MS-CYS Program Learning Outcomes

In general, faith integration is not only part of the University mission statement, but reflection on a biblical worldview is also heavily emphasized beyond the technical knowledge and skills used in the Master of Science in Cyber Security (MS-CYS) program. Faith integration and carrying this knowledge to the "sphere of influence" to the workplace, families, and society are critical components of this degree program. As part of the mission statement this faith integration is required and regularly reviewed by the Higher Learning Commission (HLC).

Given the MS-CYS program operates at the graduate level, program-level outcomes are reviewed using a grading rubric for every assignment in all courses. The final submission of the research project is evaluated in a post-process review conducted in the final course CYS-655 Capstone in Cyber Security in the form of a prospectus demonstrating their research and writing abilities.

Like the research project, a reflection on the biblical perspective and sphere of influence are evaluated in the threaded discussion in Session 2 as a post-process review in the final course.

There are seven University-wide Program Learning Outcomes (PLOs) used by all programs:
1. Students examine course content from a biblical perspective.
2. Students demonstrate proficient knowledge and skills.
3. Students use critical thinking skills to critique issues and provide solutions.
4. Students demonstrate proficiency of academic writing.
5. Students demonstrate information literacy according to the norms of their profession.
6. Students reflect on their Christian educational experience and its influence on their personal and professional life.
7. Students apply knowledge and skills to serve and influence their workplace, families, and society.

Even though all College of Adult Graduate Studies (CAGS) programs use the same seven PLOs, program specific PLOs are used in the MSCYS program as identified below. Specifically, the research project utilizes PLOs 2, 3, 4, 5, and 7 whereas PLOs 1 and 6 focus on a biblical perspective, the Christian educational experience, and how a biblical perspective influences the students personal and professional life. These PLOs are reviewed in a separate discussion assignment.

For PLO 1 Students examine course content from a biblical perspective.
1. SLO 1 Integration of Biblical Worldview
   - Student analyzes course content against a biblical worldview. Scripture is integrated appropriately and the effects and influences are examined.

For PLO 2 Students demonstrate proficient knowledge and skills.
There are three sub-level PLOs:
2.a Students will demonstrate proficient knowledge in cybersecurity theory, practice and principles through the application of cybersecurity concepts to real world problems.
   - All components of the project are provided. Cybersecurity concepts are applied and thoroughly expounded upon. A real-world example is provided to support concepts discussed.
2.b Students will demonstrate technical skills and tools in cybersecurity as applied to real world problems.
   - Data analysis and collection involves the use of cybersecurity tools. The discussion of data collected is applicable to real world problems.
2.c Students will demonstrate the application of a major cybersecurity concept, such as cyber defense, cyber offense, cyber policy or compliance, cyber-crime or cyber warfare to real world problems.
   - Final paper includes the application to one or more of the covered topics in the program offering and is applied to real world problems.

For PLO 3 Students use critical thinking skills to critique issues and provide solutions.

There are six sub-level PLOs relating specifically to writing skills:

3.a Introduction Tied to Discipline Assignment Prompt
- Introduction engages the reader and focuses his or her attention on what is to follow. Clear connection to the prompt.

3.b Explanation of Issues – Problem Statement or Key Idea/Question
- Issue, question or problem to be considered critically is stated, described, and clarified so that understanding is not seriously impeded by omissions.

3.c Student's Position on Content (perspective/thesis/hypothesis)
- Specific position (perspective, thesis/hypothesis) is clearly and thoroughly stated and takes into account the complexities of an issue. Hypotheses and/or propositions are detailed and logical.

3.d Influence of Context and Assumptions
- Thoroughly (systematically and methodically) analyzes own and others' assumptions and carefully evaluates the relevance of contexts and expert opinion when presenting a position.

3.e Evidence Supporting Position and Assertions
- Information is taken from source(s) with enough interpretation/evaluation to develop a coherent analysis or synthesis. Arguments and assertions flow logically from analysis.

3.f Conclusions and related outcomes (implications and consequences)
- Introduction engages reader and focuses his or her attention on what is to follow. Clear connection to the prompt. Conclusion examines implications of the thesis and gives the reader a substantial closure/summary. Introduction and conclusion provides a strong framework for the entire paper.

For PLO 4 Students demonstrate proficiency of academic writing.

There are seven sub-level PLOs:

4.a Introduction and Conclusion
- Introduction engages the reader and focuses his or her attention on what is to follow. Clear connection to the prompt. Conclusion examines implications of the thesis and gives the reader a substantial closure/summary. Introduction and conclusion provides a strong framework for the entire paper.

4.b. Thesis
- Insightful thesis clearly presents purpose, subject, or own position. Clearly responds to the prompt. Thesis is interesting, specific, and manageable and demonstrates a sophisticated understanding of the topic.

4.c. Content/Prompt Specific
- Content matches every specification in the prompt as applied to cyber security principles.

4.d. Development and Evidence
- The thesis, main points, and/or claims are supported with relevant and fully developed (reader gains insight) personal examples, textual sources and scholarly academic sources. Students demonstrate an understanding of the body of knowledge related to the topic, both related to industry standard content as well as current research.

4.e. Conclusion
- Conclusion examines implications of the thesis and gives the reader a substantial closure/summary.

4.f. Language
- Strong, effective academic word choice; variety in sentence structure; active voice is primarily used. Student demonstrates a strong understanding of the theoretical vocabulary of the field.

4.g. Conventions and Mechanics
- Paper is flawless. Paper is clear and easy to read.

For PLO 5 Students demonstrate information literacy according to the norms of their profession.

There are six sub-level PLOs:

5.a Defines and articulates the need for information.

- Thesis statement or question is well articulated and identifies gap in existing knowledge; need for additional information is thoroughly explained and supported.

5.b Selects appropriate types and formats of potential sources of information.
- Multiple secondary and tertiary information sources appropriate to the question are properly evaluated and selected; potential need for creation or construction of raw data from primary sources is recognized

5.c Obtains information using a variety of methods.
- Uses multiple academic and other specialized information search forums, surveys, letters, interviews, and other forms of inquiry to retrieve or create new information.

5.d Extracts, records and manages, the information and its sources.
- Selects appropriates sources, uses various technologies to manage information; records all pertinent citation information for a wide range of resources.

5.e Evaluates quality and quantity of information and information sources.
- Multiple and diverse sources are evaluated according to criteria such as credibility, relevance, timeliness, accuracy, authority appropriate to the question; information specifically informs and provides insights specific to the question.

5.f Evaluates and summarizes main ideas to construct new concepts.
- Interrelationships among concepts are recognized and combined into potentially useful new thoughts, conclusions and recommendations with supporting evidence, initial synthesis is extended to construct new hypotheses that may require additional information.

For PLO 6 Students reflect on their Christian educational experience and its influence on their personal and professional life.
There are three sub-level PLOs:
6.a. Christian Education Experience
- The student clearly identifies and details what is distinctive about attending a faith-based university, specifically explaining how this has been evident at CCU.

6.b. Impact on Personal and Professional Life
- The student explains transformations that have occurred while at CCU and evaluates how biblical truth and faith will continue to impact his or her personal and professional life.

6.c. Critical Self-Reflection
- The student analyzes and integrates personal examples, perspectives, and Scripture and connects these to prompt requirements. Student offers a new approach, perspective, or application based on learning

For PLO 7 Students apply knowledge and skills to serve and influence their workplace, families, and society.
There are four sub-level PLOs:
7.a Awareness of Potential to Serve and Influence Community "Sphere of Influence" (workplace, family, society)
- Student indicates acute awareness of his/her sphere of influence as a complex system and his/her potential to serve and influence workplace, family and/or society, as documented in an applied paper, service opportunity or project. Knowledge (facts, theories, skills, etc.) from student's discipline informs and supports this potential.

7.b Awareness of Personal Responsibility to Engage in Community "Sphere of Influence" (workplace, family, society)
- Student demonstrates active desire and clarified sense of personal responsibility to engage in community sphere of influence as documented in an applied paper, service opportunity or project.

7.c Active Engagement or Plan to Engage in Community "Sphere of Influence" (workplace, family, society)
- Multiple examples of engagement and/or strategies to engage in the application of knowledge and skills to influence the student's sphere of influence are shared. Possible conflicting positions and/or opposition is detailed.

7.d Motivation for Active Engagement or Plan to Engage in Community "Sphere of Influence" (workplace, family, society) clearly driven by desire to serve and glorify God.

- Motivation in the examples of engagement and/or strategies to engage in the application of knowledge and skills to influence the student's sphere of influence are attributed to a love for God and a desire to glorify Him.