# Computer Technology Department
# Business and Technology Division
## GREENVILLE TECHNICAL COLLEGE

**COURSE SYLLABUS**

**Course Title: Internet and Firewall Security**
**Course Number:** IST 266

**READ THIS SYLLABUS CAREFULLY**

You should read this syllabus carefully and ask your instructor about *any* aspects that you do not understand. The syllabus is an agreement between you and your instructor concerning course objectives, course content, grading, and other policies and procedures particular to this course. The following information is specific to the course. Three additional documents are provided as attachments and *are considered a part of this syllabus*:

Attachment I:

Each instructor will provide a supplement to this syllabus. The supplement will include: a week-by-week plan of instruction based on the section in which you are enrolled; your instructor's name, office hours and/or office location; and your instructor's contact information and recommended best methods to contact your instructor.

Attachment 2:

The Department responsible for developing and teaching has policies and procedures in place to assure quality instruction for all students. These are attached as "Departmental Policies and Procedures."

Attachment 3:

Please note that it is your responsibility to read the current Student Handbook included in Greenville Technical College's Catalog. (See website.) The Student Handbook addresses specific academic and student conduct policies and procedures. Excerpts from the Student Handbook representing the policies and procedures most often referred to in working with students are provided for your convenience as "Attachment 3."

**Approved by:** _____
Phillip Cluley, Department Head for Computer Technology
Phillip.Cluley@gvltec.edu (864) 250-8655, Barton Campus, Building 103/309

**Approved by:** _____ Date: _____
Joel D. Welch, Ph.D., PE
Dean, Technology Division

*This syllabus will remain in effect until revised or reviewed no later than August 2016.*

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## GREENVILLE TECHNICAL COLLEGE

**COURSE SYLLABUS**

**Course Title: Internet and Firewall Security**
**Course Number:** IST 266

**Lecture hours per week:** 3.0 **Lab/Clinic Hours:** **Semester credit hours:** 3.0

**Prerequisites:** IST 220. Computer Technology students must obtain a minimum grade of "C" in all CPT and IST courses.

**Catalog Course Description:** This course is an introduction to firewalls and other network security components that can work together to create an in-depth defensive perimeter around a Local Area Network (LAN).

**Purpose of the Course:** This course will provide students with a solid foundation in network security fundamentals with a primary emphasis on intrusion detection, security policy development, implementing Network Address Translation (NAT), packet filtering and installing firewalls, and Virtual Network (VPNs).

**Required text(s) and other materials:**

1. *Security + Guide to Network Security Fundamentals,* Fourth Edition; Mark Ciampa; Course Technology, ISBN-13: 978-1-111-64012-5.
2. NOTE: Students in traditional classes must access Blackboard for course-related information. Students in hybrid and online classes will access their online content through Blackboard.

**COLLEGE-WIDE STUDENT LEARNING OUTCOMES**

1. Communication – Students will demonstrate the ability to use active reading and listening skills and to produce effective written and oral communication for varying audiences.

2. Information Technology and Technological Literacy – Students will demonstrate competency in using computer technology within a field of study.

3. Critical Thinking/Reasoning – Students will demonstrate the ability to apply the scientific method, mathematical processes, and research skills to analyze and solve problems/issues by using reflection and reasoning to justify conclusions.

4. Professional and Personal Responsibility – Students will demonstrate the ability to exhibit conduct, attitudes, and etiquette appropriate to the student's community and chosen career. Students will demonstrate the ability to manage time, to use effective interpersonal skills, and to display responsible behavior.

5. Diversity – Students will demonstrate the ability to recognize diversity and to demonstrate respectful conduct and attitudes toward all. Students will demonstrate the ability to explain how global issues impact life, work, and opportunities.

*Revised December 31, 2012*

## COMPUTER TECHNOLOGY PROGRAM LEVEL STUDENT LEARNING OUTCOMES

Upon successful completion of the Computer Technology Degree students will be able to:

1. Install computer and network hardware.

2. Install computer operating systems and application software.

3. Design, create and test computer programming solutions.

4. Demonstrate the ability to take initiative, assume responsibility, and work under pressure with minimum supervision by successfully completing "hands-on" computer assignments.

5. Analyze, troubleshoot, and correct computer related technical problems.

*Revised August 2012*

## IST 266 COURSE OUTCOMES

Students who successfully complete this course will have demonstrated the skills required to accomplish the following objectives with a minimum competence level of 70 percent.

1. The student will be able to identify general security concepts such as access controls, authentication, security attacks, malicious code, social engineering, and auditing.

2. The student will be able to identify the different methods used to provide authentication in a network environment.

3. The student will be able to identify the security devices used to secure a network.

4. The student will be able to identify the steps necessary to implement security in a network environment.

5. The student will be able to identify the components that make up a network security infrastructure.

*The outcomes of the IST 266 course are intended to meet the Computer Technology program level student learning outcomes.*

## IST 266 – MAIN TOPICS

Please refer to Syllabus Attachment 1 to review the Tentative Course Schedule. The schedule outlines chapters that will be lectured, when tests will be given, and dates for assignments and laboratories.

| CHAPTER | MAJOR TOPICS |
|---|---|
| Unit 1 | |
| Chapter 1 | Introduction to Security |
| Chapter 2 | Malware and Social Engineering Attacks |
| Chapter 3 | Application and Network Attacks |
| Unit 2 | |
| Chapter 4 | Vulnerability Assessment and Attack Mitigation |
| Chapter 5 | Host, Application and Data Security |
| Chapter 6 | Network Security |
| Chapter 7 | Administrating a Secure Network |
| Unit 3 | |
| Chapter 8 | Wireless Network Security |
| Chapter 9 | Access Control Fundamentals |
| Chapter 10 | Authentication and Account Management |
| Unit 4 | |
| Chapter 11 | Basic Cryptography |
| Chapter 12 | Advanced Cryptography |
| Chapter 13 | Business Continuity |
| Chapter 14 | Risk Mitigation |

***The instructor reserves the right to modify the Plan of Instruction by changing the sequence of text material or testing content.***

## IST 266 – COURSE SPECIFIC REQUIREMENTS

**Special Note to Online Students:** Online students will be REQUIRED to come to the Barton Campus to complete hands-on labs. The number of required on-campus meetings will vary from class to class. Online students will be required to complete the labs to satisfactorily complete the course. Also, the final examination will be scheduled at a time determined by the administration.

## IST 266 – EVALUATION AND GRADING INFORMATION

**Grades for this course will be calculated as follows:**

| | |
|---|---|
| Major Tests | 60 percent |
| Attendance/Homework/Labs | 20 percent |
| Final Exam | 20 percent (75 percent written test and 25 percent hands-on lab test) |

NOTE: ALL GRADED TESTS AND EXAMS ARE RETAINED BY THE INSTRUCTOR.

**Final letter grades** will be issued as follows:

| | | |
|---|---|---|
| A | = | 90 - 100 |
| B | = | 80 - 89 |
| C | = | 70 - 79 |
| D | = | 60 - 69 |
| F | = | 0 - 59 |