ST. VINCENT PALLOTTI COLLEGE OF ENGINEERING & TECHNOLOGY, NAGPUR

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

B. Tech. Scheme of Examination & Syllabus 2025-26

ELECTRONICS AND TELECOMMUNICATION ENGINEERING

GROUP II: SEMESTER II

Sr No	Course Category	Course Code	Course Title	Hours per			Credits	Maximum Marks				Minimum Passing Marks	Duration of ESE (Hours)
				L	T	P		Mid-Sem Examination	Continual Assessment	End Sem Examination	Total		
1	BSC	**25ET201T**	Applied Chemistry	**2**	**-**	**-**	**2**	**10**	**10**	**30**	**50**	**23**	**1.5**
2	BSC	**25ET201P**	Applied Chemistry Lab	**-**	**-**	**2**	**1**	**-**	**25**	**25**	**50**	**25**	**-**
3	BSC	**25ET202T**	Statistics and Transforms	**3**	**-**	**-**	**3**	**20**	**20**	**60**	**100**	**45**	**3**
4	BSC	**25ET202P**	Statistics and Transforms Lab	**-**	**-**	**2**	**1**	**-**	**25**	**25**	**50**	**25**	**-**
5	PCC	**25ET203T**	Electrical Network Theory	**2**	**-**	**-**	**2**	**10**	**10**	**30**	**50**	**23**	**1.5**
6	ESC	**25ET204T**	Electronic Devices & Circuits	**3**	**-**	**-**	**3**	**20**	**20**	**60**	**100**	**45**	**3**
7	ESC	**25ET204P**	Electronic Devices & Circuits Lab	**-**	**-**	**2**	**1**	**-**	**25**	**25**	**50**	**25**	**-**
8	ESC	**25ET205P**	Electronic Workshop Lab – I	**-**	**-**	**4**	**2**	**-**	**25**	**25**	**50**	**25**	**-**
9	AEC	**25ET206P**	Business Communication Skills – II Lab	**-**	**-**	**2**	**1**	**-**	**25**	**25**	**50**	**25**	**-**
10	IKS	**25ET107T**	Indian Knowledge Systems*	**2**	**-**	**-**	**2**	**10**	**10**	**30**	**50**	**23**	**1.5**
11	CC	**25ET208P**	Co-curricular Courses – II	**-**	**-**	**4**	**2**	**-**	**50**	**-**	**50**	**25**	**-**
Total				**12**	**-**	**16**	**20**	**70**	**245**	**335**	**650**	**--**	**--**

Course to be taken online through NPTEL

		July 2025	**NEP 3.0**	**Applicable for 2025-26**
Chairman - BoS	**Dean – Academics**	**Date of Release**	**Version**	

SEMESTER II

Course Code	Course Name	Th	Tu	Pr	Credits		Evaluation		
						MSE	CA	ESE	Total
25ET201T	Applied Chemistry	2	0	–	2	10	10	30	50

Course Objectives	Course Outcomes
1. To impart knowledge on water chemistry, electrochemical phenomena, types of fuels and lubricants 2. To enhance analytical skills in solving numerical problems related to hardness of water, calorific values of fuel. 3. To cultivate an awareness of the importance of material selection and corrosion prevention strategies.	Students will be able to 1. Analyze the concepts of hardness of water and apply it for industrial water treatment. 2. Evaluate the performance and advantages of Li-Ion battery, fuel cell and photochemical cell in terms of efficiency, working mechanism, and applications. 3. Compare and explain different types of corrosion & its prevention methods. 4. Determine calorific values of fuels using different calorimeters and evaluate the significance of analysis of coal 5. Measure and interpret the important properties of lubricants

Unit I Water Technology-	**[10 Hrs]**
Hardness of water, Numericals on Hardness, Industrial water treatment- Boiler Troubles- Carry over, Caustic embrittlement, Boiler corrosion, Scale & Sludge formation External treatments - Softening of water by Zeolite process and De-mineralization process, Numericals on Zeolite process. Desalination of sea water- Electro dialysis and Reverse Osmosis process-Principle, methods and advantages	
Unit II Electrochemical Phenomenon & Corrosion	**[10 Hrs]**
Introduction- brief idea about electrochemical & galvanic series; Electrolytic & Electrochemical Cell; Construction, working & Advantages of Li Ion Battery, Fuel Cell, Photochemical Cell. Corrosion- Introduction, Factors affecting corrosion, Types of corrosion, Corrosion prevention- Material & Design selection & Cathodic protection	
Unit III Fuels & Lubricants	**[10 Hrs]**
Fuels: Introduction, Calorific value, HCV & LCV. Determination of calorific value of fuels by Bomb & Boy's calorimeter. Numericals on Dulong's formula. Significance of Proximate and Ultimate analysis of Coal. **Lubricants:** Introduction, Classification, Mechanisms. Properties & Significance of liquid lubricants–Viscosity and viscosity index, Flash and fire point, Cloud and pour point, Aniline point, acid value, saponification number. Numerical on Viscosity Index	

Text Books

S.N	Title	Authors	Edition	Publisher
1	Text Book of Engineering Chemistry	S.S. Dara,	New	S. Chand and Company Ltd. New Delhi.
2	Textbook of Engineering Chemistry	P.C. Jain and Monica Jain	Sixth	Dhanpat Rai and Sons, New Delhi.

Reference Books

S.N	Title	Authors	Edition	Publisher
1	A Text book of Engineering Chemistry	Shashi Chawla	Ist	Dhanpat Rai & Sons, New Delhi
2	Applied Chemistry	N. Krishnamurthy:P. Vallinavagam. And K. Jeysubramanian	Ist	TMH

SEMESTER II

Course Code	Course Name	Th	Tu	Pr	Credits	Evaluation		
25ET201P	Applied Chemistry Lab	–	–	1	1	CA	ESE	Total
						25	25	50

Course Objectives	Course Outcomes
1. To develop practical skills for analyzing water quality parameters, including hardness, alkalinity and turbidity using standard analytical techniques 2. To impart hands-on experience in testing and evaluating fuel and lubricant properties 3. To enable students to use modern analytical instruments	Students will be able to 1. Determine hardness of water samples using complexometric titration and virtual simulation experiments. 2. Evaluate key physical properties of lubricating oils 3. Perform proximate analysis of coal and interpret its industrial relevance. 4. Utilize electrochemical and conductometric methods for the quantitative estimation of chemical substances such as acids and metals.

Expt. No.	Experiments based on Performance - Any SIX
1	Determination of Hardness (Total, Permanent & Temporary) of Water Sample by Complexometric method
2	Determination of heavy metal from industrial effluent by colorimeter
3	Determination of Flash point by using Cleveland Open cup flash point apparatus / Abel's Close cup apparatus / Pensky Marten close cup apparatus
4	Determination of viscosity of lubricating oil at different temperature by Redwood Viscometer No.1 OR No. 2
5	Proximate analysis of coal -Determination of % of Moisture, Volatile Matter and Ash in coal sample
6	Determination of Neutralisation number (Acid value) of oil.
7	Determination of Cloud point & pour point from given lubricating oil
8	Determination of strength of the given acid Conductometrically
Demonstration - Any ONE	
1	Measurement of pH of sample from different sources by Digital pH Meter.
2	Determination of Consistency of grease by Penetrometer.
3	Determination of turbidity from industrial effluent.
4	Determination of calorific value of solid/ liquid fuel by using Bomb calorimeter.
Virtual Experiment - Any ONE	
1	Determination of Alkalinity of Water Sample using Warder method
2	Determination of Hardness from Tap water/ Well water/ Sea water
3	Estimation of DO content of Water sample.
Activity - Any ONE	
1	Visit of nearby industrial chemicals and safety measures.
2	Estimation of Air /Water Pollution Level at different Sites in Nagpur City.
3	Visit to Water Treatment Plant/Effluent Treatment Plant

Text Books

S.N	Title	Authors	Edition	Publisher
1	A Textbook on experiment and calculation in engineering chemistry	S.S. Dara	9th	S.Chand

Reference Books

S.N	Title	Authors	Edition	Publisher
1	Applied Chemistry theory and practical	O.P. Virmani and A.K. Narular	Ist	New Age International
2	Laboratory Manual on Engineering Chemistry	Dr. Subdharani	Ist	Dhanpat Rai Publishing

ST. VINCENT PALLOTTI COLLEGE OF ENGINEERING & TECHNOLOGY,NAGPUR

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

B. Tech. Scheme of Examination & Syllabus 2025-26

ELECTRONICS AND TELECOMMUNICATION ENGINEERING

SECOND SEMESTER

Course Code	Course Name	Th	Tu	Pr	Credits	Evaluation			
						MSE	CA	ESE	Total
25ET202T	Statistics and Transforms	3	-	-	3	20	20	60	100

Course Objectives	Course Outcomes
This Course is intended to: 1. To equip students with the skills to analyze, interpret, and model statistical data using appropriate computational and analytical techniques. 2. To develop students' understanding of integral transforms and their application in solving differential equations and engineering problems.	**Students will be able to:** 1. Solve numerical integration and find analytical solutions to difference equations. 2. Apply statistical methods such as regression, correlation, and least squares fitting to analyze data. 3. Apply Laplace and inverse Laplace transforms with their properties and theorems to evaluate integrals and solve differential equations. 4. Compute Fourier series for periodic functions and apply Fourier transform to convert signals into frequency domain.

Unit I	**[9hrs]**
Finite Differences: Operator E and delta, Factorial Polynomial, Numerical integration: Trapezoidal rule, Simpson's 1/3 rule, Simpson's 3/8 rule, Difference equations with constant coefficients.	
Unit II	**[9hrs]**
Statistics: Fitting of straight line, parabola and exponential curves by method of least squares, Coefficient of correlation and lines of regressions, Rank correlation, Multiple regression.	
Unit III	**[7hrs]**
Laplace Transform –I : Definition, Properties, Evaluation of Integrals by Laplace Transform.	
Unit IV	**[10hrs]**
Laplace Transform –II : Inverse Laplace Transform and its properties, Convolution theorem(Statement only), Unit Step Function, Periodic function, Applications of Laplace Transform.	
Unit V	**[10hrs]**
Fourier Series and Fourier Transform: Introduction to Fourier series, Concept of even and odd function, Definition, properties, Fourier Integral Theorem, Relation with Laplace Transform, Applications of Fourier Transform.	

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. Dass and 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 Publications, New Delhi.
2	A Text Book of Engineering Mathematics	Peter O' Neil	8th	Thomson Asia Pvt. Ltd., Singapore.

		July 2025	NEP 3.0	Applicable for 2025-26
Chairman - BoS	Dean – Academics	Date of Release	Version	

SEMESTER II

Course Code	Course Name	Th	Tu	Pr	Credits	Evaluation		
						CA	ESE	Total
25ET202P	Statistics and Transforms Lab	--	--	2	1	25	25	50

Course Objectives	Course Outcomes
This Course is intended to: 1. To equip students with the ability to solve mathematical problems in calculus, discrete mathematics, and applied models by integrating symbolic and numerical techniques using SageMath. 2. To interpret mathematical outcomes through transforms, series, and regression-based analysis in SageMath environment.	**Students will be able to:** 1. Apply symbolic and numerical computation techniques using Sage Math to solve problems in calculus and discrete mathematics. 2. Analyze and interpret mathematical models using data fitting, correlation, and regression techniques. 3. Develop mathematical representations of functions using Laplace and Fourier transforms and apply them to solve engineering problems.

List of Experiments:-

Experiment No.	List of Experiment
1	To compute factorial polynomials for a given algebraic function with the help of SageMath.
2	To evaluate definite integrals by employing SageMath using Numerical Techniques.
3	To fit linear and quadratic models by means of the SageMath environment using least squares method.
4	To calculate the correlation coefficient and derive regression lines through the use of SageMath tools.
5	To determine Spearman's rank correlation coefficient with the help of SageMath.
6	To verify properties of Laplace Transform using SageMath.
7	To determine the Laplace and inverse Laplace transforms of various mathematical functions using SageMath.
8	To solve linear ordinary differential equations with initial conditions using the Laplace transform approach in SageMath.
9	To compute Fourier coefficients and construct the Fourier series of periodic functions using SageMath.
10	To compute the Fourier Transform and Inverse Fourier Transform of continuous-time functions using symbolic tools 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/Resourses

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

SECOND SEMESTER

Course Code	Course Name	Th	Tu	Pr	Credits	Evaluation			
						MSE	CA	ESE	Total
25ET203T	Electrical Network Theory	2	-	-	2	10	10	30	50

Course Objectives	Course Outcomes
1. To introduce students to basic electrical quantities, laws, and principles 2. To enable students to apply mesh and nodal analysis techniques 3. To familiarize students with essential network theorems and concepts of frequency-selective networks	**Students will be able to** 1. Demonstrate the ability to analyze and solve basic electric circuits 2. Apply mesh and nodal analysis, including matrix methods 3. Apply network theorems to simplify and analyze complex circuits and understand and evaluate the behavior of frequency-dependent circuits

Unit I: Electric Circuits	**[10Hrs]**
EMF, Potential difference, Current, Power, Energy (Definition & Units SI), Ohms Law, Ideal and Practical Sources (Independent Sources only), Circuit elements, series & parallel combination of resistances, Kirchhoff's Laws (KVL, KCL) statement & Numerical	
Unit II: Mesh & Node Analysis	**[10Hrs]**
Types of sources (Voltage & Current), Source transformation. Mesh analysis, Self-inductance, Basic equilibrium equations, Matrix approach for complicated networks, independent sources to determine current, voltage, power, and energy., Nodal analysis, Basic equilibrium equations, Matrix approach for complicated networks, Principe of duality	
Unit III: Network Theorems & Frequency Selective Networks	**[10Hrs]**
Thevenin's, Norton's and Maximum Power Transfer Theorems, Reciprocity Theorem, Significance of Quality fact. Impedance, Phase angle variations with frequency, Voltage and current variation with frequency, Bandwidth, Selectivity.	

Text Books

Sr.No.	Title	Authors	Edition	Publisher
1	Network Analysis	M.E. Van Valkenburg	1	PHI Publications
2	Network and systems	D. Roy Choudhary	2	New Age Publication
3	Linear Network Theory	Kelkar and Pandit	3	Pratibha Publications.

Reference Books

Sr.No.	Title	Authors	Edition	Publisher
1	Circuit Theory	Chakraborti	1	Jeevan Vidya Prakashan, Amarkantak
2	Engineering Circuit Analysis	Hayt W.H. & J.E. Kemmerly	1	TMH

SECOND SEMESTER

Course Code	Course Name	Th	Tu	Pr	Credits	Evaluation			
						MSE	CA	ESE	Total
25ET204T	Electronic Devices & Circuits	3	-	-	3	20	20	60	100

Course Objectives	Course Outcomes
1. To introduce basics of Transistor Biasing 2. To study applications of Transistor as an oscillator, Amplifier 3. To introduce basics FET & MOSFET 4. To Introduce CMOS Technology Basics To Introduce POWER Semiconductor Devices	**Students will be able to** 1. Compare Transistor biasing Techniques & Illustrate the importance of Stability Factor. 2. Analyze different types of power amplifier & Explain basics of oscillators and Multivibrators 3. Demonstrate FET and MOSFET Characteristics 4. Outline CMOS construction & Operation and List applications of CMOS 5. Classify Thyristor & Explain basic operation of SCR, DIAC & TRIAC

Unit I: Bipolar Junction Transistor Biasing	**[9Hrs]**
Need for biasing, Q point, Biasing methods and circuits- Fixed bias, collector-to-base bias, voltage-divider bias., stability factor, Thermal stability	
Unit II : Transistorized Oscillator, Multivibrator, and Power amplifiers	**[9Hrs]**
Introduction and classification of power amplifier-Class A, B, AB, and C , Switching, Oscillator-RC, LC, and Crystal Oscillators.Types & Operation Transistorized Multivibrators	
Unit III: Field Effect Transistors (FET) and Applications	**[9Hrs]**
FET- Overview and types, Construction and operation, Characteristics & Parameter. FET Biasing. MOSFET- Types, Construction and operation, Characteristics, Applications of MOSFET.	
Unit IV: Complementary Metal-Oxide-Semiconductor	**[9Hrs]**
Basic CMOS Structure, CMOS Operation, Fabrication, Characteristics, Advantages of CMOS, Applications of CMOS (Min 4 applications)	
Unit V : Introduction to Power Semiconductor Devices	**[9Hrs]**
Thyristor Classification, Basic structure, operation & characteristics of- SCR, DIAc, TRAIC, Latching and holding currents, turn- on and turn-off processes and IGBT.	

Text Books

Sr.No.	Title	Authors	Edition	Publisher
1	Electronic devices and circuits	J. Millman and Halkias	2	TMH Publications
2	Power Electronics	M.D. Singh, K.B. Khanchandani	2	TMH Publications
3	Electronic devices and circuits	Salivahanan, Suresh Kumar, Vallavaraj	2	TMH Publications

Reference Books

Sr.No.	Title	Authors	Edition	Publisher
1	Integrated Electronics,	J. Millman and Halkias	2	TMH Publications
2	Electronics Principles	Albert Malvino	2	TMH Publications

GROUP II: SEMESTER II

Course Code	Course Name	Th	Tu	Pr	Credits	Evaluation			
						MSE	CA	ESE	Total
25ET204P	Electronic Devices & Circuits Lab	-	-	2	1	-	25	25	50

Course Objectives	Course Outcomes
1. Understand Semiconductor Device Operations 2. Develop Circuit Design Skills: 3. Explore Power Electronics Applications	**Students will be able to** 1. Analyze and interpret the characteristics of BJTs, FETs, and MOSFETs, 2. To design and construct oscillator, multivibrator, and power amplifier circuits, applying theoretical concepts to practical applications. **3.** To gain proficiency in using power electronics devices (SCR, DIAC, TRIAC, and IGBT) for control and switching applications in industrial and domestic systems.

List of Practical's

Minimum 8 practical based on the following Topics

1. Bipolar Junction Transistor Biasing circuit
2. Oscillators, Multivibrators and Power Amplifiers
3. Field effect transistor- FET, MOSFET characteristics
4. Introduction to CMOS
5. Characteristics of SCR, DIAC, TRIAC, IGBT

Text Books

S.N	Title	Authors	Edition	Publisher
1	Electronic devices and circuits	J. Millman and Halkias	2	TMH Publications
2	Power Electronics	M.D. Singh, K.B. Khanchandani	2	TMH publications.
3	Electronic devices and circuits	Salivahanan, Suresh Kumar, Vallavaraj	3	TMH Publications

Reference 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.

SEMESTER II

Course Code	Course Name	Th	Tu	Pr	Credits	Evaluation			
						MSE	CA	ESE	Total
25ET205P	Electronic Workshop Lab – I	-	-	4	2	-	25	25	50

Course Objectives	Course Outcomes
1. Develop skills in identifying, testing, and handling electronic components 2. Gain hands-on experience in assembling circuits using breadboards and PCBs 3. Apply the acquired skills to design and implement a mini-project	**Students will be able to** 1. Identify and Test Components 2. Use multimeters, oscilloscopes, and function generators to measure and analyze electrical parameters 3. Apply knowledge of electronic measurement tools to debug and troubleshoot electronic circuits 4. Design, construct, and present a working electronic circuit as a micro-project

List of Practical's

Pracicals based on the following Topics

- Identification and testing of passive components (resistors, capacitors, inductors).
- Identification and testing active components (diodes, transistors).
- Identification and testing of relays, Sensors, Motors.
- Using breadboards for circuit assembly.
- Soldering techniques and circuits assembly using PCB
- Multimeter usage for measuring voltage, current, and resistance.
- Working with oscilloscopes: waveforms, frequency, and phase measurements.
- Function generator basics.
- Working with power supplies and electronic circuit debugging.
- Micro-project

Text Books

S.N	Title	Authors	Edition	Publisher
1	Electronic devices and circuits	J. Millman and Halkias	2	TMH Publications
2	Electronic devices and circuits	Salivahanan, Suresh Kumar, Vallavaraj	3	TMH Publications
3	Troubleshooting Electronic Equipment	R. S. Khandpur	2	TMH Publications

Reference Books

- Lab Manual

SECOND SEMESTER

Course Code	Course Name	Th	Tu	Pr	Credits	Evaluation		
						CA	ESE	Total
25ET206P	Business Communication Skills – II Lab	-	-	2	1	25	25	50

Course Objectives	Course Outcomes
To empower students to develop a career oriented mindset while harnessing the power of LSRW skills.	**Students would be able to:** 1. Participate in Group Discussions. 2. Improve their reading and formal writing skills. 3. Develop upon their listening skills to engage in meaningful conversations. 4. Develop oratory skills to engage and inform audiences. 5. Prepare themselves for participating in business meetings.

Expt. No.	Title of the experiment
1	Group Discussion
2	Reading for Competitive Exams II
3	Listening Skills II
4	Presenting a TED Talk
5	Media Interaction
6	Business Correspondence II
7	Report Writing
8	Mock Meeting

Reference Books

S. N	Title	Authors	Edition	Publisher
1.	Communication Skills for Engineers	C. Muralikrishna & SunitaMIshra	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

SECOND SEMESTER

Course Code	Course Name	Th	Tu	Pr	Credits	Evaluation			
						MSE	CA	ESE	Total
25ET107T	Indian Knowledge Systems	2	-	-	2	10	10	30	50

Course Objectives	Course Outcomes
This course is intended to 1. To understand the distinctive features of Indian Knowledge Traditions. 2. To explore India's contributions in science, mathematics, astronomy, technology, and architecture. 3. To connect IKS concepts with modern applications and sustainable practices.	**Students will be able to** 1.Comprehend the foundations of Indian Knowledge System and its difference from Western approaches. 2.Analyze India's contributions in mathematics, astronomy, and technology. 3.Appreciate the relevance of art, architecture, and traditional sciences in modern contexts.

Unit I FOUNDATIONS OF IKS **[8Hrs]**

Introduction to the Indian Knowledge System with its distinctive features in contrast to Western thought, the Vedic corpus including the Vedas, Upaniṣads, and associated philosophical traditions, knowledge traditions of Śikṣā dealing with phonetics, Vyākaraṇa focusing on grammar, Nirukta exploring etymology, Chandas emphasizing prosody, Kalpa codifying rituals and social duties, Jyotiṣa concerning astronomy and timekeeping, and reflective Discover IKS activities based on case studies and experiential learning.

Unit II SCIENTIFIC AND TECHNOLOGICAL CONTRIBUTIONS **[8Hrs]**

Mathematics including the number system, importance of zero, contributions of Brahmagupta, developments in geometry and algebra, ancient Indian astronomy and its observations, contributions of Parāśara and Garga, connections between astronomical knowledge and Vedic rituals, engineering and technology in ancient India covering metallurgy and advanced metalworking, healthcare practices and their scientific basis, construction of granite structures and architectural precision, Harappan technology and innovations in urban planning, maritime traditions and shipbuilding heritage, case studies on the works of Indian mathematicians, the astronomical observatory of Jantar Mantar, and the corrosion-resistant Iron Pillar of Delhi.

Unit III Art, Architecture & Sustainable Knowledge **[8Hrs]**

Town planning traditions from the Harappan civilization to classical India, rock-cut architecture including the Ellora caves, Kailasanātha temple, and Buddhist cave traditions, principles of temple design and Vastu Shastra, indigenous engineering in art and architecture blending aesthetics, science, and spirituality, relevance of IKS in contemporary contexts through sustainability, holistic living, and eco-conscious design.

Text Books

Sr.	Title	Authors	Edition	Publisher
1	Indian Knowledge System	Kapil Kapoor & Michel Danino(Eds.)	1st	PHI Learning
2	Foundations of Indian Culture and Knowledge System	B. L. Atreya	Reprint	Bharatiya Vidya Bhavan
3	Essays on Indian Knowledge Systems	Michael Danino	1st	AICTE – IKS Division

Reference Books

Sr. No.	Title	Authors	Edition	Publisher
1	Indian Knowledge Systems: Nature, Philosophy and Manifestation	Bal Ram Singh, Pushpesh Pant	1st	Pratibha Prakashan
2	The Science and Technology in Ancient India	Debiprasad Chattopadhyaya	Reprint	People's Publishing House

		JULY 2025	NEP 3.0	Applicable for 2025-26
Chairman -BoS	Dean-Academics	Date of Release	Version	