SELECTED TOPICS/Introduction to Cryptography: COSC 4590
School of Engineering & Computing Sciences
Summer 2019

A. COURSE INFORMATION

Course number/section: COSC 4590.001
Class meeting time: TR 10:00 -11:55 AM
Class location: CI 230
Course Website: http://bb9.tamucc.edu

B. INSTRUCTOR INFORMATION

Instructor: Dr. Saman Desilva
Office location: CI 331
Office hours: TR 12:00 – 1:00PM, MW 12:00-1:00 PM
Telephone: (361) 825-3831
E-mail: saman.desilva@tamucc.edu
Appointments: email

C. COURSE DESCRIPTION

Catalog Course Description
This course introduces the basic concepts of cryptography and computer security. Topic includes theoretical and practical prospective cryptography, vulnerabilities, security threats on cryptography and use of cryptography tools. The course will focus on setting up secure network infrastructure and computer systems using cryptography tools. PreReq: COSC 3366 Network Security or faculty permission.

D. PREREQUISITES AND COREQUISITES

Prerequisites
COSC 3366 - Network Security

E. REQUIRED TEXTBOOK(S), READINGS AND SUPPLIES

Required Textbook(s)
- Cryptography Engineering: Design Principles and Practical Applications 1st Edition
  ISBN-10: 0470474246
F. STUDENT LEARNING OUTCOMES AND ASSESSMENT

Assessment is a process used by instructors to help improve learning. Assessment is essential for effective learning because it provides feedback to both students and instructors. A critical step in this process is making clear the course’s student learning outcomes that describe what students are expected to learn to be successful in the course. The student learning outcomes for this course are listed below. By collecting data and sharing it with students on how well they are accomplishing these learning outcomes students can more efficiently and effectively focus their learning efforts. This information can also help instructors identify challenging areas for students and adjust their teaching approach to facilitate learning. By the end of this course, students should be able to:

1. Understand of concepts of cryptography
2. Detail knowledge of PKI infrastructure
3. Knowledge of vulnerabilities in cryptography
4. Use of cryptography tools

G. INSTRUCTIONAL METHODS AND ACTIVITIES

Instructional methods will consist of lectures, in-class exercises and homework assignments.

H. MAJOR COURSE REQUIREMENTS AND GRADING

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

<table>
<thead>
<tr>
<th>ACTIVITY</th>
<th>FINAL GRADE</th>
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<tbody>
<tr>
<td>Exams</td>
<td>50</td>
</tr>
<tr>
<td>Quizzes</td>
<td>10</td>
</tr>
<tr>
<td>Labs/Assignments</td>
<td>40</td>
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</tbody>
</table>

**Grading scale:** A: 100-90, B: 89-80, C: 79-70, D: 69-60, and F: 59-0.

**Homework:** Approximately 6-8 homework assignments will be given.

I. COURSE CONTENT/SCHEDULE

<table>
<thead>
<tr>
<th>WEEK</th>
<th>TOPIC</th>
<th>CHAPTER</th>
<th>ASSIGNMENTS</th>
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<tbody>
<tr>
<td>1</td>
<td>Introduction to Cryptography</td>
<td>1 &amp; 2</td>
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Note: Changes in this course schedule may be necessary and will be announced to the class by the Instructor. The assignments and exams shown are directly related to the Student Learning Outcomes described in Section F.

J. COURSE POLICIES

Course Syllabus: We will meet for lectures 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 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.

Missed Exam: 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 8-12 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.

**Extra Credit:** There is no EXTRA CREDIT

**Academic Honesty Policy:** You are expected to avoid all forms of academic dishonesty as
defined in Catalog. In addition, students are expected to behave in an ethical manner in all class
activities. If you feel uncertain about a particular activity, please speak to me BEFORE problems
arise. Ethical behavior is a requirement for passing this course. All work submitted for grading
must be the student's own work. Plagiarism will result in a score of 0 (zero) for the work or
dismissal from the course and the Dean of Students office will be notified. No copying from
another student's work, of any class, is allowed. It is the student's duty to allow no one to copy
his or her work. Anyone found cheating and/or copying, in the exams or assignments, in the
instructor's opinion, will receive an automatic F for the course.

**Collaboration:** There is no collaboration allowed on homework assignments.

**Attendance:** You must attend all classes, 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.
Cell Phone Use: Cell phones and pagers must be turned off during class. First violation receives a warning. All succeeding violations result in a ten points deduction on the last exam. Any violation during a quiz or exam results in a ten percent deduction off the corresponding paper. No warnings for quizzes or exams.

Laptop Use: Laptops, Tablets cannot be used in the class.

Food in Class: No food in the class or labs.

Student Security Statement: Please read the Student Security Statement.

K. COLLEGE AND UNIVERSITY POLICIES

• Academic Integrity (University)
  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 failing grade.

• 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
  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.
• **Deadline for Dropping a Course with a Grade of W (University)**
  The grade of W will be assigned to any student officially dropping a course. Please consult with the instructor before you decide to drop to be sure it is the best thing to do. Just stopping attendance and participation **WILL NOT** automatically result in your being dropped from the class. Should dropping the course be the best course of action, visit the Office of the University Registrar for the Course Drop Form that **must** be submitted. No student is eligible to receive a W without completing the official drop process by this deadline. Please consult the Academic Calendar ([http://www.tamucc.edu/academics/calendar/](http://www.tamucc.edu/academics/calendar/)) for the last day to drop a course.

• **Grade Appeals (College of Science and Engineering)**
  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](http://www.tamucc.edu/provost/university_rules/index.html), and the College of Science and Engineering Grade Appeals webpage at [http://sci.tamucc.edu/students/GradeAppeal.html](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.

• **Disability Services**
  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 (361) 825-5816 or visit Disability Services 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.

  [http://disabilityservices.tamucc.edu/](http://disabilityservices.tamucc.edu/)

• **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.

L. OTHER INFORMATION

• Academic Advising
  The College of Science & Engineering 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. Meetings are by appointment only; advisors do not take walk-ins. Please call or stop by the Advising Center to check availability and schedule an appointment. The College’s Academic Advising Center is located in Center for Instruction 350 or can be reached at (361) 825-3928.

GENERAL DISCLAIMER

I reserve the right to modify the information, schedule, assignments, deadlines, and course policies in this syllabus if and when necessary. I will announce such changes in a timely manner during regularly scheduled lecture periods.