



## MASTER COURSE OUTLINE

A. CPRO2130 Cybersecurity Operations

B. COURSE DESCRIPTION:

The CCNA Cybersecurity Operations advanced course provides the knowledge and skills required for exciting and growing opportunities in Cybersecurity related careers. This course teaches advanced security skills needed to monitor, detect and respond to cybersecurity threats. This course covers cryptography, host-based security and analysis, security monitoring, computer forensics, attack methods and incident reporting and handling used in Security Operations (SECOPS) Centers.

Prerequisites: CPRO2100 Cisco Network Security or instructor approval for individuals pursuing professional development.

**(3 Cr - 3 lect, 0 lab)**

C. \*\*Core theme: Critical Thinking

D. MAJOR CONTENT AREAS:

At the completion of this course students will have knowledge and skills in:

- Principles of Network Security
- Cybersecurity Operations
- Windows Operating System Security
- Linux Operating System Security
- Open Source Cybersecurity Tools (Kali Linux)
- Proactive Network Security
- Cryptography and Public Key Infrastructure (PKI)
- Defensive Technologies and Countermeasures
- Endpoint Security and Analysis
- Security Monitoring
- Intrusion Data Analysis – (SECOPS)
- Incident Response – (SECOPS)
- Post-Exploitation Assessment and Remediation – (SECOPS)

E. GOAL TYPES, OBJECTIVES, AND OUTCOMES:

<u>GOAL</u>	<u>OBJECTIVES</u> Students will be able to:	<u>OUTCOMES</u> The student will successfully:
<u>**Critical Thinking</u>	imagine and seek out a variety of possible goals, assumptions, interpretations, or perspectives which can give alternative meanings or solutions to given situations or problems.	1. identify and analyze cybersecurity operations and methods, then use this knowledge to monitor, analyze and respond to security events, thus protecting systems from cybersecurity risks, threats, vulnerabilities.
<u>CS</u>	demonstrate knowledge and expertise in Cybersecurity and Cybersecurity Operating Centers	1. describe the role of the Cybersecurity Operations Analyst in the enterprise and how to prepare for a career in Cybersecurity operations.
<u>CS</u>	demonstrate knowledge and expertise in Windows Operating System Security	1. describe the Windows Operating System features and characteristics needed to support cybersecurity analyses.
<u>CS</u>	demonstrate knowledge and expertise in Linux Operating System Security	1. describe the Linux Operating System features and characteristics needed to support cybersecurity analyses.
<u>CS</u>	demonstrate knowledge and expertise in Open Source Cybersecurity Tools.	1. describe Cybersecurity and technologies used to detect and identify security compromises, then implement methods to eliminate, and mitigate security issues.
<u>CS</u>	demonstrate knowledge and expertise in cryptography and the public key infrastructure (PKI)	1. describe the impacts of cryptography and PKI on network security, then use open source tools to encrypt and decrypt data.
<u>CS</u>	demonstrate knowledge and expertise in incident response / post-exploitation assessment and remediation – (SECOPS)	1. describe, how network security incidents are handled by CSIRTs and apply incident response models, such as NIST 800-61r2 to a security incident
<u>CS</u>	demonstrate business and interpersonal skills.	2. collaborate with classmates to develop security policies and share information security techniques and strategies.

F. SPECIAL INFORMATION:

This course requires Internet access, the submission of electronically prepared documents and the use of a course management software program. Students who have a disability and need accommodations should contact their instructor or the Student Success Center at the beginning of the semester.

G. COURSE CODING INFORMATION: Course Code T / Class Maximum 30; Letter Grade.

Revision date:

AASC Approval date: 12/17/2019

<b>*Riverland Community College Disciplines</b>	<b>MnTC Goal Number</b>
Communication	<b>1</b>
Natural Sciences	<b>3</b>
Mathematics/Logical Reasoning	<b>4</b>
History and the Social & Behavioral Sciences	<b>5</b>
Humanities and Fine Arts	<b>6</b>

<b>**Riverland Community College Core Themes</b>	<b>MnTC Goal Number</b>
Critical Thinking	<b>2</b>
Human Diversity	<b>7</b>
Global Perspective	<b>8</b>
Ethical and Civic Responsibility	<b>9</b>
People and the Environment	<b>10</b>

\*These five MnTC Goals have been identified as Riverland Community College Disciplines.

\*\* These five MnTC Goals have been identified as Riverland Community College Core Themes.

\*\*\*The Minnesota Transfer Curriculum “10 Goal Areas of Emphasis” are reflected in the five required discipline areas and five core themes noted in the Riverland Community College program of study guide and/or college catalog.