Washtenaw Community College Comprehensive Report

CNT 290 Network Troubleshooting and Forensics Effective Term: Winter 2014

Course Cover

Division: Business and Computer Technologies

Department: Computer Instruction

Discipline: Computer Networking Technology

Course Number: 290 Org Number: 13400

Full Course Title: Network Troubleshooting and Forensics

Transcript Title: Network Troubleshooting

Is Consultation with other department(s) required: No

Publish in the Following: College Catalog , Time Schedule , Web Page

Reason for Submission: New Course

Change Information:

Rationale: The skills needed in industry are reflected in this course. This course is part of a

new program alignment.

Proposed Start Semester: Winter 2014

Course Description: In this course, students will be introduced to network troubleshooting and network forensics such as enterprise, remote access, LAN, WAN, voice over IP and wireless configurations. This course includes monitoring and troubleshooting of various network services, and after-event analysis of network intrusions.

Course Credit Hours

Variable hours: No

Credits: 4

Lecture Hours: Instructor: 60 Student: 60

Lab: Instructor: 0 Student: 0 Clinical: Instructor: 0 Student: 0

Total Contact Hours: Instructor: 60 Student: 60

Repeatable for Credit: NO Grading Methods: Letter Grades

Audit

Are lectures, labs, or clinicals offered as separate sections?: NO (same sections)

College-Level Reading and Writing

College-level Reading & Writing

College-Level Math

Requisites

Prerequisite

CIS 121 minimum grade "C"

and

Prerequisite

CNT 224 minimum grade "C"

and

Prerequisite

CNT 236 minimum grade "C"

General Education Request Course Transfer

Proposed For:

Student Learning Outcomes

1. Monitor and troubleshoot network services such as LAN, WAN, enterprise, remote, VoIP and wireless configurations.

Assessment 1

Assessment Tool: Departmentally-developed written exam

Assessment Date: Winter 2017
Assessment Cycle: Every Three Years

Course section(s)/other population: All sections Number students to be assessed: All students How the assessment will be scored: Answer Key

Standard of success to be used for this assessment: 75% of students will score 75% or higher on the exam.,75% of students will score 75% or higher on the exam.

Who will score and analyze the data: Departmental faculty

Assessment 2

Assessment Tool: A final hands-on assignment using a network architected by the

instructor equipped with strategically located faults and errors

Assessment Date: Winter 2016

Assessment Cycle: Every Three Years

Course section(s)/other population: All classes during winter term

Number students to be assessed: All

How the assessment will be scored: Instructor developed evaluation

Standard of success to be used for this assessment: 75% of the students will

score 75% or higher on the project.

Who will score and analyze the data: Departmental faculty

2. Monitor and analyze a network and perform after-event analysis of a network attack and determine if it was successful, where it originated, and the consequences to the target system or device.

Assessment 1

Assessment Tool: A final hands-on assignment using a network architected by the instructor equipped with strategically located faults and errors

Assessment Date: Winter 2016
Assessment Cycle: Every Three Years

Course section(s)/other population: All classes during winter term

Number students to be assessed: All

How the assessment will be scored: Instructor developed evaluation

Standard of success to be used for this assessment: 75% of the students will

score 75% or higher on the project.

Who will score and analyze the data: Departmental faculty

Assessment 2

Assessment Tool: Departmentally-developed written exam

Assessment Date: Winter 2017
Assessment Cycle: Every Three Years

Course section(s)/other population: All sections Number students to be assessed: All students How the assessment will be scored: Answer Key

Standard of success to be used for this assessment: 75% of students will score

75% or higher on the exam

Who will score and analyze the data: Departmental faculty

Course Objectives

1. Using packet analyzer, network maintenance and analysis tools, demonstrate how to

baseline network performance.

Matched Outcomes

2. Use packet analyzer, network maintenance and analysis tools to monitor network performance and determine the most efficient configuration for the given topology.

Matched Outcomes

3. Given a routed based network, demonstrate effective analysis and troubleshooting skills and techniques to restore a network to full functional status.

Matched Outcomes

4. Given a switched based network, demonstrate effective analysis and troubleshooting skills and techniques to restore a network to full functional status.

Matched Outcomes

5. Given a wireless based network, demonstrate effective analysis and troubleshooting skills and techniques to restore a network to full functional status.

Matched Outcomes

6. Given a server based network, demonstrate effective analysis and troubleshooting skills and techniques to restore a network to full functional status.

Matched Outcomes

7. Successfully troubleshoot instructor inserted faults and misconfigurations in a variety of switched, routed, VoIP, wireless and server based configurations.

Matched Outcomes

8. Recognize and monitor network events such as an attack.

Matched Outcomes

Perform after-event analysis of a network attack using open source tools such as wireshark, monitoring scripts and event logs and determine the consequences to the target system or device.

Matched Outcomes

10. Use open source tools such as wireshark to determine the source or origination of a network attack.

Matched Outcomes

11. Troubleshoot network devices and services and recommend techniques to restore service.

Matched Outcomes

New Resources for Course

Course Textbooks/Resources

Textbooks Manuals Periodicals Software

Equipment/Facilities

Level III classroom

Other: Computer networking classroom and lab

<u>Reviewer</u>	<u>Action</u>	<u>Date</u>
Faculty Preparer:		
James Lewis	Faculty Preparer	Feb 08, 2013
Department Chair/Area Director:		
John Trame	Recommend Approval	Apr 09, 2013
Dean:		
Rosemary Wilson	Recommend Approval	Jun 10, 2013
Vice President for Instruction:		
Bill Abernethy	Approve	Jul 30, 2013