P. E. S. COLLEGE OF ENGINEERING, MANDYA

Scheme of Teaching and Examinations - 2025
Outcome-Based Education (OBE) and Choice Based Credit System (CBCS)
(Effective from the academic year 2025-2026)

B.E. II – Semester [Physics Group]			Stream: –E and C Engineering Stream (ECES)		Program: Electronics and Communication Engineering and VLSI										
Sl. No	Course and Course Code		Course Title	TD/PSB	Teaching Hours/Week				Examination						
					Theory Lecture	Tutorial	Practical/ Drawing	SAAE	SEE Duration in hours	CIE Marks	SEE Marks	Total Marks	Credits		
					L	T	P	S							
1	ASC	P25MAEE201	Calculus, Laplace Transform and Numerical Techniques	Mathematics	3	2	0		03	50	50	100	04		
2	ASC	P25PHEC202	Quantum Physics and Electronics Sensors	Physics	3	0	0		03	50	50	100	03		
3	ETC	P25ETC203	Introduction to AI and Applications	Respective Engineering dept	2	0	2		03	50	50	100	03		
4	ESC	P25ESC2045	Essentials of Information Technology	Respective Engineering dept	3	0	0		03	50	50	100	03		
5	PLC	P25PSC2054	Fundamentals of Electronics & Communication Engineering	Respective Engineering dept	3	0	0		03	50	50	100	03		
6	PLC	P25PSCL2063	Fundamentals of Electronics & Communication Engineering Laboratory	Respective Engineering dept	0	0	2		03	50	50	100	01		
7	ASC	P25CHEEL207	Quantum Physics and Electronics Sensors Laboratory	Physics	0	0	2		03	50	50	100	01		
8	AEC	P25ENG208	Communicative English – II	Humanities	0	2	0		02	50	50	100	01		
9	AEC/ SDC	P25IDT209	Interdisciplinary Project Based Learning	Any Dept	0	0	2		02	50	50	100	01		
10	HSMS	P25KSK210/ P25KBK210	Samskrutika Kannada/ Balake Kannada	Humanities	1	0	0		01	100	--	100	PP		
	TOTAL									550	450	1000	20		
10	**AICTE Activity Points** (students have to earn **100** activity points between 01 to 08 semesters)				Compulsory requirement for the award of a degree										

S- (**SAAE**)Students Academic Activity Engagement Hours, **ASC**-Applied Science Course, **ESC**- Engineering Science Courses, **IC** – Integrated Course (Practical Course Integrated with Theory Course), **PLC(IC)**- Programming Language Course (Integrated Course), **AEC**- Ability Enhancement Course, **AEC/SDC**- Ability Enhancement Course/Skill Development course, **ETC**- Emerging Technology Course, **TD/PSB**- Teaching Department / Paper Setting Board, **HSMC**-Humanity, Social Science and management Course, **CIE** –Continuous Internal Evaluation, **SEE**- Semester End Examination, **NCMC:** Non Credit Mandatory Course, **PP** : (Pass/Pass) is assigned to a non-credit course. "PP" represents pass in course provided students have successfully completed the CIE requirements. Otherwise, "NP-not pass shall be awarded. "PP" is

essential for the award of the degree

Credit Definition:	04-Credits courses are to be designed for 50 hours of Teaching-Learning Session
1 hour Lecture (**L**) per week=**1 Credit**	04-Credits (IC) are to be designed for 40 hours' theory and 10-12 hours of practical sessions 03- Credits courses are to be designed for 40 hours of Teaching-Learning Session
2 hours Tutorial(**T**) per week=**1 Credit**	02- Credits courses are to be designed for 25 hours of Teaching-Learning Session
1 hours Practical / Drawing (**P**) per week=**1 Credit**	01-Credit courses are to be designed for 12 hours of Teaching-Learning sessions

The **Student Induction Programme** (SIP), initiated by the All-India Council for Technical Education (AICTE), is designed to help newly admitted students in technical institutions transition smoothly into the higher education environment. It aims to familiarize students with the institutional culture, foster connections with peers and faculty, and provide a foundation for holistic learning. The first year of Engineering programmes is composed of I semester and II semester and Summer Semester. SIP activities shall be scheduled in the afternoon sessions during the first week of class commencement of I and II semesters only. Activities under SIP may include Physical Activities, Creative Arts, Universal Human Values, Literary Events, Proficiency Modules, Lectures by Eminent Personalities, Local Area Visits, Department/Branch Familiarization, and Innovation-related sessions. The specific programmes to be conducted will be notified

separately by the University, with the academic calendar or separately.

AICTE Activity Points Requirement for BE/B.Tech. Programmes

As per AICTE guidelines (refer Chapter 6 – *AICTE Activity Point Program, Model Internship Guidelines*), in addition to academic requirements, students must earn a specified number of **Activity Points** to be earned is to be eligible for the award of their degree.

- **Regular students** admitted to a 4-year degree program must earn **100 Activity Points**.
- **Lateral entry students** (joining from the second year) must earn **75 Activity Points**.
- **Students transferred** from other universities directly into the fifth semester must earn **50 Activity Points** from the date of entry into VTU.

These Activity Points are **non-credit** and will not be considered for the SGPA/CGPA or be used for **vertical progression**. However, they are mandatory for the **award of the degree**, and the points earned will be reflected on the **eighth semester Grade Card**.

The hours spent for earning the activity points shall not be counted for regular attendance requirements. Students can accumulate these points at any time during their program, including on weekends, holidays, and vacations starting from the year of admission, provided they meet the minimum hours of engagement prescribed for each activity.

If a student fails to earn the required Activity Points, the eighth-semester Grade Card will be withheld until the requirement is fulfilled. Consequently, the degree will be awarded only after the

Grade Card has been released.

Applied Mathematics-I					Applied Chemistry				
Code	Title	L	T	P	Code	Title	L	T	P
P25MACV101	Differential Calculus and Linear Algebra: CV Stream	3	2	0	P25CHCV102	Applied Chemistry for Sustainable Built Environment (CV)	3	0	0
P25MAME101	Differential Calculus and Linear Algebra: ME Stream	3	2	0	P25CHME102	Applied Chemistry for Metal Protection and Sustainable Energy (ME)	3	0	0
P25MAEE101	Differential Calculus and Linear Algebra: EEE Stream	3	2	0	P25CHEE102	Applied Chemistry for Emerging Electronics and Futuristic Devices (EEE, ECE)	3	0	0
P25MACS101	Calculus and Linear Algebra: CSE Stream	3	2	0	P25CHCS102	Applied Chemistry for Smart Systems (CSE)	3	0	0
(ESC-I) Engineering Science Courses-I					(PLC) Programming Language Courses and Laboratory				
Code	Title	L	T	P	Code	Title	L	T	P
P25ESC1041	Introduction to Building Sciences	3	0	0	P25PLC1051	Introduction to C Programming (For none IT programmes)	3	0	0
P25ESC1042	Introduction to Electrical Engineering	3	0	0	P25PLC1052	Python Programming (for CSE and allied programmes)	3	0	0
P25ESC1043	Introduction to Electronics & Communication	3	0	0	P25PLCL1061	Introduction to C Programming Laboratory (For none IT programmes)	0	0	2
					P25PLCL1062	Python Programming Laboratory (For CSE and allied programmes)	0	0	2
P25ESC1044	Introduction to Mechanical Engineering	3	0	0	Computer Aided Engineering Drawing				
P25ESC1045	Essentials of Information Technology	3	0	0	P25ESC1031	Computer Aided Drawing for CV Stream	2	0	2
					P25ESC1032	Computer Aided Drawing for ME stream Engineering	2	0	2
	Applied Chemistry Lab (ASC Lab)				P25ESC1033	Computer Aided Drawing for EEE stream	2	0	2
P25CHCVL107	Applied Chemistry Laboratory (Applied Chemistry for Sustainable Built Environment)	0	0	2	P25ESC1034	Computer Aided Drawing for CSE stream	2	0	2

The **Mathematics/Chemistry courses** shall be taught by a single faculty member per session, with no sharing of the course (subject) modules. The **tutorial sessions** for the **mathematics course** shall be conducted in the Laboratory environment using **MATLAB software** to enhance computational understanding and application skills.

Students admitted to a specific engineering stream are required to select and successfully complete **Applied Mathematics-I** and **Applied Chemistry courses** that are aligned with their program stream. These courses are intended to reinforce the academic foundations and develop the professional competencies relevant to their chosen engineering discipline.

Engineering Sciences Courses-I (ESC-I): These courses are designed to broaden the technical knowledge of students beyond their core area of study. These courses enable students to gain a foundational understanding of engineering principles from other stream courses. Students are required to select and complete two courses that are not belong to their admitted program stream. For example, a student admitted to the any programme of the Civil Engineering stream should not select Introduction to Building Sciences but any other two. One course shall select under ESC-I and another course under ESC-II. The two courses must be different from the other.

For the course **Interdisciplinary Project,** it is mandatory to form a team comprising students from multiple engineering disciplines. For example, a project team may include students from Mechanical Engineering, Electronics and Communication Engineering (ECE), and Computer Science and Engineering (CSE), working collaboratively to design and implement the project.

Computer-Aided Engineering Drawing: The courses under this category are stream-specific. Students must select and complete the course that corresponds to their admitted engineering stream.

II Semester

Course Title	Calculus, Laplace Transform and Numerical Techniques						
Course Code	**P25MAEE201**						
Category	**COMMONTO EE STREAMS**						
Scheme and Credits	Theory/Practical/Integrated					Total teaching hours	Credits
	L	T	P	SS	Total	(40 Hours Theory + 20 Hours Tutorial)	04
	3	2	0	-	04		
CIE Marks:50	SEE Marks:50	Total Max. marks=100		Duration of SEE:03Hours			

Course Learning Objectives:

1	Apply the concepts of integral calculus and vector calculus to model and solve problems in engineering applications such as area, volume.
2	Apply appropriate numerical methods to find approximate solutions of algebraic, transcendental, and ordinary differential equations and to perform interpolation and numerical integration in engineering contexts.
3	Apply Laplace transform techniques for time domain, wave forms, periodic functions and solving differential equations.

Unit	Syllabus content	No. of hours
I	**Integral Calculus and its Applications:** Multiple Integrals: Evaluation of double and triple integrals, change of order of integration, changing to polar coordinates. Area and volume using double and triple integrals. Beta and Gamma functions: Definitions, properties, relation between Beta and Gamma functions. **Self-Study**: Volume by triple integration, Center of gravity.	8 hours
II	**Vector Calculus and its Applications:** Vector Differentiation: Scalar and vector fields, gradient of a scalar field, directional derivatives, divergence of a vector field, solenoidal vector, curl of a vector field, irrotational vector, physical interpretation of gradient, divergence and curl and scalar potential. Vector Integration: Line integrals, Statement of Green's and Stokes' theorem without verification problems. **Self-Study**: Volume integral and Gauss divergence theorem.	8 hours
III	**Numerical Methods-1:** Solution of algebraic and transcendental equations: Regula-Falsi method and Newton-Raphson method. Finite Differences and Interpolation: Forward and backward differences, Interpolation, Newton forward and backward interpolation formulae, Newton's divided difference interpolation formula and Lagrange's interpolation formula. Numerical Integration: Trapezoidal rule, Simpson's 1/3rd rule and Simpson's 3/8th rule. **Self-Study**: Boole's rule.	8 hours
IV	**Numerical Methods-2:** Numerical solution of ordinary differential equations of first order and first degree: Taylor's series method, Modified Euler's method, Runge-Kutta method of fourth order and Milne's predictor corrector	8 hours

	method and Adam-Bashforth predictor-corrector method. **Self-Study** :Runge-Kutta method of second order	
V	**Laplace Transform:** Laplace transforms (LT): Definition and Formulae of Laplace Transform, LT of elementary functions. Properties– linearity, scaling, shifting property, differentiation in the s domain, division by t. LT of periodic functions, square wave, saw-tooth wave, triangular wave, full and half wave rectifier, Heaviside Unit step function. Inverse Laplace Transforms: Definition, properties, evaluation using different methods, and applications to solve ordinary differential equations. **Self-Study:** Convolution theorem on Laplace Transform.	8 hours

COURSE OUTCOMES: On completion of the course, student should be able to:

CO1: Apply the concepts of integral calculus and vector calculus to model and solve problems in engineering applications such as area, volume.

CO2: Apply appropriate numerical methods to find approximate solutions of algebraic, transcendental, and ordinary differential equations and to perform interpolation and numerical integration in engineering contexts.

CO3: Apply Laplace transform techniques for time domain, wave forms, periodic functions and solving differential equations.

CO4: Demonstrate the applications of electrical engineering and allied engineering science using modern ICT tools

TEACHING – LEARNING PROCESS: Chalk and Talk, power point presentation, animations, videos.

TEXTBOOKS:
1. B. S. Grewal, Higher Engineering Mathematics, 44th Edition 2018, Khanna Publishers, New Delhi.
2. E. Kreysizig, Advanced Engineering Mathematics, John Wiley and sons,10th Ed. (Reprint) 2016.
3. M. K. Jain, S.R.K. Iyengar and R.K. Jain, Numerical Methods for Scientific and Engineering Computation, New Age International Publishers, 8th Ed., 2022.

REFERENCEBOOKS:

1. B.V. Ramana, Higher Engineering Mathematics, McGraw-Hill Education, 11th Ed., 2017
2. Srimanta Pal & Subodh C. Bhunia, Engineering Mathematics, Oxford University Press, 3rd Ed., 2016.
3. N. P. Bali and Manish Goyal, A Textbook of Engineering Mathematics, Laxmi Publications, 10th Ed.,2022.
4. H. K. Dass and Er. Rajnish Verma, Higher Engineering Mathematics, S. Chand Publication,3rd Ed., 2014.
5. Steven V. Chapra and Raymond P. Canale, Applied Numerical Methods with Matlab for Engineers and Scientists, McGraw-Hill, 3rd Ed., 2011.
6. Richard L. Burden, Douglas J. Faires and A. M. Burden, Numerical Analysis, 10th Ed.,2010, Cengage Publishers.

7. S.S. Sastry, "Introductory Methods of Numerical Analysis", PHI Learning Private Limited, 5th Ed., 2012

Web links and Video Lectures (e-Resources):

• http://academicearth.org/
• VTU e-Shikshana Program
• VTU EDUSAT Program
• https://nptel.ac.in/courses/111105160
• https://nptel.ac.in/courses/127106019
• https://ocw.mit.edu/courses/18-335j-introduction-to-numerical-methods-spring-2019/
• https://ocw.mit.edu/courses/18-330-introduction-to-numerical-analysis-spring-2012/pages/syllabus/

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	2	2										
CO2	2	3										
CO3	3	2										
CO4	2	3										
Strength of correlation: Low-1, Medium-2, High-3												

Academic Year: 2025-26		
Course Title: Quantum Physics and Electronic Sensors		
Course Code: P25PHEC202	**Semester: II**	**Scheme: P25**
Teaching hours/week (L:T:P): (3:0:0)	**CIE Marks:50**	**CIE Weightage:50%**
Credits: 03	**SEE Marks:50**	**SEE Weightage: 50%**
Teaching hours of Pedagogy: 40 hours Theory	**Total: 100**	**Exam Hours: 3 Hrs**

Course Learning Objectives:

- To **study** the fundamental principles of quantum mechanics to analyze microscopic systems.
- To **recall** the origin of electrical conductivity in metals and semiconductors.
- To **learn** the properties of superconductors and their applications.
- To **understand** the concepts light–matter interaction and their role in laser-based technologies.
- To **explore** semiconductor devices and sensors for their operations and engineering applications.

UNIT-I	Hrs: 08

Quantum Physics: De Broglie Hypothesis, Heisenberg's Uncertainty Principle and its application (Broadneing of Spectral Lines), Principle of Complementarity, Wave Function, Time independent Schrödinger wave equation (Derivation), Physical significance of a wave function and Born Interpretation, Expectation value and its physical significance, Eigen functions and Eigen values, Particle inside one dimensional infinite potential well, Role of higher dimensions (Qualitative), Waveforms and Probabilities, Particle inside a finite potential well and quantum tunneling, Numerical Problems.

Prerequisite: Physics principles like waves, particles, energy, momentum and atomic spectra

Self-Study Component: Particle inside a finite potential well and quantum tunneling

UNIT - II	Hrs: 08

Electrical Properties of Metals and Semiconductors: Failures of classical free electron theory, Mechanisms of electron scattering in solids, Matheissen's rule, Assumptions of quantum free electron theory, Density of states, Fermi Dirac statistics, Fermi energy, Variation of Fermi factor with temperature and energy, Expression for carrier concentration in a conductor, Derivation of electron concentration in an intrinsic semiconductor, Expression for electron and hole concentration in extrinsic semiconductor, Fermi level for intrinsic (with derivation) and extrinsic semiconductor (no derivation), Hall effect, Numerical Problems.

Prerequisite: Basic concepts like energy bands and electrical conductivity in metals

Self-Study Component: Hole concentration in an extrinsic semiconductor

UNIT - III	Hrs: 08

Superconductivity: Zero resistance state, Persitent current, Meissner effect, Critical temperature, Critical current (Silsbee Effect) – Derivation for a cylindrical wire using ampere's law, Critical field, Formation of Cooper pairs - Mediation of phonons, Two-fluid model, BCS Theory - Phase coherent state, Limitations of BCS theory, examples of systems with low and high electron-phonon coupling, Type-I and Type-II superconductors, Formation of Vortices, Explanation for upper critical field, Josephson

junction, Flux quantization, DC and AC SQUID, Charge Qubit, Numerical Problems.

Prerequisite: Solid state physics & fundamentals of electromagnetism

Self-Study Component: Formation of vortices and DC and AC SQUID

UNIT - IV	Hrs: 08

Photonics: Interaction of radiation with matter – Einstein's A and B coefficients, Prerequisites for lasing actions, Types of LASER – Semiconductor diode LASER, Use of attenuators for single photon sources, Optical modulators – Pockel's effect, Kerr effect, Photodetectors – Photomultiplier tube, Single Photon Avalanche Diode, Optical fiber, Derivation of Numerical aperture, V-number, Number of modes, losses in optical fiber, Mach-Zehnder interferometer, Numerical problems.

Prerequisite: Concept of laser principles and wave propagation

Self-Study Component: Mach-Zehnder interferometer

UNIT - V	Hrs: 08

Semiconductor devices and Sensors: Direct and indirect band gap, Band gap engineering, Zener Diode, LED, Photo Diode, Photo Transistor, Light dependent resistor, Resistance temperature detectors (high, medium, low), Sensing mechanisms, Piezo electric Sensors, Metal Oxide Semiconductor (MOS) sensors, Hall sensor, Superconducting Nanowire Single Photon Detector, Numerical Problems.

Prerequisite: Basics of band theory and basic electronics

Self-Study Component: Superconducting Nanowire Single Photon Detector

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Course Outcomes: At the end of the course students should be able to:

CO1: Discuss quantum mechanics to **analyze** microscopic systems, quantized states, and tunneling.

CO2: Analyze electrical conduction in metals and semiconductors, including carrier concentration and Fermi energy.

CO3: Summarize superconductivity phenomena and their applications in advanced materials.

CO4: Describe light–matter interaction, lasers, modulators, and photonic devices in sensor technologies.

CO5: Apply principles and applications of semiconductor, optical devices, sensors, and transducers in electron-ic and photonic systems.

Suggested Learning Resources:

Text books:

	Title	Author	Year & Edition	Publisher
1.	Engineering Physics	Satyendra Sharma and Jyotsna Sharma	2018	Pearson
2.	Engineering Physics	S L Kakani, Shubra Kakani	3rd Edition, 2020	CBS Publishers and Dis tributers Pvt. Ltd.
3	Solid State Physics	S O Pillai	2018	New Age International

4	Basic Electronics	B L Theraja	Multi-color Edition, 2006	S Chand
Reference Books:				
1.	Engineering Physics	S Mani Naidu	Fourteenth Impression, 2024	Pearson
2.	Concepts of Modern Physics	Beiser A	6th ed., 2002	Mc Graw-Hill Education
3.	Introduction to Quantum Mechanics	Griffiths D J	2nd or 3rd ed., 2018	Pearson
4.	Introduction to Superconductivity	Tinkham M	2nd ed., 2004	Dover Publications
5.	Superconductivity – Basics and Applications	Mishra P K	2009	Ane Books
6.	Optical Electronics.	Ghatak, A & Thyagarajan K	2005	Oxford University Press
7.	Fundamentals of Photonics	Saleh B E A & Teich M C	3rd ed., 2019	Wiley
8.	Quantum Computation and Quantum Information	Nielsen M A & Chuang I L	10th Anniversary ed., 2010	Cambridge University Press

WeblinksandVideoLectures(e-resources)

1. NPTEL – Quantum Mechanics I (IIT Madras): https://nptel.ac.in/courses/115106066
2. 2. NPTEL – Physics: Introductory Quantum Mechanics (NOC): https://archive.nptel.ac.in/courses/115/104/115104096
3. Solid State Physics – NPTEL (IIT Madras) https://nptel.ac.in/courses/115106127
4. A Brief Course on Superconductivity – NPTEL IIT Guwahati (Prof. SaurabhBasu)
5. Playlist Introduction Video: https://www.youtube.com/watch?v=SHoGV-sezNI
6. Full playlist available via the YouTube channel description or archive link.
7. Concepts in Magnetism and Superconductivity – NOC (IIT Kharagpur)Series start (Lecture 1): https://digimat.in/nptel/courses/video/115105131/L01.html
8. Introduction to Photonics – NPTEL (IIT Madras, Prof. Balaji Srinivasan) Lecture 03 to Lecture 12 cover: Direct video link (start Lecture 03): https://nptel.ac.in/courses/108106135/03
9. Semiconductor Optoelectronics – NPTEL (IIT Delhi, Prof. M. R. Shenoy)Direct video link (start relevant lecture): https://nptel.ac.in/courses/108108174/05
10. Sensors and Actuators – NPTEL (IISc Bangalore, Prof. Hardik J. Pandya) Lecture 1 – Introduction to Sensors, Transducers & Actuators, incl. Hall, RTDs, Thermistors https://digimat.in/nptel/courses/video/108108147/L01.html
11. Smart Sensors – NPTEL Lecture 34 – Covers various sensors including gas, pressure, MOS sensors, photodetectors like SNSPD https://www.youtube.com/watch?v=oRydUfgMdgA
12. Lecture 32 – Superconducting Qubits (includes Charge Qubit / Cooper-Pair Box) https://www.youtube.com/watch?v=iYo8ALJ-Mls

Teaching Learning Process:

1. Chalk and talk	2. Short Animations and Videos
3. Experimential Learning	4. Active based Learning
5. Hybrid Learning	6. Simulations and Interactive Simulations
7. ICT Based Learning	8. Self Learning using AI Tools

Active Based Learning (Suggested Activities in Class)/Practical Based Learning
http://nptel.ac.in
https://swayam.gov.in
https://virtuallabs.merlot.org/vl_physics.html
https://phet.colorado.edu
https://www.myphysicslab.com

COs / POs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11
Course Articulation Matrix of Quantum Physics and Electronic Sensors											
CO1	3	2	-	-	1	-	-	-	-	-	2
CO2	3	3	2	-	1	-	-	-	-	-	2
CO3	3	2	-	2	1	-	-	-	-	-	2
CO4	3	2	-	2	2	-	-	-	-	-	2
CO5	3	2	2	-	3	-	-	-	-	-	2

Academic Year: 2025-26	Semester: II	Scheme: P25
Course Title: **Introduction to AI and Applications**		
Course Code: **P25ETC203**	CIE Marks: 50	CIE Weightage:**50%**
Teaching hours/week (L:T:P: S): 3:0:0:0	SEE Marks: 50	SEE Weightage:**50%**
Credits: **3**		
Course learning Objectives:		

- Able to understand the fundamental concepts, history, and types of Artificial Intelligence (AI).
- Develop an understanding of prompt engineering techniques and their role in generative AI communication.
- Able to apply the basic machine learning methods for regression, classification, and clustering.
- Provide awareness of recent trends, ethical concerns, and industrial applications of AI, including robotics, drones, AIoT, and no-code/low-code AI platforms.
- Explore real-world applications of AI across multiple domains such as healthcare, finance, retail, agriculture, and education.

UNIT 1	Hrs:08

Introduction to Artificial Intelligence: Artificial Intelligence, How Does AI Work?, Advantages and Disadvantages of Artificial Intelligence, History of Artificial Intelligence, Types of Artificial Intelligence, Weak AI, Strong AI, Reactive Machines, Limited Memory, Theory of Mind, Self-Awareness, Is Artificial Intelligence Same as Augmented Intelligence and Cognitive Computing, Machine Learning and Deep Learning.

Machine Intelligence: Defining Intelligence, Components of Intelligence, Differences Between Human and Machine Intelligence, Agent and Environment, Search, Uninformed Search Algorithms, Informed Search Algorithms: Pure Heuristic Search, Best-First Search Algorithm (Greedy Search).

Knowledge Representation: Introduction, Knowledge Representation, Knowledge-Based Agent, Types of Knowledge.

Textbook Map:
Textbook 1: Chapter 1 (1.1-1.5), Chapter 3 (3.1-3.7.2), Chapter 4 (4.1-4.4)

UNIT 2	Hrs: 08

Introduction to Prompt Engineering, Introduction to Prompt Engineering, The Evolution of Prompt Engineering, Types of Prompts, How Does Prompt Engineering Work?, Comprehending Prompt Engineering's Function in Communication, The Advantages of Prompt Engineering, The Future of LLM Communication.

Prompt Engineering Techniques for ChatGPT, Introduction to Prompt Engineering Techniques, Instructions Prompt Technique, Zero, One, and Few Shot Prompting, Self-Consistency Prompt.

Prompts for Creative Thinking: Introduction, Unlocking Imagination and Innovation.
Prompts for Effective Writing: Introduction, Igniting the Writing Process with Prompts.

Textbook Map:
Textbook 2: Chapters 1,3,4 & 5

UNIT 3	Hrs: 08

Machine Learning: Techniques in AI, Machine Learning Model, Regression Analysis in Machine Learning, Classification Techniques, Clustering Techniques, Naïve Bayes Classification, Neural Network, Support Vector Machine (SVM).

Textbook Map:
Textbook 1: Chapter 2 (2.1-2.8)

UNIT 4	Hrs: 08

Trends in AI: AI and Ethical Concerns, AI as a Service (AIaaS), Recent trends in AI, Expert System, Internet of Things, Artificial Intelligence of Things (AIoT).

Textbook Map:
Textbook 1: Chapter 8 (8.1, 8.2, 8.4), Chapter 9 (9.1- 9.3)

UNIT 5	Hrs: 08

Robotics, Robotics-an Application of AI, Drones Using AI, No Code AI, Low Code AI.
Industrial Applications of AI: Application of AI in Healthcare, Application of AI in Finance, Application of AI in Retail, Application of AI in Agriculture, Application of AI in Education, Application of AI in Transportation, AI in Experimentation and Multi-disciplinary research.

Text book Map:
Textbook 1: Chapter 8 (8.3), Chapter 1 (1.7, 1.8, 1.10, 1.11)
Textbook 3: Chapter 3, Chapter 5 (5.1)

Teaching Learning Process: Chalk and Board, PPT

Course Outcomes: At the end of the course students should be able to:

CO1: Explain the concepts and types of artificial intelligence.
CO2: Make use of prompt engineering techniques to interact with generative AI tools.
CO3: Illustrate basic machine learning methods for regression, classification and clustering.
CO4: Outline recent trends in artificial intelligence and machine learning.
CO5: Identify real-world applications across different disciplines.

Suggested Learning Resources:

Textbooks:

Sl No	Title	Author	Year & Edition	Publisher
1	Artificial Intelligence: Beyond Classical AI	Reema Thareja,	2023	Pearson Education
2	Prompt Engineering: Empowering Communication	Ajantha Devi Vairamani and Anand Nayyar,	2024	CRC Press, Taylor & Francis Group
3	"AI for Everyone – A Beginner's Handbook for Artificial Intelligence",	Saptarsi Goswami, Amit Kumar Das and Amlan Chakrabarti,	2024	Pearson

Reference Books:

Sl No	Title	Author	Year & Edition	Publisher
1.	Artificial Intelligence: A Modern Approach	Stuart Russell and Peter Norvig	2023, 4th Edition	Pearson Education,
2.	Artificial Intelligence,	Elaine Rich, Kevin Knight, and Shivashankar B. Nair		McGraw Hill Education.
3.	Prompt Engineering for Generative AI	Tom Taulli		O'Reilly Media,

4.	Artificial Intelligence: Making A System Intelligent	Nilakshi Jain	1st Edition	Wiley.

Web links and Video Lectures (e-resources)

01. Elements of AI – https://www.elementsofai.com
02. CS50's Introduction to Artificial Intelligence with Python – Harvard https://cs50.harvard.edu/ai/
03. Google Machine Learning Crash Course – https://developers.google.com/machine-learning/crash-course
04. Learn Prompting (Open-Source Guide) – https://learnprompting.org
05. Google AI – Learn with Google AI https://ai.google/education/
06. Coursera – Machine Learning by Andrew Ng (Stanford University) https://www.coursera.org/learn/machine-learning
07. OpenAI Prompt Engineering Guide (for ChatGPT) https://platform.openai.com/docs/guides/gpt-best-practices
08. Prompt Engineering for Developers – DeepLearning.AI + OpenAI https://www.deeplearning.ai/short-courses/chatgpt-prompt-engineering-for-developers/
09. Ethics in AI – Google Responsible AI Practices https://ai.google/responsibilities/responsible-ai-practices/
10. Google Teachable Machine (Train AI models visually without code) https://teachablemachine.withgoogle.com

Active Based Learning (Suggested Activity in Class)/Practical based Learning

The following are sample strategies that educators may adopt to enhance the effectiveness of the teaching- learning process and facilitate the achievement of course outcomes.

- Flipped Classroom
- Problem-Based Learning (PBL)
- Case-Based Teaching
- Simulation and Virtual Labs
- ICT-Enabled Teaching
- Tool Demonstration

CO-PO Mapping

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PSO1	PSO2
CO1	2	1	-	-	1	2	-	-	1	-	1	-	1
CO2	1	2	2	2	2	2	3	2	2	-	1	2	2
CO3	2	3	1	1	2	2	2	-	-	-	2	2	2
CO4	2	-	-	1	2	1	1	-	-	-	1	1	1
CO5	2	2	2	2	2	2	2	1	1	2	2	1	1

Academic Year: 2025-26	Semester: II	Scheme: P25
Course Title: **Introduction to Electrical Engineering**		
Course Code: **P25ESC2042**	CIE Marks:**50**	CIE Weightage:**50%**
Teaching hours/week (L:T:P): **3:0:0**	SEE Marks:**50**	SEE Weightage:**50%**
Teaching hours of Pedagogy:**40**	Exam Hours: **3 Hrs**	
Credits:**3**		

Course learning Objectives:

- Explain the generation of power and the laws used in DC circuits.
- Analyze single-phase and three-phase circuits.
- Describe the construction, operation and applications of DC machines.
- Describe the construction, operation and applications of transformers and induction motors.
- Explain electricity billing and safety measures

Unit 1	8 Hours

Power Generation: Conventional and nonconventional energy sources. Single-line diagram of power supply system showing power station, transmission system and distribution system. Definition of power grid.

DC circuits: Ohm's law and Kirchhoff's laws, analysis of series, parallel and series-parallel circuits. Power and energy. Problems.

Unit 2	8 Hours

Single-Phase Circuits: Generation of single-phase system. Equation of AC voltage and current, average value, RMS value, form factor, peak factor and their relation [No derivations]. Voltage and current relationships in R, L and C circuits, concept of power, reactive power, apparent power and power factor, analysis of R-L, R-C and R-L-C series circuits, parallel circuits, illustrative examples.

Three-Phase Circuits: Generation of three-phase systems, star and delta (mesh) connections, relation between phase and line values of voltages and of currents of star and delta connections. Definition of balanced and unbalanced source and load. Power, reactive power and power factor. Problems with balanced loads.

Unit 3	8 Hours

DC Generator: Principle of operation, constructional details, induced emf expression, types of generators. Relation between induced emf and terminal voltage. Simple problems.

DC Motor: Principle of operation, back emf and its significance. Torque equation, types of motors, characteristics and speed control of DC shunt motor. Applications of DC motors. Simple problems.

Unit 4	8 Hours

Transformers: Introduction to transformers, necessity of transformer, principles of operation, constructional features of single-phase transformers. EMF equation, losses, variation of losses with respect to load. Calculation of efficiency at different loads.

Three-phase induction Motors: Definition of rotating magnetic field (without derivation), Principle of operation. Constructional features of squirrel cage type and wound rotor type induction motor. Slip and its significance, problems. Applications.

Unit 5	8 Hours

Domestic Wiring: Two-way and three-way control of loads.

Electricity Bill: Definition of "unit" used for consumption of electrical energy, power rating of common household appliances. Two-part electricity tariff.

Equipment Safety measures: Working principle of fuse and miniature circuit breaker (MCB),

merits and demerits.

Personal safety measures: Electric shock, safety precautions to avoid shock. Earthing and types: Plate earthing and pipe earthing.

Suggested Learning Resources:

Textbooks:

1	B.L. Theraja	A textbook of Electrical Technology	S Chand and Company	Volume-1 Reprint Edition 2014
2	V. K. Mehta, Rohit Mehta	Principles of Electrical Engineering & Electronics	S. Chand and Company Publications,	2nd edition, 2015

Reference Books:

1.	D. P. Kothari and I. J. Nagrath	Basic Electrical Engineering	McGraw Hill	4th edition, 2019
2	Rajendra Prasad	Fundamentals of Electrical Engineering	PHI	3rd edition, 2014
3	E. Hughes	Electrical Technology	Pearson	12th Edition, 2016
4	K. Vijayarekha	Basic Electrical and Electronics Engineering	Cengage	Reprint 2023
5	Harish C Rai	Handbook of Electrical Engineering formulae	CBS Publications	2018

Course Outcomes: At the end of the course students should be able to;
CO1: Analyse the single-line power supply system and compare conventional and non-conventional energy sources based on generation and distribution.
CO2: Apply AC circuit concepts to determine current, voltage, and power in single-phase and three-phase systems under different load conditions.
CO3: Analyze the working principles and performance characteristics of DC generators and motors for various applications.
CO4: Apply the principles of operation of transformers and three-phase induction motors to evaluate their performance and applications.
CO5: Analyze domestic electrical wiring systems and safety measures to ensure safe and efficient utilization of electrical energy.

COURSE ARTICULATION MARTIX[CAM]													
	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	P011	PSO1	PSO2
CO1	3	2					1						
CO2	3	3											
CO3	3	3											
CO4	3	3											
CO5	2	3				1	1	1					
EXPECTED ATTAINMENT TARGET OF EACH PO'S													
%													

1. Level 3 is placed on the "apply or analyze or understand or design" level, which corresponds to 50% of the total distribution.
2. Level 2 is placed on the "apply or analyze or understand or design" level, which corresponds to 33% of the total distribution.
3. Level 1 is placed on the "apply or analyze or understand or design" level, which corresponds to 17% of the total distribution.

Web links and Video Lectures (e-resources)

www.nptel.ac.in
(1) Principle of Electrical Sciences, Prof Sanjay Agrawal, Indira Gandhi National Open University.
(2) Electricity and Electrical Wiring, Dr. Antara Mahanta Barua, Krishna Kanta Handiqui State Open University, Guwahati.

Teaching-Learning Process (Innovative Delivery Methods):

The following are sample strategies that educators may adopt to enhance the effectiveness of the teaching- learning process and facilitate the achievement of course outcomes.

1. Technology Integration, 2. Collaborative Learning, 3. Flipped Classroom, 4. Visual Based Learning

Academic Year: 2025-26		Semester: II	Scheme: P25
Course Title: **Introduction to C Programming**			
Course Code: **P25PLC2051**		CIE Marks:**50**	CIE Weightage:**50%**
Teaching hours/week (L:T:P): **3:0:0**		SEE Marks:**50**	SEE Weightage:**50%**
Teaching hours of Pedagogy:**40**		Exam Hours: **3 Hrs**	
Credits:**3**			
Course learning Objectives:			

At the end of the course, the student will be able to:
- Explain the basic structure, syntax, and primitive constructs of a C program, including data types, variables, and operators.
- Apply decision-making and looping constructs to develop programs that solve simple computational problems.
- To implement solutions for data manipulation and problem-solving in real-world contexts using Use arrays and string operations.
- Develop modular programs using user-defined functions and apply concepts of recursion and parameter passing.
- Demonstrate the use of structures and pointers to represent and manipulate complex data efficiently.
- Integrate various C programming constructs to design, implement, and debug complete programs for practical applications.

Unit 1	8 Hours

Flowchart and Algorithms: Art of Programming through Algorithms & Flowcharts.

Overview of C: History of C, Importance of C, Basic Structure of C Programs, Programming Style, Compiling and Executing a 'C' Program.

Constants, Variables and Data Types: Character Set, C Tokens, Keywords and Identifiers, Constants, Variables, Data Types, Declaration of Variables, Assigning Values to Variables, Defining Symbolic Constants, Declaring a Variables as Constants and Volatile, Input/Output Statements in C.

Textbook Map: Chapter 1. 6, 2.1, 2.2, 2.8, 2.9, 2.10, Chapter 3.2 to 3.14, Chapter 5.1 to 5.5	

Unit 2	8 Hours

Operators: Introduction to Operators, Arithmetic Operators, Relational Operators, Logical Operators, Assignment Operators, Increment and Decrement Operators, Conditional Operators, Precedence of Arithmetic Operators.

Decision Making, Branching, Looping: Introduction, Decision Making with IF Statement, Simple IF Statement, The IF..ELSE Statement, Nesting of IF..ELSE Statements, The ELSE IF Ladder, The Switch Statement, The ?: Operator, The GOTO Statement, WHILE, DO, FOR, Jumps in LOOPS.

Textbook Map: Chapter 4.1 to 4.7, 4.12, Chapter 6.1 to 6.9, Chapter 7.1 to 7.5	

Unit 3	8 Hours

Arrays and Strings: Introduction, Declaration and Initialization of One-dimensional and Two-Dimensional Arrays, Declaring and Initializing String Variables, Example programs using arrays, Reading Strings from Terminal, Writing Strings to Screen, Arithmetic Operations on Characters, Comparison of Two Strings, String-handling Functions.

Textbook Map: Chapter 8.1 to 8.6, Chapter 9.2 to 9.5, 9.7, 9.8	

Unit 4	8 Hours

User-defined Functions: Introduction, Need for User-defined Functions, A Multi-functional Program, Elements of User-defined Functions, Definition of Function, Return Values and their Types, Function Calls, Function Declaration, No Arguments and no Return Values, Arguments but no Return Values, Nesting of Functions.

Textbook Map: Chapter 10.1 to 10.8, 10.10 to 10.14

Unit 5	8 Hours

Structures and Pointers: Introduction, defining a Structure, Declaring and Accessing Structure Variables and Members, Structure Initialization, Copying and Comparing Structure Variables, Array of Structures, Arrays within Structures.
Pointers: Introduction, Understanding Pointers, Accessing the Address of Variable, declaring pointer variables, initialization of pointers, accessing variables through its pointer.

Textbook Map: Textbook 1: Chapter 7

Textbooks: Chapter 11.1 to 11.6, 11.8, 11.19, Chapter 12.1 to 12.6

Suggested Learning Resources:

1	Programming in ANSI C	9e, E Balaguruswamy		Tata McGraw Hill Education

Reference Books:

1.	PROGRAMMING IN C	Reema Thareja, Oxford University	3rd Edition	2023
2	The 'C' Programming Language	Brian W. Kernighan and Dennis M. Ritchie	2nd Edition	Prentice Hall of India, 2015

Web links and Video Lectures (e-Resources):

1. elearning.vtu.ac.in/econtent/courses/video/BS/15PCD23.html
2. https://nptel.ac.in/courses/106/105/106105171/ MOOC

Courses can be adopted for more clarity in understanding the topics and verities of problem-solving methods.

- https://www.tutorialspoint.com/what-is-an-algorithm-and-flowchart-in-c-language
- https://www.tutorialspoint.com/cprogramming/c_data_types.htm
- https://www.tutorialspoint.com/cprogramming/c_operators.htm
- https://www.ccbp.in/blog/articles/decision-making-statements-in-c
- https://www.tutorialspoint.com/cprogramming/c_arrays.htm
- https://www.geeksforgeeks.org/variables-in-c/
- https://www.w3schools.com/c/c_arrays.php
- https://www.programiz.com/c-programming/c-strings
- https://www.programiz.com/c-programming/c-pointers
- https://www.scaler.com/topics/c/structures-c/

Course Outcomes: On completion of this course, students are able to:

COs	**Course Outcomes** with *Action verbs* for the Course topics	Bloom's Taxonomy Level	Program Outcomes (PO#) with BTL
CO1	Apply the fundamental programming principles to construct efficient solutions by integrating C language features such as data types, control structures, arrays, functions, structures, and pointers.	L2, L3	PO1

CO2	*Analyze and Develop* algorithms/logical constructs to solve problems through systematic and efficient programming approaches.	L4	PO2, PO3
CO3	*Construct* C programs by integrating multiple programming components and techniques.	L4, L6	PO3
CO4	Design and implement modular programs by integrating user-defined functions, structures, and pointers to develop efficient solutions for complex computational problems.	L4, L6	PO3, PO4
CO5	Design and develop optimized efficient programs using C programming practices and modern tools, ensuring robustness, scalability, and maintainability for the given problem.	L6	PO4, PO5

CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PSO1	PSO2
#1	3											3	
#2		3	2										3
#3			2										
#4			2	2									
#5				2	2								

Academic Year: **2025-26**	Semester: **II**	Scheme: **P25**
Course Title: **Introduction to C Programming Laboratory**		
Course Code: **P25PLCL2061**	CIE Marks:**50**	CIE Weightage:**50%**
Teaching hours/week (L: T:P): **0:0:2**	SEE Marks:**50**	SEE Weightage:**50%**
Teaching hours of Pedagogy: **24**	Exam Hours: **3**	
Credits:**1**		

PRACTICAL COMPONENT

1.	Develop a program to calculate the temperature converter from degree to Fahrenheit.
2.	Develop a program to find the roots of quadratic equations.
3.	Develop a program to find whether a given number is prime or not.
4.	Develop a program to find key elements in an array using linear search.
5.	Given age and gender of a person, develop a program to categorize senior citizen (male & female).
6.	Generate Floyd's triangle for given rows.
7.	Develop a program to find the transpose of a matrix.
8.	Develop a program to concatenate two strings, find length of a string and copy one string to other using string operations.
9.	Develop a modular program to find GCD and LCM of given numbers.
10.	Develop a program to declare the structure of employees and display the employee records with higher salary among two employees.
11.	Develop a program to add two numbers using the pointers to the variables.
12.	Develop a program to find the sum of digits of a given number.
13.	Develop a program to perform Matrix Multiplication.
14.	Develop a program to create an array of structures to store book details and check whether a specific book, as requested by the user, is available or not.

Course Outcome

COs	Course Outcomes with *Action verbs* for the Course topics	Bloom's Taxonomy Level	Program Outcome Addressed (PO #) with BTL
	Course Outcomes: On completion of this course, students are able to:		
CO1	Apply fundamentals of C programming constructs to implement and solve basic computational problems.	L3	PO1, PO2
CO2	Develop C programs to transform data structures such as arrays, strings and matrices to solve the given problems.	L5	PO2, PO3, PO4
CO3	Create efficient modular programs by employing advanced C programming concepts.	L4, L6	PO2, PO3, PO4
CO4	Design, implement and test programs that solve real-world problems utilizing modern tools for efficient coding and debugging.	L4, L6	PO3, PO4, PO5, PO11

CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PSO1	PSO2
#1	3	3										3	3
#2		2	2	1									2
#3		2	2	1									2
#4			2	1	1						2		

Academic Year: 2025-26		
Course Title: Quantum Physics and Electronic Sensors Laboratory **Semester: II**		
Course Code:	P25PHECL207	**Credit: 01**
Teaching hours/week (L:T:P):	0:0:2	**CIE Marks:50**
Teaching hours of Pedagogy:	10-12 Lab slots	**SEE Marks:50**

Course Learning Objectives:

- Identify the principles of quantum physics to perform and analyze laboratory experiments related to Engineering field.
- Setup or construct the circuit to perform experiments related to Engineeering applicatons.
- Analyze the knowledge of mathematical sciences to calculate experimental result comparing with theory related to Engineering field.

PART–A : Fixed Set of Experiments	24 Hours

1. Determination of wavelength of LASER using **Diffraction Grating.**

2. Determination of acceptance angle and numerical aperture of the given **Optical Fiber**.

3. Determination of resistivity of a semiconductor by **Four Probe Method**.

4. Determination of **dielectric constant** of the material of capacitor by Charging and Discharging method.

5. Study the Characteristics of a **Photo-Diode** and to determine the power responsivity.

6. Determination of **Plank's Constant** using LEDs/**Black-Body**.

7. Determination of **Fermi Energy** of Copper.

8. Interference by the division of amplitude (Air-wedge/**Newton's Rings**).

9. **Black-Box Experiment** (Identification of basic Electronic Components).

10. Study the I-V Characteristics of a **Bipolar Junction Transistor** and hence determine α & β.

11. **Resonance in LCR** circuit and hence determine the coefficient of self inductance.

12. Determine the **Energy gap** of a given Semiconductor.

13. To study the operation of a multimeter and use it for measuring resisatance, current, voltage and for testing diodes, transistors and continuity in conductors.

14. Construction and Analyzing Electronic circuits using one of the following

   1. Expeyes: https://**expeyes**.in/

   2. Circuit Lab : https://www.circuitlab.com/

   3. Multisim : https://www.multisim.com/

   4. DCAC lab : https://dcaclab.com/

   5. Falstad : https://www.falstad.com/circuit/

Course Outcomes: On completion of this course, students should be able to:
CO1: Apply the fundamental concepts of physics by performing laboratory experiments using electronic components and circuits.

CO2:	Analyze and interpret experimental data, calculate errors and compare results with theoretical predictions to validate physical laws and engineering applications.
CO3:	Demonstrate the use of simulation tools such as PHET, Spreadsheets and Tracker to model, visualize and investigate physical phenomena for engineering problem-solving.

Suggested Learning Resources:

Textbooks:

	Title	Author	Year & Edition	Publisher
1.	Engineering Physics Practical	V Rajendran	Latest Edition	Tata McGraw Hill
2.	Practical Physics	S L Gupta, V Kumar	Latest Edition	Pragati Prakashan

Reference Books:

1.	Applied Physics Laboratory Manual	R Arora	Latest Edition	S Chand & Co.,
2.	Laboratory Experiments in Engineering Physics	D Chattopadhyay, P C Rakshit	Latest Edition	New Central Book Agency
3.	Learn Quantum Computation using Qiskit (Lab-Oriented Text)	H Abraham et al. (IBM Research)	2019, Open Access	Qiskit Textbook Project
4.	Expeyes - Experiments for Young Engineers and Scientists	Ajith Kumar B P	2016	IUAC, New Delhi (Open Source Initiative)

Course Articulation Matrix of Quantum Physics and Electronic Sensors Laboratory										
COs / POs	**PO1**	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**	**PO7**	**PO8**	**PO9**	**PO10**	**PO11**
CO1	3	2	-	-	-	-	-	-	-	-	-
CO2	2	3	-	2	-	-	-	-	2	-	-
CO3	1	2	-	-	3	-	-	-	1	-	2

Course Title:	Communicative English – II (Common to all branches)		
Course Code:	P25ENG208	CIE Marks	50
	Theory	SEE Marks	50
		Total Marks	100
Teaching Hours/Week (L: T:P:S)	0:2:0:2	Exam Hours	02 Theory
Total Hours of Pedagogy	30 hours	Credits	01

Module-1: Listening Skills II	2 Hours

Levels of listening, Active listening, Techniques of listening. Activity: Listening for main ideas and listening for specific information

Speaking Skills II	6 Hours

Language of discussion – Giving opinion, agreeing / disagreeing, asking questions, making suggestions. Sentence stress – content and structure words, Speaking situations, Intonations and Summarizing skills

Module-2: Reading Skills II	2 Hours

Guessing meaning from the context, understanding graphical information, Summarizing. Activity: Book review

Writing Skills II	4 Hours

Linkers and connectives, Sentence and paragraph transformation, Mind mapping techniques, Letter writing, Essay writing

Module-3: Email Etiquette	4 Hours

Parts of an email, Writing an effective subject line, email language and tone. Activity: Email writing practice - Scenario based emails

Group Presentations	2 Hours

Group presentations by the students.

Module-4 Goal Setting	2 Hours

Defining goals, types of goals, Establishing SMART goals, Steps in setting goals, Goal setting activity

Individual Presentations	4 Hours

Individual presentation by the students

Module-5 Teamwork	4 Hours

Defining teams, Team vs. Group, Benefits and challenges of working in teams, Stages of team building, building effective teams, Case studies on teamwork

Course Outcomes: On completion of this course, students will be able to,
CO1: Develop skills in listening, speaking, reading, and writing for effective communication.
CO2: Write effective emails, essays, and use proper email etiquette including subject lines, language, and tone.
CO3: Define goals (individual and team), establish SMART goals, and work effectively in teams including stages of team building and benefits/challenges of teamwork.
CO4: Develop skills for individual and group presentations

Textbooks and Reference Books:

1. Communication Skills by Sanjay Kumar and Pushpa Lata, Oxford University Press - 2015.
2. Everyday Dialogues in English by Robert J. Dixson, Prentice-Hall of India Ltd., 2006.

3. Developing Communication Skills by Krishna Mohan& Meera Banerjee (Macmillan)
4. The Oxford Guide to Writing and Speaking, John Seely, Oxford.
5. English Language Communication Skills - Lab Manual cum Workbook by Rajesh Kumar Singh, Cengage learning India Pvt Limited – 2018
6. The 7 habits of highly effective people by Stephen R Covey, Simon & Schuster – 2020.
7. You Are the Team: 6 Simple Ways Teammates Can Go from Good to Great by Michael G. Rogers.

CO – PO – PSO Matrix

CO	PO												PSO		
	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11		PSO1	PSO2	PSO3
CO1					1				3		1				
CO2					2				3						
CO3								3	1		2				
CO4					2			3	1						
CO5															

Academic Year: 2025-2026	Semester: II		Scheme: P25
Course Title: Interdisciplinary Project Based Learning			
Course Code: P25IDT209	CIE Marks: 50		CIE Weightage: 50
Teaching hours/week (L: T:P) 0:0:2	SEE Marks: 50		SEE Weightage:50
Teaching hours of Pedagogy: -	Exam Hours: 02		
Credits: 01			

Prerequisite:
- Basic understanding of design thinking principles
- Open-mindedness to diverse perspectives
- Effective communication, problem-solving skills and team collaboration

Course learning Objectives:

After learning this course, the student will be able to
- Design effective questionnaires and feedback forms for usability and experience evaluation.
- Create an Empathy Map to better understand the user's mindset, needs, and experiences.
- Understand the basics of early-stage business planning for social innovation projects.
- Present a fully functional Proof of Concept (PoC) to evaluators and stakeholders.

Course content

Week – 1 & 2: Introduction and first Semester Recap- Project-based learning & interdisciplinarity, User Testing Preparation & Execution - Interview Techniques and Questionnaire design, Field Visit.

Week – 3, 4 & 5: Analysis, Feedback & Prioritization- Feedback analysis, Customer Journey Mapping, Stakeholder Mapping and Empathy map.

Week – 6, 7 & 8: Iteration & Refinement- Feature improvement using SCAMPER technique, Iteration Sprint 1, Iteration Sprint 2

Week – 9, 10 &11: Presentation & Future Planning- Business Model Canvas, Pitch deck creation

Week - 12, 13 & 14: Final demo and social pitch - Prototype building, Hackathon and Demo Day

Course Outcomes: At the end of the course students should be able to:

CO1: Analyse user feedback using empathy mapping to validate and refine problem–solution fit.

CO2: Develop the solution through iterative sprints based on validated user insights.

CO3: Develop a business plan and pitch deck articulating value proposition, feasibility, sustainability, and implementation strategy.

CO4: Demonstrate a Proof of Concept (PoC) and present a future roadmap by integrating technical, user, and business learnings during Demo Day.

Course Articulation Matrix															
Course Outcomes		Program Outcomes												PSO	
		1	2	3	4	5	6	7	8	9	10	11	12	1	2
CO1	Analyze user feedback using empathy mapping to validate and refine problem–solution fit.		3		3				2	2	2				
CO2	Develop the solution through iterative sprints based on validated user insights.			3	2	2				2			2		
CO3	Develop a business plan and pitch deck articulating value proposition, feasibility, sustainability, and implementation strategy.									2	3	3			
CO4	Demonstrate a Proof of Concept (PoC) and present a future roadmap by integrating technical, user, and business learnings during Demo Day.			3	2	2				2	3	2	2		

ಸಾಂಸ್ಕೃತಿಕ ಕನ್ನಡ – ಕನ್ನಡ ಬಲ್ಲ ಮತ್ತು ಕನ್ನಡ ಮಾತೃಭಾಷೆಯ ವಿದ್ಯಾರ್ಥಿಗಳಿಗೆ ನಿಗದಿಪಡಿಸಿದ ಪಠ್ಯಕ್ರಮ

Course Title:	ಸಾಂಸ್ಕೃತಿಕ ಕನ್ನಡ		
Course Code:	P25KSK110	CIE Marks	100
Course Type (Theory/Practical /Integrated)	Theory	SEE Marks	-
		Total Marks	100
Teaching Hours/Week (L:T:P:S)	0:2:0:0	Exam Hours	01 Theory
Total Hours of Pedagogy	15 hours	Credits	00

Course Objectives: ಸಾಂಸ್ಕೃತಿಕ ಕನ್ನಡ ಪಠ್ಯದ ಕಲಿಕೆಯ ಉದ್ದೇಶಗಳು:

The course will enable the students,

೧. ಪದವಿ ವಿದ್ಯಾರ್ಥಿಗಳಾಗಿರುವುದರಿಂದ ಕನ್ನಡ ಭಾಷೆ, ಸಾಹಿತ್ಯ ಮತ್ತು ಕನ್ನಡದ ಸಾಂಸ್ಕೃತಿಯ ಪರಿಚಯ ಮಾಡಿಕೊಡುವುದು.

೨. ಕನ್ನಡ ಸಾಹಿತ್ಯದ ಪ್ರಧಾನ ಭಾಗವಾದ ಆಧುನಿಕ ಪೂರ್ವ ಮತ್ತು ಆಧುನಿಕ ಕಾವ್ಯಗಳನ್ನು ಸಾಂಕೇತಿಕವಾಗಿ ಪರಿಚಹಯಿಸುವುದು.

೩. ವಿದ್ಯಾರ್ಥಿಗಳಲ್ಲಿ ಸಾಹಿತ್ಯ ಮತ್ತು ಸಾಂಸ್ಕೃತಿಯ ಬಗ್ಗೆ ಅರಿವು ಹಾಗೂ ಆಸಕ್ತಿಯನ್ನು ಮೂಡಿಸುವುದು.

೪. ತಾಂತ್ರಿಕ ವ್ಯಕ್ತಿಗಳ ಪರಿಚಯವನ್ನು ಹಾಗೂ ಅವರುಗಳ ಸಾಧಿಸಿದ ವಿಷಯಗಳನ್ನು ಪರಿಚಯಿಸುವುದು.

೫. ಸಾಂಸ್ಕೃತಿಕ, ಜನಪದ ಹಾಗೂ ಪ್ರವಾಸ ಕಥನಗಳ ಪರಿಚಯ ಮಾಡಿಕೊಡುವುದು.

ಬೋಧನೆ ಮತ್ತು ಕಲಿಕಾ ವ್ಯವಸ್ಥೆ (Teaching-Learning Process – General Instructions):

These are sample Strategies, which teacher can use to accelerate the attainment of the course outcomes.

೧. ಸಾಂಸ್ಕೃತಿಕ ಕನ್ನಡವನ್ನು ಬೋಧಿಸಲು ತರಗತಿಯಲ್ಲಿ ಶಿಕ್ಷಕರು ಪ್ರಸ್ತುತ ಪುಸ್ತಕ ಆಧಾರಿಸಿ ಬ್ಲಾಕ್ ಬೋರ್ಡ್ ವಿಧಾನವನ್ನು ಅನುಸರಿಸುವುದು. ಪ್ರಮುಖ ಅಂಶಗಳ ಚಾರ್ಟ್‌ಗಳನ್ನು ತಯಾರಿಸಲು ವಿದ್ಯಾರ್ಥಿಗಳನ್ನು ಪ್ರೇರೇಪಿಸುವುದು ಮತ್ತು ತರಗತಿಯಲ್ಲಿ ಅವುಗಳನ್ನು ಚರ್ಚಿಸಲು ಅವಕಾಶ ಮಾಡಿಕೊಡುವುದು.

೨. ಇತ್ತೀಚಿನ ತಂತ್ರಜ್ಞಾನದ ಅನುಕೂಲಗಳನ್ನು ಬಳಸಿಕೊಳ್ಳುವುದು – ಅಂದರೆ ಕವಿ–ಕಾವ್ಯ ಪರಿಚಯದಲ್ಲಿ ಕವಿಗಳ ಚಿತ್ರಣ ಮತ್ತು ಲೇಖನಗಳು ಮತ್ತು ಕಥೆ ಕಾವ್ಯಗಳ ಮೂಲ ಅಂಶಗಳಿಗೆ ಸಂಬಂಧಪಟ್ಟ ಧ್ವನಿ ಚಿತ್ರಗಳು, ಸಂಭಾಷಣೆಗಳು, ಈಗಾಗಲೇ ಇತರ ವಿಮರ್ಶಕರು ಬರೆದಿರುವ ವಿಮರ್ಶಾತ್ಮಕ ವಿಷಯಗಳನ್ನು ಟಿಪಿಟಿ, ಡಿಜಿಟಲ್ ಮಾಧ್ಯಮಗಳ ಮುಖಾಂತರ ವಿಶ್ಲೇಷಿಸುವುದು.

೩. ನವೀನ ಮಾದರಿಯ ಸಾಹಿತ್ಯ ಬೋಧನೆಗೆ ಸಂಬಂಧಪಟ್ಟ ವಿಧಾನಗಳನ್ನು ಶಿಕ್ಷಕರು ವಿದ್ಯಾರ್ಥಿಗಳಿಗೆ ಅನುಕೂಲವಾಗುವ ರೀತಿಯಲ್ಲಿ ಅಳವಡಿಸಿಕೊಳ್ಳಬಹುದು.

Module-1 ಕನ್ನಡ ಸಂಸ್ಕೃತಿ ಮತ್ತು ಭಾಷೆ ಕುರಿತಾದ ಲೇಖನಗಳು   (03 hours of pedagogy)

೧. ಕರ್ನಾಟಕ ಸಂಸ್ಕೃತಿ – ಹಂಪ ನಾಗರಾಜಯ್ಯ

೨. ಕರ್ನಾಟಕದ ಏಕೀಕರಣ : ಒಂದು ಅಪೂರ್ವ ಚರಿತ್ರೆ – ಜಿ. ವೆಂಕಟಸುಬ್ಬಯ್ಯ

೩. ಆಡಳಿತ ಭಾಷೆಯಾಗಿ ಕನ್ನಡ – ಡಾ. ಎಲ್. ತಿಮ್ಮೇಶ ಮತ್ತು ಪ್ರೊ. ವಿ. ಕೇಶವಮೂರ್ತಿ

Module-2 ಆಧುನಿಕ ಪೂರ್ವದ ಕಾವ್ಯ ಭಾಗ   (03 hours of pedagogy)

೧. ವಚನಗಳು: ಬಸವಣ್ಣ, ಅಕ್ಕಮಹದೇವಿ, ಅಲ್ಲಮಪ್ರಭು, ಆಯ್ದಕ್ಕಿ ಮಾರಯ್ಯ, ಜೇದರದಾಸಿಮಯ್ಯ, ಆಯ್ದಕ್ಕಿ ಲಕ್ಕಮ್ಮ.

೨. ಕೀರ್ತನೆಗಳು: ಅದರಿಂದೇನು ಫಲ ಇದರಿಂದೇನು ಫಲ – ಪುರಂದರದಾಸರು

೩. ತಲ್ಲಣಿಸದಿರು ಕಂಡ್ಯ ತಾಳು ಮನವೇ – ಕನಕದಾಸರು

೪. ತತ್ವಪದಗಳು: ಸಾವಿರ ಕೊಡಗಳ ಸುಟ್ಟು – ಶಿಶುನಾಳ ಶರೀಫಕಾರಕ ರೂಪಗಳು ಮತ್ತು ವಿಭಕ್ತಿ ಪ್ರತ್ಯಯಗಳು – ಸಪ್ತಮಿ ವಿಭಕ್ತಿ ಪ್ರತ್ಯಯ – (ಆ, ಅದು, ಅವು, ಅಲ್ಲಿ) Predictive Forms, Locative Case

Module-3 ಆಧುನಿಕ ಕಾವ್ಯಭಾಗ   (03 hours of pedagogy)

೧. ಡಿವಿಜಿ ರವರ ಮಂಕುತಿಮ್ಮನ ಕಗ್ಗದಿಂದ ಆಯ್ದ ಕೆಲವು ಭಾಗಗಳು

೨. ಕುರುಡು ಕಾಂಚಾಣ: ದಾ.ರಾ. ಬೇಂದ್ರೆ

೩. ಹೊಸಬಾಳಿನ ಗೀತೆ: ಕುವೆಂಪು

Module-4 ತಾಂತ್ರಿಕ ವ್ಯಕ್ತಿಗಳ ಪರಿಚಯ	**(03 hours of pedagogy)**

೧. ಡಾ. ಸರ್. ಎಂ. ವಿಶ್ವೇಶ್ವರಯ್ಯ: ವ್ಯಕ್ತಿ ಮತ್ತು ಇತಿಹ್ಯ – ಎ ಎನ್ ಮೂರ್ತಿರಾವ್

೨. ಕರಕುಶಲ ಕಲೆಗಳು ಮತ್ತು ಪರಂಪರೆಯ ವಿಜ್ಞಾನ: ಕರೀಗೌಡ ಬೀಚನಹಳ್ಳಿ

Module-5 ಸಾಂಸ್ಕೃತಿಕ, ಜನಪದ ಕಥೆ ಮತ್ತು ಪ್ರವಾಸ ಕಥನ	**(03 hours of pedagogy)**

೧. ಯುಗಾದಿ: ವಸುಧೇಂದ್ರ

೨. ಮೆಗಾನೆ ಎಂಬ ಗಿರಿಜನ ಪರ್ವತ: ಹಿ.ಚಿ. ಬೋರಲಿಂಗಯ್ಯ

ಸಾಂಸ್ಕೃತಿಕ ಕನ್ನಡ ಕಲಿಕೆಯಿಂದ ವಿದ್ಯಾರ್ಥಿಗಳಿಗೆ ಆಗುವ ಪರಿಣಾಮಗಳು (**Course Outcomes**)

CO1: ಕನ್ನಡ ಭಾಷೆ, ಸಾಹಿತ್ಯ ಮತ್ತು ಕನ್ನಡದ ಸಂಸ್ಕೃತಿಯ ಕುರಿತು ಅರಿವು ಮೂಡಿರುತ್ತದೆ.

CO2: ಕನ್ನಡ ಸಾಹಿತ್ಯದ ಆಧುನಿಕ ಪೂರ್ವ ಮತ್ತು ಆಧುನಿಕ ಕಾವ್ಯಗಳು ಸಾಂಕೇತಿಕವಾಗಿ ಕಲಿತು ಹೆಚ್ಚಿನ ಓದಿಗೆ ಮತ್ತು ಜ್ಞಾನಕ್ಕೆ ಸ್ಫೂರ್ತಿ ಮೂಡತ್ತದೆ.

CO3: ವಿದ್ಯಾರ್ಥಿಗಳಲ್ಲಿ ಸಾಹಿತ್ಯ ಮತ್ತು ಸಂಸ್ಕೃತಿಯ ಬಗ್ಗೆ ಅರಿವು ಹಾಗೂ ಆಸಕ್ತಿಯು ಹೆಚ್ಚಾಗುತ್ತದೆ.

CO4: ತಾಂತ್ರಿಕ ವ್ಯಕ್ತಿಗಳ ಪರಿಚಯ ಹಾಗೂ ಅವರುಗಳ ಸಾಧಿಸಿದ ವಿಷಯಗಳನ್ನು ತಿಳಿದುಕೊಂಡು ನಾಡಿನ ಇನ್ನಿತರ ವ್ಯಕ್ತಿಗಳ ಬಗ್ಗೆ ತಿಳಿದುಕೊಳ್ಳಲು ಕೌತುಕತೆ ಹೆಚ್ಚಾಗುತ್ತದೆ.

CO4: ಸಾಂಸ್ಕೃತಿಕ, ಜನಪದ ಹಾಗೂ ಪ್ರವಾಸ ಕಥನಗಳ ಪರಿಚಯ ಮಾಡಿಕೊಡುವುದು.

Assessment Details: Only CIE will be conducted for this course.
Continuous Internal Evaluation:
Three Tests will be conducted in the pattern (20+ 40 + 40) for 100 Marks. CIE methods / question paper is designed to attain the different levels of Bloom's taxonomy as per the outcome defined for the course.

CIE methods / question paper is designed to attain the different levels of Bloom's taxonomy as per the outcome defined for the course.

ಪಠ್ಯ ಪುಸ್ತಕ: University Prescribed Textbook
ಸಾಂಸ್ಕೃತಿಕ ಕನ್ನಡ
ಡಾ. ಹಿ. ಚಿ. ಬೋರಲಿಂಗಯ್ಯ ಮತ್ತು ಎಲ್. ತಿಮ್ಮೇಶ,
ಪ್ರಸಾರಾಂಗ, ವಿಶ್ವೇಶ್ವರಯ್ಯ ತಾಂತ್ರಿಕ ವಿಶ್ವವಿದ್ಯಾಲಯ, ಬೆಳಗಾವಿ

ಬಳಕೆ ಕನ್ನಡ - Balake Kannada (Kannada for Usage)

Course Title:	ಬಳಕೆ ಕನ್ನಡ		
Course Code:	P25KSK110	CIE Marks	100
Course Type (Theory/Practical /Integrated)	Theory	SEE Marks	-
		Total Marks	100
Teaching Hours/Week (L:T:P:S)	0:2:0:0	Exam Hours	01 Theory
Total Hours of Pedagogy	15 hours	Credits	00

Course objectives: ಬಳಕೆ ಕನ್ನಡ ಪಠ್ಯ ಕಲಿಕೆಯ ಉದ್ದೇಶಗಳು

The course will enable the students,

1. To create the awareness regarding the necessity of learning local language for comfortable and healthy life.
2. To enable learners to Listen and understand the Kannada language properly.
3. To speak, read and write Kannada language as per requirement.
4. To train the learners for correct and polite conservation.
5. To know about Karnataka state and its language, literature and General information about this state.

ಬೋಧನೆ ಮತ್ತು ಕಲಿಕಾ ವ್ಯವಸ್ಥೆ (Teaching-Learning Process – General Instructions):

These are sample Strategies, which teacher can use to accelerate the attainment of the course outcomes.

೧. ಬಳಕೆ ಕನ್ನಡವನ್ನು ತರಗತೆಯಲ್ಲಿ ಶಿಕ್ಷಕರು ಬೋಧಿಸಲು ವಿಟಿಯು ಸೂಚಿಸಿರು ಪಠ್ಯಪುಸ್ತಕವನ್ನು ಉಪಯೋಗಿಸಬೇಕು.

೨. ಪ್ರಮುಖ ಅಂಶಗಳ ಚಾರ್ಟ್‌ಗಳನ್ನು ತಯಾರಿಸಲು ವಿದ್ಯಾರ್ಥಿಗಳನ್ನು ಉತ್ತೇಜಿಸುವುದು ಮತ್ತು ತರಗತಿಯಲ್ಲಿ ಅವುಗಳನ್ನು ಚರ್ಚಿಸಲು ಅವಕಾಶ ಮಾಡಿಕೊಡುವುದು.

೩. ಪ್ರತಿ ವಿದ್ಯಾರ್ಥಿ ಪುಸ್ತಕವನ್ನು ತರಗತಿಯಲ್ಲಿ ಬಳಸುವಂತೆ ನೋಡಿಕೊಳ್ಳುವುದು ಮತ್ತು ಪ್ರತಿ ಪಾಠ ಮತ್ತು ಪ್ರವಚನಗಳ ಮೂಲ ಅಂಶಗಳಿಗೆ ಸಂಬಂಧಪಟ್ಟಂತೆ ಪೂರಕ ಚಟುವಟಿಕೆಗಳಿಗೆ ತೊಡಗಿಸತಕ್ಕದ್ದು.

೪. ಡಿಜಿಟಲ್ ತಂತ್ರಜ್ಞಾನದ ಮುಖಾಂತರ ಇತ್ತೀಚೆಗೆ ಡಿಜಿಟಲೀಕರಣಗೊಂಡಿರುವ ಭಾಷೆ ಕಲಿಕೆಯ ವಿಧಾನಗಳನ್ನು ಪಿಪಿಟಿ ಮತ್ತು ದೃಶ್ಯ ಮಾಧ್ಯಮದ ಮುಖಾಂತರ ಚರ್ಚಿಸಲು ಕ್ರಮಕೈಗೊಳ್ಳುವುದು. ಇದರಿಂದ ವಿದ್ಯಾರ್ಥಿಗಳನ್ನು ತರಗತಿಯಲ್ಲಿ ಹೆಚ್ಚು ಏಕಾಗ್ರತೆಯಿಂದ ಪಾಠ ಕೇಳಲು ಮತ್ತು ಅಧ್ಯಯನದಲ್ಲಿ ತೊಡಗಲು ಅನುಕೂಲವಾಗುತ್ತದೆ.

೫. ಭಾಷಾಕಲಿಕೆಯ ಪ್ರಯೋಗಾಲಯದ ಮುಖಾಂತರ ಬಹುಬೇಗ ಕನ್ನಡ ಭಾಷೆಯನ್ನು ಕಲಿಯಲು ಅನುಕೂಲವಾಗುವಂತೆ ಕಾರ್ಯಚಟುವಟಿಕೆಗಳನ್ನು ಮತ್ತು ಕ್ರಿಯಾ ಯೋಜನೆಗಳನ್ನು ರೂಪಿಸುವುದು.

Module-1	(03 hours of pedagogy)

1. Introduction, Necessity of learning a local language. Methods to learn the Kannada language.
2. Easy learning of a Kannada Language: A few tips. Hints for correct and polite conservation, Listening and Speaking Activites
3. ವೈಯಕ್ತಿಕ, ಸ್ವಾಮ್ಯಸೂಚಕ / ಸಂಬಂಧಿತ ಸಾರ್ವನಾಮಗಳು ಮತ್ತು ಪ್ರಶ್ನಾರ್ಥಕ ಪದಗಳು –Personal Pronouns, Possessive Forms, Interrogative words

Module-2	(03 hours of pedagogy)

೧. ನಾಮಪದಗಳ ಸಂಬಂಧಾರ್ಥಕ ರೂಪಗಳು, ಸಂದೇಹಾಸ್ಪದ ಪ್ರಶ್ನೆಗಳು ಮತ್ತು ಸಂಬಂಧವಾಚಕ ನಾಮಪದಗಳು – Possessive forms of nouns, dubitive question and Relative nouns

೨. ಗುಣ, ಪರಿಮಾಣ ಮತ್ತು ವರ್ಣಬಣ್ಣ ವಿಶೇಷಣಗಳು, ಸಂಖ್ಯಾವಾಚಕಗಳು Qualitative and Colour Adjectives, Numerals

೩. ಕಾರಕ ರೂಪಗಳು ಮತ್ತು ವಿಭಕ್ತಿ ಪ್ರತ್ಯಯಗಳು – ಸಪ್ತಮಿ ವಿಭಕ್ತಿ ಪ್ರತ್ಯಯ – (ಆ, ಅದು, ಅವು, ಅಲ್ಲಿ) Predictive Forms, Locative Case

Module-3	(03 hours of pedagogy)

ಗ. ಚತುರ್ಥಿ ವಿಭಕ್ತಿ ಪ್ರತ್ಯಯದ ಬಳಕೆ ಮತ್ತು ಸಂಖ್ಯಾವಾಚಕಗಳು – Dative Cases, and Numerals

ಞ. ಸಂಖ್ಯಾಗುಣವಾಚಕಗಳು ಮತ್ತು ಬಹುವಚನ ನಾಮರೂಪಗಳು – Ordinal numerals and Plural markers

ಚ. ನ್ಯೂನ / ನಿಷೇಧಾರ್ಥಕ ಕ್ರಿಯಾಪದಗಳು ಮತ್ತು ವರ್ಣ ಗುಣವಾಚಕಗಳು – Defective / Negative Verbs and Colour Adjectives

Module-4	**(03 hours of pedagogy)**

ಗ. ಅಪ್ಪಣೆ / ಒಪ್ಪಿಗೆ, ನಿರ್ದೇಶನ, ಪ್ರೋತ್ಸಾಹ ಮತ್ತು ಒತ್ತಾಯ ಅರ್ಥರೂಪ ಪದಗಳು ಮತ್ತು ವಾಕ್ಯಗಳು
   Permission, Commands, encouraging and Urging words (Imperative words and sentences)

ಞ. ಸಾಮಾನ್ಯ ಸಂಭಾಷಣೆಗಳಲ್ಲಿ ದ್ವಿತೀಯ ವಿಭಕ್ತಿ ಪ್ರತ್ಯಯಗಳು ಮತ್ತು ಸಂಭವನೀಯ ಪ್ರಕಾರಗಳು
   Accusative Cases and Potential Forms used in General Communication

ಚ. "ಇರು ಮತ್ತು ಇರಲ್ಲ" ಸಹಾಯಕ ಕ್ರಿಯಾಪದಗಳು, ಸಂಭಾವ್ಯಸೂಚಕ ಮತ್ತು ನಿಷೇಧಾರ್ಥಕ ಕ್ರಿಯಾ ಪದಗಳು – Helping Verbs "iru and iralla", Corresponding Future and Negation Verbs

ಛ. ಹೋಲಿಕೆ (ತರತಮ), ಸಂಬಂಧ ಸೂಚಕ ಮತ್ತು ವಸ್ತು ಸೂಚಕ ಪ್ರತ್ಯಯಗಳು ಮತ್ತು ನಿಷೇಧಾರ್ಥಕ ಪದಗಳ ಬಳಕೆ – Comparative, Relationship, Identification and Negation Words

Module-5	**(03 hours of pedagogy)**

ಗ. ಕಾಲ ಮತ್ತು ಸಮಯದ ಹಾಗೂ ಕ್ರಿಯಾಪದಗಳ ವಿವಿಧ ಪ್ರಕಾರಗಳು –Differint types of forms of Tense, Time and Verbs

ಞ. ದ್, –ತ್, –ತು, –ಇತು, –ಆಗಿ, –ಅಲ್ಲ, –ಗ್, –ಕ್, ಇದೆ, ಕ್ರಿಯಾ ಪ್ರತ್ಯಯಗಳೊಂದಿ ಭೂತ, ಭವಿಷ್ಯತ್ ಮತ್ತು ವರ್ತಮಾನ ಕಾಲ ವಾಕ್ಯ ರಚನೆ – Formation of past, Future and Present Tense Sentences with Verb Forms

ಚ. Kannada Vocabulary List: ಸಂಭಾಷಣೆಯಲ್ಲಿ ದಿನೋಪಯೋಗಿ ಕನ್ನಡ ಪದಗಳು – Kannada Words in Conversation

Course Outcomes (Course Skill Set):
ಬಳಕೆ ಕನ್ನಡ ಪಠ್ಯದ ಕಲಿಕೆಯಿಂದ ವಿದ್ಯಾರ್ಥಿಗಳಿಗೆ ಆಗುವ ಅನುಕೂಲಗಳು ಮತ್ತು ಫಲಿತಾಂಶಗಳು:

At the end of the Couse, The Students will be able
CO1: To understand the necessity of learning of local language for comfortable life.
CO2: To Listen and understand the Kannada language properly.
CO3: To speak, read and write Kannada language as per requirement.
CO4: To communicate (converse) in Kannada language in their daily life with kannada speakers.
CO5: To speak in polite conservation.

Assessment Details: Only CIE will be conducted for this course.
Continuous Internal Evaluation:
Three Tests will be conducted in the pattern (20+ 40 + 40) for 100 Marks. CIE methods / question paper is designed to attain the different levels of Bloom's taxonomy as per the outcome defined for the course.

   CIE methods / question paper is designed to attain the different levels of Bloom's taxonomy as per the outcome defined for the course.

ಕನ್ನಡ ಕಲಿಕೆಗಾಗಿ ನಿಗದಿಪಡಿಸಿದ ಪಠ್ಯಪುಸ್ತಕ (Prescribed Textbook to Learn Kannada)
ಪಠ್ಯ ಪುಸ್ತಕ (**Text book**):
ಬಳಕೆ ಕನ್ನಡ
 ಡಾ. ಎಲ್. ತಿಮ್ಮೇಶ,
 ಪ್ರಕಟಣೆ: ಪ್ರಸಾರಾಂಗ,

 ವಿಶ್ವೇಶ್ವರಯ್ಯ ತಾಂತ್ರಿಕ ವಿಶ್ವವಿದ್ಯಾಲಯ, ಬೆಳಗಾವಿ