GUJARAT TECHNOLOGICAL UNIVERSITY

Subject Name: Security in Wireless and Mobile Systems (Elective V- Group 3)
Subject Code: 3735302
Semester III

Type of course: ME - Computer Engineering (Wireless And Mobile Computing)

Prerequisite:

1. Wireless Networks
2. Computer Networks

Rationale: NA

Teaching and Examination Scheme:

Teaching Scheme			Credits	Examination Marks				Total Marks
L	T	P	C	Theory Marks		Practical Marks		
				ESE (E)	PA (M)	PA (V) ESE	PA (I)	
3	2#	0	4	70	30	30	20	150

L- Lectures; T- Tutorial/Teacher Guided Student Activity; P- Practical; C- Credit; ESE- End Semester Examination; PA- Progressive Assessment;

Content:

Sr. No.	Content	Total Hrs	% Weightage
1	Overview: Security - Threats, Vulnerabilities, Attacks, Integrity, Confidentiality, Policy and relevant definitions Authentication – Different techniques	6	10
2	Cryptography – Symmetric Key Cryptography, Asymmetric key Cryptography, Key management, Digital signatures, Certificate	6	20
3	Distributed Systems Security – Cipher techniques, Protection systems, Example protocols	6	10
4	Wireless and Mobile system security – Strategies, Routing security, Different schemes for MANET	7	10
5	Hardware Perspectives for End to End Security (E2E) in wireless application Optimizing wireless security with FPGAs and ASICs	7	20

Text Book:

1. Wireless and Mobile Network Security by Venkataram/TMH
2. Wireless Security: Models, Threats and Solutions by Randall Nichols/TMH

References Books:

1. Wireless Security Essentials: Defending Mobile Systems from Data Piracy by Russell Dean Vines/john wiely & sons

Course Outcome:

1. Demonstrate the knowledge about security of devices
2. Design and implement of the Wireless Security
3. Protecting the mobile and wirelss devices from intrudars

List of Experiments: (with Open Ended Problems)

Case Studies:

1. Implementation of non-repudiation.
   Detail: User A sends mail to User B. User B delete it, and denying that he/she has Not received mail even though it is available in User A's sent mail. Now, how Would user A ensures that mail is actually received and read by User B?

2. Implementation of customize cryptographic algorithm in networking scenario Which would produce different cipher text on each run. Make sure the results by Sniffing packet using packet sniffers.

3. Convert following cipher text into plain text:
   Guvf vf tbvat gb or sha nffvtazrag sbe lbh. Guvf vf ubj rapelcgvba vf jbexvat

4. To study and implement Truecrypt

Review Presentation (RP): The concerned faculty member shall provide the list of peer reviewed Journals and Tier-I and Tier-II Conferences relating to the subject (or relating to the area of thesis for seminar) to the students in the beginning of the semester. The same list will be uploaded on GTU website during the first two weeks of the start of the semester. Every student or a group of students shall critically study 2 papers, integrate the details and make presentation in the last two weeks of the semester. The GTU marks entry portal will allow entry of marks only after uploading of the best 3 presentations. A unique id number will be generated only after uploading the presentations. Thereafter the entry of marks will be allowed. The best 3 presentations of each college will be uploaded on GTU website