Rowan University

College of Science and Math

Course No: ASRC Course Title: Advanced Cyber Security Principles and Applications

Fall 2018

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Course Description:

This course will cover the material within a specific area in the field of cyber security Called, Network Security. Network security is extremely important in today's world. Confidential and sensitive information is routinely transmitted by the governments, military, private businesses, and individuals. The data transmitted over the Internet often Requires encryption, authentication, and integrity verification. Generally, the field of Network security addresses the issues of protecting the data during their transmission From one device to other devices on the network. In addition network security deals with Protection of network devices from intruders, viruses, spyware, denial of service attacks, and other forms of malware.

This course will introduce the students to fundamental principles of network security. Cyber Security Specialization. This course will examine constantly evolving design and architecture of network security, exposing students to existing and developing technologies and standards.

Teaching / Learning Method

I believe that learning thrives in an environment where students are active contributors of information. As such, the course will be taught in an interactive fashion and students will be expected to actively participate in their learning experience.

A variety of teaching methods will be used to achieve the course objectives. These include lectures, instructor- and student-led discussions, presentations, and in-class exercises. In

addition, experts from different organizations (business, academia, and government) may be invited to speak to the class.

Lastly, to reinforce the lectures, a number of hands-on, as well as computer-animated exercises/experiences may be afforded.

Statement of Course Objectives:

Upon successful completion of this course, students should be able to:

- Symmetric and asymmetric cryptosystems
- Tools, protocols and mechanisms for providing data integrity, authentication, privacy, and key management
- Principles of network security
- Security threads to the network systems
- Common network security protocols
- Understanding some principle hacking methodologies

Meeting times: Thursday 4:30pm-7:00pm

Meeting Locations: ASRC- TBD

Text(s)

Title: CompTIA Security+ SY0-501 Cert Guide. 2nd Edition
Author: David L. Prowse
Publisher: Pearson
Bound version: (ISBN-13: 9780789759122)

Attendance:

The Instructor expects your attendance at each and every class; however, actual attendance is up to the student. Grade performance is a demonstrated function of attendance, preparation and participation. You can get behind very easily by skipping classes, resulting in a poor understanding of the material, which will show up as a poor grade for the class. Any class sessions missed by the student are the student's responsibility to make up, not the instructor's. Late arrival that causes disruption, early departure that causes disruption, excessive conversation among students (a disruption in its own right), inappropriate use of electronic devices that cause disruptions and other actions that disrupt the classroom are unacceptable.

http://www.rowan.edu/provost/policies/documents/AttendancePolicy-FacultyStudentsResponsibilities5-31-12_000.pdf

Policy on Plagiarism:

Plagiarism is a form of academic dishonesty which includes but is not limited to submitting someone else's work as your own and working on the individual assignments in groups. It is college policy that students who commit an act of academic dishonesty may be subject to failure in the course, suspension from the College, or both. See the official Rowan University Academic Integrity Policy at:

http://www.rowan.edu/provost/policies/AcademicIntegrity.htm

If you use materials that you've obtained on the Internet, from a book, etc., for example as part of a programming assignment, you must include an appropriate reference. To use such materials without proper attribution is a form of plagiarism. I will make a reasonable effort to catch plagiarizers, and it will not be tolerated.

Academic Integrity Statement:

Every University student is responsible for upholding the provisions of the Student Code of Conduct, as published in the Rowan University Student Handbook. The Student Code of Conduct addresses the University's policy on academic honesty, including provisions regarding plagiarism and cheating, unauthorized access to University materials, misrepresentation/falsification of University records or academic work, malicious removal, retention, or destruction of library materials, malicious/intentional misuse of computer facilities and/or services, and misuse of student identification cards.

Students are encouraged to study together and to work together on class assignments and lab exercises, however, academic honesty will be strictly enforced in this class.

Frequently students will be provided with “take-home” lab assignments. It is the student’s responsibility to ensure they fully understand to what extent they may collaborate or discuss content with other students. If lab assignment requires “no outside assistance” this includes, but is not limited to, books, publications, the Internet, students are required to provide citations for sources, proper use of citation support is expected.

Additional information can be found at the following locations.
http://www.apa.org/journals/webref.html
http://bailiwick.lib.uiowa.edu/journalism/cite.html
http://www.indiana.edu/~wts/wts/plagiarism.html
http://plagiarism.phys.virginia.edu/links.html
http://webster.commnet.edu/mla/plagiarism.htm

Guidelines for submitting work:

All homework assignments are to be submitted either by email to the instructor’s email address at the top of this syllabus or within Blackboard (instructions will be provided on the quiz). Assignments require an acknowledgement from the instructor that the assignment was received, if you did not get the acknowledgment, the instructor did not get the assignment.

All email submissions must be received prior to the stated deadline. The following format must be used when submitting assignments via email.

Subject: (CS 07.351- Course number) your name LAB# or HOMEWORK# Example: CS 07.351 Surname Lab or Homework 1

Late assignments will not be accepted!

Withdrawal Policy:

Please refer the Rowan University Student Handbook or visit the Registrar's Office

Disability Statement

Any student with a documented disability needing academic adjustments is requested to notify the instructor as early in the semester as possible, and must do so before the mid-term exam. Verification from disabled Student Support Services is required. All discussions will remain confidential.

Criteria and Procedures for Evaluating Student Performance:

Examinations/Quizzes/Project

This course has three Blackboard examinations, two quizzes. The exams and quizzes may include materials from lecture notes, assigned text, and supplemental readings. Students who miss an exam for reasons of illness, death in the family, inclement weather, religious observances, official University activities, or for matters of personal conscience should inform your instructor, ideally with a written excuse, before the fact or as soon as possible thereafter. Otherwise, no make-up exam will be given.

Grading

	Points Possible
Midterm Exam 25% of Final Grade	100 pts
Final Exam 25% of Final Grade	100 pts
Semester Project 35% of Final Grade	100 pts
Team Assignments/Labs/Quizzes/Homework 15% of Final Grade	100 pts
TOTAL	**400 pts**

In the event that select course outcome assessments are not offered, the course grade will be based on "earned points to date divided by total points offered to date".

Grading Scale (based off earned points divided by total points offered):

A	points >=93
A-	90=< points <93
B+	87=< points <90
B	83=< points <87
B-	80=< points <83

C+	77=< points <80
C	73=< points <77
C-	70=< points <73
D+	67=< points <70
D	63=< points <67
D-	60=< points <63
F	points <60

Relevant University-wide Policies

Use the hyperlink above to access the following University-wide Policies: Classroom Behavior Policy, Academic Integrity Policy, Student Accommodation Policy, and Laptop Computers in the Classroom, University Attendance Policy

Your academic success is important. If you have a documented disability that may have an impact upon your work in this class, please contact me. Students must provide documentation of their disability to the Academic Success Center in order to receive official University services and accommodations. The Academic Success Center can be reached at 856-256-4234. The Center is located on the 3rd floor of Savitz Hall. The staff is available to answer questions regarding accommodations or assist you in your pursuit of accommodations. We look forward to working with you to meet your learning goals.

Student Requirements:

1. Assignments are due as specified. Late assignments are subject to a 20% penalty per calendar day; assignments that are 5 calendar days late will not be accepted.
2. Each student should promptly check posted grades and inform the instructor of any error. Posted grades will not be changed after 5 calendar days of posting.
3. If a student misplaces course materials or fails to acquire the materials during the class they were distributed, he/she is responsible to get class information, assignments, and materials from his/her classmates.
4. Each student is responsible to retain personal copies of all submitted materials. These materials must be kept until the student receives his/her final course grade from the Registrar.
5. Each student should check email and Blackboard on a daily basis.
6. Each student should inform the instructor of course conflicts with religious holidays/events well in advance of the conflict.

White Hat Agreement:

As a part of this class, you will be exposed to hacking techniques, tools, and systems, related to Information Security. When used properly, these tools and techniques allow Information Security Professionals to better understand the vulnerabilities and security precautions of systems and or applications. Misused (either intentionally or accidentally) these tools can result in breaches of security, damage to data or other undesirable results.

Since some of the labs you will be exposed to both in class and those labs you will conduct at home, you must agree to the following:

I agree to:

- Examine only the areas outlined within the labs for the course.
- Maintain the confidentiality of any private information learned through the course exercise.
- Abide by the computing policies of Rowan University and by all laws governing use of computer
  resources on campus.

I agree to NOT:

- Attempt to gain unauthorized access to any system, server, network hardware or other network device
  on any University system or any systems identified during home lab exercises.
- Disclose any private information that I discover as a direct or indirect result of this course exercise.
- Take actions that will modify or deny access to any data or service not owned by me.
- Attempt to perform any actions or use utilities presented in the laboratory outside the confines and
  structure of the labs.
- Utilize any security vulnerabilities in the course or beyond the duration of the course exercise.
- Pursue any legal action against the course instructors or the University for consequences related to this course.

The instructor reserves the right to modify the organization and administration of the course.

Week	Date	Topic	Notes / Due Dates
1	Sept. 6	Chp 1	Introduce Syllabus, Course Goals, Schedule, Textbook, Team Review, etc.
2	Sept. 13	Chps 2, 3	
3	Sept. 20	Chps 4, 5	Lab
4	Sept. 27	Chps 6, 7	Lab
5	Oct. 4	Chp 8	
6	Oct.11	Chp 8, 9	also exam review
7	Oct. 18	**Assessment**	**Exam #1** (Chapters 1 - 9)
8	Oct. 25	Chps 10, 11	
9	Nov. 1	Chp 12	Lab
10	Nov. 8	Chp 13	
11	Nov. 15	Chp 14	Lab
12	Nov. 22		No Class for Thanksgiving holiday
13	Nov. 29	Chps 15 ,16	Lab
12	Dec. 6	Chp 17	Semester Project is Due
13	Dec. 13	Chp 18	also exam review
14	Dec. 18	Finals Week/ Assessment	**Exam** (Chapters 10 - 18)