



# North Central Michigan College Master Course Syllabus

## PART 1:

Course Name: Network Security Fundamentals

Course Number: IT 222

Credit Hrs. 3      Lecture Hrs. 3      Lab Hrs. 0      Clinical Hrs. 0      Variable Hrs. 0

Total Hours of Instruction: 3      Total Contact Hours: 52.8  
(Total Contact hour's formula: (lecture hrs. + lab hrs. + clinical hrs) x 17.6)

### Course Description:

Introduces the core security principles, confidentiality, integrity and availability. The topics covered include the different security layers, authentication, authorization and accounting. Students will learn how to harden networks, servers and clients using policies, hardware and software.

Prerequisite (s): IT 101 and IT 112

Co-requisite (s): None

### Course Objectives:

Upon successful completion of the course, the learner will be able to:

- Describe access control and identity management.
- Describe application, data and host security.
- Plan compliance and operational security.
- Define cryptography.
- Deploy network security procedures.
- Describe the security layers, threats and vulnerabilities.
- Explain how to implement operating system security and deploy security software.

Reasonable accommodations can be provided for students with documented disabilities. Please contact Learning Support Services to arrange for these (231)348-6687 or (231)348-6817, Room 533 SCRC.



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## PART 2:

### Course Objectives and Linked Lumina DQP Outcomes

See **PART 3** of this syllabus for the complete language of each Lumina DQP outcome.

*Please identify the Lumina DQP outcome(s) supported by the course objectives. List each course objectives (from **PART 1**), followed by the corresponding Lumina DQP Outcome number(s) in parentheses. (See the example.)*

*Example:*

- *Course Objective (DQP # 1, 5, 8)*
- Describe access control and identity management. (DQP 2)
- Describe application, data and host security. (DQP 2)
- Plan compliance and operational security. (DQP 2)
- Define cryptography. (DQP 2)
- Deploy network security procedures. (DQP 2)
- Describe the security layers, threats and vulnerabilities. (DQP 2)
- Explain how to implement operating system security and deploy security software. (DQP 2)



# North Central Michigan College Master Course Syllabus

## **Suggested Methods of Instruction:**

This course will be completed as an instructor directed self-study using laboratory exercises coinciding with assigned readings and online supplemental study aids.

## **Suggested Methods of Assessment and Evaluation:**

Quizzes, lab exercises, third party examinations.

## **Adopted Text at Time of Course Adoption/Revision:**

CompTIA Security+ Certification Kit, Exam SY0-301, Sybex; 3 edition, (August 2, 2011), Dulaney, 9781118061152

MTA: Security Fundamentals 9780470901847

OPTIONAL SUPPLEMENTARY MATERIALS:

## **Topics Covered During the Semester:**

*Sequence of topics and time allowance are at the discretion of the instructor*

WEEK 1	Pretest
WEEK 2	Setup network
WEEK 3	Validate network
WEEK 4	Harden network
WEEK 5	Test security of your network
WEEK 6	System security
WEEK 7	Access control
WEEK 8	Assessments and audits
WEEK 9	Cryptography
WEEK 10	Organizational security
WEEK 11	Threats and vulnerabilities
WEEK 12	Compliance and operational security
WEEK 13	Application, data and host security
WEEK 14	Examination
WEEK 15	Post test
WEEK 16	Oral exam

Part 1 & Part 2 approved by CRDAP on: 05 06 16

Part 2 approved by AD:

Date:

Part 2 approved by CRDAP Chair:

Date:

Rev02/15



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## Master Course Syllabus

### **PART 3:**

**LUMINA DQP OUTCOMES** – Use this reference sheet for **PART 2** of Master Course Syllabus.

#### **Specialized Knowledge**

1. Describes the scope and principal features of the field of study, citing at least some of its core theories and practices and offers a similar explication of at least one related field.
2. Illustrates contemporary terminology used in the field.
3. Generates substantially error-free products, reconstructions, data, juried exhibits or performances as appropriate to the field.

#### **Broad Integrative Knowledge**

4. Describes how existing knowledge or practice is advanced, tested and revised
5. Describes and examines a range of perspectives on key debates and their significance both within the field and in society.
6. Illustrates core concepts of the field while executing analytical, practical or creative tasks.
7. Selects and applies recognized methods of the field in interpreting characteristic discipline-based problems.
8. Assembles evidence relevant to characteristic problems in the field, describes the significance of the evidence and uses the evidence in analysis of these problems.
9. Describes the ways in which at least two disciplines define, address and interpret the importance of a contemporary challenge or problem in science, the arts, society, human services, economic life or technology.

#### **Intellectual Skills – Analytic Inquiry**

10. Identifies, categorizes and distinguishes among elements of ideas, concepts, theories and/or practical approaches to standard problems.

#### **Intellectual Skills – Use of Information Resources**

11. Identifies, categorizes, evaluates and cites multiple information resources necessary to engage in projects, papers or performance in his or her program.

#### **Intellectual Skills – Engaging Diverse Perspectives**

12. Describes how knowledge from different cultural perspectives would affect his or her interpretations of prominent problems in politics, society, the arts and/or global relations.

#### **Intellectual Skills – Communication Fluency**

13. Presents accurate calculations and symbolic operations and explains how such calculations and operations are used in either his or her specific field of study or in interpreting social and economic trends.
14. Presents substantially error-free prose in both argumentative and narrative forms to general and specialized audiences.

#### **Applied Learning**

15. Describes in writing at least one substantial case in which knowledge and skills acquired in academic settings are applied to a challenge in a non-academic setting; applies that learning to the question; and analyzes at least one significant concept or method related to his or her course of study in light of learning outside the classroom.
16. Locates, gathers and organizes evidence on an assigned research topic addressing a course-related question or a question of practice in a work or community setting; offers and examines competing hypotheses in answering the question.

#### **Civic Learning**

17. Describes his or her own civic and cultural background, including its origins and development, assumptions and predispositions.
18. Describes diverse positions, historical and contemporary, on selected democratic values or practices and presents his or her own position on a specific problem where one or more of these values or practices are involved.
19. Takes an active role in a community context (work, service, co-curricular activities, etc.) and examines the civic issues encountered and the insights gained from the community experience.

The Degree Qualifications Profile was adopted by CRDAP: April 11, 2012