



Department of Electronics and Telecommunication Engineering

LECTURE PLAN

<b>Name of Course with Code:</b> (Mobile Communication and 5G Networks: 3140512)	<b>Class: B. Tech.</b> <b>V<sup>th</sup> Sem</b>	<b>Session: July-December 2025</b>
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Teaching Session	Content to be Covered	CO's	Blooms Level (BL)	% Coverage	Mode
1.	Introduction to cellular mobile systems: Basic Cellular System.	CO1	L2	2%	Offline / Black Board Teaching/ Interactive Learning
2.	Cellular communication infrastructure: Cells, Clusters, Cell Splitting	CO1	L2	2%	Offline / Black Board Teaching
3.	Frequency reuse concept, Cellular system components.	CO1	L2	3%	Offline / Black Board Teaching
4.	Fixed and dynamic, Cellular interferences: Co-Channel and adjacent channel and sectorization.	CO1	L3	2%	Offline / Black Board Teaching
5.	Operations of cellular systems, Handoff/Handover, Channel assignment	CO1	L3	2%	Offline mode
6.	Problem Solving Session	CO1	L3	3%	Offline / Black Board Teaching
7.	Properties of mobile radio channels – Intersymbol interference	CO1	L3	3%	Offline / Black Board Teaching
8.	Multipath and fading effects	CO1	L3	3%	Offline / Black Board Teaching
9.	Interleaving and diversity	CO2	L2	2%	Offline / Black Board Teaching
10	Multiple access schemes (TDMA, FDMA)	CO2	L2	2%	Offline / Black Board Teaching
11	CDMA, SDMA	CO2	L4	2%	Offline / Black Board Teaching
12	Interuser interference	CO2	L2	3%	Offline / Black Board Teaching
13	Traffic issues and cell capacity	CO2	L4	3%	Group based Learning
14	Problem Solving Session	CO2	L3	2%	Offline / Black Board Teaching
15	Pulse shaping, Linear and non-linear Modulation techniques	CO2	L2	3%	Offline / Black Board Teaching

16	Constant Envelop modulation,	CO3	L2	2%	Offline / Black Board Teaching
17	QPSK, MSK, GMSK	CO3	L2	2%	Offline / Black Board Teaching
18	Spread spectrum modulation techniques	CO3	L2	2%	Offline / Black Board Teaching
19	Direct sequence and Frequency Hopping Spread Spectrum and their applications.	CO3	L2	3%	Offline / Black Board Teaching
20	Problem Solving Session	CO3	L3	3%	Offline / Black Board Teaching
21	2G Architecture such as GSM and CDMA based – 2.5G	CO3	L2	3%	Offline & Experiment with problem solving in group based learning
22	GPRS: GPRS and its features	CO3	L2	2%	Offline / Black Board Teaching
23	3G standard details such as UMTS	CO3	L3	3%	Offline / Black Board Teaching
24	Introduction to LTE	CO4	L3	3%	Offline / Black Board Teaching
25	Basic concept of massive MIMO.	CO4	L3	2%	Offline / Black Board Teaching
26	5G potential and applications	CO4	L3	2%	Offline / Black Board Teaching
27	Usage scenarios: enhanced mobile broadband (eMBB),	CO4	L3	2%	Offline / Black Board Teaching
28	ultra reliable low latency communications (URLLC)	CO4	L2	3%	Offline / Black Board Teaching
29	massive machine type communications (MMTC)	CO4	L3	2%	Online / Interactive Learning
30	D2D communications,	CO4	L3	3%	Offline / Black Board Teaching
31	V2X communications; Spectrum for 5G and sharing	CO4	L5	3%	Offline / Black Board Teaching

Online	Offline				
	Black board teaching	Group based Learning	Learning through experimentation	Activity based Learning	Onsite/field-based learning
10%	72%	9%	3%	3%	3 %

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