



CIS 6930
Info. Security and Privacy in Dist. Systems
19618, 009, 3
College of Engineering, Computer Science and
Engineering

COURSE SYLLABUS

Semester: Spring 2019
Class Meeting Days: Friday
Class Meeting Time: 11:00am to 1:45pm
Class Meeting Location: CPR 123
Instructor: Dr. Sriram Chellappan
Office Location: ENB 317
Office Hours: 12:00 to 1:30pm MW
Phone Number: 813-974-1379
Email: sriramc@usf.edu

I. Welcome!

This is a course that will cover advanced security concepts beyond traditional offerings. Emphasis will be made on all aspects of cyber security including vulnerabilities, threats, attacks and defenses in distributed systems.

II. University Course Description

This course covers topics in information security and privacy in distributed computing systems like encryption, authentication, anonymity, traceback, denial of service, forensics etc. in wired and wireless systems and networks.

III. Course Prerequisites

Fundamentals of Computer Networking

IV. Course Purpose

Modern distributed computing systems are increasingly vulnerable to new classes of attacks from a security and privacy perspective. This class a variety of security topics in distributed systems with sufficient depth on understanding threats, attacks and defenses.

V. How to Succeed in this Course

Attend classes, submit assignments, ask questions, read about attacks in the industry today/ their impacts, dig deeply into the issues presented in class, see how the material learned is relevant in current contexts, ask questions, and do well in exams and the project. Videos of lectures will be posted for every topic. You are expected to view them carefully, take notes and ask follow up questions in class.

VI. Course Topics

- 1) Emerging vulnerabilities, threats, attacks, defense mechanisms and analysis tools for distributed systems security
- 2) How to formally define metrics to analyze security systems performance
- 3) How to understand tradeoffs between security and other aspects like system design, energy efficiency and overhead
- 4) Understand challenges in wired and wireless systems security
- 5) Understand ethical aspects of cyber security

VII. Student Learning Outcomes

At the conclusion of the course, students will be expected to get a clear and in-depth understanding of state of the art in information security and privacy in emergent computing systems from the perspective of attacks and defenses.

VIII. Readings and Course Materials

Materials will be posted throughout the class as reading materials on Canvas. Videos of lectures will be posted for every topic. You are expected to view them.

IX. Supplementary (Optional) Texts and Materials

None.

X. Grading Scale

Tentative Grading Scale (%)	
94-100	A
90 – 93	A-
87 – 89	B+
84 – 86	B
80 – 83	B-
77 – 79	C+
74 – 76	C
70 – 73	C-
67 – 69	D+
64 – 66	D
60 – 63	D-
0 – 59	F

XI. Grade Categories and Weights

Exam 1:	40%
Final Exam:	40%
Project:	20%

XII. Project Assignments and Exams

Exam 1: Week 9 – Tentative

Project: Week 14 – Tentative

Final Exam – Finals Weeks – Monday April 29, 8pm to 10pm in class

XIII. Grade Dissemination

Graded tests and materials in this course will be returned individually. You can access your scores at any time using "Grades" in Canvas. You are strongly recommended to do so.

XIV. Course Schedule

Topics Covered	
Module 1	Introduction to Basic Concepts in Security and Privacy
Module 2	Key Management in Distributed Sensor Networks
Module 3	Security in RFID Network Systems
Module 4	Secure Communications in Emerging Vehicular Networks
Module 5	Intrusion Detection in Wireless Sensor Networks
	Exam 1
Module 6	Internet Worms and Distributed Denial of Service Attacks
Module 7	Combating DDoS Attacks
Module 8	IP Traceback
Module 9	Anonymity on the Internet
Module 10	Human Centered Cyber Security Designs
	Exam 2

XV. Course Policies: Grades

Late Work Policy: Late work will not be accepted, unless prior arrangements have been made with instructor for unavoidable reasons (other professional commitments, religious events etc.), or documented medical reasons (with a doctor note). No make-ups for exams are allowed, unless prior arrangements are made with instructor, or for documented medical reasons.

Extra Credit Policy: There is none

Grades of "Incomplete": The current university policy concerning incomplete grades will be followed in this course. An "I" grade may be awarded to a student only when a small portion of the student's work is incomplete and only when the student is otherwise earning a passing grade. The time limit for removing the "I" is one week, and will be considered only under extenuating circumstances.

Rewrite Policy: There is none

Make-up Exams Policy: No make-ups for exams are allowed, unless prior arrangements are made with instructor, or for documented medical reasons.

Exam Retention Policy: They will be retained for one week after the Final exam.

Essay Commentary Policy: There are no essays for this class.

Group Work Policy: All work must be your own. Group work is not permitted under any circumstances.

Final Examinations Policy: All final exams are to be scheduled in accordance with the University's final examination policy.

XVI. Course Policies: Technology and Media

Email is the preferred way of communication for this course. I mostly use Canvas to send emails about assignments, course materials, deadlines, exam dates etc. Please make sure there is space to receive emails. I also prefer email, or face to face as the best form of communication with me. Videos of lectures will be posted for every topic. You are expected to view them. If you need help learning how to perform various tasks related to this course or other courses being offered in Canvas, please view the following videos or consult the Canvas help guides. You may also contact USF's IT department at (813) 974-1222 or help@usf.edu. Regarding usage of laptops, it is upto you. Please ensure that other students are not disturbed with your laptop use (via key stroke sounds, audio etc.). You can use audio recorders in class as long they are not intrusive.

XVII. Course Policies: Student Expectations

Academic Integrity

Academic integrity is the foundation of the University of South Florida System's commitment to the academic honesty and personal integrity of its university community. Academic integrity is grounded in certain fundamental values, which include honesty, respect, and fairness. Broadly defined, academic honesty is the completion of all academic

endeavors and claims of scholarly knowledge as representative of one's own efforts. The final decision on an academic integrity violation and related academic sanction at any USF System institution shall affect and be applied to the academic status of the student throughout the USF System, unless otherwise determined by the independently accredited institution. The process for faculty reporting of academic misconduct, as well as the student's options for appeal, are outlined in detail in [USF System Regulation 3.027](#).

Disruption to Academic Progress

Disruptive students in the academic setting hinder the educational process. Disruption of the academic process is defined as the act, words, or general conduct of a student in a classroom or other academic environment which in the reasonable estimation of the instructor: (a) directs attention away from the academic matters at hand, such as noisy distractions, persistent, disrespectful or abusive interruption of lecture, exam, academic discussion, or general University operations, or (b) presents a danger to the health, safety, or well-being of self or other persons.

Academic Grievance Procedure

The purpose of these procedures is to provide all undergraduate and graduate students taking courses within the University of South Florida System an opportunity for objective review of facts and events pertinent to the cause of the academic grievance. An "academic grievance" is a claim that a specific academic decision or action that affects that student's academic record or status has violated published policies and procedures, or has been applied to the grievant in a manner different from that used for other students.

Disability Access

Students with disabilities are responsible for registering with Students with Disabilities Services (SDS) (SVC 1133) in order to receive academic accommodations. SDS encourages students to notify instructors of accommodation needs at least five (5) business days prior to needing the accommodation. A letter from SDS must accompany this request.

Sexual Misconduct / Sexual Harassment

USF is committed to providing an environment free from sex discrimination, including sexual harassment and sexual violence ([USF System Policy 0-004](#)). The USF Center for Victim is a confidential resource where you can talk about incidents of sexual harassment and gender-based crimes including sexual assault, stalking, and domestic/relationship violence. This confidential resource can help you without having to report your situation to either the [Office of Student Rights and Responsibilities](#) (OSSR) or the [Office of Diversity, Inclusion, and Equal Opportunity](#) (DIEO), unless you request that they make a report. Please be aware that in compliance with Title IX and under the USF System Policy, educators must report incidents of sexual harassment and gender-based crimes including sexual assault, stalking, and domestic/relationship violence. If you disclose any of these situations in class, in papers, or to me personally, I am required to report it to OSSR or

DIEO for investigation. Contact the [USF Center for Victim Advocacy and Violence Prevention](#): (813) 974-5757.

Religious Observances

All students have a right to expect that the University will reasonably accommodate their religious observances, practices and beliefs ([USF System Policy 10-045](#)). The USF System, through its faculty, will make every attempt to schedule required classes and examinations in view of customarily observed religious holidays of those religious groups or communities comprising the USF System's constituency. Students are expected to attend classes and take examinations as determined by the USF System. No student shall be compelled to attend class or sit for an examination at a day or time prohibited by his or her religious belief. However, students should review the course requirements and meeting days and times to avoid foreseeable conflicts, as excessive absences in a given term may prevent a student from completing the academic requirements of a specific course. Students are expected to notify their instructors at the beginning of each academic term if they intend to be absent for a class or announced examination, in accordance with this Policy.

Statement of Academic Continuity

In the event of an emergency, it may be necessary for USF to suspend normal operations. During this time, USF may opt to continue delivery of instruction through methods that include, but are not limited to: Learning Management System, online conferencing, email messaging, and/or an alternate schedule. It is the responsibility of the student to monitor the Learning Management System for each class for course-specific communication, and the main USF, College, and Department websites, emails, and MoBull messages for important general information ([USF System Policy 6-010](#)). For additional guidance on emergency protective actions and hazards that affect the University, please visit www.usf.edu/em

Attendance Policy: Attendance is expected for all classes, although you will not be penalized for missed classes.

Professionalism Policy: Per university policy and classroom etiquette; mobile phones, iPods, etc. **must be silenced** during all classroom and lab lectures. Those not heeding this rule will be asked to leave the classroom/lab immediately so as to not disrupt the learning environment. Please arrive on time for all class meetings. Students who habitually disturb the class by talking, arriving late, etc., and have been warned may suffer a reduction in their final class grade.

End of Semester Student Evaluations: All classes at USF make use of an online system for students to provide feedback to the University regarding the course. These surveys will be made available at the end of the semester, and the University will notify you by email when the response window opens. Your participation is highly encouraged and valued.

Food and Drink Policy: Please adhere to the firm policy of no beverages (other than bottled/capped water), food, tobacco products, or like items in the classroom. Your understanding of the necessity for this policy and cooperation will be greatly appreciated. This policy will be strictly enforced.

The Writing Studio: The Writing Studio is a free resource for USF undergraduate and graduate students. At the Writing Studio, a trained writing consultant will work individually with you, at any point in the writing process from brainstorming to editing. Appointments are recommended, but not required. For more information or to make an appointment, visit <http://www.lib.usf.edu/writing/>, stop by LIB 2nd Floor, or call 813-974-8293.

XVIII. Important Dates to Remember

Assignments, Project, and Midterm dates are yet to be confirmed. But you be notified in class and via email well in advance. Final exam date, time and venue are below.

Final Examination: Monday, April 29th, 8pm to 10pm in class.