IST-263
Introduction to Network Security

Course Description
This course is designed to be an introduction to Network Security concepts and practices. The course is designed to prepare the student to be successful in completing CompTIA’s Security+ certification exam.

Course Focus
Course lab is set up for maximum hands-on operations to increase a student's ability to perform. Students must concentrate on labs by completing all reading assignments.

Text and References

Course Goals
The following list of course goals will be addressed in the course. These goals are directly related to the performance objectives. (*designates a CRUCIAL goal)

1. Security Overview
2. Understanding Attacks
3. Defense Planning
4. Access Control
5. Cryptography Basics
6. Network Monitoring
7. Incident Response
8. Security Policies
9. Risk Management
10. Manageable Network Plan
11. Social Engineering
12. App Development and Deployment
13. Employee Management
14. Mobile Devices
15. Third-Party Integration
16. Physical Threats
17. Device Protection
18. Network Infrastructure Protection
19. Recon and Denial
20. Spoofing and Poisoning
21. Security Appliances
22. Demilitarized Zones (DMZ)
23. Firewalls
24. Network Address Translation (NAT)
25. Virtual Private Networks (VPN)
26. Web Threat Protection
27. Network Access Protection
28. Wireless Overview
29. Wireless Attacks
30. Wireless Defenses
31. Network Threats
32. Network Device Vulnerabilities
33. Network Applications
34. Switch Attacks
35. Switch Security
36. Using VLANs
37. Router Security
38. Intrusion Detection and Prevention
39. Vulnerability Assessment
40. Protocol Analyzers
41. Remote Access
42. Network Authentication
43. Penetration Testing
44. Virtual Networking
45. Software-Defined Networking (SDN)
46. Malware
47. Password Attacks
48. Windows System Hardening
49. Hardening Enforcement
50. File Server Security
51. Linux Host Security
52. Embedded Systems
53. Log Management
54. Audits
55. Email
56. BYOD Security
57. Mobile Device Management
58. Host Virtualization
59. Access Control Models
60. Authentication
61. Authorization
62. Web Application Attacks
63. Internet Browsers
64. Application Development
65. Active Directory Overview
66. Windows Domain Users and Groups
67. Linux Users
68. Linux Groups
69. Linux User Security
70. Group Policy Overview
71. Hardening Authentication 1
72. Hardening Authentication 2
73. Data Management
74. Advanced Cryptography
75. Cryptography Implementations
76. Cryptographic Attacks
77. Symmetric Encryption
78. File Encryption
79. Public Key Infrastructure (PKI)
80. Hashing
81. Data Transmission Security
82. Data Loss Prevention (DLP)
83. Redundancy
84. Backup and Restore
85. Cloud Storage

**Student Contributions**
Each student will complete all lab and quiz work assigned.

**Course Evaluation**
The grading scale is as follows:

<table>
<thead>
<tr>
<th>Score Range</th>
<th>Grade</th>
</tr>
</thead>
<tbody>
<tr>
<td>90 - 100</td>
<td>A</td>
</tr>
<tr>
<td>80 - 89</td>
<td>B</td>
</tr>
<tr>
<td>70 - 79</td>
<td>C</td>
</tr>
<tr>
<td>60 - 69</td>
<td>D</td>
</tr>
<tr>
<td>Below 60</td>
<td>F</td>
</tr>
</tbody>
</table>

**Grading Policy**

<table>
<thead>
<tr>
<th>Component</th>
<th>Weight</th>
</tr>
</thead>
<tbody>
<tr>
<td>Final</td>
<td>20%</td>
</tr>
<tr>
<td>Lab</td>
<td>40%</td>
</tr>
<tr>
<td>Exams</td>
<td>40%</td>
</tr>
</tbody>
</table>

**Course Schedule**
The class meets online.

Approved by: _Kelli Boniecki_  
Kelli Boniecki, Division Dean for Business/Industrial Division  
Developed/Revised: 01/07/2019
ADA STATEMENT
The Technical College of the Lowcountry provides access, equal opportunity and reasonable accommodation in its services, programs, activities, education and employment for individuals with disabilities. To request disability accommodation, contact the counselor for students with disabilities at (843) 525-8228 during the first ten business days of the academic term.

ACADEMIC MISCONDUCT

There is no tolerance at TCL for academic dishonesty and misconduct. The College expects all students to conduct themselves with dignity and to maintain high standards of responsible citizenship.

It is the student’s responsibility to address any questions regarding what might constitute academic misconduct to the course instructor for further clarification.

The College adheres to the Student Code for the South Carolina Technical College System. Copies of the Student Code and Grievance Procedure are provided in the TCL Student Handbook, the Division Office, and the Learning Resources Center.

ATTENDANCE

The College’s statement of policy indicates that students must attend ninety percent of total class hours or they will be in violation of the attendance policy.

- Students not physically attending class during the first ten calendar days from the start of the semester must be dropped from the class for NOT ATTENDING.
- Students taking an online/internet class must sign in and communicate with the instructor within the first ten calendar days from the start of the semester to indicate attendance in the class. Students not attending class during the first ten calendar days from the start of the semester must be dropped from the class for NOT ATTENDING.
- Reinstatement requires the signature of the division dean.

In the event it becomes necessary for a student to withdraw from the course OR if a student stops attending class, it is the student’s responsibility to initiate and complete the necessary paperwork. Withdrawing from class may have consequences associated with financial aid and time to completion.

When a student exceeds the allowed absences, the student is in violation of the attendance policy. The instructor MUST withdrawal the student with a grade of “W”, “WP”, or “WF” depending on the date the student exceeded the allowed absences and the student’s progress up to the last date of attendance or under extenuating circumstances and at the discretion of the faculty member teaching the class, allow the student to continue in the class and make-up the work. This exception must be documented at the time the allowed absences are exceeded.

Absences are counted from the first day of class. There are no "excused" absences. All absences are counted, regardless of the reason for the absence.

- A student must take the final exam or be excused from the final exam in order to earn a non-withdrawal grade.

A copy of TCL’s STATEMENT OF POLICY NUMBER: 3-1-307 CLASS ATTENDANCE (WITHDRAWAL) is on file in the Division Office and in the Learning Resources Center.

ONLINE ATTENDANCE PROCEDURE

For all online courses, students must complete an assignment designated by the instructor during the first week of
Instructors will withdraw students from the class when 90% attendance is not maintained. Attendance in an online course is defined by regular course access and by timely completion of assignments as required by the instructor. Each student will be expected to access the web class at least once a week and complete 90% of assignments on time. Additional access is encouraged and may be necessary for successful completion of classes.

Failure to log in and complete assignments will result in the student being withdrawn from the course. The instructor will assign a grade of “W,” “WP,” or “WF” based upon the student’s academic standing as the last date of attendance, which is the last login. Students are responsible for any financial matters associated with an administrative withdrawal. If a fails to email the instructor (using the my.tcl.edu email account) requesting to be dropped from the course and has not submitted the initial assignment required during the first week of class, the instructor will assign a “Never Attended” code in the student information system (web-advisor) no later than ten calendar days after the first day of the class. Students who are dropped as a result of never attending the course are still responsible for all fees associated with the course.

HAZARDOUS WEATHER
In case weather conditions are so severe that operation of the College may clearly pose a hardship on students and staff traveling to the College, notification of closing will be made through the following radio and television stations: WYKZ 98.7, WGCO 98.3, WGZO 103.1, WFXH 106.1, WWVV 106.9, WLOW 107.9, WGZR 104.9, WFXH 1130 AM, WLVH 101.1, WSOX 1230 AM, WAVE 97.3, WTCV, WTVS, WJWJ TV, and WSAV TV. Students, faculty and staff are highly encouraged to opt in to the Emergency Text Message Alert System. www.tcl.edu/textalert.asp

EMERGENCY TEXT MESSAGE ALERT
Students, faculty and staff are highly encouraged to opt in to the Emergency Text Message Alert System. Participants receive immediate notification of emergency events and weather cancelations via text messaging on their cell phones. Participants can also opt in to receive non-emergency news and announcements. Go to www.tcl.edu. On the homepage, click on “emergency TextAlert at TCL” and fill out the form or go to www.tcl.edu/textalert.asp

SYLLABUS SAFETY ADDENDUM

Purpose
The purpose of this safety addendum is to provide each student with safety guidelines during an incident, emergency, or disaster at TCL. In addition, it provides students guidelines for lockdown procedures, evacuation procedures, and active shooter.

Definitions
An incident is any event, potential or actual, that may impact normal operations but has no immediate health or life threatening consideration or serious effect on the overall functional capacity of the College. An event of this nature should be reported to the Office of the Vice President for Administrative Services. Also notify the off-site campus administrator if applicable.

An emergency is any incident, potential or actual, which may endanger life or health or which affects an entire building or buildings, and will disrupt the overall operations of the College. Outside emergency services will probably be required, as well as major efforts from campus support services. Major policy considerations and decisions will usually be required from the college administration during times of crises. An emergency should be reported immediately by directly using 911 if life or health/injury considerations exist and then to the Office of the President or Vice President for Administrative Services as quickly as possible. Also notify the off-site campus administrator if applicable.

A disaster is any event or occurrence that has taken place and has seriously impaired or halted the operations of the College. In some cases, mass personnel casualties and severe property damage may be sustained. A coordinated effort of all campus-wide resources is required to effectively control the situation. Outside emergency services will be essential. In all cases of disaster, an Emergency Control Center will be activated, and the appropriate support and
operational plans will be executed. The disaster should be immediately reported, first by calling 911 and then to the Office of the President or Vice President for Administrative Services. Also notify the off-site campus administrator if applicable.

**Types of Emergencies**
1. Hurricane
2. Tornado
3. Fire
4. Biochemical or Radiation Spill
5. Explosion/Bomb
6. Downed Aircraft (crash which directly impacts campus operations)
7. Utility Failures
8. Violent or criminal behavior
9. Psychological Crisis

**Procedures**

**Active Shooter**

**Building Evacuation**
1. Building evacuations occur when an alarm sounds and/or upon notification by Security or the Emergency Director.
2. When the building evacuation alarm is activated during an emergency, individuals should exit according to the building evacuation plan and alert others to do the same.
3. Once outside, individuals should proceed to a clear area that is at least 500 feet away from the affected building. Streets, fire lanes, hydrant areas and walkways should be kept clear for emergency vehicles and personnel.
4. Individuals should not return to an evacuated building unless told to do so by Security or the Emergency Director.
5. Individuals should assist persons with disabilities in exiting the building. Elevators are reserved for disabled persons.

**Campus Evacuation**
1. A uniformed Security Guard, the Emergency Director, or an Emergency Resource Team member will announce evacuation of all or part of the campus grounds.
2. All persons (students and staff) are to immediately vacate the campus, or in the case of a partial evacuation relocate to another part of the campus grounds as directed.

**Lockdown**
1. Clear the halls
2. Report to the nearest classroom/office
3. Assist those needing special assistance
4. Ensure classroom/office doors are closed and locked
5. Turn off lights
6. Stay away from doors and windows (out of the line of sight)
7. BE QUIET and follow instructor’s directions
8. Silence cell phones
9. Wait for the “All Clear” before leaving