Group B 1st & 2nd Sem (SESSION 2024 onwards)

B. Tech (Computer Science & Engineering)
SEMESTER –I

Sl No.	Course Code	Course Title	Hours Per Week			Total Credits
			Lecture	Tutorial	Practical	
1.	100110	Engineering Physics	3	0	0	3
2.	100102	Engineering Mathematics-I	3	1	0	4
3.	100111	Programming for Problem Solving	3	0	0	3
4.	100115P	Swachha Bharat Mission	0	0	2	1
5.	100113	IT Workshop	2	0	0	2
6.	100114	Basic Electronics Engineering	3	0	0	3
7.	100110P	Engineering Physics Lab	0	0	2	1
8.	100111P	Programming for Problem Solving Lab	0	0	2	1
9.	100113P	IT Workshop Lab	0	0	2	1
10.	100114P	Basic Electronics Engineering Lab	0	0	2	1
		TOTAL				20

SEMESTER –II

Sl No.	Course Code	Course Title	Hours Per Week			Total Credits
			Lecture	Tutorial	Practical	
1.	100215	Engineering Chemistry	3	0	0	3
2.	100202	Engineering Mathematics-II	3	1	0	4
3.	100216	Communicative English	3	0	0	3
4.	100220P	Sports/Yoga/NCC/NSS	0	0	2	1
5.	100218	Python Programming	2	0	0	2
6.	100219	Introduction to Web Design	3	0	0	3
7.	100215P	Engineering Chemistry Lab	0	0	2	1
8.	100216P	Communicative English Lab	0	0	2	1
9.	100218P	Python Programming Lab	0	0	2	1
10.	100219P	Introduction to Web Design Lab	0	0	2	1
		TOTAL				20

Course Code-100110   Engineering Physics   3 0 0 3

Unit- 1.0

1. Frame of Reference: **2 hrs**

Non-Inertial frame of reference, rotating coordinate system, centripetal and Coriolis acceleration and its application in weather system.

2. Oscillations: **3 hrs**

Harmonic Oscillator, Damped Harmonic motion – overdamped, critically Damped and lightly damped oscillators, Force Oscillators and Resonance.

Unit- 2.0

1. Optics: **4 hrs**

Huygens's Principle, Superposition of Waves and interference of Light by wave front-splitting and amplitude-splitting; Young's double slit experiment, Michelson interferometer, Fraunhofer diffraction from single slit and circular aperture, Diffraction Grating and their resolving power

2. LASER: **4 hrs**

Einstein's theory of matter-radiations interaction, Einstein's Coefficients (A and B), Amplification by population inversion, Different types of lasers – Gas Laser, Helium-Neon Laser, Solid State Laser (Ruby, Neodymium), Semiconductor Laser.

Unit- 3.0

1. Quantum Mechanics: **5 hrs**

Compton Effect, Photoelectric Effect, Wave Particle duality, de Broglie's hypothesis, Heisenberg's Uncertainty Principle, Wave function and wave packets, phase and group velocities, Schrodinger's Wave Equation, Normalization, Expectation values, Eigenvalues and Eigenfunction.

2. Applications in One dimensions: **2 hrs**

Application of Schrodinger Wave Equation for particle in one dimensional box – its wavefunction and eigenvalue of energy and momentum.

Unit- 4.0

1. Vector Calculus: **2 hrs**

Gradient, Divergence and Curl, Line, Surface and Volume integrals, Gauss's Divergence theorem and Stokes' theorem in Cartesian Coordinate.

2. Electrostatics: **4 hrs**

Gauss's Law and its applications, Divergence and Curl of Electrostatic fields, Electrostatic Potential, Boundary Conditions, Poisson's and Laplace's equations, Dielectrics, Polarization, Bound Charges, Electric displacement, Boundary Conditions in dielectrics.

Unit- 5.0

1. Magnetostatics: **4 hrs**

Lorentz force, Biot-Savart and Ampere's circuital laws and their applications, Divergence and Curl of Magneto static fields, Magnetic vector potential, Force and torque on a magnetic dipole, Magnetic Materials, Magnetization, Bound currents, Boundary conditions.

2. Electrodynamics and Electromagnetic Waves: **4 hrs**

Ohm's law, Motional EMF, Faraday's Law, Lenz's law, Self and mutual inductance, Energy stored in magnetic field, Maxwell's equations in vacuum and nonconducting medium, Continuity Equation, Poynting Theorem, Wave Equations: plain electromagnetic wave in vacuum and their transverse nature and Polarization.

Unit- 6.0

1. Introduction to Solids and Semi-Conductors: **3 hrs**

Free electron theory of metal, fermi level, Bloch's theorem for particle in a periodic Potential, Kroning-Penney model and origin of energy band.

2. Electronic Materials: **3 hrs**

Metals, semiconductors and insulators, intrinsic and extrinsic semiconductors,Carriertransport, diffusion and drift, P-N junction.

Group B 1st & 2nd Sem (SESSION 2024 onwards)

Text/ Reference:-

1. Quantum Physics of Atoms, Molecules, Solids, Nuclei and Particles, R. Eisberg R. Resnick, Wiley India Pvt. Ltd ISBN 978-81-265-0818-1
2. Theory of Vibration with Application, W.T. Thomson M. D. Dahleh, Pearson India ISBN 978-81-317-0482-0
3. Introduction to Electrodynamics, D.J. Griffiths, Pearson India, ISBN 978-93-325-5044-5
4. Electromagnetism, I.S. Grant, W. R. Phillips, Wiley India Pvt. Ltd ISBN 978-04-719-2712-9
5. The Feynman Lectures on Physics, R.P. Feynman R. B. Leighton, Pearson India ISBN 978-00-710-7458-2
6. Optics, Ajay Ghatak ,McGraw Hill ISBN 978-93-901-1359-0
7. Physics of Vibration and Waves, H. J. Pain, Wiley India Pvt. Ltd, ISBN 978-04-700-1296-3
8. Concept of Modern Physics, Arthur Beiser, McGraw Hill ISBN 978-93-513-4185-7
9. Introduction to Solid State Physics, C. Kittle , Wiley India Pvt. Ltd, ISBN 978-81-265-7843-6

Course Code-100102   Engineering Mathematics–I   3 1 0 4

Unit- 1.0: Linear Algebra-I   **7 hrs**

Elementary Row operations, Gauss -Jordan Method for finding the inverse of Matrix, Complex Matrix : Hermitian , Skew Hermitian and Unitary Matrix, Vector space, Sub Spaces, Linear dependence and Independences of Vectors, Linear Span, Basis, Dimension, Extension of basis of subspace, The rank of a matrix, Row and column space, Solvability of system of linear equations.

Unit- 2.0: Linear Algebra-II   **7 hrs**

Linear Transformations, Kernel and Range of linear transformation, Matrix Representation of a linear transformation, Rank-Nullity Theorem, Eigen Value and Eigen Vectors, Properties of Eigen vectors, Eigen Bases, Orthogonal Transformation, Similarity Transformation, Matrix Diagonalization, Cayley- Hamilton Theorem.

Unit- 3.0: Calculus for single variable   **7 hrs**

Inderminate form, L'Hospital Rule, Rolle's Theorem, Mean Value Theorem, Expansion of function (single variable), Taylor and Maclaurin Series, Riemann Integration, Riemann Sum, Improper Integrals, Beta and Gamma function and their properties.

Unit- 4.0 : Multivariable Calculus (Differentiation)   **7 hrs**

Function with two or more variable, Limit, continuity and Partial differentiation, Total Differentiation

Taylor's series and Maclaurin's series for function with two variable, Jacobian, Maxima and Minima, Method of Lagrange's multiplier.

Unit-5.0: Multivariable Calculus (Integration)   **7 hrs**

Double Integral, change of order of integration, Triple integral, Change of Variable in a Double and Triple Integrals, Change to polar coordinate, Change to cylindrical coordinate, Change to spherical polar coordinate, Application to area and volume using double and triple integral

Unit- 6.0: Vector Calculus   **7 hrs**

Scalar and vector fields, Gradient, Directional derivative, Divergence, Curl and their properties, Line integral, Green's theorem in plane (without proof), Surface integral, Stoke's theorem (without proof), Volume Integral, Gauss-Divergence' theorem (without proof).

Text/ Reference:-

1. AICTE's Prescribed Textbook: Mathematics-I (Calculus & Linear Algebra), ReenaGarg, Khanna Book Publishing Co. ISBN-10 9391505171
2. Advanced Engineering Mathematics, Chandrika Prasad &ReenaGarg, Khanna Book Publishing Co., 2021. ISBN 10: 9386173522 / ISBN 13: 9789386173522.
3. Higher Engineering Mathematics, B.V. Ramana, Tata McGraw Hill New Delhi, 11th Reprint, 2010,ISBN-10 007063419X ISBN-13978- 0070634190.
4. Advanced Engineering Mathematics, SrkIyengarRk Jain,Narosa,5thEdition,ISBN-10 8184875606I
    SBN-13978-8184875607

5. Advanced Engineering Mathematics, Erwin Kreyszig, 9th Edition, John Wiley & Sons, 2006.

Course Code-100111   Programming for Problem Solving   3 0 0 3

Unit- 1.0
Introduction to Programming   6 hrs
Introduction to components of a computer system (disks, memory, processor, where a program is stored and executed, operating system, compilers etc.). Idea of Algorithm: steps to solve logical and numerical problems. Representation of Algorithm: Flowchart/ Pseudo code with examples. From algorithms to programs; source code, variables (with data types) variables and memory locations, Syntax and Logical Errors in compilation, object and executable code.

Unit- 2.0
Operators, Conditional Branching and Loops   8 hrs
Arithmetic expressions/arithmetic operators, relational operators, logical operators, bitwise operators and precedence.Writing and evaluation of conditionals and consequent branching, Iteration and loops.

Unit- 3.0
Arrays and String   6 hrs
Array declaration & initialization, bound checking arrays (1-d, 2-d), character arrays and strings.

Unit- 4.0
Function, Recursion and Pointers   9 hrs
Functions (including using built in libraries), Parameter passing in functions, call by value, passing arrays to functions: Recursion, as a different way of solving problems. Example programs, such as Finding Factorial, Fibonacci series, Ackerman function etc. Idea of pointers, Defining pointers, Use of Pointers in self- referential structures, idea of call by reference.

Unit- 5.0
User defined Data Types and File handling   8 hrs
Structure- defining, declaring, initializing; accessing structure members, processing of structure, array of structures, structures within structure, structure and function, type definition; Union— definition, declaration, accessing union members, initializing union. Introduction, file declaration, opening and closing a file, working with text and binary files, I/O operations on file, error handling, random access to files

Unit- 6.0
Basic Algorithms   5 hrs
Searching, Basic Sorting Algorithms (Bubble, Insertion and Selection), Finding roots of equations, notion of order of complexity through example programs (no formal definition required)

Text/ Reference:-
1. Programming in ANSI C 4th Ed,EBalagurusamy, McGraw Hill Education India Private Limited, ISBN-978-9339219666, 7th Edition
2. The C Programming Language 2e,W. Kernighan / Dennis Ritchie,Pearson Education India, 978-9332549449, 2nd Edition
3. Computer Fundamentals and Programming in C,ReemaThareja,Oxford University Press, ISBN- 978-9354977893, 3rd Edition

Course Code-100115P   Swatch Bharat Mission   0 0 2 1

Objectives:

1. Understanding the importance of cleanliness and sanitation: The course could aim to create
awareness about the significance of cleanliness and sanitation in maintaining personal health,
environmental sustainability, and community well-being. It could cover topics such as waste
management, sanitation practices, and the impact of poor sanitation on public health.

2. Developing skills for effective waste management: The course could provide training on
various waste management techniques, such as waste segregation, composting, recycling,
and proper disposal of hazardous waste. It could also emphasize the importance of reducing
waste generation and promoting sustainable waste management practices.

3. Promoting behavioural change towards cleanliness: The course could focus on influencing
positivebehavioural change among individuals and communities towards cleanliness. It
could include modules on promoting good hygiene practices, creating awareness about the
harmful effects of littering and open defecation, and encouraging responsible waste disposal
habits.

4. Creating awareness about Swachh Bharat Mission initiatives: The course could provide
information about the Swachh Bharat Mission initiatives and campaigns launched by the
Government of India to promote cleanliness and sanitation, such as SwachhSurvekshan,
Swachh Bharat Abhiyan, and Clean India Campaign. It could also discuss the progress made,
challenges faced, and future prospects of the Swachh Bharat Mission.

5. Engaging in community participation and advocacy: The course could emphasize the
importance of community participation in the Swachh Bharat Mission and provide tools and
strategies for engaging with local communities to promote cleanliness and sanitation. It could
also encourage advocacy for policy changes and innovations to address sanitation-related
issues at the community, regional, and national levels.

6. Pre-requisite: Nil

7. Course Outcome:

8. Increased awareness and knowledge about cleanliness and sanitation: Participants of the
course may gain a deeper understanding of the importance of cleanliness and sanitation,
including the impact on personal health, environmental sustainability, and community well-
being. They may learn about various waste management techniques, hygiene practices, and
the initiatives of the Swachh Bharat Mission.

9. Enhanced skills for effective waste management: Participants may acquire practical skills
related to waste management, such as waste segregation, composting, recycling, and proper
disposal of hazardous waste. They may also develop skills in reducing waste generation and
promoting sustainable waste management practices in their communities or workplaces.

10. Positive behavioral change towards cleanliness: The course may influence participants to
adopt positive behavioral changes towards cleanliness, such as avoiding littering, practicing
good hygiene habits, and promoting responsible waste disposal. Participants may develop a
sense of responsibility towards maintaining cleanliness in their surroundings and actively
contribute towards creating a cleaner environment.

11. Increased community participation and advocacy: Participants may become actively
engaged in community participation and advocacy efforts related to cleanliness and
sanitation. They may collaborate with local communities, government bodies, and non-
governmental organizations (NGOs) to raise awareness, implement cleanliness initiatives,

and advocate for policy changes or innovations to address sanitation-related issues.

12. Contribution towards Swachh Bharat Mission objectives: Participants may contribute towards the objectives of the Swachh Bharat Mission, such as promoting cleanliness, ensuring proper waste management, and eliminating open defecation. They may actively participate in Swachh Bharat Mission campaigns, initiatives, and activities, and make a positive impact on their communities and society at large.

13. List of Reports:

14. Any topics related to Swatch Bharat Mission

Course Code-100113   IT Workshop   2 0 0 2

Unit- 1.0

PC HARDWARE(6 lectures):

Identification of the peripherals of a computer, components in a CPU and its functions. Block diagram of the CPU along with the configuration of each peripheral. Functions of Motherboard. Assembling and Disassembling of PC. Installation of OS. Basic Linux commands.

Unit- 2.0

INTERNET(4 lectures)

Web Browsers, Access of websites, Surfing the Web, Search Engines, Customization of web browsers, proxy settings, bookmarks, search toolbars, pop-up blockers.Antivirus types, Protection from various threats.

Unit- 3.0

MICROSOFT WORD(4 lectures)

Overview of MS word features. Usage of Hyperlink, Symbols, Spell Check, Track Changes. Table of Content, Newspaper columns, Images from files and clipart, Drawing toolbar and Word Art, Formatting Images, Textboxes, Paragraphs and Mail Merge in word. Using Word to create Project Certificate, Project Abstract, News Letter, Resume.

Unit- 4.0

LaTeX(6 lectures)

Word Orientation: Overview of LaTeX and tool word: Importance of LaTeX and MS office or equivalent (FOSS) tool Word as word Processors, Details of the four tasks and features that would be covered in each, Using LaTeX and word – Accessing, overview of toolbars, saving files, Using help and resources, rulers, format painter in word.

Using LaTeX and Word to create a project certificate. Features to be covered:- Formatting Fonts in word, Drop Cap in word, Applying Text effects, Using Character Spacing, Borders and Colors, Inserting Header and Footer, Using Date and Time option in both LaTeX.

Creating project abstract Features to be covered:-Formatting Styles, Inserting table, Bullets and Numbering, Changing Text Direction, Cell alignment, Footnote, Hyperlink, Symbols, Spell Check, Track Changes.

Creating a Newsletter: Features to be covered:- Table of Content, Newspaper columns, Images from files and clipart, Drawing toolbar and Word Art, Formatting Images, Textboxes, Paragraphs and Mail Merge in word.

Unit- 5.0

MICROSOFT EXCEL(4 lectures)

Overview of Excel Features Excel formulae & Functions, conditional formatting, Charts, Hyper linking, Renaming and Inserting worksheets, Data Analysis functions. Creating a Scheduler (Features: - Gridlines, Format Cells, Summation, auto fill, Formatting) Calculating GPA (Features: - Cell Referencing, Formulae and functions in excel.

Unit- 6.0

MICROSOFT POWER POINT(4 lectures)

Overview of PowerPoint features, Insertion of images, slide transition, Custom animation, Hyperlinks.

Text/ Reference:-

1. The Complete Computer upgrade and repair book, Cheryl A Schmidt, 3rd edition, WILEY Dream tech
2. Introduction to Information Technology,   ITL   Education   Solutions   limited, Pearson Education.
3. PC Hardware – A,   Handbook – Kate J., Chase PHI
4. LaTeX Beginner's Guide, Stefan Kottwitz, Packt Publishing

Course Code-100106   Basic Electrical Engineering   3 0 0 3

Unit- 1.0   **8 hrs**

DC Circuit Analysis and Network Theorems: Concepts of Network, Active and Passive elements, voltage and current sources, concept of linearity and linear network, unilateral and bilateral elements. R L and C as linear elements.Source Transformation. Kirchhoff's Law, loop and nodal methods of analysis; star – delta transformation; Network Theorems: Superposition Theorem, Thevenin's Theorem, Norton's Theorem, Maximum Power Transfer Theorem. (Simple Numerical Problems)

Unit- 2.0   **5 hrs**

Magnetic Circuit: Magnetic circuit concepts, analogy between Electric & Magnetic circuits, Magnetic circuits with DC and AC excitation, Magnetic leakage. B-H curve, Hysteresis and Eddy Current losses, Magnetic circuit calculations.

Unit- 3.0   **8 hrs**

Steady State Analysis of Single-Phase AC Circuits: Sinusoidal, Square and Triangular waveforms–average and effective values, form and peak factors, concept of phasors, phasor representation of sinusoidally varying voltage and current. Analysis of series, parallel, and series – parallel RLC Circuits: Apparent, Active & Reactive Powers, Power factor, causes and problems of low power factor, power factor improvement. Resonance in Series and Parallel Circuits. (Simple Numerical Problems)

Unit- 4.0   **5 hrs**

Three Phase AC Circuits: Three Phase System – its necessity and advantages, meaning of phase sequence and star and delta connections, balanced supply and balanced load, line and phase voltage/ current relations, three phase power and its measurement. (Simple Numerical Problems)

Unit- 5.0   **10 hrs**

Introduction to DC Machines:Principal, Operation, Construction, and types of DC machines, e.m.f. equation of generator and torque equation of motor.

Single Phase Transformer: Principle of Operation, Construction, e.m.f. equation, losses in transformer, efficiency.

Three Phase Induction Motor:Principal, Operation, and Construction (Simple Numerical Problems)

Unit- 6.0   **6 hrs**

Soldering- Soldering and desoldering techniques, breadboard wiring, general-purpose PCB soldering/wiring.

Wiring-Types of residential and commercial wiring systems, general rules and guidelines for installation, loadcalculation and sizing of wire, rating of main switch, distribution board.

Text/ Reference:-

1. Basic Electrical Engineering, D.P. Kothari et al,McGraw-Hill Education 4th Edition,2019
2. Electrical and Electronic TechnologyEdward Hughes, 12th edition, 2016
3. Principles Electrical Engineering and Electronics, V.K Mehata, Rohit Mehta, S Chand and Company 2nd edition, 2015
4. Basic Electrical Engineering, J. B. Gupta, Katson Publication
5. A textbook of Electrical Technology B. L. Thereja, A. K. Thereja Vol. 1, 2, and 3 S Chand Publication

Course Code-100110P   Engineering Physics Lab   0 0 2 1
Perform any 10 Experiments

1. Determination of the capacitance and permittivity of the given material.
2. Determination of e/m of electron.
3. Determination of Planck's constant and Photoelectric Work Function using Photoelectric cell.
4. Verification of inverse square law using photocell.
5. Determination of Wavelength of (He-Ne) LASER using Diffraction Grating Method.
6. Calculation of Energy Band Gap of a semiconductor.
7. Determination of Dielectric constant using resonance method.
8. Determination of Wavelength of Sodium light by measuring the diameter of the Newton's Ring.
9. Determination of curvature of convex surface of a lens by Newton's ring.
10. Verification of existence of Bohr's Energy level with Frank-Hertz apparatus.
11. Determination of the Earth's horizontal magnetic field intensity and magnetic Moment of a magnet by   employing magnetometer.
12. Verification of Faraday's Law and Lenz's Law of Electromagnetic Induction.

Course Code-100111P   Programming for Problem Solving Lab   0 0 2 1
Perform any 10 Experiments

1. Tutorial 1: Problem solving using computers:
      Lab1: Familiarization with programming environment
2. Tutorial 2: Variable types and type conversions:
      Lab 2: Simple computational problems using arithmetic expressions
3. Tutorial 3: Branching and logical expressions:
      Lab 3: Problems involving if-then-else structures
4. Tutorial 4: Loops, while and for loops:
      Lab 4: Iterative problems e.g., sum of series
5. Tutorial 5: 1D Arrays: searching, sorting:
      Lab 5: 1D Array manipulation
6. Tutorial 6: 2D arrays and Strings
      Lab 6: Matrix problems, String operations
7. Tutorial 7: Functions, call by value:
      Lab 7: Simple functions
8. Tutorial 8 &9: Numerical methods (Root finding, numerical differentiation, numerical integration):
      Lab 8 and 9: Programming for solving Numerical methods problems
9. Tutorial 10: Recursion, structure of recursive calls
      Lab 10: Recursive functions
10. Tutorial 11: Pointers, structures and dynamic memory allocation
      Lab 11: Pointers and structures
11. Tutorial 12: File handling:
      Lab 12: File operations

Course Code-100113P   IT Workshop Lab   0 0 2 1

Unit- 1: PC Hardware
Task 1: Identify the peripherals of a computer, components in a CPU and its functions. Different types of printer.
Task 2: Every student should disassemble and assemble the PC back to working condition. Lab instructors should verify the work and follow it up with a Viva. Also students need to go through the video which shows the process of assembling a PC. A video would be given as part of the course content.
Unit 2:
Task 1: Every student should individually install MS windows on the personal computer. Lab instructor should verify the installation and follow it up with a Viva.
Task 2: Every student should install Linux on the computer. This computer should have windows installed. The system should be configured as dual boot with both Windows and Linux. Lab instructors should verify the installation and follow it up with a Viva.

Task 3: Different commands of DOS and Linux.
Unit- 3:Internet& World Wide Web
Task1: Orientation & Connectivity Boot Camp: Students should get connected to their Local Area Network and access the Internet. In the process they configure the TCP/IP setting. Finally students should demonstrate, to the instructor, how to access the websites and email. If there is no internet connectivity preparations need to be made by the instructors to simulate the WWW on the LAN.
Task 2: Web Browsers, Surfing the Web: Students customize their web browsers with the LAN proxy settings, bookmarks, search toolbars and pop up blockers. Also, plug-ins like Macromedia Flash and JRE for applets should be configured.
Task 3: Search Engines & Netiquette: Students should know what search engines are and how to use the search engines. A few topics would be given to the students for which they need to search on Google. This should be demonstrated to the instructors by the student.
Task 4: Cyber Hygiene: Students would be exposed to the various threats on the internet and would be asked to configure their computer to be safe on the internet. They need to customize their browsers to block pop ups, block active x downloads to avoid viruses and/or worms.
Unit- 4.0: LaTeX
Task 1 – Word Orientation: The mentor needs to give an overview of LaTeX and tool word: Importance of LaTeX and MS office or equivalent (FOSS) tool Word as word Processors, Details of the four tasks and features that would be covered in each, Using LaTeX and word – Accessing, overview of toolbars, saving files, Using help and resources, rulers, format painter in word.
Task 2: Using LaTeX and Word to create a project certificate. Features to be covered:- Formatting Fonts in word, Drop Cap in word, Applying Text effects, Using Character Spacing, Borders and Colors, Inserting Header and Footer, Using Date and Time option in both LaTeX.
Task 3: Creating project abstract Features to be covered:-Formatting Styles, Inserting table, Bullets and Numbering, Changing Text Direction, Cell alignment, Footnote, Hyperlink, Symbols, Spell Check, Track Changes.
Task 4: Creating a Newsletter: Features to be covered:- Table of Content, Newspaper columns, Images from files and clipart, Drawing toolbar and Word Art, Formatting Images, Textboxes, Paragraphs and Mail Merge in word.
Unit- 5.0 :

Group B 1st & 2nd Sem (SESSION 2024 onwards)

Excel Orientation: The mentor needs to tell the importance of MS office or equivalent (FOSS) tool Excel as a Spreadsheet tool, give the details of the four tasks and features that would be covered in each. Using Excel – Accessing, overview of toolbars, saving excel files, Using help and resources.

Task 1: Creating a Scheduler - Features to be covered: Gridlines, Format Cells, Summation, auto fill, Formatting Text

Task 2 : Calculating GPA - .Features to be covered:- Cell Referencing, Formulae in excel – average, std. deviation, Charts, Renaming and Inserting worksheets, Hyper linking, Count function, LOOKUP/VLOOKUP

Task 3: Split cells, freeze panes, group and outline, Sorting, Boolean and logical operators, Conditional formatting

Unit- 6.0 :

Powerpoint:

Task 1: Students will be working on basic power point utilities and tools which help them create basic powerpoint presentations. PPT Orientation, Slide Layouts, Inserting Text, Word Art, Formatting Text, Bullets and Numbering, Auto Shapes, Lines and Arrows in PowerPoint.

Task 2: Interactive presentations - Hyperlinks, Inserting –Images, Clip Art, Audio, Video, Objects, Tables and Charts. Task 3: Master Layouts (slide, template, and notes), Types of views (basic, presentation, slide slotter, notes etc), and Inserting – Background, textures, Design Templates, Hidden slides.

Group B 1st & 2nd Sem (SESSION 2024 onwards)

Course Code-100106P   Basic Electrical Engineering Lab   0 0 2 1
Perform any 10 Experiments

1. Verification of Kirchhoff's laws.
2. Verification of Superposition Theorem.
3. Verification of Thevenin's Theorem.
4. Verification of Norton's Theorem.
5. Verification of Maximum Power Transfer Theorem.
6. Measurement of power in 3 – Ø circuit by Two Watt meter method and determination of its power factor.
7. Star to Delta and Delta to Star conversion of the three circuit.
8. Determination of Efficiency by load test of a 1 – Ø Transformer.
9. To study the typical BHK house wiring
10. Study of safety precautions while working on electrical installations and necessity of earthing

Course Code-100215   Engineering Chemistry   3 0 0 3

Unit 1.0- Atomic and Molecular Structure   **8 hrs**
Electromagnetic radiations, Dual nature of electron and Heisenberg uncertainty Principle.Photoelectric effect, Planck's theory.Principles for the combination of atomic orbitals to form a molecular diagram of molecular orbitals.Bent's rule, VSEPR theory (typical example) co-ordination numbers and geometries. Isomerism in transition metal compounds. Metal Carbonyls; Synthesis and Structure.

Unit 2.0- Spectroscopy   **6 hrs**
Principle of rotational and vibrational spectroscopy, selection rule for application in diatomic molecules, elementary idea of electronic spectroscopy, UV-VIS spectroscopy with related to rules and its applications. Basic Principle of nuclear Magnetic resonance spectroscopy with applications.

Unit 3.0 -Electrochemistry and Fuels   **6 hrs**
Nernst equation, EMF and electrochemical cell, the introduction of corrosion, corrosion mechanism, types of corrosion, water line corrosion, stress corrosion, pitting corrosion, Lead acid storage cell, leclanche cell. Calorific value of fuels, proximate and ultimate analysis of coals, fuel cells, Bio fuels.

Unit 4.0- Water Chemistry   **8 hrs**
Hardness of water, estimation of water hardness by EDTA and Alkalinity method.Removal of the hardness of water- soda lime process, zeolite process, Ion exchange process, Boiler problem, sludge, and scale formation, priming and foaming, Boiler corrosion, and Caustic embrittlement.

Unit 5.0 - Polymer and Plastics   **8 hrs**
Polymerization techniques (free radical, ionic, and co-ordination mechanism)Preparation properties, and technical application of phenol-formaldehyde resins, elastomers, synthetic rubbers (Buna-S, Buna-N, neoprene). Inorganic polymers, Silicones, adhesives, epoxy resins. the structural difference between thermoplastic and thermosetting Plastics, the Importance of commercially important thermoplastics and thermosets; Poly ethylene, Polyvinyl chloride, Polystyrene.

Unit 6.0- Organic Reactions and Synthesis of A Drug Molecul   **6 hrs**
Introduction to intermediate and reaction involving Substitution, addition, elimination, oxidation-reduction. Diels Elder cyclization and epoxide ring opening reactions, synthesis of commonly used drug molecules like aspirin.

Text/ Reference:-
1. University Chemistry, B.H. Mahan,Pearson
2. Chemistry, principles and application, M.J. Sienko and R.A. Plane, McGraw Hill International
3. Fundamentals of molecular Spectroscopy, C.N. Banwell   ,   McGraw   Hill International
4. Engineering Chemistry (NPTEL Web- Book), B.L. Tembe, Kamaluddin and M.S. Krishnan, NPTEL
5. Physical Chemistry, P.W. Atkins, Oxford University Press
6. A text book of engineering chemistry, S. Chawala, DhanpatRai Publication
7. General Chemistry Part 1, R. Sarkar, New Central Book agency

Course Code-100202   Engineering Mathematics– II   3 1 0 4

Unit- 1.0 Complex Analysis – I   6 hrs

Functions of complex variable, limit, Continuity, Differentiability, Analytic function, Cauchy-Riemann Equations in Cartesian and polar form, harmonic function and harmonic conjugate.

Unit- 2.0 Complex Analysis – II   8 hrs

Line Integral, contour integrals, Cauchy theorem, Cauchy's Integral formula(without proof), Taylors series, zero of analytic functions, singularities, Laurent's series, residue, Cauchy residue theorem(without Proof) and its applications.

Unit- 3.0 Ordinary Differential Equations   8 hrs

Linear differential equations of nth Order with constant coefficients, solution of Homogeneous and Non-Homogeneous Equations, Equations with variable coefficients, Cauchy- Euler Equations, Method of Variation of Parameters.

Unit- 4.0   Sequence and Series   6 hrs

Introduction of Sequence and Series, Nature of series Tests of convergence of Series: Comparison test, D'Alembert ratio test, Cauchy's Root test, Raabe's test, Logarithmic test, Cauchy's condensation test.

Unit- 5.0   Laplace Transform   8 hrs

Laplace Transform, Existence theorem, properties of Laplace Transform, Laplace Transform of Periodic functions, Inverse Laplace Transform, convolution theorem. Application of Laplace Transform to solve Ordinary differential equations.

Unit- 6.0 Fourier Series   6 hrs

Fourier Series, Fourier Series for odd and even functions, Half range sine and cosine series, Parseval's theorem.

Text/ Reference:-

1. Advanced Engineering Mathematics, Kreyszig Erwin, John Wiley and Sons,10th Edition,2020 ISBN:978-0470-45836-5
2. Advanced Engineering Mathematics, Dass H.K., S Chand and Company pvt.Ltd.,22nd Edition,2018 ISBN:978-93-5283-718-2
3. Higher Engineering Mathematics, Grewal B.S., Khanna Publishers,44th Edition,2023 ISBN:9788174091154
4. Complex Variables (Theory and Applications), Kasana H.S., PHI,2nd Edition.2015 ISBN:978-81-203-2641-5
5. A Text Book of Engineering Mathematics, Bali N.P., Goyal Manish Laxmi Publications,9th Edition,2014
6. Higher Engineering Mathematics, Ramana B.V., Tata McGraw Hill New Delhi, 11th Reprint, 2010, ISBN-10 007063419X ISBN-13978- 0070634190
7. Differential Equations, Ross S.L.,Wiley Publications,3rd edition,2016 ISBN:978-81-265—1537-0
8. Advanced Differential Equations, Raisinghania M.D., S.Chand and Company PVT.LTD.,18th Edition,2015 ISBN:978-81-219-0893-1
9. Schaum's Outlines Complex Variables, Spiegel Murray R, Lipschutz Seymour, Schiller J John and Spellman Dennis, MC Graw Hill Education Private Ltd.2nd Edition,2010 ISBN:978-0-07-008538-1

Course Code-100216   Communicative English   3 0 0 3

Unit-1.0: Vocabulary Building   **7 hrs**
Nature of Word Formation; Root Word and Morpheme; Prefix and Suffix; Foreign Expressions in English; Synonym and Antonym; Homophone and Homograph; Abbreviation and Acronym.

Unit-2.0: Basic Writing Skills   **7 hrs**
Parts of Speech: Types of Words; Structures of Sentence; Kind of Sentence; Phrase and Clause; Punctuation Marks; Capitalization; Tenses: Present, Past and Future; Voices: Active and Passive; Formation of Questions using Primary Auxiliaries, Modals and Wh-Words.

Unit-3.0: Common Errors in English   **7 hrs**
Articles; Prepositions; Modifiers; Subject-Verb Agreement; Noun-Pronoun agreement; Redundancies; Cliches; Spelling Error.

Unit-4.0: Principles of Appropriate Writi   **7 hrs**
Defining: Describing, Classifying and Exemplifying; Introduction, Body, and Conclusion; References, Quotations and Illustrations; Organizing the Paragraphs in a Document; 7Cs of the Professional Writing: Clear, Concise, Concrete, Correct, Coherent, Complete and Courteous.

Unit-5.0: Practices of Formal Writing   **7 hrs**
Formal Letter: Cover-Letter and Application; Resume Writing; Report Writing; Minutes of Meeting; Memorandum; Notice; Essay Writing: Personal and Impersonal; Email Writing Etiquettes; Article Writing; Writing for Current Social Media.

Unit-6.0: Comprehension of Written English   **7 hrs**
Of Studies (Essay) by Sir Francis Bacon; *The Sun Rising* (Poem) by John Donne; *The Last Leaf* (Story) by O Henry; Unseen/Untaught Passage.

Text/ Reference:-
1. English language and communication skills for engineers, Sanjay Kumar,Pushplata, Oxford university Press
2. Communicative English for Technical student, Dr. BijayBhadur Singh and Dr. KalpanaSinha, Foundation publishing House (FPM)
3. Communication Skill (As per VRV syllabus 2018),Sanjay Kumar and Pushplata, Oxford University Press
4. A course in Listening & Speaking, V. Sasi Kumar ,P. KiranmaiDutt and GeethaRajeevan, Foundation Books

Course Code-100220P   Sports/Yoga/NCC/NSS   0 0 2 1

Course Objectives:

(a) Encouraging creativity and innovation: The course could aim to foster a culture of creativity and innovation among engineering students. It could provide opportunities for students to generate and develop new ideas, think critically, and come up with innovative solutions to real-worldproblems. This objective could be achieved through brainstorming sessions, design thinking exercises, and hands-on projects.

(b) Enhancing problem-solving skills: The course could focus on enhancing the problem-solving skills of engineering students. It could provide training on various problem-solving techniques, such as root cause analysis, critical thinking, and decision-making. Students may learn how to identify and analyse complex problems, develop feasible solutions, and implement them effectively.

(c) Developing project management skills: The course could aim to develop project management skills among engineering students. It could cover topics such as project planning, scheduling, budgeting, and risk management. Students may learn how to manage resources, communicate effectively, and work collaboratively in a project-based environment.

(d) Promoting interdisciplinary collaboration: The course could encourage interdisciplinary collaboration among engineering students. It could provide opportunities for students from different engineering disciplines to work together on innovative projects. This could foster cross-disciplinary learning, encourage diverse perspectives, and promote teamwork and collaboration skills.

(e) Facilitating practical application of engineering concepts: The course could focus on the practical application of engineering concepts and principles. It could provide students with opportunities to apply their theoretical knowledge to real-world projects, prototypes, or simulations. Students may learn how to translate engineering theories into practical solutions and develop hands-on experience in implementing innovative projects.

Pre-requisite: Nil

Course Outcome:

1. Developed innovative projects: Students may have successfully developed innovative projects that demonstrate their creativity, problem-solving skills, and technical competence. These projects could be prototypes, models, simulations, or practical solutions to real-world problems, showcasing their ability to apply engineering concepts in a creative and innovative manner.

2. Improved critical thinking and problem-solving skills: Students may have honed their critical thinking and problem-solving skills through various course activities, such as brainstorming, design thinking, and project development. They may have learned to analyse complex problems, identify viable solutions, and make informed decisions based on technical, economic, and social considerations.

3. Enhanced project management and teamwork skills: Students may have gained practical experience in managing projects, including planning, scheduling, budgeting, and risk management. They may have learned how to work effectively in a team, collaborate with diverse team members, and communicate project progress and results professionally.

4. Increased interdisciplinary knowledge and collaboration: Students may have gained exposure to interdisciplinary concepts and collaborated with peers from different engineering disciplines. They may have learned to appreciate diverse perspectives, leverage interdisciplinary knowledge, and work collaboratively to develop innovative solutions that integrate multiple domains of engineering.

5. Cultivated a mindset of innovation and entrepreneurship: Students may have developed a mindset of innovation and entrepreneurship, recognizing the importance of creativity,

adaptability, and continuous improvement in engineering practice. They may have learned to identify opportunities, think critically, and take risks to develop and implement innovative projects with commercial or societal potential.

List of Reports:

Any topics related to innovative project.

Course Code-100218   Python Programming   2 0 0 2
Module 1: Input and Output   **6 Hrs**
Identifiers, Keywords, Statements and Expressions, Variables, Operators, Precedence and Associativity, Data Types, Indentation, Comments, Reading Input, Print Output, Type Conversions, The type() Function and Is Operator, Dynamic and Strongly Typed Language
Module 2: Control Flow statements, Function and Loops   **6 Hrs**
Control Flow Statements, The if Decision Control Flow Statement, The if…else Decision Control Flow Statement, The if…elseif…else Decision Control Statement, Nested if Statement, Built-InFunctions, Commonly Used Modules, Function Definition and Calling the Function, The return Statement and void Function, Scope and Lifetime of Variables, Default Parameters, The while Loop, The for Loop, The continue and break Statements.
Module 3:Strings   **3 Hrs**
Creating and Storing Strings, Basic String Operations, Accessing Characters in String by Index Number, String Slicing and Joining, String Methods, Formatting Strings.

Module 4 : Lists   **3 Hrs**
Creating Lists, Basic List Operations, Indexing and Slicing in Lists, Built-In Functions Used on Lists, List Methods, The del Statement.
Module 5:Dictionaries, Tuples and Sets   **5 Hrs**
Creating Dictionary, Accessing and Modifying key value Pairs in Dictionaries, Built-In Functions Used on Dictionaries, Dictionary Methods, The del Statement, Tuples and Sets, Creating Tuples, Basic Tuple Operations, Indexing and Slicing in Tuples, Built-In Functions Used on Tuples, Relation between Tuples and Lists, Relation between Tuples and Dictionaries, Tuple Methods, Using zip() Function, Sets, Set Methods, Traversing of Sets, Frozen set.
Module 6: Files   **5Hrs**
Types of Files, Creating and Reading Text Data, File Methods to Read and Write Data, Reading and Writing Binary Files, The Pickle Module, Reading and Writing CSV Files, Python os and os.path Modules.
Text/ Reference:-
1. Introduction to Python Programming, Gowrishankar S, VeenaA ,1st Edition, CRC Press/Taylor & Francis, 2018. ISBN-13: 978-0815394372
2. Python Data Science Handbook: Essential Tools for Working with Data, Jake VanderPlas, 1st Edition, O'Reilly Media, 2016. ISBN-13: 978-1491912058
3. Core Python Applications Programming, Wesley J Chun, 3rd Edition, Pearson Education India, 2015. ISBN-13: 978-9332555365
4. Python Programming A Modular Approach, SheetalTaneja, Pearson Publications
5. Programming and Problem Solving with Python, Ashok NamdevKamathane and Amit Ashok Kamathane Tata McGraw Hill Education (India) Private Limited

Course Code-100219   Introduction to Web Designing   3 0 0 3

Unit- 1.0

Fundamentals of Internet and Web Technologies Lecture [51 Web Basics and Overview: Introduction to Internet, World Wide Web, History of the web, Website, Homepage, Domain Narne, Web Brolvsers and Web server, Web Server Working, Client-Server Architecture, 3-Tier Web Architecture, Web hosting, URL, MIME, HTTP protocol, Web Programrners Toolbox.

Unit- 2.0

Introduction to HTML: Elements and Structure Lecture [7] lntroduction to html: Fundamentals of HTML elements, History of HTML, Document body, Different tags, sections, text, heading, paragraphs, hyperlink, lists, tables, color coding and images, Div and Span Tags for grouping, character entities, URL Encoding, frames, and frame sets.

Unit - 3.0

HTML Forms and Multimedia Integration Lecture [51 HTML form, Form Elements, Form Attributes, HTML canvas, embedding audio and video in a webpage, HTML Vs XHTML.

Unit- 4.0

Introduction to CSS: Styling and Layouts Lecture [8] Need for CSS, introduction to CSS, basic syntax and structure, External Style Sheets, Internal Style Sheets, lnline Style, CSS Selectors, div & span tag, CSS Color, CSS Backgrounds, Borders, Margins, Padding. Box Model, Heightiwidth, outline, Text, Font, Tables, CSS Buttons, CSS Display, CSS Float & Clear, CSS Overflow.

Unit- 5.0

JavaScript Basics: Scripting and Control Lecture [8] Java Script: [ntroduction to Client-side Scripting, w-hat can JavaScript Do, Need of JavaScript, Enhancing HTML Documents with JavaScript; the Building Blocks: Data types, variables, Types of Operators, Operator Precedetrce, Type conversion; Conditional statement irr .lavaScript: if else, and else il, Switch statement; Loops in JavaScript: for, while, do/while, break, continue.

Unit- 6.0

Advanced JavaScript: Objects and Events Lecture [9] Advanced JavaScript: Objects in JavaScript (array, number, string. Boolean); event handling (e.g., onclick, onsubniit); error liandling: JavaScript scope; responsive modal forrns; form validation.

Text/ Reference:-

1. Beginning Web Prograrnming with HTML, XHTML, and CSS., Jon Duckett, Publisher(s): WROX ISBN:9780470259313

2. JavaScript: The Definitive Guide, 6th Edition, David Flanagan, Publisher(s): O'Reilly Media, Inc. ISBN: 978059680552

3. lnternet& World Wide Web: How to Program, Fourth Edition, H. M. Deitel- Deitel& Associates, Inc., P. J. Deitel - Deitel& Associates, Inc, Publisher(s): Pearson ISBN: 9780 I 36085645

4. Internet and Web Technologies, Kamal Raj, Publisher: McGraw Hill Education India ISBN: 9780070472969, 9180070472969

Course Code-100215P   Engineering Chemistry Lab   0 0 2 1
Perform any 10 Experiments

1. To estimate hardness of water by alkalinity method
2. To estimate hardness of water by EDTA method
3. To remove hardness of water by ion exchange method
4. Determination of pH of a given acid solution using a standard sodium hydroxide solution
5. Determination of surface tension and viscosity
6. Chemical analysis of salt (Acid radical and basic radical)
7. Adsorption of acetic acid by charcoal
8. Test of adulteration of fat butter, sugar, turmeric powder, chilli powder and pepper
9. Saponification/ acid value of an oil
10. Identification of organic substances and their functional groups
11. Potentiometric determination of redox potentials and emf
12. Synthesis of drug/ polymer like ASPRIN/ Urea- formaldehyde resin
13. Thin layer chromatography
14. Analysis of flue gas by orsatapparatus

Course Code-100216P   Communicative English Lab   0 0 2 1

Perform any 10 Experiments

Introduction: Language Lab of English includes Listening Comprehension, Reading Comprehension, Speaking Skills: Phonetics, International Phonetic Alphabet Symbols (IPAS), Sounds: Vowels and Consonants, Pronunciation, Intonation, Stress and Rhythm, Just A Minute Technique (JAM), Communication: Verbal and Non-Verbal; Ethical Usage of Artificial Intelligence, Self-Introduction: Social, Academic and Professional; Interview: Online and Offline; Oral Presentation, Debate, Group Discussion, Group-Activities, and Brainstorming Vocabulary Activities.

1. Listening Comprehension and Speed (Software)
2. Reading Comprehension and Speed (Software)
3. Pronunciation: Learning and Test (Software)
4. Self-Introduction: Social, Academic and Professional
5. English Typing: Microsoft Word Document (MS Word), and Microsoft Power Point Presentation (PPT)
6. Oral Presentation
7. Interview: Online and Offline
8. Just A Minute Technique (JAM) and Extempore
9. Debate
10. Group Discussion
11. Activities: Role Play, Peer Activities, and Group Activities
12. Anchoring and Addressing: an Assembly, a Meeting, a Seminar, a Party

Course Code-100218P   Python Programming Lab   0 0 2 1

List of Experiments-

S.No.	Name of program
Input and Output	
1	Write a program to demonstrate different number data types in Python.
2	Write a program to perform different Arithmetic Operations on numbers in Python.
3	Write a program to create, concatenate and print a string and accessing sub-string from a given string.
4	Create a variable "number" and assign an Integer to the number. Check the assigned Integer is "Positive" or "Negative".
5	Write a program to find the largest element among three Numbers.
6	Write a program to print the sum of all the even numbers in the range 1 - 50 and print the even sum.
7	Write a Program to display all prime numbers within an interval of 20 and 50.
Variables and Functions	
8	Write a program to swap two numbers without using a temporary variable.
9	Write a program to define a function with multiple return values.
10	Write a python program to find factorial of a number using Recursion.
11	Write a python script to print the current date in the following format "WED 09 02:26:23 IST 2020".
12	Write a Python program to convert temperatures to and from Celsius, Fahrenheit [Formula: c/5 = f-32/9].
13	Write a Python script that prints prime numbers less than 20.
Loops and Conditionals	
14	Write a program to print the following patterns using loop: * ** *** ****
15	Write a program to print multiplication tables of 8, 15, 69.
16	Write a program to check whether the given input is digit or lowercase character or uppercase character or a special character (use 'if-else-if' ladder).
17	Write a python Program to print the Fibonacci sequence using while loop.
Strings	
18	Write a program to find the length of the string without using any library functions.
19	Write a program to check if two strings are anagrams or not.
20	Write a program to check if the substring is present in a given string or not. (use regular expressions)
Lists	
21	Write a program to perform the given operations on a list: i. add ii. Insert iii. slicing
22	Write a program to perform any 5 built-in functions by taking any list.
23	Write a program to get a list of the even numbers from a given list of numbers.(use only comprehensions).
24	Write a program to implement round robin.
	Note: This routine to take a variable number of sequences and return elements from them in round robin till each sequence is exhausted. If one of the input sequences is infinite, this is also infinite. e.g. if input is [1,2,3], (4,5) -> yield 1,4,2,5,3 one after the other. Use exception control and comprehensions to write elegant code. Hint:

	This requires you to understand variable arguments, lists, list copy, comprehensions, iterators, generators, exception handling, control flow etc.
Tuples	
25	Write a program to create tuples (name, age, address, college) for at least two members and concatenate the tuples and print the concatenated tuples.
26	Write a program to return the top 'n' most frequently occurring chars and their respective counts. e.g. aaaaabbbbcccc, 2 should return [(a 5) (b 4)]
Sets	
27	Write a program to count the number of vowels in a string (No control flow allowed).
28	Write a program that displays which letters are present in both strings.
29	Write a program to sort given list of strings in the order of their vowel counts.
Dictionaries	
30	Write a program to generate a dictionary that contains numbers (between 1 and n) in the form of (x, x*x).
31	Write a program to check if a given key exists in a dictionary or not.
32	Write a program to add a new key-value pair to an existing dictionary.
33	Write a program to sum all the items in a given dictionary.
Files	
34	Write a program to sort words in a file and put them in another file. The output file should have only lower case words, so any upper case words from source must be lowered. (Handle exceptions)
35	Write a program to find the most frequent words in a text. (read from a text file).

Additional Programs:
1. Write a program to check whether a given number has an even number of 1's in its binary representation (No control flow allowed).
2. Write a program to implement user defined map() function.
3. Write a program to return a list in which duplicates are removed and the items are sorted from a given input list of strings.
4. Write a program to implement left binary search.
5. Write a program to change days to hours, hours to minutes and minutes to seconds using currying of composition of functions.
6. Write a program to generate an infinite number of even numbers (Use generator)
7. Write a program to convert a given iterable into a list. (Using iterator)
8. Write a program that accepts a sequence of whitespace separated words as input and prints the words after removing all duplicate words and sorting them alphanumerically.

Text Books:
1. Y. Daniel Liang, Introduction to programming using Python, 1st Edition, Pearson Publications, 2017.
2. SheetalTaneja, Python Programming A Modular Approach ,1st Edition Pearson Publications, 2017.
3. Brett Slatkin (C), Effective Python: 59 Specific Ways to Write Better Python, I/C, 1st Edition Pearson Publications, 2015.

4. Ashok NamdevKamathane and Amit Ashok Kamathane, Programming and Problem Solving with Python , 1st Edition, McGraw Hill Education (India) Private Limited, 2017.

REFERENCE BOOKS:
1. Python Programming: A Modern Approach, VamsiKurama, Pearson
2. Python Programming A Modular Approach with Graphics, Database, Mobile, and Web Applications, SheetalTaneja, Naveen Kumar, Pearson
3. Programming with Python, A User's Book, Michael Dawson, Cengage Learning, India Edition
4. Think Python, Allen Downey, Green Tea Press
5. Core Python Programming, W. Chun, Pearson
6. Introduction to Python, Kenneth A. Lambert, Cengage

Course Code-100219P   Introduction to Web Designing Lab   0 0 2 1

1. Design a home page which displays information about your college department using heading, HTML entities and paragraphs. Implement diffbrent types of list tags in the college department home page. Create a webpage for any clinic using marquee and HTML formatting ta-es. Create an image(s) and iframe in a webpage.

2. Create a Hyperlink in home page connecting it to 3 different pages. Design a webpage using HTML that includes an image map, and embeds audio and video. Design a time-table and display it in a tabular format. iv. Design an admission form for any course in your college with text, password fields, drop-down list, check-boxes, radio button, submit, and reset button.

3. Design a static webpage using HTML to co-2, co-3 create a frameset with header, navigation, and content sections. Create a webpage with a frameset divided into 3 frames: 20oh on the left for page contents, 60% tt the center for the main body, and 20o/o on the right for remarks. Create a web page multiple types of style sheet used in a single page

4. Create a catalogue for an online shopping company that sells electronic items using CSS. Design a webpage of your horne town with an attractive background color, text font, and an image using inline CSS formatting Create a student web form for enterning student information. Design a library webpage using different CSS border styles and the CSS box model.

5. Write a JavaScript program: Find the largest among three numbers. Calculate the factorial of a number. Check whether a given number is an Armstrong number. Find the sum of natural numbers using recursion. v. Check whether a string is a palindrome. Convert a decimal number to binary.

6. Write a JavaScript program: To design a scientific calculator with event handling for each button. To compute the squares and cubes of numbers ffom 0 to 10, and display the results in an HTML table format.

7. Write JavaScript to validate the following fields of the registration page: Name: Must contain only alphabets and be at least 6 characters long. Password: Must be at least 6 characters long. E-mail ID: Must follow the standard pattern name@domain.com and not contain inval id characters. Phone Number: Must contain exactly l0 digits