Board of Studies of Electronics and Telecommunication Engineering

Program: B. Tech. in Electronics and Telecommunication Engineering

Scheme 2026

MAHARSHI KARVE STREE SHIKSHAN SAMSTHA'S
Cummins
COLLEGE OF ENGINEERING
FOR WOMEN, NAGPUR

Department of Electronics and Telecommunication Engineering

Board of Studies of Electronics and Telecommunication Engineering

Program: B. Tech. in Electronics and Telecommunication Engineering

Scheme Summary

Semester	Credits	Hours	Marks	No. of Theory Heads	No. of Practical Heads	Total Heads
I	20	25	700	6	4	10
II	20	25	750	6	4	10
III	20	24	800	5	4	9
IV	20	27	900	6	5	11
V	20	24	800	6	4	10
VI	20	25	850	6	4	10
VII	20	26	800	5	3	8
VIII	20	34	500	2	1	3
Total	**160**	**210**	**6100**	**42**	**29**	**71**

BoS Members	(PP) (KW)	(BH) (AD)	(RR) (PT)	(LIC) (AB)	(AM) (K)
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Cummins College of Engineering for Women, Nagpur-441110

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Board of Studies of Electronics and Telecommunication Engineering

Program: B.Tech. in Electronics and Telecommunication Engineering

Curriculum Framework

Semester		I	II	III	IV	V	VI	VII	VIII	Total Credits
Basic Science Course	BSC / ESC	08	08	--	--	--	--	--	--	16
Engineering Science Course		06	04	03	02	--	--	--	--	15
Program Core Course (PCC)	Program courses	--	02	08	09	12	08	06	--	45
Program Elective Course (PEC)		--	--	--	--	--	03	07	06	16
Multidisciplinary Minor	Multidisciplinary Courses	--	--	03	03	03	03	--	--	12
Open Elective (OE) other than a particular program		--	--	--	--	02	02	03	--	07
Vocational and Skill Enhancement Course (VSEC)	Skill Courses	02	02	--	02	--	02	--	--	08
Ability Enhancement Course (AEC – 01, AEC – 02)	Humanities Social Science and Management (HSSM) (14)	02	--	--	02	01	--	--	--	05
Entrepreneurship / ECONOMICS / Management Courses		--	--	02	--	02	--	--	--	04
Indian Knowledge System (IKS)		--	02	--	--	--	--	--	--	02
Value education course (VEC)		--	--	02	02	--	--	--	--	04
Research Methodology	Experiential Learning Courses	--	--	--	--	--	02	--	--	02
Comm. Engg. Project (CEP) / Field Project (FP)		--	--	02	--	--	--	--	--	02
Project		--	--	--	--	--	--	04	--	04
Internship / OJT		--	--	--	--	--	--	--	14	14
Co – curricular Courses (CC)	Liberal Learning Courses	02	02	--	--	--	--	--	--	04
Total Credits (Major)		20	20	20	20	20	20	20	20	160

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Sr. No.	Course Category / BOS	Course Code	Name of Course	Teaching Scheme (hrs.)			Credits	Evaluation Scheme						Total Marks
								Theory			Practical			
				L	T/A	P		TAE	CAE	ESE	CE	IE	EE	
SEMESTER I														
1	BSC/ ASH		Linear Algebra and Differential Calculus	3	1	--	4	25	25	50	--	--	--	100
2	BSC/ ASH		Applied Physics	3	--	--	3	25	25	50	--	--	--	100
3	BSC/ ASH		Applied Physics Laboratory	--	--	2	1	--	--	--	25	25	--	50
4	ESC/ CE		Programming for problem solving	3	--	--	3	25	25	50	--	--	--	100
5	ESC/ CE		Programming for problem solving Laboratory	--	--	2	1	--	--	--	25	25	--	50
6	ESC/ ETC		Fundamentals of Electrical Engineering	2	--	--	2	25	25	50	--	--	--	100
7	VSEC/ ETC		Electrical Workshop	--	--	4	2	--	--	--	25	25	--	50
8	AEC/ ASH		Professional Communication Skills	1	--	--	1	10	15	25	--	--	--	50
9	AEC/ ASH		Professional Communication Skills Laboratory	--	--	2	1	--	--	--	25	25	--	50
10	CC/ ASH		Liberal Learning Course-I	--	2	--	2	--	--	--	50	--	--	50
TOTAL				**25**			**20**	**--**	**--**	**--**	**--**	**--**	**--**	**700**

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								Theory			Practical			
				L	T/A	P		TAE	CAE	ESE	CE	IE	EE	
SEMESTER II														
1	BSC/ ASH		Applied Engineering Mathematics	3	--	--	3	25	25	50	--	--	--	100
2	BSC/ ASH		Applied Engineering Mathematics Laboratory	--	--	2	1	--	--	--	25	25	--	50
3	BSC/ ASH		Materials Chemistry	3	--	--	3	25	25	50	--	--	--	100
4	BSC/ ASH		Materials Chemistry Laboratory	--	--	2	1	--	--	--	25	25	--	50
5	ESC/CE		Python Programming	3	--	--	3	25	25	50	--	--	--	100
6	ESC/CE		Python Programming Laboratory	--	--	2	1	--	--	--	25	25	--	50
7	PCC/ ETC		Fundamentals of Electronics Engineering	2	--	--	2	25	25	50	--	--	--	100
8	VSEC/ ETC		Electronics Workshop and Drone Technology	--	--	4	2	--	--	--	25	25	--	50
9	IKS/ ASH		Ancient Indian Knowledge	2	--	--	2	25	25	50	--	--	--	100
10	CC/ASH		Liberal Learning Course-II	--	2	--	2	--	--	--	50	--	--	50
TOTAL				**25**			**20**	**--**	**--**	**--**	**--**	**--**	**--**	**750**

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								Theory			Practical			Total Marks
				L	T/A	P		TAE	CAE	ESE	CE	IE	EE	
SEMESTER III														
1	ESC/ASH		Transforms and Computational Mathematics	2	1	--	3	25	25	50	--	--	--	100
2	PCC/ETC		Digital Logic Design using Verilog	3	--	--	3	25	25	50	--		--	100
3	PCC/ETC		Digital Logic Design using Verilog Laboratory	--	--	2	1	--	--	--	25	25	--	50
4	PCC/ETC		Analog Circuits	3	--	--	3	25	25	50	--	--	--	100
5	PCC/ETC		Analog Circuits Laboratory	--	--	2	1	--	--	--	25	--	25	50
6	MDM/CE		MDM-I- Refer Basket	3	--	--	3	25	25	50	--		--	100
7	VEC		Advanced Communication Skills	--	--	4	2	--	--	--	25	25	50	100
8	HSSC/ASH		Entrepreneurship Development	2	--	--	2	25	25	50	--		--	100
9	Experiential Learning Courses		Community Engineering Project	--	--	4	2	--	--	--	25	25	50	100
TOTAL				**26**			**20**	**--**	**--**	**--**	**--**	**--**	**--**	**800**

BoS Members	(Dr. PP) (Dr. KW)	(B.H)	(R.R) (P.T)	(LK)
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Sr. No.	Course Category / BOS	Course Code	Name of Course	Teaching Scheme (hrs.)			Credits	Evaluation Scheme						
								Theory			Practical			Total Marks
				L	T/A	P		TAE	CAE	ESE	CE	IE	EE	
SEMESTER IV														
1	PCC/ETC		Analog and Digital Communication	2	--	--	2	25	25	50	--	--	--	100
2	PCC/ETC		Analog and Digital Communication Laboratory	--	--	2	1	--	--	--	25	--	25	50
3	PCC/ETC		Microcontroller and Applications	2	--	--	2	25	25	50	--	--	--	100
4	PCC/ETC		Microcontroller and Applications Laboratory	--	--	2	1	--	--	--	25	--	25	50
5	PCC/ETC		Electromagnetic Fields	2	1	--	3	25	25	50	--	--	--	100
6	MDM/CE		MDM-II- Refer Basket	2	--	--	2	25	25	50	--	--	--	100
7	MDM/CE		MDM-II -Laboratory	--	--	2	1	--	--	--	25	--	25	50
8	VSEC/ ETC		Software Workshop Laboratory	--	--	4	2	--	--	--	25	25	--	50
9	ESC/ETC		Network Theory	2	--	--	2	25	25	50	--	--	--	100
10	VEC/ASH		Universal Human Values	2	--	--	2	25	25	50	--	--	--	100
11	AEC		Employability Enhancement Training	--	--	4	2	--	--	--	25	25	50	100
TOTAL				**27**			**20**	**--**	**--**	**--**	**--**	**--**	**--**	**900**

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Sr. No.	Course Category / BOS	Course Code	Name of Course	Teaching Scheme (hrs.)			Credits	Evaluation Scheme						
								Theory			Practical			Total Marks
				L	T/A	P		TAE	CAE	ESE	CE	IE	EE	
SEMESTER V														
1	PCC/ETC		Digital Signal Processing	3	--	--	3	25	25	50	--		--	100
2	PCC/ETC		Digital Signal Processing Laboratory	--	--	2	1	--	--	--	25	--	25	50
3	PCC/ETC		Embedded System Design	3	--	--	3	25	25	50	--	--	--	100
4	PCC/ETC		Embedded System Design Laboratory	--	--	2	1	--	--	--	25	--	25	50
5	PCC/ETC		Antenna and Wave Propagation	3	--	--	3	25	25	50	--	--	--	100
6	PCC/ETC		Antenna and Wave Propagation Laboratory	--	--	2	1	--	--	--	25	--	25	50
7	HSSC/ ASH		Business Administrations Relations	2	--	--	2	25	25	50	--	--	--	100
8	MDM/CE		MDM-III - Refer Basket	3	--	--	3	25	25	50	--	--	--	100
9	OE		Open Elective - I	2	--	--	2	25	25	50	--	--	--	100
10	AEC		Soft Skills	--	--	2	1	--	--	--	25	25	--	50
TOTAL				**24**			**20**	**--**	**--**	**--**	**--**	**--**	**--**	**800**

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								Theory			Practical			Total Marks
				L	T/A	P		TAE	CAE	ESE	CE	IE	EE	
SEMESTER VI														
1	PCC/ETC		Computer Communication Networks	3	--	--	3	25	25	50	--	--	--	100
2	PCC/ETC		Computer Communication Networks Laboratory	--	--	2	1	--	--	--	25	--	25	50
3	PCC/ETC		Internet of Things and Applications	3	--	--	3	25	25	50	--	--	--	100
4	PCC/ETC		Internet of Things and Applications Laboratory	--	--	2	1	--	--	--	25	--	25	50
5	PEC/ETC		Program Elective - I	2	1	--	3	25	25	50	--	--	--	100
6	MDM/CE		MDM-IV- Refer Basket	2	--	--	2	25	25	50	--	--	--	100
7	MDM/CE		MDM-IV- Laboratory	--	--	2	1	--	--	--	25	--	25	50
8	OE		Open Elective - II	2	--	--	2	25	25	50	--	--	--	100
9	VSEC/ ETC		Minor Project	--	--	4	2	--	--	--	50	--	50	100
10	Experiential Learning Courses		Research Methodology	2	--	--	2	25	25	50	--	--	--	100
TOTAL				**25**			**20**	**--**	**--**	**--**	**--**	**--**	**--**	**850**

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								Theory			Practical			Total Marks
				L	T/A	P		TAE	CAE	ESE	CE	IE	EE	
SEMESTER VII														
1	PCC/ ETC		CMOS VLSI Design	3	--	--	3	25	25	50	--	--	--	100
2	PCC/ ETC		CMOS VLSI Design Laboratory	--	--	2	1	--	--	--	25	--	25	50
3	PCC/CE		Software Workshop Engineering and Project Management	2	--	--	2	25	25	50	--	--	--	100
4	PEC/ ETC		Program Elective - II	3	--	--	3	25	25	50	--	--	--	100
5	PEC/ ETC		Program Elective – III	3	--	--	3	25	25	50	--	--	--	100
6	PEC/ ETC		Program Elective – III Laboratory	--	--	2	1	--	--	--	25	--	25	50
7	OE		Open Elective - III	3	--	--	3	25	25	50	--	--	--	100
8	Project		Project	--	--	8	4	--	--	--	50	50	100	200
TOTAL				**26**			**20**	**--**	**--**	**--**	**--**	**--**	**--**	**800**

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Sr. No.	Course Category / BOS	Course Code	Name of Course	Teaching Scheme (hrs.)			Credits	Evaluation Scheme						
								Theory			Practical			Total Marks
				L	T/A	P		TAE	CAE	ESE	CE	IE	EE	
SEMESTER VIII														
1	PEC/ETC		NPTEL - I Program Elective - IV	3	--	--	3	25	25	50	--	--	--	100
2	PEC/ETC		NPTEL - II Program Elective - V	3	--	--	3	25	25	50	--	--	--	100
3	Internship		Internship	--	--	28	14	--	--	--	75	75	150	300
TOTAL				**34**			**20**	**--**	**--**	**--**	**--**	**--**	**--**	**500**

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PROGRAM ELECTIVES

TRACK	IOT & AUTOMATION	VLSI DESIGN & TECHNOLOGY	COMMUNICATION ENGINEERING	EMERGING TECHNOLOGIES
PEC-I	Control System Engineering	Edge Computing	Optical Communication	Web Technology
PEC-II	Industrial Electronics	VLSI Signal Processing	Broadband Communication Systems	Big Data and Cloud Computing
PEC-III	PLC & Scada for Industry 4.0	Processor System Design	Integrated Sensing & Communication	Augmented Reality - Virtual Reality
PEC-IV* (NPTEL-I)	Industrial Robotics	Digital IC Design	Software Defined Radio	Android Programming
PEC-V* (NPTEL-II)	AI in Industrial and Management Engineering	C Based VLSI Design	Principles of Modern CDMA/MIMO/OFDM Wireless Communications	Computer Vision

***List to be updated with respect to NPTEL SWAYAM Portal.**

OPEN ELECTIVES

SEMESTER	INDUSTRY 4.0 AND AUTOMATION	COMMUNICATION	EMERGING
V(OE-I)	Sensors & Actuators	Communication Systems	Augmented and Virtual Reality
VI(OE-II)	Mechatronics	Wireless Ad hoc Networks	Drone and UAV Electronics
VII(OE-III)	Industrial IoT	Biomedical Engineering	Smart Mobility

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Multi-Disciplinary Minor (MDM)

Host BoS / Department	Name of the MDM Course
ETC	Sensors and Systems
	Microcontroller and Applications
	Analog and Digital Communication
	Wireless Sensor Networks
	Internet of Things and its Applications
ME	Renewable Energy sources
	3D Printing and Additive Manufacturing
	Automobile Engineering
	Industrial Robotics & Digital Manufacturing
	Computer Aided Design
CE/CSE (AI/ML)	Introduction to Data Science
	Database System
	Data Structure
	Artificial Intelligence & Machine Learning
	Operating Systems

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Course Basket for Additional Minor in Electronics and Telecommunication Engineering

(For Students of Programs other than E&TC Engineering)

Sr. No	Course Name	Credits
1	Analog and Digital Communication	3
2	Analog Circuits	3
3	Computer Communication Networks	3
4	Digital Signal Processing	3
NPTEL COURSES		
5	Analog VLSI Design	3
6	Electromagnetic Theory	3
7	5G Wireless Standard Design	3
8	Semiconductor Devices and Circuits	3

NOTE: Eligible students should Earn the total 18-20 credits from 3rd Semester to 8th Semester.

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