Stillman College
School of Business
CIT 310 – Network Security (NWS) & Mobile & IoT Security (MIS)

General Class and Course Information

Course number: CIT 310   **Section:** TBD   **Term:** TBD

Course title: Network Security (NWS) & Mobile & IoT Security (MIS)   **Credit hours:** 3

Prerequisite: CIT 302

Professor's Contact Information

Professor's Name: Maria C. Laurent-Rice
Office Location: TBD
Telephone: (469)826-4009
Email address: mlaurentrice@stillman.edu
Email/Phone Response Time: at least 24 hours
Home Page:
Office Hours: via phone upon request via email

Course Description: This course prepares students to understand the basic knowledge of networking and provide understanding of how networks are built and operate, and to give students some experience with basic network analysis tools. Students are exposed to the concept of potential vulnerabilities in a network. This course also prepares students to understand how Mobile Technologies & IoT Security course design is and to provide students with an understanding of the hardware, communications, management and programming environments associated with mobile technologies.

Course Level Student Learning Outcomes (SLOs): As a result of taking this course, the student will be able to
  • Describe the fundamental concepts, technologies, components, and issues related to communications and data networks
  • Design a basic network architecture given a specific need and set of hosts/clients
  • Track and identify the packets involved in a simple TCP connection (or a trace of such a connection)
  • Use a network monitoring tool to observe the flow of packets (e.g., WireShark)
  • Perform network mapping (enumeration and identification of network components) (e.g., Nmap)
  • Describe common network vulnerabilities - Network Security Landscape
      a.   Dark web, TOR (the onion router), VPN (Virtual Private Network, IP2(Invisible Internet Project), TCP/IP, Ports, FTP, DNS (Domain Name Service)
  • Enterprise Network Security
      a.   DMZ and edge networks, Internet server farm, Untrusted networks, Extranet and Internet data centers
  • Anatomy of a Network Attack
      a. Persistent Threat or APT (Advanced Persistent threat
      b. "kill chains" analysis
  • Describe Mobile & IoT Global Trends
  • Explain Mobile IoT Security Landscape
  • Explain Internet megacamon - Mirai botnet
  • Demonstrate End-point Protection
  • Demonstrate how Mobile Security works

Course Learning Objectives: The objectives of this course are to:
  • Understand network attack trends in the financial sector using crypto miners
  • Understand how cyber criminals use networks in the dark web to perform illicit crime activities
  • Learn network protection practices like DNS, VPN
  • Understand enterprise network security practices through the analysis of an advanced persistent threat
  • Explore the mobile and IOT global phenomena and explore recent most threatening IoT cyber-attack scenarios
  • Understand mobile and IoT attack surface

The syllabus and course assignments are subject to change by the instructor as needed. Any changes to this syllabus will be posted online.

Full Course Outline: Click on the following link:
https://stillman.edu/wp-content/uploads/2019/08/2019-2020-Stillman-College-Catalog.pdf

Class Schedule: Online
Class: CIT 230 – Network Security (NWS) & Mobile & IoT Security (MIS)

Textbook(s) Information: From CIA to APT: An Introduction to Cyber Security by Edward G. Amoroso and Matthew E. Amoroso (Free on Kindle) ISBN:978-1-5220-7494-6 or ISBN 10: 1522074945 / ISBN 13: 9781522074946
https://www.amazon.com/CIA-APT-Introduction-Cyber-Security-ebook/dp/B074Q5H6Z2/ref=sr_1_1?crid=1EFEXEOMR01WD&keywords=from+cia+to+apt&qid=1585006819&s=books&sprefix=from+CIA%2Cstripbooks%2C244&sr=1-1&swrs=A863944B709E9FB556693E8C0E1065AB

Methods of Instruction:
1. Lectures: Important material from the text and outside sources will be posted online. Students should plan to take careful notes as not all material can be found in the texts or readings. Discussion is encouraged as is student-procured outside material relevant to topics being covered.
2. Lab/Hands-on Exercises: End of Module activities and online activities will be assigned to reinforce covered material. These assignments may require the application of various software packages.
3. Projects Textbook Exercises: All assignments will be posted in the syllabus to help ensure students keep up with assigned material.
4. IBM Exam and Practice Exams will be administered online. The exams will be to reinforce assigned readings and assignments. The
5. Final exam may be comprehensive in nature.

Unique Requirements of the Class: In-class and online
Course Evaluation Methods:
Grading Scale and Policy:
A=100%-90%
B=89%-80%
C=79%-70%
D=69%-60%
F=59%-0%

Objective: •Exams: Review, Practice •Hands-on Exercises •Lab/Hands-on Exercises •Discussions
20%---Exam: Word, Excel, Access, PowerPoint
10%---Projects/Group/Individual
30%---Quizzes Exam Practice
20%-- Reading/Videos, Lab/Hands-on Exercises
20%--Online Discussions/Participation/Attendance
No Incomplete or WX (Withdrawn for excessive absences) grades will be issued without a valid, written medical excuse.

Late Assignment Policy: See Exams/Projects/Quizzes/Lab schedule due dates in the course outline.
Late assignments such as labs, projects, lab exercises are based on percentage and are as follows:
Any missing assignment deadlines will result in a penalty of 20% of the maximum points for that assignment for each week that it is late; however, late work is always accepted.
*** Final Exam, Exams, and Midterms are excluded ***

Make-up Exam Policy: Prior approval of Instructor only. See Exam/Lab/Projects schedule due dates. There will be **NO make-up** exam except under extreme extenuating circumstances that must be documented.

Class Requirements
Assignments- all assignments (Exams, Projects, Labs, etc…) must be completed using a computer with Microsoft Word and/or other software used in class or lab, and must be submitted online. The use of Stillman student's account allows you to upload assignments and download materials such as lectures, assignments schedules and others (See Lab/Project/Exam Schedule (Due Dates). Prior approval of professor for any changes is required.

The syllabus and course assignments are subject to change by the instructor as needed. Any changes to this syllabus will be posted online.

Material Requirements: Textbook, Computer and Software
Have access to a modern laptop with a windows or Mac operating system with internet connectivity is clearly a requirement and/or use campus computers in the labs. Software to be used in the course includes:
•   MS Office 365 software to present and discuss problems and solutions. A standard suite of "Office-like" software will likely already be installed on your system.

Computer Accounts Required:
1.   Stillman Account: This account allows you to access the software in the Computer Science Labs (BUS Building). These are fully networked labs running Windows.

2.   Stillman/email or Canvas account: All of my communications to you will be sent via your preferred e-mail. Make sure the email stored is the one you want me to use for your class communications.

Class Lab Tools/Specifications:

Technical Requirements: Hardware, Software, and Email Accounts (Stillman, gmail)
•   A computer with Internet access. You may use your home computer or the computers in the Geneva Hall or Wynn Center labs
•   Available software programs use in the lab. Contact Helpdesk for help with technical problems.
helpdesk@stillman.edu
Hardware
This course requires a personal computer.
Operating Systems:
  • Mac – This course has been successfully tested using Mojave.
  • Windows – This course has been successfully tested using Windows 10.
Web Browser:
  • Mozilla Firefox, Google Chrome – All labs have been tested successfully using Firefox.
Software Installed Locally:
  • Zenmap • Wireshark • PuTTY • Mozilla Firefox
Tools accessed through Web Browser:
  • IBM X-Force Exchange
Software accessed through IBM Cloud:
  • QRadar
    o QRadar Vulnerability Manager
    o Watson User Behavior Analytics
    o i2 Analyst's Notebook

Class Policies and Methodology

Attendance: Professors are required to take attendance.   Initial discussion post due by Monday of each week in the discussion forum.
Electronic Device Use: Cell phones, PC, Tablet, Desktop, etc...
Email Policy: The professor will communicate with the students via email and in class. In some cases, test information or information about work due will be communicated via email so it is imperative to check your email regularly.
Equipment and Supplies: Students may need a storage device such as a USB flash drive as a back-up on which to save tutorials, labs, and any assignments or projects generated in or outside the class
Professor's Expectations: Students must complete all assignments in order to receive a grade. Students will be expected to put in at least 5 additional hours per week to complete required assignments.

University Policies and Web Information

Academic Dishonesty
Academic dishonesty is the intentional misrepresentation of all or part of one's work to deceive for personal gain or assisting another to do the same. Academic dishonesty includes, but is not limited to, cheating, plagiarism, fabrication, and/or submission of work, via written or electronic means, all or any part of which was developed in response to the assignment of an instructor.

The syllabus and course assignments are subject to change by the instructor as needed. Any changes to this syllabus will be posted online.

Consequences for Academic Dishonesty: Consequences for Academic Dishonesty: Action(s): Automatic "F" on assignment, course or possible expulsion from the institution. Please refer to Stillman College Student Handbook: https://stillman.edu/wp-content/uploads/2019/02/Student-Handbook-2018-2019-final.pdf

Computer Competency Component: Each student will, to the satisfaction of the professor, demonstrate a fundamental understanding of basic computer operations through various professor-determined exercises and/or assignments.

Disability Support Services: Students with disabilities are advised, in compliance with federal and state laws, that accommodations and services are available through the office of American Disability Act (ADA). It is the student's responsibility to contact Disabled Student Services Advisors and to submit appropriate documentation prior to receiving services. For accommodations due to a disability, please contact the instructor within the first week of class. In addition, please see the website at: https://stillman.edu/about-us/help/

Student Responsibility Policy: When a student attends the University, s/he becomes subject to its jurisdiction. Students are expected to conduct themselves in a responsible manner, in all areas of campus life. By enrolling, they pledge to obey the rules and regulations of the University and are responsible for observing all University policies and procedures as published in the student handbook, the University catalog and other University publications. The student will be responsible for preparing for class and completing assignments on time.

Please refer to Stillman College Student Handbook: https://stillman.edu/wp-content/uploads/2019/02/Student-Handbook-2018-2019-final.pdf

Withdrawal Policy for Individual Courses: The Business Department will adhere to the University policy stated in the Schedule of Classes. It is the student's responsibility to add/drop a class. Please visit the following website: https://stillman.edu/programs/academic-calendar/

Important Contact Information:
helpdesk@stillman.edu   Help with technical problems in Business computer labs.

Department Contact Information

Department Contact Name: Dean Isaac McCoy
Office Location: Houston H. Harte Center – Room# 209
Telephone: (205)248-3401
Email address: imccoy@stillman.edu

The syllabus and course assignments are subject to change by the instructor as needed. Any changes to this syllabus will be posted online.