Course Code	CSE335,CSE545
Course Name	Foundations of Computer Security
Credits	4
Course Offered to	UG/PG
Course Description	This course provides a principled introduction to techniques for defending against hostile adversaries in modern computer systems and computer networks. Topics covered in the course include Threat modeling; ACL mechanism, Access control list; Access Control; Matrix Types of ACL; network security, including cryptography and cryptographic protocols, firewalls, and network denial-of-service attacks and defenses; Crime-ware addressing issues like phishing, malware, social engineering; Auditing; Multilevel and multi-lateral security Information flow control, MAC, MLS; Security protocols. More advanced topics will additionally be covered as time permits, such as: Program Security; techniques to provide privacy in Internet applications; and protecting digital content (music, video, software) from unintended use.

Pre-requisites

Pre-requisite (Mandatory)	**Pre-requisite (Desirable)**	**Pre-requisite(other)**
	CSE232 Computer Networks	
*Please insert more rows if required		

Post Conditions*(For suggestions on verbs please refer the second sheet)

CO1	**CO2**	**CO3**	**CO4**
Students are able to describe basic components / concepts of security.	Students are able to describe and differentiate security and privacy.	Students are able to critique, deconstruct recent attacks and trends in computer security.	Through project, student are able to design, and implement one of the topics covered in class in detail.

Weekly Lecture Plan

Week Number	**Lecture Topic**	**COs Met**	**Assignment/Labs/Tutorial**
Week 1	Course Introduction	CO1, C02	
Week 1	CIA Model	CO1, C02	
Week 2	Security protocols	CO1, C02	
Week 2	Physical protection and tamper resistance	CO1, C02	
Week 3	Auditing	CO1, C02	
Week 3	Program Security	CO1, C02	HW 1: CIA, Protocols
Week 4	Identity management	CO1, C02	
Week 5	Cryptography	CO1, C02	
Week 6	Economics of Information Security	CO1, C02	HW 2: Cryptography
Week 7	Multilevel and multi-lateral security -- Information flow control, MAC, MLS	CO1, C02	
Week 7	Crime-ware	CO1, C02	
Week 8	Network Security	CO1, C02	

Week 9	Threat Modeling	CO1, C02	HW 3: Crimeware, Network security
Week 10	Privacy	CO1, C02	
Week 11	Recent Attacks	CO3	
Week 11	Recent Attacks	CO3	HW 4: Privacy, OECD
Week 12	Project evalaution	CO4	
Week 13	Critique - Project ideas discussion	CO4	
*Please insert more rows if required			

Assessment Plan	
Type of Evaluation	**% Contribution in Grade**
Homework	20
Quiz	30
Mid-sem exam	15
End Sem	20
Project 10	10
Class Participation	5

*Please insert more row for other type of Evaluation

Resource Material	
Type	**Title**
Textbook	Computer Security: Art and Science, Matt Bishop, 2nd Revised Edition, ISBN 13: 9780321712332
Reference book	Security Engineering: A guide to building Dependable Distributed Systems, 2nd Edition, Ross J Anderson, ISBN-978-0-470-06852-6