

SOCIETY OF ST. FRANCIS XAVIER, PILAR'S  
**FR. CONCEICAO RODRIGUES COLLEGE OF ENGINEERING**  
 (Approved by AICTE & Affiliated to University of Mumbai)

Fr. Agnel Ashram, Bandstand, Bandra (W), Mumbai - 400 050.

Phone : (022) 6711 4000, 6711 4101, 6711 4104

Website : [www.frce.ac.in](http://www.frce.ac.in) - Email : [crce@fragnel.edu.in](mailto:crce@fragnel.edu.in)

## Computer Engineering

(Academic Year:2023-2024)

<b>Course Code: CSC603</b>	
<b>Course Name: Mobile Computing Class: TE (B)</b>	
<b>Course Teacher: Dr. Ashok Kanthe</b>	
<b>Course Outcomes (CO): <i>At the End of the course students will be able to</i></b>	
CSDC7022.1	Identify basic concepts and principles in computing, cellular architecture.
CSDC7022.2	Describe the components and functioning of mobile networking.
CSDC7022.3	Classify variety of security techniques in mobile network
CSDC7022.4	Apply the concepts of WLAN for local as well as remote applications.
CSDC7022.5	Describe Long Term Evolution (LTE) architecture and its interfaces.





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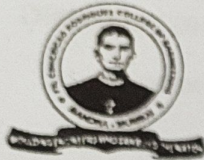
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**Course Lesson Plan**

Sr. No.	Proposed Date	Actual Date	Topics	CO	Teacher's Remark	HoD's Remark
1	08-01-24	8-1-24	Introduction to Mobile Computing,	1		
2	09-01-24	9-1-24	Telecommunication Generations, Cellular systems.	1		
3	12-01-24	11-2-24	Electromagnetic Spectrum, Antenna, Signal Propagation, Signal Characteristics	1	Extra Lecture of prof. K. K. K. K.	
4	15-01-24	12-1-24	Multiplexing, Spread Spectrum: DSSS & FHSS.	1	Assignment 1 (Questions on Module 1 solve and submit)	
5	16-01-24	15-1-24	GSM Mobile services- GSM Mobile services	2		
6	19-01-24	16-1-24	System Architecture	2		
7	23-01-24	19-1-24	Radio interface, Protocols	2	Holiday Taken.	
	26-01-24		Republic Day			
8	29-01-24	23-1-24	Localization and Calling, Handover	2		
9	30-01-24	30-1-24	security (A3, A5 & A8)	3		
10	02-02-24	02-2-24	GPRS system and protocol architecture	2	Discussion on UT-1	
	05-02-24 to 07-02-24		Unit Test-1			
11	09-02-24	09-2-24	UTRAN, UMTS core network;	2		
12	12-02-24	12-2-24	Improvements on Core Network	2	Assignment 2 (Questions on Module 2 solve and submit)	
13	13-02-24	13-2-24	Mobile Networking- Medium Access Protocol	2		
14	16-02-24	16-2-24	Internet Protocol and Transport layer	2		
	19-02-24	26-2-24	Holiday- Chhatrapati Shivaji Maharaj Jayanti			





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	20-02-24 to 23-02-24		<u>Cresendo Technical Festival</u>			
15	26-02-24	27-2-24	Mobile IP: IP Packet Delivery	2	Assignment 3, Technical Paper study, understand and present in class in group and submit the summary of paper.	
16	27-02-24	01-3-24	Agent Advertisement and Discovery, Registration	2		
17	01-03-24	01-3-24	Tunneling and Encapsulation, Reverse Tunneling	2		
18	04-03-24	04-3-24	Mobile TCP: Traditional TCP, Classical TCP Improvements like Indirect TCP	2		
19	05-03-24	04-03-24	Snooping TCP & Mobile TCP, Fast Re transmit/ Fast Recovery	2		
20	11-03-24	05-03-24	Transmission/Timeout Freezing, Selective Re transmission	2		
21	12-03-24	05-03-24	Wireless Local Area Networks- Wireless Local Area Networks: Introduction, Infrastructure and ad-hoc Network.	4		
22	15-03-24	05-3-24	IEEE 802.11: System architecture, Protocol architecture, Physical layer	4		
23	18-03-24	11-3-24	Medium access control layer, MAC management 802.11a, 802.11b standard	4		
24	19-03-24	11-3-24	Wi-Fi security: WEP, WPA, Wireless LAN Threats, Securing Wireless Networks	3		
25	20-03-24	19-3-24	Bluetooth: Introduction, User Scenario, Architecture, protocol stack	4		
26	26-03-24	19-3-24	Mobility Management- Mobility Management: Introduction, IP Mobility	4		





FR. CONCERNING

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	08-03-24		Holiday- Mahashivaratri			
27	12-03-23	22-3-24	Optimization, IPv6	4		
28	13-03-23	21-3-24	Macro Mobility : MIPv6,	4		
29	14-03-23	26-3-24	FMIPv6	4		
30	20-03-23	26-3-24	Micro Mobility: CellularIP	4		
	18-03-24		Students Activity- Cultural Festival Euphoria 2024		Holiday Euphoria	Holiday
31	21-03-24	10-4-24	HAWAII,	4		
	25-03-24		Holiday- Dhulivandan			
32	27-03-24	10-4-24	HMIPv6	4		
33	28-03-24	12-4-24	Long-Term Evolution (LTE) of 3GPP- Long-Term Evolution (LTE) of 3GPP : LTE System Overview,	5		
	29-03-24		Holiday- Good Friday			
	01-04-24 to 03-04-24		Unit Test-2			
34	05-04-24	12-4-24	LTE/SAE Requirements, SAE Architecture	5		
35	08-04-24	12-4-24	EPS: Evolved Packet System, E-UTRAN	5		
	11-04-24		Holiday- Ramzan Eid			
36	15-04-24	15-4-24	Voice over LTE (VoLTE), Introduction to LTE-Advanced.	5		
37	15-04-24(Extra)	15-4-24	Self Organizing Network (SON-LTE)	5		
38	15-04-24	15-4-24	SON for Heterogeneous Networks (HetNet)	5		
39	16-04-24 (Extra)	15-4-24	Comparison between Different Generations (2G, 3G, 4G and 5G), Introduction to 5G.	5		
	19-04-24		Remedial Session			
	13-05-24		University ESE Examination			





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**Text Books/ Reference Books:**

**Text Books:**

- 1 Jochen Schiller, "Mobile Communication", Addison wisely, Pearson Education.
- 2 William Stallings "Wireless Communications & Networks", Second Edition, Pearson Education.
- 3 Christopher Cox, "An Introduction to LTE: LTE, LTE-Advanced, SAE and 4G Mobile Communications", Wiley publications.
- 4 Raj Kamal, "Mobile Computing", 2/e, Oxford University Press-New.

**Reference Books:**

- 1 Seppo Hamalainen, Henning Sanneck , Cinzia Sartori, "LTE Self-Organizing Networks (SON): Network Management Automation for Operational Efficiency", Wiley publications
- 2 Ashutosh Dutta, Henning Schulzrinne "Mobility Protocols and Handover Optimization: Design, Evaluation and Application", IEEE Press, Wiley Publication.
- 3 Michael Gregg, "Build your own security lab", Wiley India edition.
- 4 Dipankar Raychaudhuri, Mario Gerla, "Emerging Wireless Technologies and the Future Mobile Internet", Cambridge.
- 5 Andreas F. Molisch, "Wireless Communications", Second Edition, Wiley Publication.

**Course Instructor: Dr. Ashok M. Kanthe**