



Department of Computer Applications National Institute of Technology, Tiruchirappalli

1. Course Outline			
Course Title	Information Security		
Course Code	CA724		
Department	CA	No. of Credits	3
Programme	MCA (Section B)	Learning Hours	3
Course Type	Programme Core	Course Teacher	Dr. Mrs. B. Janet
Pre-requisites	CA 713, Basics on Networks, Operation Systems and Database		
E-mail	janet@nitt.edu	Telephone No.	0431-2503741
Course Type	Core Course	Office	Lyceum 108
Course Page	http://egov.nitt.edu/moodle/course/view.php?id=12		

2. Course Content

The Information Security course deals with the study and analysis of aspects of security in computers. It also explores Cryptography, Forensics along with Network, Application and Data security.

3. Course Objectives

1. To understand and apply the models of information security
2. To study and analyze cryptographic and forensic methods
3. Analyze and simulate the network and application security
4. Explore the nature and logic behind security threats on the web as an ethical hacker

4. Course Learning Outcomes (CO)

1. Identify the information security models and their characteristics
2. Analyze the different types of cryptographic and forensic methods
3. Study the network security issues
4. Discover the layers of application security
5. Identify different threats and suggest fixes in data and cyber security.

5. Course Outcome (CO)	Aligned Programme Outcome (PO)											
	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
Identify the information security models and their characteristics	H	H	A	A	A	H	H	A	L	H	A	H
Analyze the different types of cryptographic and forensic methods	H	H	A	A	H	A	H	A	L	A	A	H
Study the network security issues	H	H	H	A	H	A	H	L	L	H	H	H
Discover the working of application security	H	H	H	H	H	A	H	L	L	H	H	H
Identify different threats and suggest fixes in data and cyber security.	H	H	H	H	H	H	H	H	A	H	H	H

Lectures

Class lectures and class exercise with self-learning videos will form the primary teaching activity, the schedule for which is outlined below. Lecture material will address the intended learning objectives, and loosely follow the readings as specified in the Moodle course site. The lecture material will be made available before the class. The lectures are meant to be interactive, where learning takes place through interactive discussion in class. The Moodle site will be available for detailed content dissemination and discussion inside and outside the classroom, between students and with the teacher. Student engagement in class and in the Moodle online forum will count towards assessment of student participation that has assessment weightage.

Guest Lectures

Structured lectures will be supplemented by guest lectures by practitioners and researchers from industry and academia. These will serve to show the practical relevance of the course content and also expose the students to the open problems for research.

6. Course Teaching and Learning Activities

Week	Mode of Delivery	Topics	Materials
1.	Classroom activity	Critical characteristics of Information	Refer Moodle Course Site
		NSTISSC Security Model	
		Components of information System	
2.	Classroom activity	Review I	
		Securing	
3.	Classroom activity	Balancing security and access	
		SDLC	
		Review II	
4.	Classroom activity	Classical Cryptography	
		Symmetric Cryptography	
		Asymmetric Cryptography	
5.	Classroom activity	Modern Cryptography	
		Review III	
		DRM	
6.	Classroom activity	Steganography	
		Biometrics	
		Review IV	
7.	Classroom activity	Network security	
		Wireless security	
		Intrusion Management	
8.	Classroom activity	Application security	
		Database security	
		Email security	
9.	Classroom activity	VOIP security	
		Review V	
		Vulnerability and Threats detection	
10.	Classroom activity	Tools	
		Breaches and fixes	
		Review VI	

- All relevant material will be made available to the students in the moodle course site. Classroom activity may include lectures, tutorials, quiz, simulation exercise, laboratory exercise, mini-project, group task and seminar.

7. Course Assessment Methods – Theory

Sl. No.	Mode of Assessment	Portions	Schedule	Duration in Minutes	Weightage (%)
1.	Test – 1	Unit I	4 th week	30	10
2.	Test – 2	Unit II	6 th week	30	10
3.	Test – 3	Unit III	8 th week	30	10
4.	Test – 4	Unit IV and V	10 th week	30	10
5.	Student participation	*	Course duration	*	10
7.	End Semester Exam	All Units	November	120	50
Total					100

* Evaluated based on participation in lecture, class activity and moodle course.

8. Essential Learning material (Textbooks, Reference books, Websites, Journals, etc.)

1. William Stallings, “Cryptography and Network Security: Principles and Practices”, 6th Edition, 2013, PHI.
2. Michael E Whitman and Herbert J Mattord, "Principles of Information Security", 2003, Vikas Publishing House, New Delhi.
3. Niel Daswani, Christopher Kern, Anita Kesavan, “Foundations of Security: What every programme” APRESS, 2007

9. Course Exit Survey

- The students may give their feedback at any time to the course Teacher or through an email message in moodle, which will be duly addressed.
- The students may also give their feedback during Class Committee meeting and fill up the feedback form in moodle site at the end of each test.

10. Course Policy (including plagiarism, academic honesty, attendance, etc.)

Classroom Behavior

- Ensure that the course atmosphere, both in the class and discussions outside the class room with Teacher, is conducive for learning. Participate in discussions but do not dominate or be abusive. Be considerate of your fellow students and avoid disruptive behavior.

Exam policy

- Each student is required to take all exams at the scheduled times. All exceptions must be cleared with the professor prior to the exam time. Exams missed for insufficient

reason and without being cleared with the professor prior to the exam time will be assigned a score of zero.

Assignments

- All assignments are due on or before the mentioned date and time and is to be uploaded on the course moodle site.

Late assignments

- Late submissions are not accepted.

Plagiarism

- The students are expected to come out with their original work on activity, assignments and tests/examinations. If found to be plagiarized, it will be assigned a score of zero.

Attendance

- Attendance is expected. If a student misses a class, the student is still responsible for the material that is studied and for completing any assignments by the due date that may have been handed out by the instructor during class.

Academic Honesty

- i) No type of academic dishonesty will be tolerated. If the student is caught cheating (on the assignments, exams, or project) the punishment will be the most severe penalty allowed by the Institute policy.
- ii) Possession of any electronic device, if any, found during the test or exam, the student will be debarred for 3 years from appearing for the exam and this will be printed in the Grade statement/Transcript.
- iii) Tampering of MIS records, if any, found, then the results of the student will be withheld and the student will not be allowed to appear for the Placement interviews conducted by the Office of Training & Placement, besides (i).

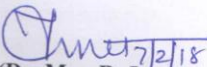
11. Additional Course Information

- The students can get their doubts clarified during class.
- Prior request for appointment through mail, stating the subject matter to be discussed, is required to fix a time for discussion of subject matter outside class. Appointment time will be communicated through reply mail.

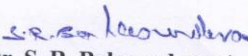
For Senate's Consideration


(Dr. Michael Arock)

PAC Chairperson


(Dr. Mrs. B. Janet)

Course Faculty


(Dr. S. R. Balasundaram)

Head