Course Description:
This course is a laboratory-based course that focuses on the standards and technologies used to establish inter-network structures that will support a TCP/IP data stream for higher-level services to operate over. This course introduces firewalls, Intrusion Prevention Systems (IPS), and Intrusion Detection Systems (IDS) technology. Topics include Windows, Linux, Check Point and Cisco firewalls, TCP/IP and open system interconnection (OSI) models, attack traffic analysis, and network based and host based hardware and software. Device configuration will be examined and evaluated with appropriate laboratory exercises.

Pre-requisite:
COSC 2365 System Administration I, COSC 2366 Network Administration I, and COSC 4365 Systems Administration II

Student Learning Outcomes:
Upon completion of this course, students will be able to:
- Evaluate the effectiveness firewalls.
- Evaluate effective Intrusion Prevention Systems (IPS) and Intrusion Detection System (IDS) systems.
- Mastery of packet analysis
- Understand how to effectively apply and deploy technologies and administrative tools in an organizational environment.

Course Text:
- Required:
  Linux Firewalls

Grading Policy:
Your course grade will be decided on your performance in the homework assignments, quizzes, two mid-term exams, and the final exam. The distribution of points is as follows:

1. Homework assignments and quizzes worth 30%.
2. Two mid-term exams worth 50% (exam 1 worth 25% & exam 2 worth 25%).
3. Final exam worth 20%. 
Grading scale: A: 100-90, B: 89-80, C: 79-70, D: 69-60, and F: 59-0.

Course Organization and Policies:

Course Syllabus: We will meet in lecture on Tuesday and Thursday, when new material will be presented. Non-text material may also be included in the lectures. The assignments, quizzes, and exams will be given during the class hours. You are responsible for all the material presented during the lecture.

Exams: Exams will cover all lecture, assignments, quizzes and reading material. Exams must be taken on the hour they are scheduled. In the event, if you cannot attend the class to take the exam due to some emergency or some unavoidable situation (such as serious illness, death in the family, participation in university sports, religious observations, and so on) you must notify me as soon as possible before the exam and also you must validate your absence by providing me a document (e.g., with a letter from your doctor)

Homework Assignments and Quizzes: Approximately 6 homework assignments will be given. Partial credit will be given for incomplete assignments. In addition, there may be a quiz from time-to-time. They will significantly be based on the material from the lectures and other material considered essential for the successful completion of this course. They will be handed out in the class during the lecture. The submission details will be provided to you along with the assignment. All the homework assignments are due at the beginning of the class on the due date. If the student is absent on the due date, it is the student’s responsibility to see to it that the assignment is submitted on the designated date. An assignment that is turned in after the class on the due date is considered one day late. There is a penalty for late submissions. 10% penalty for 1-2 days late. 25% penalty for 3-4 days late. 75% penalty for 5 days late. 100% penalty (i.e. no credit) if submitted after 5 days. If you have not completed your assignment by the due date, you should submit the work you have done for partial credit. No work will be accepted once the graded work has been returned or the solution has been disclosed to the class, except for unusual circumstances which the instructor feels reasonable. Be sure to backup your work. Note that any kind of hardware or software failure or machine unavailability in the lab does not merit an extension on the assignment. Diskettes upon which major examinations, assignments, projects or papers submitted may be retained by the instructor as a permanent record of the student’s work.

Grading Error: All questions concerning a test score or grading of a returned test or assignment must be resolved within one week. It is always a good idea to keep all of your work until the end of the semester. In case of any recording errors or doubts, you may produce them for correction or verification.

Attendance: You must attend all classes. In class attendance will affect your grade. You are responsible for any materials covered or handed out or announcements made for the tests, homework assignments in your absence. Records of your attendance will be maintained and reported to the university. Students found missing classes without the instructor’s permission will be automatically withdrawn from the course.

Absence from class: Students are responsible for all materials covered in class and assigned. Should a student be absent from class, it is his/her responsibility to get the notes, etc. for that missed class. More important, should there be assignments, it is the student responsibility to obtain such
assignments. No excuse will be accepted for assignments not turned in because the student was absent when it was due.

Other Policies: Cell phones and pagers must be turned off during class. First violation receives a warning. All succeeding violations result in a ten point deduction off the final exam. Any violation during a quiz or exam results in a ten percent deduction off the corresponding paper. No warnings for quizzes or exams.

Academic Integrity/Plagiarism

University students are expected to conduct themselves in accordance with the highest standards of academic honesty. Academic misconduct for which a student is subject to penalty includes all forms of cheating, such as illicit possession of examinations or examination materials, falsification, forgery, complicity or plagiarism. (Plagiarism is the presentation of the work of another as one’s own work.) In this class, academic misconduct or complicity in an act of academic misconduct on an assignment or test will result in a zero.

Dropping a Class

I hope that you never find it necessary to drop this or any other class. However, events can sometimes occur that make dropping a course necessary or wise. Please consult with me before you decide to drop to be sure it is the best thing to do. Should dropping the course be the best course of action, you must initiate the process to drop the course by going to the Student Services Center and filling out a course drop form. Just stopping attendance and participation WILL NOT automatically result in your being dropped from the class. November 7 is the last day to drop a class with an automatic grade of “W” this term.

Classroom/professional behavior

Texas A&M University-Corpus Christi, as an academic community, requires that each individual respect the needs of others to study and learn in a peaceful atmosphere. Under Article III of the Student Code of Conduct, classroom behavior that interferes with either (a) the instructor’s ability to conduct the class or (b) the ability of other students to profit from the instructional program may be considered a breach of the peace and is subject to disciplinary sanction outlined in article VII of the Student Code of Conduct. Students engaging in unacceptable behavior may be instructed to leave the classroom. This prohibition applies to all instructional forums, including classrooms, electronic classrooms, labs, discussion groups, field trips, etc.

Statement of Civility (can be in place of classroom/professional behavior)

Texas A&M University-Corpus Christi has a diverse student population that represents the population of the state. Our goal is to provide you with a high quality educational experience that is free from repression. You are responsible for following the rules of the University, city, state and federal government. We expect that you will behave in a manner that is dignified, respectful and courteous to all people, regardless of sex, ethnic/racial origin, religious background, sexual orientation or disability. Behaviors that infringe on the rights of another individual will not be tolerated.

Grade Appeals (College of Science and Engineering Version)
As stated in University Procedure 13.02.99.C2.01, Student Grade Appeal Procedures, a student who believes that he or she has not been held to appropriate academic standards as outlined in the class syllabus, equitable evaluation procedures, or appropriate grading, may appeal the final grade given in the course. The burden of proof is upon the student to demonstrate the appropriateness of the appeal. A student with a complaint about a grade is encouraged to first discuss the matter with the instructor. For complete details, including the responsibilities of the parties involved in the process and the number of days allowed for completing the steps in the process, see University Procedure 13.02.99.C2.01, Student Grade Appeal Procedures. These documents are accessible through the University Rules website at http://www.tamucc.edu/provost/university_rules/index.html, and the College of Science and Engineering Grade Appeals webpage (http://sci.tamucc.edu/students/GradeAppeal.html). For assistance and/or guidance in the grade appeal process, students may contact the chair or director of the appropriate department or school, the Office of the College of Science and Engineering Dean, or the Office of the Provost.

Disabilities Accommodations

The Americans with Disabilities Act (ADA) is a federal anti-discrimination statute that provides comprehensive civil rights protection for persons with disabilities. Among other things, this legislation requires that all students with disabilities be guaranteed a learning environment that provides for reasonable accommodation of their disabilities. If you believe you have a disability requiring an accommodation, please call or visit Disability Services at (361) 825-5816 in Corpus Christi Hall 116.

If you are a returning veteran and are experiencing cognitive and/or physical access issues in the classroom or on campus, please contact the Disability Services office for assistance at (361) 825-5816.

Statement of Academic Continuity

In the event of an unforeseen adverse event, such as a major hurricane and classes could not be held on the campus of Texas A&M University–Corpus Christi; this course would continue through the use of Blackboard and/or email. In addition, the syllabus and class activities may be modified to allow continuation of the course. Ideally, University facilities (i.e., emails, web sites, and Blackboard) will be operational within two days of the closing of the physical campus. However, students need to make certain that the course instructor has a primary and a secondary means of contacting each student.

Academic Advising: The College of Science and Technology requires that students meet with an Academic Advisor as soon as they are ready to declare a major. The Academic Advisor will set up a degree plan, which must be signed by the student, a faculty mentor, and the department chair.
Tentative Course Schedule (Subject to change)

08/27/14: Introduction – Linux – Chp01 iptables

09/01/14: Linux – Chp01 iptables
            HW01

09/08/14: Linux – Chp02, 03, & 04 Network Layer, Transport Layer & Application Layer
            Attacks – HW02

09/15/14: Linux – Chp05 & 06 Port Scan Attack Detector (PSAD) & Suspicious Traffic
            HW03

09/22/14: Linux – Security Onion
            HW04

09/29/14: Check Point Firewall, Exam 1 Review
            Exam 1

10/06/14: Check Point Firewall
            HW05

10/13/14: Check Point Firewall
            HW06

10/20/14: Check Point Firewall
            HW07

10/27/14: Cisco ASA

11/03/14: Cisco ASA
            Exam 2

11/10/14: Attack Analysis – Wireshark, snort, and splunk
            Exam 2 Review

11/17/14: Attack Analysis - Lower Layer Protocols – arp, ip, tcp

11/24/14: Attack Analysis - Lower Layer Protocols – tcp, udp, icmp

12/01/14: Attack Analysis - Upper Layer Protocols - dhcp, dns, http

Final Exam

Note: This syllabus represents a general plan for the course. Deviations from this syllabus may be
necessary during the semester and changes will be announced in class.