



**DHIRAJLAL GANDHI COLLEGE OF TECHNOLOGY  
SALEM  
(AUTONOMOUS)**

**M.E. – COMMUNICATION SYSTEMS**

**Curriculum & Syllabus  
(I to IV Semesters)**

**Autonomous Regulations – 2024**



**CURRICULUM FOR  
I TO IV SEMESTERS**



**VISION:**

- To be globally recognized for providing value based engineering education and research in the field of Electronics and Communication Engineering

**MISSION:**

- To provide a congenial learning environment which fosters creativity and innovation among students
- To conduct value based courses for improving technical competency
- To encourage faculty to attend workshops, seminars, faculty development programs and engage them in continuous learning and to use innovative teaching methodologies
- To impart moral values and inculcate moral and ethical behavior
- To establish Centre of Excellence in emerging areas in the field of Communication Engineering
- To undertake collaborative work with industry and institutes and provide solutions for societal challenge

**I. PROGRAM EDUCATIONAL OBJECTIVES (PEOs)**


- PEO1:** Apply technical knowledge and skills to have successful career in industry, government and academia as communication engineers
- PEO2:** Pursue multidisciplinary scientific research in communication and related areas
- PEO3:** Make use of various state-of art systems and cutting edge technologies to solve various complex engineering problems
- PEO4:** Inculcate leadership skills, team work, effective communication and lifelong learning to the success of their organization and nation
- PEO5:** Practice ethics and exhibit commitment in profession to empower/enable

**II. PROGRAM OUTCOMES (POs)**

- PO1:** An ability to independently carry out research/investigation and development work to solve practical problems
- PO2:** An ability to write and present a substantial technical report/document
- PO3:** Students should be able to demonstrate a degree of mastery over the area as per the specialization of the program. The mastery should be at a level higher than the requirements in the appropriate bachelor program
- PO4:** Design and analyze RF, Signal processing, Networking, Adaptive and modern communication systems
- PO5:** Develop the knowledge in 5G communication techniques, mm wave communication, smart antennas , Massive MIMO and Wireless sensor networks
- PO6:** Apply various software tools and cutting edge engineering hardware to provide solutions for complex communication engineering problems

**CURRICULUM DETAILS****M.E. – COMMUNICATION SYSTEMS**

SEMESTER – I											
S.NO	COURSE CODE	COURSE TITLE	CAT	PERIODS PER WEEK			TOTAL CONTACT PERIODS	CREDITS	MAXIMUM MARKS		
				L	T	P		C	CA	EE	TOTAL
<b>THEORY</b>											
1.	24TMA152	Linear Algebra, Probability and Queueing Theory	FC	3	1	0	4	4	40	60	100
2.	24TPD105	Research Methodology and IPR	RMC	2	0	0	2	2	40	60	100
3.	24TPS101	Statistical Signal Processing	PCC	3	0	0	3	3	40	60	100
4.	24TPS102	Modern Digital Communication Systems	PCC	3	0	0	3	3	40	60	100
5.	24TPS103	Advanced Wireless Communication	PCC	3	0	0	3	3	40	60	100
6.	24TPS104	Radiating Systems	PCC	3	0	0	3	3	40	60	100
<b>PRACTICALS</b>											
8.	24LPS101	Digital Communication Systems Laboratory	PCC	0	0	3	3	1.5	60	40	100
9.	24LPS102	Advanced Digital Signal Processing Laboratory	PCC	0	0	3	3	1.5	60	40	100
<b>TOTAL</b>				<b>19</b>	<b>1</b>	<b>6</b>	<b>24</b>	<b>21</b>	<b>360</b>	<b>440</b>	<b>800</b>

  
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 Communication Engineering  
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 Warananagar, Salem - 637 005.

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SEMESTER – II											
S.NO	COURSE CODE	COURSE TITLE	CAT	PERIODS PER WEEK			TOTAL CONTACT PERIODS	CREDITS	MAXIMUM MARKS		
				L	T	P		C	CA	EE	TOTAL
	<b>THEORY</b>										
1.	24TPS201	RF System Design	PCC	3	0	0	3	3	40	60	100
2.	24TPS202	Microwave Integrated Circuits	PCC	3	0	2	5	4	50	50	100
3.	24TPS203	Advanced Wireless Networks	PCC	3	0	0	3	3	40	60	100
4.	24TPS204	Machine Learning	PCC	3	0	2	5	4	50	50	100
5.		Professional Elective - I	PEC	3	0	0	3	3	40	60	100
6.		Professional Elective - II	PEC	3	0	0	3	3	40	60	100
	<b>PRACTICALS</b>										
8.	24LPS201	Wireless Communication Laboratory	PCC	0	0	4	4	2	60	40	100
9.	24LPS202	Term Paper Writing and seminar	EEC	0	0	2	2	1	60	40	100
<b>TOTAL</b>				<b>18</b>	<b>0</b>	<b>10</b>	<b>28</b>	<b>23</b>	<b>380</b>	<b>420</b>	<b>800</b>

  
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SEMESTER - III											
S.NO	COURSE CODE	COURSE TITLE	CAT	PERIODS PER WEEK			TOTAL CONTACT PERIODS	CREDITS	MAXIMUM MARKS		
				L	T	P		C	CA	EE	TOTAL
<b>THEORY</b>											
1.	24TPS301	Optical Communication and Networking	PCC	3	0	0	3	3	40	60	100
2.		Professional Elective - III	PEC	3	0	0	3	3	40	60	100
3.		Professional Elective - IV	PEC	3	0	2	5	4	50	50	100
4.		Open Elective	OEC	3	0	0	3	3	40	60	100
<b>PRACTICALS</b>											
5.	24PPS301	Project Work - I	EEC	0	0	12	12	6	50	50	100
<b>TOTAL</b>				12	0	14	26	19	220	280	500

SEMESTER - IV											
S.NO	COURSE CODE	COURSE TITLE	CAT	PERIODS PER WEEK			TOTAL CONTACT PERIODS	CREDITS	MAXIMUM MARKS		
				L	T	P		C	CA	EE	TOTAL
<b>THEORY</b>											
1.	24S003	Entrepreneurship Development	EEC	2	0	2	4	3	50	50	100
<b>PRACTICALS</b>											
2.	24PPS401	Project Work - II	EEC	0	0	24	24	12	50	50	100
<b>TOTAL</b>				2	0	26	28	15	100	100	200
<b>TOTAL CREDITS EARNED</b>								78	1060	1240	2300

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**SUMMARY OF CREDIT DISTRIBUTION**

S.NO	COURSE CATEOGRY	CREDITS PER SEMESTER				TOTAL CREDITS
		I	II	III	IV	
1.	FC	4	-	-	-	4
2.	PCC	15	16	3	-	34
3.	PEC	-	6	7	-	13
4.	RMC	2	-	-	-	2
5.	OEC	-	-	3	-	3
6.	EEC	-	1	6	15	22
<b>TOTAL CREDITS</b>		<b>21</b>	<b>23</b>	<b>19</b>	<b>15</b>	<b>78</b>

**CATEGORY**

FC	-	Foundation Course
PCC	-	Professional Core Course
PEC	-	Professional Elective Course
RMC	-	Research Methodology Course
OEC	-	Open Elective Course
EEC	-	Employment Enhance Course

  
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**FOUNDATION COURSE (FC)**

S.NO.	COURSE CODE	COURSE TITLE	PERIODS PER WEEK			TOTAL CONTACT PERIODS	CREDIT S
			L	T	P		C
1.	24TMA152	Linear Algebra, Probability and Queuing Theory	3	1	0	4	4

**PROFESSIONAL CORE COURSES (PCC)**

S.NO.	COURSE CODE	COURSE TITLE	CAT	PERIODS PER WEEK			TOTAL CONTACT PERIODS	CREDITS
				L	T	P		C
1.	24TPS101	Statistical Signal Processing	PCC	3	0	0	3	3
2.	24TPS102	Modern Digital Communication Systems	PCC	3	0	0	3	3
3.	24TPS103	Advanced Wireless Communication	PCC	3	0	0	3	3
4.	24TPS104	Radiating Systems	PCC	3	0	0	3	3
5.	24LPS101	Digital Communication Systems Laboratory	PCC	0	0	3	3	1.5
6.	24LPS102	Advanced Digital Signal Processing Laboratory	PCC	0	0	3	3	1.5
7.	24TPS201	RF System Design	PCC	3	0	0	3	3
8.	24TPS202	Microwave Integrated Circuits	PCC	3	0	2	5	4
9.	24TPS203	Advanced Wireless Networks	PCC	3	0	0	3	3
10.	24TPS204	Machine Learning	PCC	3	0	2	5	4
11.	24LPS201	Wireless Communication Laboratory	PCC	0	0	4	4	2
12.	24TPS301	Optical Communication and Networking	PCC	3	0	0	3	3

  
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**PROFESSIONAL ELECTIVE COURSES (PEC)**  
**PROFESSIONAL ELECTIVE (I - V)**

**SEMESTER II, ELECTIVE I**

S.NO.	COURSE CODE	COURSE TITLE	CAT	PERIODS PER WEEK			TOTAL CONTACT PERIODS	CREDITS
				L	T	P		
1.	24EPS201	Electromagnetic Interference and Compatibility	PEC	3	0	0	3	3
2.	24EPS202	Advanced Satellite Communication and Navigation Systems	PEC	3	0	0	3	3
3.	24EPS203	High Speed Switching and Networking	PEC	3	0	0	3	3
4.	24EPS204	Signal Integrity for High Speed Design	PEC	3	0	0	3	3
5.	24EPS205	Wavelets and Subband Coding	PEC	3	0	0	3	3

**SEMESTER II, ELECTIVE II**

S.NO.	COURSE CODE	COURSE TITLE	CAT	PERIODS PER WEEK			TOTAL CONTACT PERIODS	CREDITS
				L	T	P		
1.	24EPS206	Multimedia Compression Techniques	PEC	3	0	0	3	3
2.	24EPS207	Cognitive Radio Networks	PEC	3	0	0	3	3
3.	24EPS208	Speech Processing	PEC	3	0	0	3	3
4.	24EPS209	mm Wave Communication	PEC	3	0	0	3	3
5.	24EPS210	Analog and Mixed Signal VLSI Design	PEC	3	0	0	3	3

**SEMESTER III, ELECTIVE III**

S.NO.	COURSE CODE	COURSE TITLE	CAT	PERIODS PER WEEK			TOTAL CONTACT PERIODS	CREDITS
				L	T	P		
1.	24EPS301	Ultra Wide Band Communications	PEC	3	0	0	3	3
2.	24EPS302	VLSI for Wireless Communication	PEC	3	0	0	3	3
3.	24EPS303	MEMS and NEMS	PEC	3	0	0	3	3
4.	24EPS304	Advanced Antenna Design	PEC	3	0	0	3	3
5.	24EPS305	Software Defined Radios	PEC	3	0	0	3	3

**SEMESTER III, ELECTIVE IV**

S.NO.	COURSE CODE	COURSE TITLE	CAT	PERIODS PER WEEK			TOTAL CONTACT PERIODS	CREDITS
				L	T	P		
1.	24EPS306	Image Processing and Video Analytics	PEC	3	0	2	5	4
2.	24EPS307	Radar Signal Processing	PEC	3	0	2	5	4
3.	24EPS308	Telecommunication System Modeling and Simulation	PEC	3	0	2	5	4
4.	24EPS309	Signal Detection and Estimation	PEC	3	0	2	5	4
5.	24EPS310	Real Time Embedded Systems	PEC	3	0	2	5	4

**RESEARCH METHODOLOGY AND IPR COURSE (RMC)**

S.NO.	COURSE CODE	COURSE TITLE	PERIODS PER WEEK			TOTAL CONTACT PERIODS	CREDITS
			L	T	P		
1.	24TPD105	Research Methodology and IPR	2	0	0	2	2

**EMPLOYMENT ENHANCES COURSES (EEC)**

S.NO.	COURSE CODE	COURSE TITLE	CAT	PERIODS PER WEEK			TOTAL CONTACT PERIODS	CREDITS
				L	T	P		
1.	24LPS202	Term Paper Writing and seminar	EEC	0	0	2	2	1
2.	24PPS301	Project Work - I	EEC	0	0	12	12	6
3.	24S003	Entrepreneurship Development	EEC	2	0	2	4	3
4.	24PPS401	Project Work - II	EEC	0	0	24	24	12

  
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## LIST OF OPEN ELECTIVES FOR PG PROGRAMMES COURSES (OEC)

S.NO.	COURSE CODE	COURSE TITLE	CAT	PERIODS PER WEEK			TOTAL CONTACT PERIODS	CREDITS
				L	T	P		
1.	24OPT301	Sustainable Management	OEC	3	0	0	3	3
2.	24OPT304	Environmental Sustainability	OEC	3	0	0	3	3
3.	24OPT307	IPR, Biosafety and Entrepreneurship	OEC	3	0	0	3	3
4.	24OPT308	Integrated Water Resources Management	OEC	3	0	0	3	3
5.	24OPT309	Principles of Sustainable Development	OEC	3	0	0	3	3
6.	24OPT310	Environmental Impact Assessment	OEC	3	0	0	3	3
7.	24OPT311	Water, Sanitation and Health	OEC	3	0	0	3	3
8.	24MPD009	Additive Manufacturing	OEC	3	0	0	3	3
9.	24TPC301	Security Practices	OEC	3	0	0	3	3
10.	24EPC202	Cloud Computing Technologies	OEC	3	0	0	3	3
11.	24OPC304	Deep Learning	OEC	3	0	0	3	3
12.	24OPS301	Electric Vehicle Technology	OEC	3	0	0	3	3
13.	24OPS302	Renewable Energy Technology	OEC	3	0	0	3	3
14.	24OPS303	Smart Grid	OEC	3	0	0	3	3
15.	24OPS304	Energy Conservation and Management in Domestic Sectors	OEC	3	0	0	3	3
16.	24OPS305	IoT for Smart Systems	OEC	3	0	0	3	3
17.	24OPS306	Embedded Automation	OEC	3	0	0	3	3
18.	24OPD010	Vibration and Noise Control Strategies	OEC	3	0	0	3	3
19.	24OPD011	New Product Development	OEC	3	0	0	3	3
20.	24OPD003	Micro and Small Business Management	OEC	3	0	0	3	3
21.	24OPD004	Ethical Management	OEC	3	0	0	3	3
22.	24OPD005	Intellectual Property Rights	OEC	3	0	0	3	3