

York Technical College

Course Syllabus

Course Information

Course Prefix/Number: IST 294
Course Title: IT and Data Assurance II
Lecture Hours/Week: 3.0
Lab Hours/Week: 0.0
Credit Hours/Semester: 3.0

DL Attendance/VA Statement Textbook Information

Course Description: This course introduces methods for attacking a network. Concepts, principles, tools, and techniques for attacking and disabling a network will be covered in the context of understanding how to properly secure a network as a network administrator.

Course Competencies:

Upon successful completion of this course, the student should be competent to perform the following tasks:

Module 1 – IP Addresses

Convert DNS IP addresses into normal IP addresses.
Convert a normal IP Address into its DWORD equivalent.
Convert IP addresses into binary, octal, and hexadecimal equivalents.
Describe techniques used to obtain IP addresses through instant messaging.
Obtain IP addresses of users visiting a website.
Describe how and when to use Netstat.
Identify well-known port numbers.
Describe proxy servers, squid, and firewalls.

Module 2 – Gathering Information

Identify types of TCP/UDP port scans.
Describe how to code a FTP bounce attack
Describe how open ports can be exploited.
Identify and describe common ICMP messages.
Use ICMP to gather information.
Identify and describe PING and Traceroute.
Describe fingerprinting techniques and packet sniffing techniques.
Gather information about remote system's routing.

Module 3 – Attacking Network Security

Describe the DOS attack and its countermeasures.
Identify and describe IP spoofing.
Describe TCP wrappers.
Identify methods used to extract passwords.
Identify common Trojan attacks.
Describe methods of removing footprints from a remote system.

Module 4 – Security protocols, encryption algorithms and file security

Describe SSL, Kerberos, MD5, DES, RC4 cipher and other encryption algorithms.
Describe Base64 encoding.
Identify methods of securing files on a hard disk.

Minimal Standards/Performance Objectives

Students must read the assigned material prior to class and complete all assignments. The instructor will discuss the concepts and demonstrate the methods as appropriate. Students must participate in independent as well as team activities. Students may exempt a module by completing both theory and performance pre-assessments, if applicable, with a score of at least 80% on each assessment. Students who do not exempt the modules through pre-assessment must complete each module, learning activities, and post-assessment. Computer Technology students must attain a grade of "C" or better in this course for the degree and certificates.

Course Requirements*Attendance*

The student will attend class as stated in the York Technical College Handbook's attendance policy. Online students will participate in discussions and complete all assigned activities in a timely manner as evidence of virtual class attendance.

Academic Integrity

The student is bound by the policies stated in the York Technical College Catalog and Handbook. A student violating these policies will be subject to academic discipline.

Evaluation Strategies and Grading

Grades will be based on the average of the three module assessments.

The following scale will be the standard:

Score:	Grade:
90 – 100	A
80 – 89	B
70 – 79	C
60 – 69	D
<60	F

Final Grade:

Module 1 Assessment		% Module Grade	Course Grade
Theory / Performance Tests	100	70%	
Homework & Learning Activities	100	20%	
Discussions	<u>100</u>	<u>10%</u>	
Module Grade		100%	25%
Module 2 Assessment		% Module Grade	
Theory / Performance Tests	100	70%	
Homework & Learning Activities	100	20%	
Discussions	<u>100</u>	<u>10%</u>	
Module Grade		100%	25%
Module 3 Assessment		% Module Grade	Course Grade
Theory / Performance Tests	100	70%	
Homework & Learning Activities	100	20%	
Discussions	<u>100</u>	<u>10%</u>	
Module Grade		100%	25%
Module 4 Assessment		% Module Grade	
Theory / Performance Tests	100	70%	
Homework & Learning Activities	100	20%	
Discussions	<u>100</u>	<u>10%</u>	
Module Grade		100%	25%
Final Grade			100.0%

Entry Level Skills

Keyboarding ability and fundamentals of the Windows operating system.

Prerequisites

IST 292 and IST 293

Co-Requisites

None

Effective:FA2005