



# ST. VINCENT PALLOTTI COLLEGE OF ENGINEERING & TECHNOLOGY, NAGPUR

(An autonomous institution affiliated to Rashtrasant Tukadoji Maharaj Nagpur University)

## B. Tech. Scheme of Examination & Syllabus 2026-27 ELECTRONICS AND TELECOMMUNICATION ENGINEERING

### Annexure – I

### CREDIT FRAMEWORK STRUCTURE

Semester		I	II	III	IV	V	VI	VII	VIII	Total Credits
Basic Science Course	BSC/ESC	7	7	-	-	-	-	-	-	14
Engineering Science Course		6	6	-	-	-	-	-	-	12
Program Core Course (PCC)	Program Courses	2	2	13	10	7	4	6		44
Program Elective Course (PEC)		-	-	-	-	4	6	6	4	20
Multidisciplinary Minor (MDM)	Multidisciplinary Courses	-	-	2	3	3	3	3	-	14
Open Elective (OE) Other than a particular program		-	-	-	-	2	3	3	-	08
Vocational and Skill Enhancement Course (VSEC)	Skill Courses	-	2	1	1	2	2	-	-	08
Ability Enhancement Course (AEC -01, AEC-02)	Humanities Social Science and Management (HSSM)	1	1	-	-	2	-	-	-	04
Entrepreneurship/Economics/Management Courses		-	-	2	2	-	-	-	-	04
Indian Knowledge System (IKS)		2	-	-	-	-	-	-	-	02
Value Education Course (VEC)		-	-	2	2	-	-	-	-	04
Research Methodology	Experiential Learning Courses	-	-	-	-	-	-	-	4	04
Comm. Engg. Project (CEP)/ Field Project (FP)		-	-	-	2	-	-	-	-	02
Project		-	-	-	-	-	2	2	-	04
Internship/OJT		-	-	-	-	-	-	-	12	12
Co-curricular Courses (CC)	Liberal Learning Courses	2	2	-	-	-	-	-	-	04
<b>Total Credits (Major)</b>		<b>20</b>	<b>20</b>	<b>20</b>	<b>20</b>	<b>20</b>	<b>20</b>	<b>20</b>	<b>20</b>	<b>160</b>

		July 2026	NEP 4.0	Applicable for 2026-27
Chairman - BoS	Dean – Academics	Date of Release	Version	



## ST. VINCENT PALLOTTI COLLEGE OF ENGINEERING & TECHNOLOGY, NAGPUR

(An autonomous institution affiliated to Rashtrasant Tukadoji Maharaj Nagpur University)

### B. Tech. Scheme of Examination & Syllabus 2026-27 ELECTRONICS AND TELECOMMUNICATION ENGINEERING

#### GROUP II: SEMESTER I

SrNo	Course Category	CourseCode	Course Title	Hours per Week			Credits	Maximum Marks				Minimum Passing Marks	No of Hours for ESE
				L	T	P		Mid-Sem Examination	Continual Assessment	End Sem Examination	Total		
1	BSC	26ET101T	Applied Physics	2	-	-	2	10	10	30	50	23	1.5
2	BSC	26ET101P	Applied Physics Lab	-	-	2	1	-	25	25	50	25	-
3	BSC	26ET102T	Linear Algebra and Calculus	3	-	-	3	20	20	60	100	45	3
4	BSC	26ET102P	Linear Algebra and Calculus Lab	-	-	2	1	-	25	25	50	25	-
5	ESC	25ET103T	Digital Electronics	3	-	-	3	20	20	60	100	45	3
6	ESC	26ET103P	Digital Electronics Lab	-	-	2	1	-	25	25	50	25	-
7	ESC	26ET104P	C Programming Lab	-	-	4	2	-	25	25	50	25	-
8	PCC	26ET105T	Fundamentals of Electronics Engineering	2	-	-	2	10	10	30	50	23	1.5
9	AEC	26ET106P	Business Communication Skills – I Lab	-	-	2	1	-	25	25	50	25	-
10	IKS	26ET207T	Design Thinking #	2	-	-	2	10	10	30	50	23	1.5
11	CC	26ET107P	Co-curricular Courses - I	-	-	4	2	-	50	-	50	25	-
<b>Total</b>				<b>12</b>	<b>-</b>	<b>16</b>	<b>20</b>	<b>70</b>	<b>245</b>	<b>335</b>	<b>650</b>	<b>309</b>	

		July 2026	NEP 4.0	Applicable for 2026-27
Chairman - BoS	Dean – Academics	Date of Release	Version	



## ST. VINCENT PALLOTTI COLLEGE OF ENGINEERING & TECHNOLOGY, NAGPUR

(An autonomous institution affiliated to Rashtrasant Tukadoji Maharaj Nagpur University)

### B. Tech. Scheme of Examination & Syllabus 2026-27 ELECTRONICS AND TELECOMMUNICATION ENGINEERING

#### GROUP II: SEMESTER II

Sr. No	Course Category	Course Code	Course Title	Hours per Week			Credits	Maximum Marks				Minimum Passing Marks	No of Hours for ESE
				L	T	P		Mid-Sem Examination	Continual Assessment	End Semester Examination	Total		
1	BSC	26ET201T	Applied Chemistry	2	-	-	2	10	10	30	50	23	1.5
2	BSC	26ET201P	Applied Chemistry Lab	-	-	2	1	-	25	25	50	25	-
3	BSC	26ET202T	Statistics and Transforms	3	-	-	3	20	20	60	100	45	3
4	BSC	26ET202P	Statistics and Transforms Lab	-	-	2	1	-	25	25	50	25	-
5	ESC	26ET203T	Electrical Network Theory	2	-	-	2	10	10	30	50	23	1.5
6	ESC	26ET204T	Electronic Devices and Circuits	3	-	-	3	20	20	60	100	45	3
7	ESC	26ET204P	Electronic Devices and Circuits Lab	-	-	2	1	-	25	25	50	25	-
8	PCC	26ET205P	Electronic Workshop Lab – I	-	-	4	2	-	25	25	50	25	-
9	AEC	26ET206P	Business Communication Skills – II Lab	-	-	2	1	-	25	25	50	25	-
10	SEC	26ET107T	Indian Knowledge Systems #	2	-	-	2	10	10	30	50	23	1.5
11	CC	26ET207P	Co-curricular Courses – II	-	-	4	2	-	50	-	50	25	-
<b>Total</b>				<b>12</b>	<b>-</b>	<b>16</b>	<b>20</b>	<b>70</b>	<b>245</b>	<b>335</b>	<b>650</b>	<b>309</b>	<b>-</b>

		July 2026	NEP 4.0	Applicable for 2026-27
Chairman - BoS	Dean – Academics	Date of Release	Version	



# ST. VINCENT PALLOTTI COLLEGE OF ENGINEERING & TECHNOLOGY, NAGPUR

(An autonomous institution affiliated to Rashtrasant Tukadoji Maharaj Nagpur University)

## B. Tech. Scheme of Examination & Syllabus 2026-27

### ELECTRONICS AND TELECOMMUNICATION ENGINEERING

#### FIRST SEMESTER

Course Code	Course Name	Th	Tu	Pr	Credits	Evaluation			
						MSE	CA	ESE	Total
26ET101T	Applied Physics	2	--	--	2	10	10	30	50

Course Objectives	Course Outcomes
<p>This course is intended</p> <ol style="list-style-type: none"><li>To understand the basic laws of physics and types of materials and their application in engineering and technology.</li><li>To develop scientific temper and analytical capability.</li></ol>	<p>Students will be able to</p> <ol style="list-style-type: none"><li>Explain the fundamental concepts of crystal structure, unit cells, Miller indices, and apply Bragg's law to analyze X-ray diffraction in crystalline solids.</li><li>Classify different types of magnetic materials and analyze their properties (diamagnetic, paramagnetic, ferromagnetic) along with their practical applications.</li><li>Illustrate the band theory of solids, differentiate between conductors, insulators, and semiconductors, and calculate Fermi energy for given systems.</li><li>Distinguish between intrinsic and extrinsic semiconductors and evaluate the working principle and applications of p-n junction diodes in electronic devices.</li></ol>

<b>Unit I CRYSTAL STRUCTURE</b>	<b>[10 Hrs]</b>
Space lattice, Crystal structure, Unit cell, Types of unit cell, Characteristics of SC, BCC and FCC unit cell, Miller Indices, Interplanar distance and its derivation, Diffraction of X-rays - Bragg's Law and its applications.	
<b>Unit II MAGNETIC MATERIALS</b>	<b>[10 Hrs]</b>
Terms and definitions, Types of magnetic materials, characteristics of Diamagnetic, Paramagnetic and Ferromagnetic Materials, Applications of soft and hard magnetic materials.	
<b>Unit III SEMICONDUCTORS</b>	<b>[10 Hrs]</b>
Free electron Theory (qualitative idea) and its features; Idea of band formation in solids, Classification of solids: Metal, Insulator, Semiconductor; Fermi Energy, Types - Intrinsic and Extrinsic Semiconductors, Application of Extrinsic Semiconductors - p-n junction diode	

#### Text Books

S.N	Title	Authors	Edition	Publisher
1	Fundamentals of Physics	David Halliday, Robert Resnick and Jerle Walker	8 <sup>th</sup> extended	John-Wiley India
2	Engineering Physics	M. N. Avadhanulu	Latest edition	S. Chand & Co.

#### Reference Books

S.N	Title	Authors	Edition	Publisher
1	Solid State Physics	Charles Kittel	Eighth edition	John Wiley & Sons, Inc
2	Solid State Physics	R.L. Singhal	Eighth edition	Kedarnath Ramnath

#### Online Resources

1	<a href="https://www.britannica.com/science/semiconductor#ref233890">https://www.britannica.com/science/semiconductor#ref233890</a>
2	<a href="https://www.geeksforgeeks.org/semiconductors/">https://www.geeksforgeeks.org/semiconductors/</a>
3	<a href="https://www.sciencedirect.com/topics/chemistry/magnetic-material">https://www.sciencedirect.com/topics/chemistry/magnetic-material</a>
4	<a href="https://www.livescience.com/33816-quantum-mechanics-explanation.html">https://www.livescience.com/33816-quantum-mechanics-explanation.html</a>

		July 2026	NEP 4.0	Applicable for 2026-27
Chairman - BoS	Dean - Academics	Date of Release	Version	



# ST. VINCENT PALLOTTI COLLEGE OF ENGINEERING & TECHNOLOGY, NAGPUR

(An autonomous institution affiliated to Rashtrasant Tukadoji Maharaj Nagpur University)

## B. Tech. Scheme of Examination & Syllabus 2026-27

### ELECTRONICS AND TELECOMMUNICATION ENGINEERING

#### FIRST SEMESTER

Course Code	Course Name	Th	Tu	Pr	Credits	Evaluation		
						CA	ESE	Total
26ET101P	Applied Physics Lab	--	--	2	1	25	25	50

Course Objectives	Course Outcomes
This course is intended 1. To understand the basic laws of physics and types of materials and their application in engineering and technology. 2. To develop scientific temper and analytical capability.	Students will be able to 1. Illustrate principles/ laws by selecting and using proper measuring instruments, interpret result and draw conclusions. 2. Find various parameters using various properties of light. 3. Demonstrate the concept and working of Semiconductor Devices and the effect of distance on magnetic field intensity.

Expt. No.	Title of the experiment
1	Determination of forward and reverse V-I characteristics of p-n junction diode
2	Determination of voltage regulation characteristics of Zener diode
3	Determination of wavelength of monochromatic light by using the phenomenon of Diffraction of light
4	Determination of the radius of curvature of Plano-convex lens using the phenomenon of Interference of light
5	Determination of refractive indices of a Birefringent crystal for o-ray and e-ray
6	Stewart & Gee Experiment to study the effect of distance on magnetic field
7	Determination of current gain of a transistor in Common Base mode
8	Determination of current gain of a transistor in Common Emitter mode
9	Determination of lattice constant of a crystal
10	Study of Zener diode as voltage regulator using V-Lab

#### Text Books

S.N	Title	Authors	Edition	Publisher
1	Fundamentals of Physics	David Halliday, Robert Resnick and Jerle Walker	8e extended	John-Wiley India
2	A Textbook of Engineering Physics	Dr. M. N. Avadhanulu, Dr. P. G. Kshirsagar	Latest edition	S. Chand Publication.

#### Reference Books

S.N	Title	Authors	Edition	Publisher
1	Solid State Physics	Charles Kittel	Eighth edition	John Wiley & Sons, Inc
2	Solid State Physics	R.L. Singhal	Eighth edition	Kedarnath Ramnath

#### Online Resources

1	<a href="https://www.britannica.com/science/semiconductor#ref233890">https://www.britannica.com/science/semiconductor#ref233890</a>
2	<a href="https://www.geeksforgoeks.org/semiconductors/">https://www.geeksforgoeks.org/semiconductors/</a>
3	<a href="https://www.sciencedirect.com/topics/chemistry/magnetic-material">https://www.sciencedirect.com/topics/chemistry/magnetic-material</a>

		July 2026	NEP 4.0	Applicable for
Chairman - BoS	Dean - Academics	Date of Release	Version	2026-27



# ST. VINCENT PALLOTTI COLLEGE OF ENGINEERING & TECHNOLOGY, NAGPUR

(An autonomous institution affiliated to Rashtrasant Tukadoji Maharaj Nagpur University)

## B. Tech. Scheme of Examination & Proposed Syllabus 2026-27 ELECTRONICS AND TELECOMMUNICATION ENGINEERING

### FIRST SEMESTER

Course Code	Course Name	Th	Tu	Pr	Credits	Evaluation			
						MSE	CA	ESE	Total
26ET102T	Linear Algebra and Calculus	3	-	-	3	20	20	60	100

Course Objectives	Course Outcomes
<b>This course is intended to</b> 1. Develop students' conceptual understanding and computational skills in Matrix Algebra and Differential Equations for solving mathematical problems. 2. Enable learners to apply Multivariate and Vector Calculus for analyzing functions of several variables and modeling physical phenomena.	<b>Students will be able to</b> 1. Apply matrix concepts to solve and analyze linear systems. 2. Analyze and solve engineering problems involving eigenvalues, eigenvectors, and functions of matrices. 3. Solve multivariate calculus problems involving partial derivatives, Jacobians, and optimization. 4. Apply first order and higher order differential equations to solve problems in engineering. 5. Evaluate vector calculus operations and their physical applications.
<b>Unit I</b>	<b>[9Hrs]</b>
<b>Matrix Algebra:</b> Introduction to matrices, Rank of a matrix, Consistency of system of linear equations, Linear and orthogonal transformations, Linear dependence of vectors.	
<b>Unit II</b>	<b>[9Hrs]</b>
<b>Matrices:</b> Characteristics equation, Cayley- Hamilton Theorem, Eigen values and Eigen vectors, Reduction to diagonal form, Reduction of quadratic form to canonical form by orthogonal transformation, Sylvester's theorem.	
<b>Unit III</b>	<b>[9Hrs]</b>
<b>Multivariate Calculus:</b> Functions of several variables and their partial derivatives, Chain rule and total differential coefficient, Jacobians and its properties, Maxima –Minima of functions of two variables, Lagrange's method of undetermined multipliers.	
<b>Unit IV</b>	<b>[9Hrs]</b>
<b>Differential Equations:</b> First order and first degree differential equations: Linear, Higher order differential equations with constant coefficients, Method of variation of parameters, Cauchy's homogeneous linear equation, Applications of differential equations.	
<b>Unit V</b>	<b>[9Hrs]</b>
<b>Vector Calculus:</b> Vector differentiation, Gradient, Directional derivatives, Divergence and Curl with their physical interpretation Solenoidal and Irrotational motions, Scalar potential, Line integral & Work done.	

### Text Books

S.N	Title	Authors	Edition	Publisher
1	Higher Engineering Mathematics	B. S. Grewal	38th	Khanna Publishers, New Delhi.
2	Higher Engineering Mathematics	H. K. Das & Er. Rajnish Verma	1st	S. Chand & CO. Pvt. Ltd., New Delhi

### Reference Books

S.N	Title	Authors	Edition	Publisher
1	Higher Engineering Mathematics	B.V. Ramana,	11th reprint, 2010.	Tata McGraw Hill New Delhi
2	A Text Book of Engineering Mathematics	Peter O' Neil	8 <sup>th</sup>	Thomson Asia Pvt. Ltd., Singapore.

		July 2026	NEP 4.0	Applicable for 2026-27
Chairman - BoS	Dean – Academics	Date of Release	Version	



# ST. VINCENT PALLOTTI COLLEGE OF ENGINEERING & TECHNOLOGY, NAGPUR

(An autonomous institution affiliated to Rashtrasant Tukadoji Maharaj Nagpur University)

## B. Tech. Scheme of Examination & Syllabus 2026-27

### ELECTRONICS AND TELECOMMUNICATION ENGINEERING

#### FIRST SEMESTER

Course Code	Course Name	Th	Tu	Pr	Credits	Evaluation		
						CA	ESE	Total
26ET102P	Linear Algebra and Calculus Lab	--	--	2	1	25	25	50

Course Objectives	Course Outcomes
<p><b>This Course is intended to:</b></p> <ol style="list-style-type: none"><li>To develop students' computational proficiency in solving problems related to linear algebra, calculus, and differential equations using SageMath with an emphasis on symbolic computation and numerical methods.</li><li>To enable students to apply SageMath for solving and visualizing problems in vector calculus through effective use of graphical and analytical tools.</li></ol>	<p><b>Students will be able to:</b></p> <ol style="list-style-type: none"><li>Apply fundamental matrix operations and solve systems of linear equations using Sage Math.</li><li>Apply concepts of linear algebra to compute eigenvalues and eigenvectors of matrices using SageMath.</li><li>Evaluate partial derivatives of multivariable functions and solve first and higher-order ordinary differential equations using SageMath.</li><li>Analyze and visualize vector calculus operations including gradient, divergence, curl, and evaluate line and surface integrals using SageMath.</li></ol>

#### List of Experiments:-

Experiment No.	List of Experiment
1	To Implement basic matrix operations using SageMath's symbolic computation tools.
2	To check the consistency of a system of linear equations using augmented matrices and SageMath.
3	To solve systems of linear equations using various within the SageMath environment.
4	To determine eigenvalues and eigenvectors of matrices using built-in SageMath functions.
5	To implement and validate the Cayley-Hamilton Theorem with the aid of SageMath.
6	To compute partial derivatives of various orders for multivariable functions using SageMath.
7	To solve first-order and higher-order differential using SageMath's differential equation solvers.
8	To find maxima and minima of functions of two variables using partial derivatives and the second derivative test implemented in SageMath.
9	To compute and visualize vector differential operations using SageMath.
10	To compute vector integrals in SageMath.

#### Text Books

S.N	Title	Authors	Edition	Publisher
1	Computational Mathematics with SageMath	Paul Zimmermann	1st	SIAM Publications Library.
2	Basics of SageMath : Mathematics(Practicals)	Varun Kumar	1st	Amazon KDP

#### Reference Books

S.N	Title	Authors	Edition	Publisher
1	Mathematics-SageMath Software System	Indrajeet Varhadpande & Dr. Kirti Sahu	1 <sup>st</sup>	Himalaya Publication
2	Applied Mathematics Using SageMath	Dr. Kirti Sahu & Dr. Sajid Anwar	1 <sup>st</sup>	Himalaya Publication

			July 2026	NEP 4.0	Applicable for 2026-27
Chairman - BoS	Dean - Academics	Date of Release	Version		



**ST. VINCENT PALLOTTI COLLEGE OF ENGINEERING & TECHNOLOGY, NAGPUR**

(An autonomous institution affiliated to Rashtrasant Tukadoji Maharaj Nagpur University)

**B. Tech. Scheme of Examination & Proposed Syllabus 2026-27**

**ELECTRONICS AND TELECOMMUNICATION ENGINEERING**

**FIRST SEMESTER**

Course	Course Name	Th	Tu	Pr	Credits	Evaluation			
						MSE	CA	ESE	Total
26ET103T	Digital Electronics	3	-	-	3	20	20	60	100

Course Objectives	Course Outcomes
1. To acquaint students with various basic digital gates used in digital system and develop logical circuits using Boolean gates, construction of various combinational and sequential logic circuits using basic gates. 2. The student will be able to analyze, design, and evaluate digital circuits of medium complexity and differentiate various logic families.	Students will be able to, <ol style="list-style-type: none"> <li>1. Illustrate number conversion, use of Boolean algebra theorems, codes and reduction the given expression using Boolean algebra and Kmaps</li> <li>2. Analyze, design and implement combinational logic circuits.</li> <li>3. Implement truth tables of all flip-flops and illustrate flip-flop conversion</li> <li>4. Analyze, design and implement various shift registers and counters.</li> <li>5. Summarize the different logic families and design digital system using PLD and explain real life example.</li> </ol>

**Unit I Number System and Logic Simplification**

**[9 Hrs]**

Analog V/s Digital systems, Number Systems, Digital Codes – Binary, Octal, decimal, Hex, ASCII, BCD, Gray, Ex -3, Conversion, Boolean Algebra, Logic Gates, standard representations for logic functions, k map representation of logic functions (SOP & POS forms), minimization of logical functions for min-terms and max-terms (up to 4 variables), don't care conditions

**Unit II Combinational Circuits**

**[9Hrs]**

Adders, Subtractor, Parity generators/checkers, Multiplexers and their use in combinational logic designs, multiplexer trees, Demultiplexers, Encoders & Decoders, BCD - to 7 segment decoder, Binary Code converters

**Unit III Sequential Circuits**

**[9Hrs]**

1 Bit Memory Cell, Clocked SR, JK, MS J-K flip flop, D and T flip-flops. Use of preset and clear terminals, Excitation Table for flip flops. Conversion of flip flops.

**Unit IV Application of Sequential Circuits**

**[9Hrs]**

Registers, shift registers, Counters (ring counters, twisted ring counters, ripple counters) up/down counters, synchronous counters.

**Unit V Logic Families and Semiconductor**

**[9Hrs]**

Logic families TTL, ECL, CMOS and their characteristics – Fan-In, Fan-Out, Propagation Delay, Power dissipation, Noise Margin, Timing issues. Comparison of different logic Families. Memory elements (RAM, ROM, EPROM, EEPROM, NVRAM, SRAM, DRAM, Synchronous SRAM, DDR and QDR SRAM, Content Addressable Memory) Concept of Programmable logic devices, Logic implementation using Programmable Devices.

**Text Books**

S.	Title	Authors	Edition	Publisher
1	Fundamentals of digital circuits	Kumar, A Anand	2	Prentice hall of India private
2	Digital Design	M. Morris Mano, Michael D. Ciletti	1	Pearson, 2013
3	Digital circuits and logic design	Lee, Samuel	--	Prentice Hall Of India private limited

**Reference Books**

S.N	Title	Authors	Edition	Publisher
1	Digital Electronics: Principles, Devices	A. K. Maini	1	Wiley, 2007
2	Integrated electronics: Analog and	Millman, Jacob	1	TMH

		July 2026	NEP 4.0	Applicable for 2026-27
Chairman - BoS	Dean – Academics	Date of Release	Version	

**ST. VINCENT PALLOTTI COLLEGE OF ENGINEERING & TECHNOLOGY, NAGPUR**

(An autonomous institution affiliated to Rashtrasant Tukadoji Maharaj Nagpur University)

**B. Tech. Scheme of Examination & Proposed Syllabus 2026-27****ELECTRONICS & TELECOMMUNICATION ENGINEERING****FIRST SEMESTER**

Course	Course Name	Th	Tu	Pr	Credits	Evaluation		
						CA	ESE	Total
26ET103P	Digital Electronics Lab	-	-	2	1	25	25	50

Course Objectives	Course Outcomes
To acquire knowledge of digital electronics and implement digital logic circuits.	<ol style="list-style-type: none"><li>1. Identify the various digital ICs and understand its operation</li><li>2. Analyze, design, illustrate and implement combinational logic circuits</li><li>3. Design and implement sequential circuits like flip flops, registers, counters</li><li>4. Develop medium complexity logic circuits.</li></ol>

Expt. No.	Title of the experiment
1	To verify the truth table of different Logic Gates.
2	To study and verify the NAND and NOR gates as a universal gate.
3	To implementation of Half adder and Full Adder and to verify their truth table.
4	To Implement full adder using 4:1 MUX and verify truth table of 1:4 DEMUX
5	To study and verify truth table of Encoder and Decoder.
6	To study and verify the truth table of different types of Flip-flops
7	To study the functioning of Up/Down counter,
8	Design and Simulation of Arithmetic Logic Unit
9	Mini Project: Design of Code converters on Breadboard.

**Reference Books****Lab Manual**

S.N	Title	Authors	Edition	Publisher
1	Digital Electronics: Principles, Devices	A. K. Maini	1	Wiley, 2007
2	Integrated electronics: Analog and	Millman, Jacob	1	TMH

		July 2026	NEP 4.0	Applicable for 2026-27
Chairman - BoS	Dean – Academics	Date of Release	Version	



**ST. VINCENT PALLOTTI COLLEGE OF ENGINEERING & TECHNOLOGY, NAGPUR**  
(An autonomous institution affiliated to Rashtrasant Tukadoji Maharaj Nagpur University)  
**B. Tech. Scheme of Examination & Proposed Syllabus 2026-27**  
**DEPARTMENT OF ELECTRONICS & TELECOMMUNICATION ENGINEERING**

**FIRST SEMESTER**

Course Code	Course Name	Th	Tu	Pr	Credits	Evaluation		
						CA	ESE	Total
26ET104P	Programming Using C Lab	-	-	4	2	25	25	50

Course Objectives	Course Outcomes
<ol style="list-style-type: none"><li>To develop problem-solving skills by applying programming techniques.</li><li>To impart knowledge on using arrays and strings for data manipulation.</li><li>To understand the use of structures for organizing complex data.</li><li>To learn how to handle files for data storage and manipulation.</li><li></li></ol>	<ol style="list-style-type: none"><li>Write basic C programs to perform simple tasks such as printing output, performing arithmetic operations, and calculating simple interest.</li><li>Develop programs using loops (for, while, do-while) to handle repetitive tasks efficiently.</li><li>Create and utilize user-defined functions to promote code reusability and modularity.</li><li>Perform searching and sorting operations on arrays.</li><li>Develop programs to copy contents from one file to another, demonstrating proficiency in file handling.</li></ol>

Expt. No.	Topics
1	Basic Programs: Hello World, Arithmetic Operations, Simple Interest Calculation
2	Control Structures: Programs using if-else
3	Control Structures: switch-case
4	Control Structures: loops
5	Functions: Programs on user-defined functions, recursive functions
6	Arrays and Strings: Programs on searching, sorting, string manipulation
7	Pointers: Pointer arithmetic, arrays and pointers, dynamic memory allocation
8	Structures: Defining and using structures, array of structures, structures and functions
9	File Handling: File read/write operations, copying contents from one file to another

**References**

S.No.	Title	Authors	Edition	Publisher
1.	Programming In Ansi C	E. Balagurusamy	5th	Tata McGraw - Hill Education
2.	The C programming Language	Brian W. Kernighan and Dennis M. Ritchie	2 <sup>nd</sup>	Prentice-Hall
3.	Let Us C	Yashavant Kanetkar	5th	Bpb

		July 2026	NEP 4.0	Applicable for 2026-27
Chairman - BoS	Dean – Academics	Date of Release	Version	



**ST. VINCENT PALLOTTI COLLEGE OF ENGINEERING & TECHNOLOGY, NAGPUR**  
 (An autonomous institution affiliated to Rashtrasant Tukadoji Maharaj Nagpur University)  
**B. Tech. Scheme of Examination & Proposed Syllabus 2026-27**  
**DEPARTMENT OF ELECTRONICS & TELECOMMUNICATION ENGINEERING**

**FIRST SEMESTER**

Course Code	Course Name	Th	Tu	Pr	Credits	Evaluation			
						MSE	CA	ESE	Total
26ET105T	Fundamentals of Electronics Engineering	2	-	-	2	10	10	30	50

Course Objectives	Course Outcomes
1. To introduce the fundamental concepts of electronics and communication systems. 2. To familiarize students with basic electronic components, devices, and circuit theories. 3. To provide hands-on experience in analyzing and designing simple electronic circuits.	After completion of the course students are able to,  1. Grasp the principles of operation of different types diodes, transistors and their applications. 2. Analyze basic electronic circuits and their applications. 3. Acquire knowledge of communication systems.

<b>UNIT- I Diodes and it's applications</b>	<b>[10Hrs]</b>
Structure and Working Principle of diode, PN Junction, Zener, Light Emitting Diode, LDR, Photodiode Characteristics and Applications, Diode Circuits and applications -Switching, Rectifiers, Clipper and Clamper Circuits, Zener Regulator.	
<b>Unit -II Bipolar Junction Transistor</b>	<b>[10Hrs]</b>
BJT Types, Operation: NPN Transistor and PNP Transistor, Modes of Operation: Active, Cut-off, and Saturation, CE Characteristics, Application: Amplifier, switch. Introduction to Power amplifier, Principle of positive & negative feedback in electronic circuits.	
<b>Unit -III Communication Fundamentals</b>	<b>[10Hrs]</b>
Signal-Noise-Distortion, Introduction to Communication Systems, Basic Types of Modulation: AM, FM, PM, Signal to noise ratio, Modulation index, Transmission and Reception of Signals, Applications in Modern Telecommunication	

**Handson :** Diode and Transistor Characteristics, Rectifier Circuit: Build and analyze half-wave and full-wave rectifier circuits

**Text Books**

S.N	Title	Authors	Edition	Publisher
1	Electronic devices and circuits	J. Millman and Halkias	2	TMH Publications
2	Electronic Devices & Circuit Theory	Boylestad & Nashelsky	2	PHI publications.
3	Electronic devices and circuits	Salivahanan, Suresh Kumar, Vallavaraj	3	TMH Publications

**Referen e Books**

S.N	Title	Authors	Edition	Publisher
1	Integrated Electronics, Analog & Digital Circuits & Systems	J. Millman and Halkias	2	TMH Publications
2	Electronics Principles	Albert Malvino	3	TMH Publications.
3	Electronics Circuits Discrete and Integrated ckt	Schilling & Beloove	--	TMH Publications.

		July 2026	NEP 4.0	Applicable for 2026-27
Chairman - BoS	Dean – Academics	Date of Release	Version	



# ST. VINCENT PALLOTTI COLLEGE OF ENGINEERING & TECHNOLOGY, NAGPUR

(An autonomous institution affiliated to Rashtrasant Tukadoji Maharaj Nagpur University)

## B. Tech. Scheme of Examination & Syllabus 2026-27 ELECTRONICS AND TELECOMMUNICATION ENGINEERING

### FIRST SEMESTER

Course Code	Course Name	Th	Tu	Pr	Credits	Evaluation		
						CA	ESE	Total
26ET106P	Business Communication Skills – I Lab	-	-	2	1	25	25	50

Course Objectives	Course Outcomes
To develop students' ability to apply, analyze, and evaluate LSRW skills in business and professional communication settings.	<b>Students will be able to:</b> 1. Apply effective pronunciation, grammar, and voice modulation in professional communication. 2. Analyze spoken and written texts using listening and reading comprehension skills for professional and competitive contexts. 3. Create clear and professional business correspondence using appropriate format, tone, and language. 4. Evaluate communication strategies to demonstrate confidence and clarity in structured presentations and group discussions.

Expt. No.	Title of the experiment
1	Pronunciation and Voice Modulation
2	Self-Introduction
3	Grammar
4	Business Correspondence
5	Reading Comprehension for Competitive Exam
6	Listening Skills (Speeches of great Personalities)
7	Presentation Skills
8	Group Discussion

#### Reference Books:

S. N	Title	Authors	Edition	Publisher
1	Communication Skills for Engineers	C. Muralikrishna & Sunita Mishra	2nd Edition, 2011	Pearson India Education Services
2	Communication Skills	Dr. L. Bisen, Dr. B. Agrawal & Dr. N. T. Kalyani	1st Edition, 2021	Himalaya Publishing House
3	Barron's IELTS Superpack	Lin Lougheed	2012	Barrons Educational Series

		July 2026	NEP 4.0	Applicable for 2026-27
Chairman - BoS	Dean – Academics	Date of Release	Version	