CTN281 - Security+ Certification Prep

Document Type: District Master Course Outline
Proposal Type: New Course
Requester(s): Carol Koepke
College: South
Origination Approved: 08/21/2012 - 9:04 AM

BASIC INFORMATION

Requester(s): Carol Koepke

College: South Seattle Community College

Division/Dept: Professional Technical

Dean: Duncan G Burgess

Peer Reviewer(s): Jay M Abram

David Herman

COURSE INFORMATION

Proposed Course Number:

Prefix: **CTN**   Number: **281**

☐ Request a new Prefix

☐ This will be a common course

Full Title: Security+ Certification Prep

Abbreviated Title: Security+ Certification

Catalog Course Description:

Prepares students for the latest CompTIA Security+ Certification Exam. Focus is on security risks, vulnerabilities and solution concepts including the following: Infrastructure, access control, cryptography, physical, network and operating system security strategies, assessments and auditing. Most recent distributed operating systems will be used. Prereq: CTN 277 (2.0 or better)

Course Length: 11 Weeks   ☐ Request an Exception

Course Prerequisite(s):

CTN 277 (2.0 or better)

Topical Outline:

TOPICS	HOURS
I. Access Control a. Securing your access from physical threats	3

II. Cryptography
   a. Fundamental methods of cryptography
   b. Reasons and value of using cryptography
	4

III. Securing Network Infrastructure a. Local, remote and cloud security	10
IV. Network Attacks and Countermeasures a. Detecting and defending against network attacks	10

V. Network and Application Security
    a. Securing your servers, ports and web
    b. Resource Monitoring and Diagnostics
	15

VI. Securing your System and Organization
    a. Hardening your network systems
    b. Developing policies and procedures
	10

VII. Security Audits and Assessments a. Risk management and vulnerability testing	3
TOTAL HOURS	**55**

COURSE CODING

Funding Source: 1....................State

Institutional Intent: 21..................Vocational Preparatory

This Course is a requirement for the following program(s):

Program Title

NETWORK ADMIN (527)

☐ My Course Proposal is a requirement for a program not on this list

Will this course transfer to a 4-year university?   **No**

Is this course designed for Limited English Proficiency?   **No**

Is this course designed for Academic Disadvantaged?   **No**

Does this course have a Workplace Training component?   **No**

CIP Code: 11.0901   ☐ Request Specific CIP Code

EPC Code: 527   ☐ Request Specific EPC Code

Credits:
** Will this course be offered as Variable Credit?**   **No**
** List Course Contact Hours**

Lecture (11 Contact Hours : 1 Credit)   55

Lab (22 Contact Hours : 1 Credit)   0

Clinical Work (33 Contact Hours : 1 Credit)   0

Other (55 Contact Hours : 1 Credit)   0

Total Contact Hours   55

Total Credits   5

COLLEGE SUPPLEMENTAL

Proposed Quarter of Implementation: Spring 2013   ☐ Request Provisional Exception

Class Capacity: 24

Modes of Delivery: (Check all that apply)
☑ Fully On Campus
☐ Fully Online
☐ Hybrid
☐ Other   Explanation:

Student Learning Outcomes:

Communication

Speak and write effectively for personal, academic, and career purposes

Computation

Use arithmetic and other basic mathematical operations as required by program of study
> Specific calculations must be done in decimal, binary and hex for ACL, IP addressing, throughput monitoring, priority settings.

Human Relations

Use social interactive skills to work in groups effectively

Recognize the diversity of cultural influences and values

Critical Thinking and Problem-Solving

Think critically in evaluating information, solving problems, and making decisions
> There are many choices to be made when deciding which security measures should be used and what the best course of action would be for addressing hacking and intrusion issues. All operating systems, router, switches and networking infrastructure must constantly watched; improvements chosen and acted upon.

Technology

Select and use appropriate technological tools for personal, academic, and career tasks

Personal Responsibility

Be motivated and able to continue learning and adapt to change

Take pride in one's work
> The successful student should be able to achieve the CompTIA Security+ Certification.

Be aware of civic and environmental issues
> Issues addressed in this course include ethics and the law with respect to 4th Amendment rights,

decency, confidentiality and the law.

Information Literacy

Access and evaluate information from a variety of sources and contexts, including technology
Students must constantly research the newest hacks, threats and solutions.

Program Outcomes:

- Install and properly configure network devices and related operating systems
- Build, configure, and prepare a network server for a given role.
- Select, configure, and use different operating systems.
- Select, implement appropriate troubleshooting tools and methods for problem solving.
- Be able to analyze and troubleshoot various Microsoft and open source operating systems.
- Troubleshoot and solve problems occurring at any level of the OSI layers in a network.
- Correctly add/remove/change users and computers, sites, and domains in a network.
- Be able to secure and monitor activities on computers and networks.
- Make use of software applications for utilitarian or presentation purposes.
- Use critical thinking for analysis of hardware, OS, or network problems.
- Access information efficiently and accurately to resolve computer problems.
- Work effectively with others to accomplish complex tasks. Develop logical thinking skills.
- Develop effective communication skills.
- Be able to explain and communicate problems accurately and the related solutions effectively.
- Use safety precautions while working in and around computers and people.

Course Outcomes/Objectives:

•Discuss and compare the advantages and disadvantages of the importance of the various methods of security used in the IT industry
•Be able to implement security measures against physical threats.
•Discuss and compare the types, application of and methods of cryptography.
•Be able to explain the basic concepts of local, remote and cloud security
•Be able to secure local computers, servers, ports and web sites and prove the hardening by using audits and vulnerability testing.
•Be able to read, write and understand security policies and procedures.

Explain the student demand for the course and potential enrollment:

Students and people exploring our Computing Technology programs have asked if we offer this training. They have been asking us for at least 2 years. We are quite certain that this class will exced enrollment minimums.

Explain why this course is being created:

Our current CTN 277, Network Security course cannot cover the vast realm of IT security issues. We also know that the CompTIA Security+ Certification will strongly help our students to get jobs as this is one the certifications that is in demand.
Employers and our TAC and the reviewers for our last OPR have asked us to implement this course specifically.

What challenges, if any, do you foresee in offering this course:

We don't envision any challenges of significance because we have computers in the room (TEC 119) that

are new enough to handle the course work and labs. This room is independent of the campus network so this course will not cause any disruption to the SSCC networks.

This is to certify that the above criteria have all been met and all statements are accurate to the best of my knowledge.

Faculty involved in originating this program:

Carol Koepke	*Carol Koepke*	8/15/2012
Print Name	**Signature**	**Date**

Dean:

Duncan G Burgess	*Duncan G Burgess*	8/20/2012
Print Name	**Signature**	**Date**

Results of SSCC Curriculum Coordinating Council Findings

Participating Faculty Response and Remarks

☐ Recommended for approval

☐ Not recommended for approval

☒ This course did not go through Committee Review

Chairman, Curriculum Coordinating Council:

Print Name	**Signature**	**Date**

Vice President for Instruction:

Donna Miller-Parker	*Donna Miller-Parker*	8/21/2012
Print Name	**Signature**	**Date**