STATE UNIVERSITY OF NEW YORK
COLLEGE OF TECHNOLOGY
CANTON, NEW YORK

MASTER SYLLABUS

CYBR 165 - SURVEY OF CYBERSECURITY

Created by: Minhua Wang
Updated by: Minhua Wang

SCHOOL OF SCIENCE, HEALTH & CRIMINAL JUSTICE
CENTER FOR CRIMINAL JUSTICE, INTELLIGENCE AND CYBERSECURITY
SPRING 2020

A. <u>TITLE</u>: SURVEY OF CYBERSECURITY

B. <u>COURSE NUMBER:</u> CYBR 165

C. <u>CREDIT HOURS:</u> **(Hours of Lecture, Laboratory, Recitation, Tutorial, Activity)**

> **# Credit Hours:** 3
> **# Lecture Hours:** 3 **per week**
> **# Lab Hours:** **per week**
>   **Other:** **per week**
>
> **Course Length:** 15 **Weeks**

D. <u>WRITING INTENSIVE COURSE</u>: No

E. <u>GER CATEGORY:</u> None

F. <u>SEMESTER(S) OFFERED:</u> Fall and Spring

G. <u>COURSE DESCRIPTION:</u> This course is an introductory survey of Cybersecurity and its terminology. Emphasis is on current and emerging technologies. Topics include: overview of computer system components, communications and networks including the Internet, and their security features; basic concepts in programming languages, information system development, and their security solutions; IT impact on society, security, privacy, and ethics.

H. <u>PRE-REQUISITES/CO-REQUISITES:</u>

> a. Pre-requisite(s): none
> b. Co-requisite(s): none
> c. Pre- or co-requisite(s): none

I. <u>STUDENT LEARNING OUTCOMES:</u>

By the end of this course, the student will be able to:

Course Student Learning Outcome [SLO]	*PSLO*	*ISLO*
a. Explain computer system components	3. Use a variety of computer hardware and software and other technological tools appropriate and necessary for the performance of tasks	5
b. Define various communications and networks including the Internet	3. Use a variety of computer hardware and software and other technological tools appropriate and necessary for the performance of tasks	5
c. Apply basic concepts in programming languages	3. Use a variety of computer hardware and software and other technological tools appropriate and	5

	necessary for the performance of tasks	
d. Outline information system development	5. Analyze and resolve Cybersecurity problems through the application of systematic approaches, and complete all work in compliance with relevant policies, practices, processes, and procedures	2[CA] 5
e. Examine issues of IT's impact on society, security, privacy and ethics	5. Analyze and resolve Cybersecurity problems through the application of systematic approaches, and complete all work in compliance with relevant policies, practices, processes, and procedures	4[ER] 5
f. Produce a Cybersecurity planning document	1. Communicate clearly, concisely, and correctly in the written, spoken, visual, and electronic form that fulfills the purpose and meets the needs of audiences 2. Interpret, produce, and present work-related documents and information effectively and accurately	1[W] 5

KEY	Institutional Student Learning Outcomes [ISLO 1 – 5]
ISLO #	ISLO & Subsets
1	**Communication Skills** Oral [O], Written [W]
2	**Critical Thinking** *Critical Analysis [CA], Inquiry & Analysis [IA], Problem Solving [PS]*
3	**Foundational Skills** *Information Management [IM], Quantitative Lit,/Reasoning [QTR]*
4	**Social Responsibility** *Ethical Reasoning [ER], Global Learning [GL], Intercultural Knowledge [IK], Teamwork [T]*
5	**Industry, Professional, Discipline Specific Knowledge and Skills**

J.   APPLIED LEARNING COMPONENT: Yes __X___   No_____
Classroom/Lab

K.   TEXTS: None

L.   REFERENCES: Various online resource such as SUNY Canton Library Books24x7 ITPro Book Database

M.   EQUIPMENT: Computer lab classroom

N.   GRADING METHOD: A-F

O.   SUGGESTED MEASUREMENT CRITERIA/METHODS:
- Exams
- Quizzes
- Participation

P.   DETAILED COURSE OUTLINE:

I. Introduction to Computers and Computer Security
      A. Computer and its components
      B. Categories of computers
      C. Various computer applications in society
      D. Computer Security

II. The Internet, the World Wide Web and Cybersecurity
      A. The Internet
      B. The Web
      C. Search for information on the Web
      D. Web Publishing
      E. Cybersecurity

III. Application Software
      A. Categories of application software
      B. Software distribution
      C. Interaction with application software
      D. Application software on the web
      E. Software Security

IV. Communication and Networks
      A. Components of communications
      B. Advantages of using a network
      C. Various network communications technologies
      D. Commonly used communication devices
      E. Network Security

V. Computers and Society, Security, Privacy, and Ethics
      A. Safeguards against computer security risks
      B. Backing up computer resources
      C. Information privacy
      D. Information accuracy, rights, and conduct

VI. Programming Languages and Program Development
      A. Structured design and object-oriented design

B. Various ways to develop Web pages

C. Steps in program development cycleD. Security in Programming

VII. Computer Careers and Certification

A. Career opportunities in computer industry and Cybersecurity

B. Backing up computer resources

C. Information privacy

D. Information accuracy, rights, and conduct

VIII. Other Topics: As Defined by the Instructor (The topics on most recent Cybersecurity developments are strongly recommended.)

Q. **<u>LABORATORY OUTLINE</u>:** N/A