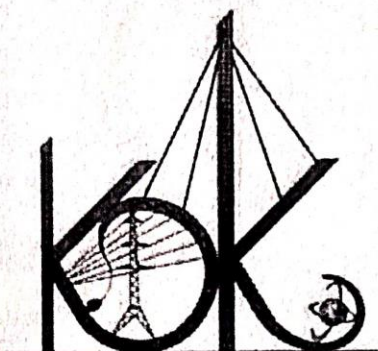




KDK College of Engineering, Nagpur 440024

Scheme and Syllabus for
Bachelor of Technology (Electronics and Telecommunication Engineering)

Submitted by
Board of Studies in Electronics and Telecommunication Engineering

2024-25

FYUG Engineering Curriculum (Proposed) : NEP- Electronics and Telecommunication Engineering

Institute

Vision:

Service to the society through Quality Technical Education

Mission:

- Academic Excellence in Engineering and Technology Through Complete dedication to all round Growth of Students.
- Enable the Students to Develop Outstanding Professional with Technical Competence and Management Skills.
- Fulfill the Expectance of the Society and Industries with Ethical Standards for developing Sustainable Solutions

Department

Vision:

Endeavoring in developing technically competent, confident and socially responsible Electronics Engineers.

Mission:

M1. Focus on teaching-learning process to spread in-depth knowledge of principles and its applications pertaining to Electronics Engineering and interdisciplinary areas.

M2. To inculcate creative thinking through innovative and group work exercises which enhances the practical and project skills, entrepreneurship, employability and research capabilities

M3. Provide ethical and value based education by promoting activities addressing the societal needs.

Program Educational Objectives (PEOs):

PEO 1. Graduates shall exhibit their knowledge and skills in analyzing and solving the real time engineering problems..

PEO 2. Graduate shall be successful in careers, higher studies, research or entrepreneurial assignments.

PEO 3. Graduate shall have exposure to emerging technologies, have opportunities to work as team member on multidisciplinary projects with effective communication skills and leadership qualities

PROGRAM OUTCOMES (POs)

PO1: Engineering Knowledge: Apply the knowledge of mathematics, science, engineering fundamentals, and engineering specialization to the solution of complex engineering problems.

PO2: Problem analysis: Identify, formulate and analyze hardware and software engineering problems and arrive at substantiated conclusions using first principles of mathematics, natural and engineering sciences.

PO3. Design/Development of solutions: Design and develop hardware / software system to meet desired needs within realistic constraints related to economic, environmental, social, political, ethical, health and safety, verifiability, and sustainability concerns.

PO4. Conduct investigations of complex problems: Use research based knowledge including design of experiments, analysis and interpretation of data and synthesis of the information to provide valid conclusions.

PO5. Modern tool usage: Use techniques, skills, and modern computer engineering tools, including simulation and modeling, for addressing the needs of engineering profession and interdisciplinary business.

PO6. The engineer and society: Understand the computing needs of inter-disciplinary scientific and engineering disciplines and design and develop algorithms and techniques for societal, health, safety, legal and cultural problems.

PO7. Environment and sustainability: Understand the impact of the professional engineering solutions in societal and environmental contexts, and demonstrate the knowledge of and need for sustainable development.

PO8. Ethics: Apply ethical principles and commit to professional ethics and responsibilities and norms of the engineering practice.

PO9. Individual and team work: Function as member or leader of team and to understand engineering management principles & finance to manage projects in multidisciplinary environment.

PO10. Communications: Effectively transfer technology to engineering community and society at large on broadly defined engineering needs through technical reports, presentations and software technologies.

PO11. Project management and finance: Demonstrate knowledge and understanding of engineering and management principles and apply these to one's own work, as a member and leader in a team. Manage projects in multidisciplinary environments.

PO12. Life-long learning: Engage in lifelong learning and adapt to rapid changes in computer science & allied areas.

PROGRAM SPECIFIC OUTCOMES (PSOs)

PSO1: Students will have ability to design and deploy systems in Electronics, Communication, Embedded System, Automation, VLSI, Signal Processing, Robotics and IOT.

PSO2: Students shall have aptitudes towards design, development and research of innovative products / systems in Electronics solving real time, societal problems.

CREDIT FRAMEWORK STRUCTURE

Semester		I	II	III	IV	V	VI	VII	VIII	Total Credits
Basic Science Course	BSC/ESC	3 * 2 = 6	4 * 2 = 8	--	--	--	--	--	--	14
Engineering Science Course		4 * 2 = 8	04	--	--	--	--	--	--	12
Programme Core Course (PCC)	Program Courses	--	02	4 * 2 = 8	4 * 2 = 8	4 * 2 + 2 = 10	3+3+3 = 9	--	4+4=8	45
Programme Elective Course (PEC)		--	--	--	--	04	4+3=7	02	3 * 2 = 6	19
Multidisciplinary Minor (MDM)	Multidisciplinary Courses	--	--	02	02	04	02	02	02	14
Open Elective (OE) Other than a particular program		--	--	04	02	02	--	--	--	08
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)	02	--	--	02	--	--	--	--	04
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	--	--	--	--	--	--	04	--	04
Comm. Engg. Project(CEP)/ Field Project (FP)		--	--	02	--	--	--	--	--	02
Project		--	--	--	--	--	--	--	04	04
Internship/ OJT		--	--	--	--	--	--	12	--	12
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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B. Tech. Semester-I (Electronics and Telecommunication Engineering -Major)

S N	Course Category	Course Code	Name of Course	BoS	Teaching Scheme (hrs.)			Total Credit	Examination Scheme					
					(Th)	TU	P		Theory				Practical	
									Exam Hrs.	MSE	CA	ESE	CA	ESE
1	BSC-I	1BET01T	Applied Mathematics-I	ASH	3	-	-	3	3	30	20	50	-	-
2	BSC-II	1BET02T	Applied Physics	ASH	2	-	-	2	2	15	10	25	-	-
3	BSC-II	1BET02P	Applied Physics Lab	ASH	-	-	2	1	-	-	-	-	25	25
4	ESC-I	1BET03T	Programming for Problem Solving	ETC	3	-	-	3	3	30	20	50	-	-
5	ESC-I	1BET03P	Programming for Problem Solving Lab	ETC	-	-	2	1	-	-	-	-	25	25
6	ESC-II	1BET04T	Basics of Electrical & Electronics Engineering	ETC	3	-	-	3	3	30	20	50	-	-
7	ESC-II	1BET04P	Basics of Electrical & Electronics Engineering lab	ETC	-	-	2	1	-	-	-	-	25	25
8	AEC-I	1BAE01T	Refer AEC Basket	ASH	2	-	-	2	2	15	10	25	-	-
9	VSC-I	1BET05P	Electronics workshop I	ETC	-	-	4	2	-	-	-	-	50	50
10	CC-I	1BCC01P	Refer CC Basket	ASH	-	-	4	2	-	-	-	-	50	50
Total					13	-	14	20	-	120	80	200	225	125
Total Marks (Theory & Practical)									400			350		
Total Marks (I Semester)									750					

J. Jaiswal

Shamange

V. K. Singh

B.Tech. Sem-II (Electronics and Telecommunication Engineering -Major)

S N	Course Category	Course Code	Name of Course	BoS	Teaching Scheme (hrs.)			Total Credit	Examination Scheme					
					(Th)	TU	P		Theory				Practical	
									Exam Hrs.	MSE	CA	ESE	CA	ESE
1	BSC-III	2BET01T	Applied Mathematics-II	ASH	3	1	-	4	3	30	20	50	-	-
2	BSC-IV	2BET02T	Applied Chemistry	ASH	3	-	-	3	3	30	20	50	-	-
3	BSC-IV	2BET02P	Applied Chemistry Lab	ASH	-	-	2	1	-	-	-	-	25	25
4	ESC-III	2BET03T	Object Oriented Programming	ETC	3	-	-	3	3	30	20	50	-	-
5	ESC-III	2BET03P	Object Oriented Programming Lab	ETC	-	-	2	1	-	-	-	-	25	25
6	PCC-1	2BET04T	Digital Electronics Design	ETC	2	-	-	2	2	15	10	25	-	-
7	IKS-I	2BIK01T	Refer IKS Basket	ASH	2	-	-	2	2	15	10	25	-	-
8	SEC-I	2BSE01P	Refer SEC Basket	ETC	-	-	4	2	-	-	-	-	50	50
9	CC-II	2BCC01P	Refer CC Basket	ASH	-	-	4	2	-	-	-	-	50	50
Total					13	1	12	20	-	120	80	200	200	100
Total Marks (Theory & Practical)										400			300	
Total Marks (II Semester)										700				

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COURSE CODE				
<u>SEM</u>	<u>B.Tech.</u>	<u>Branch</u>	<u>Subject S.N.</u>	<u>T/P</u>
1	B	ET	01	T

Exit option: Award of UG Certificate in Major with 40 credits and an additional 8 credits (see Exit Courses) in skill-based courses, internship, mini projects etc.

B.Tech. in Electronics and Telecommunication Engineering (Exit Level 1)
Offline/Online (ESSC-India / NSQF skill) Certification Course as below
(Additional 8 Credits)

SN	Course Category	Course Code	Name of Course	BoS	Teaching Scheme (hrs.)			Total Credit	Examination Scheme					
									Theory			Practical		
					(Th)	TU	P		Exam Hrs.	MSE	CA	ESE	CA	ESE
1	Exit Course	ETEXT01P	Electronic Sensors for Industrial applications Lab	ETC	-	-	2	1	-	-	-	-	25	25
2	Exit Course	ETEXT02P	Microcontroller and Applications Lab	ETC	-	-	2	1	-	-	-	-	25	25
3	Exit Course	ETEXT03P	Internship	ETC	-	-	-	6	-	-	-	-	-	200
Total					-	-	4	8	-	-	-	-	50	250
Total Marks (Exit Courses)										300				

EXIT COURSE CODE			
Branch	EXIT	Subject S.N.	T/P
ET	EXT	01	T

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**4-Years Bachelor's degree (B.Tech.) in Engg. /Tech. with
Multidisciplinary Minor**

LIST OF INDIAN KNOWLEDGE SYSTEM COURSES (IKS)

S. N.	Course Code	Course Name
1	1BIK01T-A / 2BIK01T-A	Indian Knowledge System
2	1BIK01T-B / 2BIK01T-B	Consciousness Studies
3	1BIK01T-C / 2BIK01T-C	Preserving Art, Culture and Tradition
4	1BIK01T-D / 2BIK01T-D	Wellness, traditional medicines and yoga
5	1BIK01T-E / 2BIK01T-E	Glimpses of ancient Science and Technology
6	1BIK01T-F / 2BIK01T-F	Foundation literature of Indian civilization

LIST OF CO-CURRICULAR COURSES (CC1 & CC2)

S. N.	Course Code	Course Name
1	1BCC01P-A / 2BCC01P-A	Yoga/ Sports Recreation
2	1BCC01P-B / 2BCC01P-B	Fundamentals of Indian Classical Dance: Kathak
3	1BCC01P-C / 2BCC01P-C	Music
4	1BCC01P-D / 2BCC01P-D	Chess
5	1BCC01P-E / 2BCC01P-E	Introduction to Language and Culture – Japanese/ Spanish/ German
6	1BCC01P-F / 2BCC01P-F	Basics of Vedic Maths
7	1BCC01P-G / 2BCC01P-G	Self-defense Essentials and Basics
8	1BCC01P-H / 2BCC01P-H	Basket Ball
9	1BCC01P-I / 2BCC01P-I	Athletics
10	1BCC01P-J / 2BCC01P-J	Painting

LIST OF ABILITY ENHANCEMENT COURSES (AEC) OFFERED

S. N.	Course Code	Course Name
1	1BAE01T-A / 2BAE01T-A	Professional Communication
2	1BAE01T-B / 2BAE01T-B	Business Communication Skill
3	1BAE01T-C / 2BAE01T-C	English for Professional Aptitude

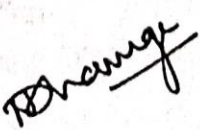
Note: IKS, CC and AEC courses are offered by Applied Science Board and Humanities

LIST OF SKILL ENHANCEMENT COURSES (SEC)

(Electronics & Telecommunication Engineering)

Offered by Departmental BOS

S. N.	Course Code	BoS	Course Name
1	2BSE01P-A	ETC	Electronic Workshop-II
2	2BSE01P-B	ETC	Digital Marketing
3	2BSE01P-C	ETC	Web Design Technology

			June 2024	1.00	Applicable for AY 2024-25 onwards
Chairman, BoS	Dean (Acad.)	Principal	Date of release	Version	

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