Student Outcomes	**Program Educational Objectives**			
	1.Be a successful practitioner in cybersecurity-related field or accepted into a graduate program	2.Engage in professional development through continuing education, certifications, professional organizations, or experience	3.Be characterized by effective leadership skills and high standards of ethics.	4.Live and work as contributing, well-rounded members of society
1. Analyze a complex computing problem and to apply principles of computing and other relevant disciplines to identify solutions.	▪	▪		
2. Design, implement, and evaluate a computing-based solution to meet a given set of computing requirements in the context of the program's discipline.	▪	▪		
3. Communicate effectively in a variety of professional contexts.	▪			▪
4. Recognize professional responsibilities and make informed judgments in computing practice based on legal and ethical principles.	▪		▪	▪
5. Function effectively as a member or leader of a team engaged in activities appropriate to the program's discipline.	▪		▪	▪
6. Apply security principles and practices to the environment, hardware, software, and human aspects of a system.	▪	▪		▪
7. Analyze and evaluate systems with respect to maintaining operations in the presence of risks and threats.	▪	▪		

1. Analyze a complex computing problem and to apply principles of computing and other relevant disciplines to identify solutions.

Performance Indicator	Delivery Methods	Courses used for Assessment	Assessment Methods	Data Needed	Assessed Groups	Expected level of attainment*	Timeline
(a) Uses established cybersecurity models to analyze a problem	IT 250, IT 351, IT 357, IT 360	IT 360	Use rubric 1(a)	IT 360: Assignment that requires using models for problem analysis	IT 360 students	60%	Odd Spring Semesters
(b) Identifies technical and procedural requirements to solve a problem	IT 250, IT 351, IT 357, IT 360	IT 360	Use rubric 1(b)	IT 360: Assignment that requires both technical and procedural solutions	IT 360 students	60%	Odd Spring Semesters

* - The expected level of attainment is measured by the minimum percentage of the assessed sample that is scored in the two maximum (Developed/Exemplary) categories of the relevant rubric.

Rubric 1: An ability to analyze a complex computing problem and to apply principles of computing and other relevant disciplines to identify solutions				
	Poor or Non-Existent	Developing	Developed	Exemplary
(a) Uses established cybersecurity models to analyze a problem	Unable to produce recognizable model	Can create visual model, but model does not fit problem	Creates visual model that fits problem description	Creates a well-formed and parsimonious model of problem
(b) Identifies technical and procedural requirements to solve a problem	Records none or very few requirements	Record some appropriate requirements but misses one or more major requirements	Records all appropriate requirements	Records all appropriate requirements in a well-formatted and logical manner

2. Design, implement, and evaluate a computing-based solution to meet a given set of computing requirements in the context of the program's discipline.							
Performance Indicator	**Delivery Methods**	**Courses used for Assessment**	**Assessment Methods**	**Data Needed**	**Assessed Groups**	**Expected level of attainment***	**Timeline**
(a) Write a computer program that solves a problem	IT 168, IT 378	IT 168	Use rubric 2 (a)	IT 168: Completed program that solves a business problem	IT 168 students	60%	Odd Spring Semesters
(b) Write queries to retrieve data from databases	IT 378	IT 378	Use rubric 2 (b)	IT 378: Assignments from later in semester with queries, or exam questions	IT 378 students	60%	Odd Fall Semesters

* - The expected level of attainment is measured by the minimum percentage of the assessed sample that is scored in the two maximum (Developed/Exemplary) categories of the relevant rubric.

Rubric 2: Design, implement, and evaluate a computing-based solution to meet a given set of computing requirements in the context of the program's discipline.				
	Poor or Non-Existent	Developing	Developed	Exemplary
(a) Write a computer program that solves a business problem	Program has major syntactical errors or does not run with normal inputs without crashing, code does not solve the given problem	Program produces correct results in only some cases, program crashes with some valid inputs	Program works correctly for all sample data and typical cases, solves the correct problem	Program works correctly for all relevant cases, and addresses at least one unspecified case or implements an extra feature
(b) Write queries to retrieve data from databases	Does not know the query syntax	Writes queries to create, use, and modify tables, records, and attributes. Queries may not always work correctly	Writes and successfully executes variety of queries including join queries, can create variety of reports, uses grouping	Writes parameter queries, stored procedures, and triggers

3. Communicate effectively in a variety of professional contexts.							
Performance Indicator	**Delivery Methods**	**Courses used for Assessment**	**Assessment Methods**	**Data Needed**	**Assessed Groups**	**Expected level of attainment***	**Timeline**
(a) Communicates effectively in a variety of professional contexts orally	IT 191, IT 351, COM 110	IT 351	Use rubric 3(a)	IT 351: Oral presentation	IT 351 students	60%	Odd Fall semesters
(b) Communicates effectively in a variety of professional contexts in writing	IT 191, IT 250, ENG 101, ENG 249	IT 250	Use rubric 3(b)	IT 250: Written paper	IT 250 students	60%	Even Spring semesters

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Rubric 3: Communicate effectively in a variety of professional contexts.					
		Poor or Non-Existent	Developing	Developed	Exemplary
(a) Communicates effectively in a variety of professional contexts orally	Clarity	Not assertive or clear overall	Assertive but inconsistent, occasionally trying to sound too technical or intentionally vague	Mostly clear and easy to understand	Clear and assertive, very easy to understand
	Organization	Not well organized, no logical flow	Inconsistent flow, lacking macro or micro-organization	Logically organized at micro and macro level	Entire communication has logical flow, flow is reinforced throughout
	Audience	Not aimed at the intended audience	Reflects own knowledge rather than targeting audience, could have taken more efforts to direct talk at audience	Directed at appropriate audience	Targeting audience well enough to enhance communication
	Engaging the audience	Not captivating, could not engage audience, little to no interaction with audience	Good beginning and end but not as engaging in between, not enough interaction with audience	Keeps the audience interested and facilitates some interaction	Keeps the audience awake and involved, occasionally adapting to audience's feedback
	Delivery	Two or more of: Spoke too fast/too slow, did not address intended questions, inappropriate attire, took significantly longer or shorter than allotted time	One of: Spoke too fast/too slow, too many pauses, awkward body language	Spoke at appropriate pace, comfortable and appropriate body language	Calm. Clear diction. Good tone. Good pacing. Appropriate attire and personal grooming.
(b) Communicates effectively in a	Clarity/ Precision	Too vague or too detailed, significant amount of	Detailed but losing overall picture, or clear at a high level but missing	Appropriately detailed and focused at a higher level.	Completely clear and precise

variety of professional contexts in writing Developing		information may be inaccurate.	details, attention to length rather than substance. Some information may be inaccurate.	Writing is precise and concise.	
	Organization	Not well-organized, no consistent flow	Micro-structure well defined but lacking macro-structure, or vice versa	Good and appropriate organization	Logically organized
	Audience	Not catered to intended audience (wrong assumptions about audience, trying to target all types of audiences)	Not consistently aimed at the audience, occasionally too detailed or too vague	Mostly aimed at the appropriate audience	Aimed exactly at the appropriate audience
	Mechanics and Style	Many spelling and grammar errors, no logical flow or document structure	Logical flow but with many spelling and grammar errors, or vice versa, crude document structure	No spelling or grammar errors. Reasonably good logical flow and appropriate document structure	No spelling or grammar errors. Good use of language and good logical flow
	Visual aids	No visual aids/too many visual aids. Very poor visual aids.	Few visual aids, some incompletely made, not referred in the text. Some visual aids poorly designed	Appropriate number and kind of visual aids referred by the text at the proper places parts	Appropriate number of well-chosen visual aids that enhance communication

4. Recognize professional responsibilities and make informed judgments in computing practice based on legal and ethical principles.							
Performance Indicator	**Delivery Methods**	**Courses used for Assessment**	**Assessment Methods**	**Data Needed**	**Assessed Groups**	**Expected level of attainment****	**Timeline**
(a) Identifies security considerations for IT systems	IT 250, IT 351, IT 357, IT 359, IT 360	IT 357	Use rubric 4(a)	Assignment analyzing vulnerability for IT systems	IT 357 students	60%	Even Fall semesters
(b) Identify laws that affect the IT and security industries	IT 250, IT 357, IT 360	IT 250	Use rubric 4(b)	Exam questions relating to IT and/or security laws	IT 250 students	60%	Odd Fall semesters
(c) Identifies sections of a professional code of ethics that apply to a given situation	IT 214, IT 250, IT 359, IT 360	IT 359	Use rubric 4(c)	Exam questions relating to ethics	IT 359 students	60%	Even Fall semesters

* - The expected level of attainment is measured by the minimum percentage of the assessed sample that is scored in the two maximum (Developed/Exemplary) categories of the relevant rubric.

Rubric 4: Recognize professional responsibilities and make informed judgments in computing practice based on legal and ethical principles.				
	Poor or Non-Existent	Developing	Developed	Exemplary
(a) Identify security considerations for IT systems	Cannot identify security considerations	Identifies a few security considerations	Identifies security considerations appropriate for system	Identifies security considerations appropriate for system. Ranks considerations according to risk and provides reasoning for ranking.
(b) Identify laws that affect the IT and security industries	Cannot identify laws appropriate for the IT and security industries	Identifies correctly **federal laws** appropriate for the IT and security industries	Identifies correctly **federal and state laws** appropriate for the IT and security industries.	Identifies **correctly federal, state, and international laws** appropriate for the IT and security industries and provides reasoning for how these laws are appropriate.
(c) Identifies sections of a professional code of ethics that apply to a given situation	Does not identify sections of a relevant professional code of ethics	Identifies sections of a code of ethics, but some are not relevant to the situation and/or some relevant sections are not identified	Identifies the sections of a code of ethics that are relevant to the situation with at most one	Identifies exactly the relevant sections and applies them appropriately to the situation

			irrelevant section or one relevant section not identified	

5. An ability to function effectively as a member or leader of a team engaged in activities appropriate to the program's discipline							
Performance Indicator	**Delivery Methods**	**Courses used for Assessment**	**Assessment Methods**	**Data Needed**	**Assessed Groups**	**Expected level of attainment***	**Timeline**
(a) Actively participates on the team	IT 261, IT 350, IT 351, IT 357, IT 359, IT 360, IT 378	IT 360	Use rubric 5 (b) and 5 (c)	Peer and group reviews from group assignment(s) or project(s)	IT 360	60%	Even Spring semesters
(b) Completes team assignments on time	IT 350, IT 351, IT 357, IT 359, IT 360, IT 378	IT 360	Use rubric 5 (a)	Peer and group reviews from group assignment(s) or project(s)	IT 360	60%	Even Spring semesters

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Rubric 5. An ability to function effectively as a member or leader of a team engaged in activities appropriate to the program's discipline				
	Poor or Non-Existent	Developing	Developed	Exemplary
(a) Contributes fairly to tasks assigned to the team	Does not contribute to final deliverable	Completes assigned tasks only partially	Satisfactorily completes assigned parts	Completes assigned parts and helps other team members with their assigned work, initiates and participates in team meetings
(b) Actively participates in team discussions	Does not contribute to discussions, does not let others express opinions	Contributes occasionally to team discussions	Contributes equally to team discussions	Leads team discussions, ensures that everybody is heard
(c) Submits quality deliverables	Does not submit deliverables that meet the minimum requirements of the assignment(s) or project(s)	Submit deliverables that meet some requirements of the assignment(s) or project(s)	Submit deliverables that meet most requirements of the assignment(s) or project(s)	Submit deliverables that meet all requirements of the assignment(s) or project(s)

6. Apply security principles and practices to the environment, hardware, software, and human aspects of a system.							
Performance Indicator	**Delivery Methods**	**Courses used for Assessment**	**Assessment Methods**	**Data Needed**	**Assessed Groups**	**Expected level of attainment***	**Timeline**
(a) Implements security hardware or software in a computing system and/or network	IT 250, IT 351, IT 357	IT 357	Use rubric 6(a)	Implementation assignment for firewall or IDPS	IT 357 students	60%	Odd Fall semesters
(b)Correctly uses or implements cryptographic algorithms or systems	IT 250, 351	IT 351	Use rubric 6(b)	Programming or implementation assignment	IT 351 students	60%	Even Fall semesters
(c)Demonstrates ability to properly secure a system with appropriate hardening steps	IT 250, 357	IT 357	Use rubric 6(c)	Hardening Assignment	IT 357 students	60%	Even Fall semesters

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Rubric 6: Apply security principles and practices to the environment, hardware, software, and human aspects of a system.				
	Poor or non-existent	Developing	Developed	Exemplary
(a) Implements security hardware or software in a computing system and/or network	Unable to implement any feature of firewall/IDPS	Able to implement some features of firewall/IDPS	Able to implement most features of firewall/IDPS	Able to implement all features of firewall/IDPS
(b) Correctly uses or implements cryptographic algorithms or systems	Unable to implement/use the algorithms or systems at all	Able to implement/use the algorithms or systems partially correctly	Able to implement/use the algorithms or systems mostly correctly	Able to implement/use the algorithms or systems completely correctly
(c) Demonstrates ability to properly secure a system with appropriate hardening steps	Unable to secure system	Partially secures system, leaving several vulnerabilities open	Partially secures system, leaving few vulnerabilities open	Secures system to the fullest extent possible without leaving any vulnerabilities

7. Analyze and evaluate systems with respect to maintaining operations in the presence of risks and threats.							
Performance Indicator	**Delivery Methods**	**Courses used for Assessment**	**Assessment Methods**	**Data Needed**	**Assessed Groups**	**Expected level of attainment***	**Timeline**
(a) Perform analysis on a case or scenario of a disaster or attack	IT 250, 357, 360	IT 360	Rubric 7(a)	Assignment or paper with analysis of a security incident	IT 360	60%	Odd Spring semesters

* - The expected level of attainment is measured by the minimum percentage of the assessed sample that is scored in the two maximum (Developed/Exemplary) categories of the relevant rubric.

Rubric 7: Analyze and evaluate systems with respect to maintaining operations in the presence of risks and threats.				
	Poor or Non-Existent	Developing	Developed	Exemplary
(a) Perform analysis on a case or scenario of a disaster or attack	Unable to analyze the case	Able to identify a few features of the case or scenario	Able to identify most features of the case or scenario	Able to identify all features of the case or scenario

2-year assessment cycle (Quick Review for Implementation)				
Semester	**Course to be Assessed**	**What is assessed**	**Expected level of attainment**	**Complete Assessment By**
Even Fall	IT 351	6(b)	60%	Week 8 of Odd Spring semester
	IT 357	4(a), 6(c)	60%	Week 8 of Odd Spring semester
	IT 359	4(c)	60%	Week 8 of Odd Spring semester
Odd Spring	IT 360	1(a)(b), 7(a)	60%	Week 8 of Odd Fall semester
	IT 168	2(a)	60%	Week 8 of Odd Fall semester
Odd Fall	IT 378	2(b)	60%	Week 8 of Even Spring semester
	IT 351	3(a)	60%	Week 8 of Even Spring semester
	IT250	4(b)	60%	Week 8 of Even Spring semester
	IT 357	6(a)	60%	Week 8 of Even Spring semester
Even Spring	IT 250	3(b)	60%	Week 8 of Even Fall semester
	IT 360	5(a)(b)	60%	Week 8 of Even Fall semester

*All the assessed courses are CAE-CD KU courses.

Review of Program Educational Objectives	
When	Procedure
Odd spring semesters	1. Assessment committee reviews and makes suggestions if any. 2. Updates are presented and discussed in faculty meeting in April of the year. 3. Approved PEOs are presented to BIAC in October meeting of the year. 4. Approved PEOs are made available to other stakeholders such as selected student groups for feedback.

Review of Student Outcomes	
When	Procedure
Odd spring semesters	1. Assessment committee reviews and makes suggestions if any. 2. Assessment committee sends report to curriculum committee and Director by end of March of the year. 3. At Director's discretion, the updated student outcomes are tabled in faculty meeting. 4. Updated student outcomes are made available to other stakeholders such as selected student groups for feedback.