JODHPUR INSTITUTE OF ENGINEERING & TECHNOLOGY, JODHPUR

(An Autonomous Institute affiliated with Bikaner Technical University)

SCHEME & SYLLABUS
B.TECH. I &II Semester
(2023-24)

Jodhpur Institute of Engineering & Technology
TEACHING SCHEME
I- Semester: B. Tech (2023-24)
Common to all branches of UG Engineering
I- Semester (Group-I)

S.N.	Category	Course Code	Name of subject	Periods per week			Marks			Total Credits
				L	T	P	IA	ETE	Total	
1.	BSC	1FY2-01	Calculus & Vector Analysis	3	1	-	60	140	200	4
2.	BSC	1FY2-02	Engineering Physics	3	1	-	60	140	200	4
3.	ESC	1FY3-04	Programming for Problem Solving	3	-	-	45	105	150	3
4.	ESC	1FY3-05/ 1FY3-06	Civil Engineering*/Electrical & Electronics Engineering	3	-	-	45	105	150	3
5.	HSMC	1FY1-08	Human Values and Ethics in Engineering	2			30	70	100	2
6.	BSC	1FY2-21	Engineering Physics Lab	-	-	2	30	20	50	1
7.	ESC	1FY3-23	Computer Programming Lab	-	-	3	45	30	75	1.5
8.	ESC	1FY3-24/ 1FY3-25	Civil Engineering Lab*/Electrical & Electronics Engineering Lab	-	-	2	30	20	50	1
9.	ESC	1FY3-27	Workshop- Manufacturing Practices	-	-	2	30	20	50	1
10.	SODECA	1FY8-00		-	-	-			25	0.5
			Total	**14**	**2**	**9**			**1050**	**21**

S.N.	Category	Course Code	Name of subject	Periods per week			Marks			Total Credits
				L	T	P	IA	ETE	Total	
1.	MC**	1FY9-MC1	Personality Development Skills	-	-	2	100	-	100	0
2.		1FY9-MC2	Techno Communication	-	-	2	100	-	100	0
4.		1FY9-MC3	Graphics Programming in C	-	-	2	100	-	100	0

Note:

- Credits for the MOOC course would be transferred in the consolidated B. Tech. mark-sheet as per the CBCS scheme of JIET.

*For Civil Engineering Students
**Mandatory non-credit courses

L- Lecture, **T**- Tutorial, **P** – Practical.

Jodhpur Institute of Engineering & Technology
TEACHING SCHEME
I-Semester: B. Tech (2023-24)
Common to all branches of UG Engineering
I-Semester (Group-II)

S.N.	Category	Course Code	Name of subject	Periods per week			Marks			Total Credits
				L	T	P	IA	ETE	Total	
1.	BSC	1FY2-01	Calculus & Vector Analysis	3	1	-	60	140	200	4
2.	BSC	1FY2-03	Engineering Chemistry	3	1	-	60	140	200	4
3.	ESC	1FY3-04	Programming for Problem Solving	3	-	-	45	105	150	3
4.	ESC	1FY3-07	Mechanical Engineering	3	1	-	60	140	200	4
5.	BSC	1FY2-22	Engineering Chemistry Lab	-	-	2	30	20	50	1
6.	ESC	1FY3-23	Computer Programming Lab	-	-	3	45	30	75	1.5
7.	ESC	1FY3-26	Engineering Graphics and Machine Drawing	-	-	2	30	20	50	1
8.	HSMC	1FY1-28	Language Lab	-	-	3	45	30	75	1.5
9.	SODECA	1FY8-00		-	-	-			25	0.5
			Total	**12**	**3**	**10**			**1025**	**20.5**

S.N.	Category	Course Code	Name of subject	Periods per week			Marks			Total Credits
				L	T	P	IA	ETE	Total	
1.	MC*	1FY9-MC1	Personality Development Skills	-	-	2	100	-	100	0
2.		1FY9-MC2	Techno Communication	-	-	2	100	-	100	0
4.		1FY9-MC3	Graphics Programming in C	-	-	2	100	-	100	0

Note:

- Credits for the MOOC course would be transferred in the consolidated B. Tech. mark-sheet as per the CBCS scheme of JIET.

*Mandatory non-credit courses

Jodhpur Institute of Engineering & Technology
TEACHING SCHEME
II Semester: B. Tech (2023-24)
Common to all branches of UG Engineering
II- Semester-(Group I)

S.N.	Category	Course Code	Name of subject	Periods per week			Marks			Total Credits
				L	T	P	IA	ETE	Total	
1.	BSC	2FY2-01	Linear Algebra & Differential Equations	3	1	-	60	140	**200**	**4**
2.	BSC	2FY2-03	Engineering Chemistry	3	1	-	60	140	**200**	**4**
3.	ESC	2FY3-04	Python Programming	3	-	-	45	105	**150**	**3**
4.	ESC	2FY3-07	Mechanical Engineering	3	1	-	60	140	**200**	**4**
5.	BSC	2FY2-22	Engineering Chemistry Lab	-	-	2	30	20	**50**	**1**
6.	ESC	2FY3-23	Python Programming Lab	-	-	2	30	20	**50**	**1**
7.	ESC	2FY3-26	Engineering Graphics and Machine Drawing	-	-	2	30	20	**50**	**1**
8.	HSMC	2FY1-28	Language Lab	-	-	3	45	30	**75**	**1.5**
9.	SODECA	2FY8-00		-	-	-			**25**	**0.5**
			Total	**12**	**3**	**9**			**1000**	**20**

S.N.	Category	Course Code	Name of subject	Periods per week			Marks			Total Credits
				L	T	P	IA	ETE	Total	
1.	MC*	2FY9-MC1	Analytical and Logical Thinking Skills	-	-	2	100	-	100	0
2.		2FY9-MC2	Technical Writing	-	-	2	100	-	100	0
3.		2FY9-MC3	GUI Programming using Tkinter (Python)	-	-	2	100	-	100	0
4.		2FY9-MC4	Basics of Management	-	-	2	100	-	100	0

Note
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- Credits for the MOOC course would be transferred in the consolidated B. Tech. mark-sheet as per the CBCS scheme of JIET.

*Mandatory non-credit courses
L- Lecture, **T**- Tutorial, **P** – Practical.

Jodhpur Institute of Engineering & Technology
TEACHING SCHEME
II Semester: B. Tech (2023-24)
Common to all branches of UG Engineering

II- Semester-(Group II)

S.N.	Category	Course Code	Name of subject	Periods per week			Marks			Total Credits
				L	T	P	IA	ETE	Total	
1.	BSC	2FY2-01	Linear Algebra & Differential Equations	3	1	-	60	140	**200**	**4**
2.	BSC	2FY2-02	Engineering Physics	3	1	-	60	140	**200**	**4**
3.	ESC	2FY3-04	Python Programming	3	-	-	45	105	**150**	**3**
4.	ESC	2FY3-06	Electrical & Electronics Engineering	3	-	-	45	105	**150**	**3**
5.	HSMC	2FY1-08	Human Values and Ethics in Engineering	2			30	70	**100**	**2**
6.	BSC	2FY2-21	Engineering Physics Lab	-	-	2	30	20	**50**	**1**
7.	ESC	2FY3-23	Python Programming Lab	-	-	2	30	20	**50**	**1**
8.	ESC	2FY3-25	Electrical & Electronics Engineering Lab	-	-	2	30	20	**50**	**1**
9.	ESC	2FY3-27	Workshop- Manufacturing Practices	-	-	2	30	20	**50**	**1**
10.	SODECA	2FY8-00		-	-	-			**25**	**0.5**
			Total	**14**	**2**	**8**			**1050**	**20.5**

S.N.	Category	Course Code	Name of subject	Periods per week			Marks			Total Credits
				L	T	P	IA	ETE	Total	
1.	MC*	2FY9-MC1	Analytical and Logical Thinking Skills	-	-	2	100	-	100	0
2.		2FY9-MC2	Technical Writing	-	-	2	100	-	100	0
3.		2FY9-MC3	GUI Programming using Tkinter (Python)	-	-	2	100	-	100	0
4.		2FY9-MC4	Basics of Management	-	-	2	100	-	100	0

Note:

- Credits for the MOOC course would be transferred in the consolidated B. Tech. mark-sheet as per the CBCS scheme of JIET.

*Mandatory non-credit courses
L- Lecture, **T**- Tutorial, **P** – Practical.

Jodhpur Institute of Engineering & Technology
SYLLABUS
I – Semester

Common to all branches of UG Engineering

1FY2-01: Calculus and Vector analysis

Credit: 4 **Max. Marks: 200 (IA: 60, ETE: 140)**
3L+1T+0P **End Term Exam: 3 Hours**

Course outcomes:

CO 1	Able to develop the concept of asymptotes with complete curve analysis in terms of convexity, concavity and point of inflexion. Further enhance the ability to draw rough curve sketching of some standard curves.
CO 2	Able to do partial differentiation of function of two or more variables with their applications in maxima & minima of two or more independent variables.
CO 3	Be able to understand the concept of improper integral and be able to understand the concept of solids of revolution.
CO 4	Be able to develop the concept of application of integral calculus in finding doubleand triple integrals.
CO 5	Be able to understand the fundamental of vector calculus with their applications toline, surface and volume integrals. Be able to calculate the line integral, surface integral and volume integral and correlate them with the application of Stokes, Green and Divergence theorem.

Unit	CONTENTS	Hours
	Scope, objectives and outcomes	**1**
1	**Differential Calculus-I:** Asymptotes (Cartesian coordinates only), Curve tracing (Cartesian and standard Polar curves- Cardioids, Lemniscates of Bernoulli, Limacon only).	**7**
2	**Differential Calculus-II:** Partial differentiation - Homogeneous functions and Euler's theorem, Chain Rule, Total derivative - Change of variables. Maxima and minima of functions of two variables.	**6**
3	**Integral Calculus-I:** Improper integrals (Beta and Gamma functions) and their properties. Applications of Definite integrals to evaluate surface area and volume of solid of revolutions (Ellipse, Cardioid, Tractrix, Astroid only).	**6**
4	**Integral Calculus-II:** Double integrals-Change of order of integration - Double integrals in polar coordinates, - Area enclosed by plane curves, Change of double integral from Cartesian to Polar coordinates, Volume of solids – Evaluation of triple integrals.	**10**
5	**Vector analysis:** Gradient and directional derivatives, divergence and curl– Irrotational and solenoidal Vector fields, Line integrals, Surface integrals, Volume integrals. Green, Gauss divergence and Stokes theorems (without proof) and their applications.	**10**
	TOTAL	**40**

TEXT BOOK:

1. Grewal B.S., "Higher Engineering Mathematics", Khanna Publishers, New Delhi, 43rd Edition, 2014.
2. Alan Jeffrey, Advanced Engineering Mathematics, University of Newcastle, Academic Press, Sydney, 2002.

REFERENCES BOOKS:

1. Anton, H, Bivens, I and Davis, S, "Calculus", Wiley, 10th Edition, 2016.
2. Jain R.K. and Iyengar S.R.K., "Advanced Engineering Mathematics", Narosa Publications, New Delhi, 3rd Edition, 2007.
3. Narayanan, S. and Manicavachagom Pillai, T. K., "Calculus" Volume I and II, S. Viswanathan Publishers Pvt. Ltd., Chennai, 2007.
4. Srimantha Pal and Bhunia, S.C, "Engineering Mathematics" Oxford University Press, 2015.
5. Weir, M.D and Joel Hass, "Thomas Calculus", 12th Edition, Pearson India, 2016.

Jodhpur Institute of Engineering & Technology
SYLLABUS
II - Semester

Common to all branches of UG Engineering

2FY2-01: Linear algebra and Differential equations

Credit: 4 **Max. Marks: 200 (IA: 60, ETE: 140)**
3 L+1T+0 P **End Term Exam: 3 Hours**
Course outcomes:

CO 1	Able to develop the concept of matrices and its applicability to solve the systems of linear equations that arises in the different areas of engineering and applied sciences.
CO 2	Be able to develop solutions of linear differential equations of higher order with constant coefficients with the simultaneous LDE approach.
CO 3	Be able to develop solutions of second order linear differential equations with variable coefficients with series solutions of Legendre and Bessel's differential equations.
CO 4	Be able to develop solutions of first order linear and nonlinear partial differential equations.
CO 5	To be able to classify various types of partial differential equations and their solutions and applications in engineering fields such as heat and wave equations.

Unit	CONTENTS	Hours
	Scope, objectives & outcomes	**1**
1	**Matrices:** Rank of a matrix, rank-nullity theorem (Statement only), System of linear equations, Symmetric, skew- symmetric and orthogonal matrices; Eigenvalues and eigenvectors, Diagonalization of matrices, Cayley-Hamilton Theorem.	**9**
2	**Ordinary differential equations of higher orders:** Linear Differential Equations of Higher order with constant coefficients.	**6**
3	**Second order linear differential equations with variable coefficients**: Homogenous and Exact forms, one part of CF is known, Change of dependent and independent variables, method of Variation of Parameters.	**8**
4	**Partial Differential Equations – First order:** Order and Degree, Formation, Lagrange's Form, Non Linear Partial Differential equations of first order, Charpit's method, Standard forms.	**8**
	Partial Differential Equations– Higher order:	

5	Classification of Second order partial differential equations, Separation of variables method to simple problems in Cartesian coordinates including one dimensional Heat, one dimensional Wave equations and two dimensional Laplace equation.	**8**
	TOTAL	**40**

TEXT BOOK:

1 Grewal B.S., "Higher Engineering Mathematics", Khanna Publishers, New Delhi, 43rd Edition, 2014.

2 Alan Jeffrey, Advanced Engineering Mathematics, University of Newcastle, Academic Press, Sydney, 2002.

REFERENCES BOOKS:

1 Jain R.K. and Iyengar S.R.K., "Advanced Engineering Mathematics", Narosa Publications, New Delhi, 3rd Edition, 2007.

2 Srimantha Pal and Bhunia, S.C, "Engineering Mathematics" Oxford University Press, 2015.

3 S. L. Ross, Differential Equations, III edition, Willey Students Edition, John Wiley & Sons, 2004.

4 Walter A. Stress, Partial Differential Equation, an Introduction, John Wiley & Sons, 1992.

Jodhpur Institute of Engineering & Technology
SYLLABUS
I&II Semester

Common to all branches of UG Engineering

1FY2-02/2FY2-02: Engineering Physics

Credit: 4 **Max. Marks: 200 (IA: 60, ETE: 140)**
3 L+1T+0 P **End Term Exam: 3 Hours**
Course outcomes:

CO 1	Understand the fundamentals of optics and applications including explanation of the operation of various optical instruments (Newton's rings) and related technological advances.
CO 2	Understand the new domain of physics of quantum particles i.e. micro particles and their behaviour.
CO 3	Apply general mathematics, science and engineering skills to the solution of engineering problems. Analyse magnetic materials and their applications.
CO 4	Understand the properties and classification of superconductors and applications of superconductivity.
CO 5	Understand the concept of stimulated emission, design of lasers & their special functioning.

Unit	CONTENTS	Hours
	Scope, objectives & outcomes	**1**
1	**Introduction to Optics:** Light Waves, coherent waves and sources, methods of producing coherent sources: division of wavefront and division of amplitude. Interference& Diffraction of Light*:* Principle of Superposition, Newton rings and its applications, Interference filter, Antireflection coating. Difference between Fresnel & Fraunhoffer Diffraction, Fraunhoffer diffraction due to single slit & 'N' slits: Diffraction grating, absent spectra, resolving power of grating.	**9**
2	**Introduction to quantum mechanics**: Matter waves, De-Broglie hypothesis, Schrodinger's equation, Normalized and orthogonal wave function, Schrodinger's time dependent and independent wave equation, Particle in one dimensional box & three dimensional box and Degeneracy.	**8**
3	**Physics of semiconductors :** Formation of energy bands in solids: Metals, Semiconductors and Insulators; intrinsic and extrinsic semiconductors, Fermi-Dirac distribution, P-N junction diode, Tunnel diode & Zener diode.	**7**
4	**Magnetic material and its Classification**: diamagnetic, paramagnetic, and ferromagnetic, anti-ferromagnetic, and ferromagnetic materials; Hard and soft magnetic materials: comparison, properties and applications. **Superconductivity**: Meissner Effect, Type I and Type II Superconductors, BCS theory (Qualitative only), properties of superconductors & applications.	**7**

5	**Laser and fibre Optics:** Temporal and spatial coherence, Stimulated and spontaneous emission, Einstein's Coefficients, He-Ne Laser, Semiconductor Laser: Construction & working, Application of Lasers. Introduction to optical fibre, Propagation of light through step index fibre numerical aperture, application of optical fibres.	**8**
	TOTAL	**40**

TEXT BOOKS:

1. Engineering Physics: Malik and Singh (Tata McGraw Hill), second edition.
2. Engineering Physics: Naidu (Pearson), first edition.

REFERENCES BOOKS:

1. Optics: Ajay Ghatak (Tata McGraw Hill), 3rd edition.
2. Concept of Modern Physics: A. Baiser (Tata McGraw Hill), 2015 edition.
3. Fundamental of Optics: Jenkins and White (Tata McGraw Hill) 2014 edition.
4. Material Science: Smith (McGraw Hill) sixth edition.
5. Solid state Physics: S.O. Pillai (New Age International) Seventh edition, 2015.

Jodhpur Institute of Engineering & Technology
SYLLABUS
I&II- Semester

Common to all branches of UG Engineering

1FY2-03/2FY2-03: Engineering Chemistry

Credit: 4 **Max. Marks: 200 (IA: 60, ETE: 140)**
3 L+1T+0P **End Term Exam: 3 Hours**
Course outcomes:

1FY2-03: Engineering Chemistry Course Outcomes	
CO 1	Understand the basics of Nano materials, lubricants and their applications in various fields. Learn the significance of principles of green chemistry for a sustainable environment.
CO 2	Learn the various process of determination of the hardness. Know the drawbacks of using hard water in boiler industries and understand the process of removing the hardness.
CO 3	Understand the electrochemical reactions in fuel cells, batteries. Understand the corrosion science and its protection measures.
CO 4	Apply the concepts of calorific value estimation in various fuels. Analyse the effective and economic combustion process of fuel.
CO 5	Understand, analyse and apply the concepts of spectroscopy in versatile fields.

Unit	**CONTENTS**	**Hours**
	Scope, objectives & outcomes	**1**
1	**Material Chemistry:** Nano materials: Definition, Classification based on dimension, Properties (Optical and Electrical) and Synthesis of nanomaterial: Introduction to chemical vapor deposition technique and overview of applications in various fields. **Lubricants**: Introduction to lubricants, Classification of lubricants, Types of lubrication, Properties; Viscosity using Redwood viscometer, Flash and fire point, cloud and pour point. **Introduction to Green Chemistry**: Principles, Atom Economy and Percentage yield.	**8**
2	**Boiler Troubles:** Introduction to Boiler troubles: Scale and sludge, boiler corrosion, caustic embrittlement, Priming and foaming, Hardness, Degree of hardness determination of hardness by Complexometric (EDTA method), Lime-Soda process. Numerical problems based on Hardness, EDTA and Lime-Soda. Municipal water treatment, Breakpoint chlorination.	**8**
3	**Electrochemistry:** Introduction to electrochemical cell. **Corrosion**: Introduction, Theory and mechanism of chemical (dry) and electrochemical (wet) corrosion, Types of corrosion: galvanic corrosion, concentration cell corrosion. Factors affecting corrosion. Prevention against corrosion: General methods of prevention, Anodic Protection: Coatings, Galvanizing and Tinning, Cathodic Protection: Sacrificial anode method. **Battery**: Introduction of Lead acid, Li Ion and Nickel metal hydride battery **Fuel Cell**: Introduction to AFCs, PEMFs, SOFCs, MCFCs, construction and working.	**9**
4	**Fuels:** Solid fuels- Determination of Calorific value of coal by Bomb Calorimeter. Liquid fuels- Synthetic petrol (Bergius process and Fisher-Tropsch Process).	

	Gaseous fuels- Determination of calorific value of gaseous fuels by Junker's calorimeter. Numerical problems based on determination of calorific value (Bomb calorimeter/Junkers calorimeter), Dulong's formula and air required for combustion.	**8**
5	**Analytical Techniques:** Spectroscopy- Introduction to Electromagnetic Spectrum and Spectroscopy, UV-Vis Spectroscopy- Introduction, Principle, Beer- Lambert's law, Instrumentation, types of transition, concept of auxo chrome and chromophores, Woodward-Fisher rules for calculation of λ_{max} in diene systems.	**6**
	TOTAL	**40**

TEXT BOOKS:

1. Engineering Chemistry, Jain and Jain, DR Publications.
2. Engineering Chemistry, Sunita Rattan, SKK sons.

REFERENCES BOOKS:

1. Engineering Chemistry Wiley-India.
2. Advanced Physical Chemistry, Bahl and Tuli, Rastogi Publications.
3. Organic Spectroscopy, Y.R. Sharma, S. Chand.
4. Spectroscopy of Organic Compounds by P. S. kalsi, New Age International.
5. Engineering Chemistry, S.S. Dara, Rastogi Publications.

Jodhpur Institute of Engineering & Technology
SYLLABUS
I - Semester

Common to all branches of UG Engineering

1FY3-04: Programming for Problem Solving

Credit: 3 **Max. Marks: 150 (IA: 45, ETE: 105)**
3 L+0T +0P **End Term Exam: 3 Hours**
Course outcomes:

CO 1	Understand the basics of computer, different types of languages and architecture of computer. It helps also to understand the representing algorithms through flowcharts and pseudo code.
CO 2	Students will be able to understand C programming development environment, compiling, debugging, linking and executing a program using the development environment.
CO 3	Understand the basic terminology used in computer programming. Use different data types in a computer program.
CO 4	Design programs involving decision statements and loops.
CO 5	Understand and apply the array, functions, pointers, memory allocation techniques and Understand the dynamics of memory by the use of pointers.

Unit	CONTENTS	Hours
	Scope, objectives & outcomes	**1**
1	**Fundamentals of Computer:** Basic principle of working of a computer, building blocks of a computer – CPU, memory, Input-output. Hardware v/s software. Idea of editor, commands, operating system, compiler. Input and output devices. **Concept of a Program**, algorithm vs. program, flow-chart, High level vs. Low level languages. **Basic structure of a C program,** declarations of data types, writing, editing, saving as file, compiling, and running a simple program.	**7**
2	**Arithmetic expressions and precedence, Decision and Iterative statements:** Writing and evaluation of expressions, Writing Decision making Statements (if, switch) and looping statements (for, while, do. While)	**8**
3	**Arrays**: Arrays (1-D, 2-D), Character arrays and Strings, Searching and Sorting Algorithms: (Bubble, Insertion and Selection)	**6**
4	**Dynamic memory allocation, and Pointers:** declaring pointers, accessing memory locations using pointers, pointer arithmetic. **Functions:** built-in and user defined functions, parameter passing in functions: call by value, call by reference. **Recursion:** Basic concepts of recursion, solving problems through recursion such as Factorial, Fibonacci series, Ackerman function etc.	**6**
5	**Structures:** Declaring structures and Array of Structures. Passing and returning structures to and from a function, use of Pointers in structures and arrays. **File handling**: Types of files, Opening and closing a file, Different modes of opening a file, Reading and writing into files (text and binary)	**8**
	TOTAL	**36**

TEXT BOOKS:

1. E. Balaguruswamy, Programming in ANSI C, Tata McGraw-Hill.

REFERENCES BOOKS:

1. Byron Gottfried, Schaum's Outline of Programming with C, McGraw-Hill
2. The C Programming Language, Brian W. Kernighan and Dennis M. Ritchie, Prentice Hall of India

Jodhpur Institute of Engineering & Technology
SYLLABUS
II – Semester

Common to all branches of UG Engineering

2FY3-04: Python Programming

Credit: 3 **Max. Marks: 150 (IA: 45, ETE: 105)**
3 L+0T + 0P **End Term Exam: 3 Hours**
Course outcomes:

CO 1	Understand Python syntax and semantics and be fluent in the use of Python flow control and Functions
CO 2	Demonstrate the proficiency in handling Strings and File Systems
CO 3	Develop, run and manipulate Python programs using Core data structures like Lists, 2, and use of regular expressions
CO 4	Interpret the concepts of object-oriented programming using Python
CO 5	Develop ability to deal with function creation and its use, along with file handling capabilities.

Unit	CONTENTS	Hours
1	**Basics of Python**: Python literals (True, False, Null), Identifiers, Identifier naming rules, keywords, Line and indentations, Comments, Python Variables, Input-output statements, command line arguments. Python Operators: Arithmetic operators, Comparison/ Relational Operators, Increment Operators, Logical operators, Bitwise Operators, Operator Precedence and Associativity.	**6**
2	**String data type**, accessing elements using index, slicing, string operators and membership operators. **Decision Making / Conditional Statements**: Simple if statement, if..else statement, if..elif statement, nested if statement and conditional expression. **Python Loop Statements**: While loop, For loop, else block of a loop, nested Loop Structures. Break, continue, and pass statements.	**6**
3	**Data structures (Lists, Tuples, Sets, and Dictionaries)**: Operations and manipulation of these data structures. Comprehension: List Comprehension, Set Comprehension and Dictionary Comprehension.	**8**

4	**Functions**: Defining function in Python, Types of Arguments, Namespaces and Scope in Python. **Recursion** and types of Recursion. **Functional Programming**: Functions as First class Values, Lambda functions, Higher order functions: map ( ) function, filter ( ) function and reduce ( ) function. Using Lambda with map ( ), filter ( ) and reduce ( ) functions.	**8**
5	**File Input Output**, Read, Write operations, File opening modes, with keyword, moving within a File, Serialization and Deserialization, File and Directory operations. **Object Oriented Programming in Python:** Classes and Objects, Identifier naming convention, Calling functions and methods, Object Initialization, Operator overloading, Inheritance and types of inheritance.	**8**
	TOTAL	**36**

TEXT BOOK

1. Let Us Python: Yashwant Kanetkar, Aditya Kanetkar 3rd edition bpb publication

REFERENCES BOOKS:

1. Core Python Programming Textbook by Wesley Chun Prentice Hall.
2. Python: The Complete Reference by Martin C. Brown Mac Graw-Hill, Oxford.

Jodhpur Institute of Engineering & Technology
SYLLABUS
I - Semester

Common to all branches of UG Engineering

1FY3-05: Civil Engineering

Credit: 3 **Max. Marks: 150 (IA: 45, ETE: 105)**
3 L+0T +0P **End Term Exam: 3 Hours**

Course outcomes:

CO-1	Understand the scope and role of Civil Engineering in development of society.
CO-2	Understand the importance of surveying and define of linear and angularmeasurement.
CO-3	Understand the basic concept of building components and describe aboutthe foundation
CO-4	Describe the importance of traffic and road safety.
CO-5	Explain the fundamental of waste management and discuss the functionalconcept of eco- system and water quality parameter.

Unit	CONTENTS	Hours
	Scope, objectives & outcomes	**1**
1	**Surveying:** Object, Principles & Types of Surveying; Site Plans, Plans& Maps; Scales & Unit of different Measurements. Linear Measurements: Instruments used. Linear Measurement by Tape, Ranging out Survey Lines and overcoming Obstructions; Measurements on sloping ground; Tape corrections, conventional symbols. Angular Measurements: Instruments used; Introduction to Compass Surveying, Bearings and Longitude & Latitude of a Line, Introduction to total station. Leveling: Instrument used, Object of leveling, Methods of leveling in brief, and Contour maps.	**9**
2	**Buildings:** Selection of site for Buildings, Layout of Building Plan, Types of buildings, Plinth area, carpet area, floor space index, Introduction to building byelaws, concept of sun light and ventilation. Components of Buildings & their functions, Basic concept of R.C.C., Introduction to types of foundation.	**3**
3	**Transportation:** Introduction to Transportation Engineering; Traffic and Road Safety: Types and Characteristics of Various Modes of Transportation; Various Road Traffic Signs, Causes of Accidents and Road Safety Measures	**4**
4	**Environmental Engineering:** Environmental Pollution, Environmental Acts and Regulations, Functional Concepts of Ecology, Basics of Species, Biodiversity, Ecosystem, Hydrological Cycle; Chemical Cycles: Carbon, Nitrogen& Phosphorus; Energy Flow in Eco-systems. Water Pollution: Water Quality standards, Introduction to Treatment & Disposal of Waste Water. Reuse and Saving of Water, Rain Water Harvesting.	**9**
5	**Solid Waste Management:** Classification of Solid Waste, Collection, Transportation and Disposal of Solid. Recycling of Solid Waste: Energy Recovery, Sanitary Land fill, On-Site Sanitation. Air& Noise Pollution: Primary and Secondary air pollutants, Harmful effects of Air Pollution, Control of Air Pollution. Noise Pollution, Harmful Effects of noise pollution, control of noise pollution, Global warming & Climate Change, Ozone depletion, Green House effect	**10**
		36

TEXT BOOKS:

1. Surveying Vol-1 by B.C. Punmia, Laxmi Publication (P) Ltd.
2. A.K. Dwiwedi, Abhishek Arya Basic Civil Engineering, Neelkanth Publishers.
3. Basic Civil Engineering by SS Bhavikatti, New age International Publishers

REFERENCES BOOKS:

1. M.S Palanichamy, Basic Civil Engineering, Tata McGraw Hills Publishers.
2. SatheeshGopi, Basic Civil Engineering, Pearson Publishers.

Jodhpur Institute of Engineering & Technology
SYLLABUS
I & II- Semester

Common to all branches of UG Engineering
1FY3-06/2FY3-06: Electrical and Electronics Engineering

Credit: 3 **Max. Marks: 150 (IA: 45, ETE: 105)**
3 L+0T+0 P **End Term Exam: 3 Hours**

Course outcomes:

CO 1	Demonstrate and understanding of the basic knowledge of electrical quantities such as current, voltage, energy and frequency to understand the impact of technology in a global and societal context. Apply the basicconcepts of DC Networks in Electrical Engineering for multi-disciplinary tasks.
CO 2	Demonstrate and understanding of the basic concepts of analysis of simple AC circuits used in electrical devices.
CO 3	Demonstrate and understanding of the basic concepts of transformers their application in transmission and distribution of electric power system also some basics of electrical safety and installations.
CO 4	Demonstrate and understanding of the basic concepts of PN Junction Diode, Zener Diode, Photovoltaic Cell and analysis of Half and full-wave uncontrolled single-phase Rectifiers.
CO 5	Demonstrate and understanding of the basics of communication systems, AM, FM and Instrumentation.

Unit	CONTENTS	Hours
	Scope, objectives & outcomes	**1**
1	**Fundamentals of DC Circuits:** Introduction to DC and AC circuits, Active and passive two terminal elements, Ohms law, Voltage-Current relations for resistor, inductor, capacitor, Kirchhoff's laws, Ideal sources –equivalent resistor, current division, voltage division, Mesh analysis, Nodal analysis, Superposition theorem, Thevenin's theorem, Maximum power transfer theorem.	**7**
2	**Fundamentals of AC Circuits:** Sinusoids, Generation of AC, Average and RMS values, Form and peak factors, concept of phasor representation, j operator. Analysis of R-L, R- C, R-L-C circuits. Introduction to three phase systems - types of connections, relationship between line and phase values for star and delta networks.	**8**
3	**Single-Phase Transformer:** Single phase transformer construction, principle of operation, EMF equation, voltage ratio, current ratio, kVA rating, losses in transformer. **Electrical Safety, Wiring and Installations:** Basic layout of Electrical power system, Safety procedures in Electrical Installations, Role and types of Fuse in electrical circuits, Role and typesof earthing, Energy Efficiency in Different types of domestic loads (lighting load ,mechanical load), Star ratings in electrical appliances, Study of domestic Electricity bill	**7**

4	**Basic Electronics:** Conduction in Semiconductors, Conduction Properties of Semiconductor Diodes, Behavior of the PN Junction, PN Junction Diode, Zener Diode, Photovoltaic Cell, Complete Analysis of Half and full-wave uncontrolled single-phase Rectifiers, Effect of L, C, and L-C filters on output voltage of rectifiers.	**7**
5	**Basics of Communication Systems:** Introduction, IEEE Spectrum for Communication Systems, Types of Communication, Amplitude and frequency Modulation. **Basics of Instrumentation**: Introduction to Transducers: Thermocouple, Resistive temperature detector (RTD), Strain Gauges.	**6**
	TOTAL	**36**

TEXT BOOKS:

1. Smarajt Ghosh, "Fundamentals of Electrical & Electronics Engineering", Second edition, PHI Learning, 2007.
2. Edward Hughes, Electrical and Electronic Technology, Pearson Publication

REFERENCES BOOKS

1. Basic Electrical and Electronics Engineering by Sukhija and Nagsarkar, Oxford Publication.
2. Basic Electrical & Electronics Engineering by Kothari, Nagrath, TMH.
3. Basic Electrical & Electronics Engineering by V. Jagathesan, K. Vinod Kumar & R. Saravan Kumar, Wiley India.

Jodhpur Institute of Engineering & Technology
SYLLABUS
I& II- Semester

Common to all branches of UG Engineering
1FY3-07/2FY3-07: Mechanical Engineering

Credit: 4 **Max. Marks: 200 (IA: 60, ETE: 140)**
3 L+1T+0 P **End Term Exam: 3 Hours**
Course outcomes:

CO 1	To explain the basic concepts, laws of thermodynamics and the modes of heat transfer.
CO 2	To explain the working of various types of Power Plants and the concept of steam formation, steam generators (Boilers) with classification and applications.
CO 3	To explain the basic concepts applied to types of Refrigeration system and working of I.C Engines with classification, the efficiency of Otto and Diesel cycles.
CO 4	To explain the layout of an automobile, transmission, clutch system with different power transmission devices.
CO 5	To explain the basic concepts of metal casting, machining and joining processes.

Unit	CONTENTS	Hours
	Scope, objectives & outcomes	**1**
1	**Basic concepts of thermodynamics:** Definition, Energy, System, Types of System, Path, Process, Cycle, 1st Law of Thermodynamics, Work & Heat for non-flow processes, 2nd Laws of Thermodynamics, Application of 2nd law of thermodynamics – heat pump and refrigerator. Introduction to Entropy. P-V and T-S diagrams of various processes.	**9**
2	**Application of thermodynamics:** **I.C. Engine:** Its Components & Classification, 2-stroke & 4-Stroke engines, Otto Cycle and Diesel cycle and its Efficiency. **Refrigeration:** Introduction, 1TR, COP, Air refrigeration, VCRS, VARS, Refrigerants, Applications.	**7**
3	**Steam Boilers:** Introduction, classification of steam boilers and their applications- Lancashire boiler, Babcock and Wilcox boiler, Benson boiler, Velox boiler. Boiler mountings and accessories. **Power plant:** Introduction & its classification, Layout of power plant (Steam Power Plant, Hydro-electric Power Plant, and Gas Power Plant)	**7**
4	**Power transmission:** Introduction, types of belts, Velocity ratio, Slip, Creep. Length of open and cross belt drive, Tension Ratio for flat belt, Power transmitted by the belt.	**5**
5	**Engineering Materials:** Introduction to ferrous engineering materials and their mechanical properties. **Metal casting:** Introduction, Pattern & its types, Pattern Allowances, Green sand casting. Properties of molding sand. **Metal Joining Process:** Introduction, types of welding – Electric Arc Welding and Oxy-Acetylene gas welding, Brazing & Soldering.	**7**
	TOTAL	**36**

TEXT BOOK:

1. Basic Mechanical Engineering, G. Shanmugam & S. Ravindran, Mc Graw Hill Education
2. Basic Mechanical Engineering, C. M. Agarwal, Wiley India Pvt. Ltd.
3. Manufacturing Technology Vol. 1: Foundry, Forming and Welding Vol. 1- P N Rao

REFERENCE BOOK:

1. Thermal Science & Engineering, D. S. Kumar, Katson Books
2. Power Plant Engineering, P. K. Nag, TMH
3. Fluid Mechanics and Hydraulic Machines, R. K. Bansal, Laxmi Publications
4. Fluid Mechanics and Hydraulic Machines, R. K. Rajput, S. Chand
5. Internal Combustion Engine, V. Ganeshan, TMH
6. Refrigeration and Air Conditioning, R. S.Khurmi, Eurasia Publishing
7. Automobile Engineering, Dr. Kripal Singh, Standard Publishers

Jodhpur Institute of Engineering & Technology
SYLLABUS
I &II - Semester

Common to all branches of UG Engineering
1FY1-08/ 2FY1-08: Human Values and Ethics in Engineering

Credit: 2 **Max. Marks: 100 (IA: 30, ETE: 70)**
2 L+0T+0 P **End Term Exam: 2 Hours**
Course outcomes:

CO 1	The student is able to identify the significance of Human Values.
CO 2	The students endeavor to strike a balance between professional and personal character
CO 3	The student envisages the momentousness or trust, mutually fulfilling the requirements of human behavior and enriching interaction with nature
CO 4	The student is able to foster present appropriate technologies and management patterns to accomplish harmony in professional and personal life.
CO 5	The student is able to realize that the combination of science and ethics can secure happiness. With this attitude all the students will take pride in utilizing their values and skills to the utmost

Unit	CONTENTS	Hours
	Scope, objectives & outcomes	**1**
1	**Course Introduction - Need, Basic Guidelines, Content and Process for Value Education:** Understanding the need, basic guidelines, Self-Exploration - its content and process; 'Natural Acceptance' and Experiential Validation, Basic Human Aspiration-Continuous Happiness & Prosperity, Right understanding, Relationship and Physical Facilities, A critical appraisal of the current scenario. Method to fulfill the above human aspirations: understanding andliving in harmony at various levels. Practice Exercises-SWOT Analysis	**4**

2	**Understanding Harmony in the Human Being- Harmony in Myself:** Understanding human being as a co-existence of the sentient 'I' and the material 'Body'. Understanding the needs of Self ('I') and 'Body', Understanding the characteristics and activities of 'I' and harmony in 'I' Understanding the harmonyof I with the Body: Self Control and Health,; correct appraisal of Physical needs, Programs to ensure self-control and Health. Practice Exercises- Case Studies/Stress management techniques will be taken up in Practice Sessions.	**5**
3	**Understanding Harmony in the Family and Society- Harmony in Human-Human Relationship:** Understanding harmony in the Family, Understanding values in human-human relationship; meaning of Justice, Trust and Respect; Difference between intentionand competence, meaning of respect, Difference between respect and differentiation;, harmony in the society-comprehensive Human Goals Visualizing a universal harmonious order in society- Undivided Society , Universal Order - from family to world family. Practice Exercises –Group Discussion (Choose any one current problem of different kind in the society and suggest how they can be solved on the basis of natural acceptance of humanvalues. Suggest steps you will take in present conditions.)	**5**
4	**Understanding Harmony in the Nature:** Understanding the harmony in the Nature. Inter connectedness and Mutual fulfillment among the four orders of nature- recyclability and self-regulation in nature. Holistic perception of harmony at all levels of existence Practice Exercises –Presentation (Now-a-days, there is a lot of voiceabout many techno- genic maladies such as energy and natural resource depletion, environmental pollution, global warming, ozone depletion, deforestation, soil degradation,etc. – all these seem to be man-made problems threatening the survival of life on Earth .Prepare a PPT on any one issue and present)	**5**
5	**Professional Ethics:** Need for Professional Ethics, Issues in Professional Ethics, Plagiarism, Professional Responsibilities-Confidentiality, Collegiality, Whistle Blowing, Intellectual Property Rights-Trademark, Copyright, Patent. Practice Exercises- Case Studies will be taken up inPractice Sessions.	**5**
	TOTAL	**25**

TEXT BOOKS:

1. R. R. Gaur, R Sangal, G P Bagaria, 2009, A Foundation Course in Human Values and Professional Ethics.
2. Prof. K. V. Subba Raju, 2013, Success Secrets for Engineering Students, Smart Student Publications, 3rd Edition.

REFERENCES BOOKS:

1 P. L. Dhar, R. R. Gaur, 1990, Science and Humanism, Common wealth Publishers.

2 A. N. Tripathy, 2003, Human Values, New Age International Publishers.

3 Donella H. Meadows, Dennis L. Meadows, Jorgen Randers, William W. Behrens III, 1972, Limits to Growth - Club of Rome's report, Universe Books.

4 E G Seebauer& Robert L. Berry, 2000, Fundamentals of Ethics for Scientists & Engineers, Oxford University Press.

5 M Govindrajan, S Natrajan & V. S Senthil kumar, Engineering Ethics (including Human Values), Eastern Economy Edition, Prentice Hall of India Ltd.

Jodhpur Institute of Engineering & Technology
SYLLABUS
I & II Semester
Common to all branches of UG Engineering
1FY2-21/2FY2-21: Engineering Physics Lab

Credit: 1 **Max. Marks: 50 (IA: 30, ETE: 20)**
0L+0T+2P

Course outcomes:

CO 1	Understand the various phenomenon of light like Interference, diffraction & Resolving power also Understand the structure of optical fibre and Apply the data and result analysis from the experiments and relate to the spectroscopy.
CO 2	Exposed to the physics of materials that they apply in device design and fabrication.
CO 3	Apply the use of Sextant in determination of surface levels, elevations and angular diameters.
CO 4	Use the prism in a spectral analysis by determining its dispersive power.
CO 5	Apply the basic electrical laws in determination of time constant of various capacitors used in electrical devices.
S.N.	**CONTENTS**
1	To determine the wave length of sodium light by Newton's Ring.
2	To determine the wave length of prominent lines of mercury by plane diffraction grating with the help of spectrometer.
3	Determination of energy band gap using a P-N junction diode.
4	To determine the height of given object with the help of sextant.
5	To determine the dispersive power of material of a prism with the help of Spectrometer.
6	To study the charge and discharge of a condenser and hence determine the same constant (both current and voltage graphs are to be plotted).
7	To measure the numerical aperture of an optical fiber.
8	To verify the expression of Resolving Power of Telescope.

TEXT BOOKS:

1. Engineering Physics laboratory- Dr. S.S. Rawat & Soni, CBH Pub.

REFERENCES BOOKS:

1 Engineering Physics laboratory- Prof. Y.C Bhatt & Prof. K.B Sharma, Ashirwad Pub.
2 University Practical Physics- Dr. D.C. Tayal, Himalaya Pub.

Jodhpur Institute of Engineering & Technology
SYLLABUS
I & II Semester

Common to all branches of UG Engineering
1FY2-22/2FY2-22: Engineering Chemistry Lab

Credit: 1 **Marks: 50 (IA: 30, ETE: 20)**
0L+0T+2P
Course outcomes:

CO 1	Understand the applicability of complexometric titration in determination of metal ions causing hardness in water. Estimate the pH and conductivity of water so as to analyze environmental samples.
CO 2	Understand and evaluate the applicability of redox iodometric titration in determination of residual chlorine and dissolved oxygen in treated water.
CO 3	Understand and evaluate the applicability of redox reaction in determination of Iron content in Iron alloys.
CO 4	Understand and evaluate the applicability of redox reaction in determination of copper content in copper alloys.
CO 5	Understand the concept of viscosity, effect of temperature on it and application of lubricant oils in machines.
S.N.	**CONTENTS**
1	To determine the viscosity of a given lubricating oil by Redwood viscometer.
2	To determine the Hardness of given water sample by EDTA method.
3	To determine the strength of dissolved oxygen in given water sample.
4	To determine the strength of free residual chlorine in a given water sample
5	To determine the strength of Ferrous Ammonium Sulphate solution with the help of $K_2Cr_2O_7$ solution.
6	To determine the strength of given HCl solution by NaOH with the help of conductivity meter.
7	To determine the strength of given HCl solution by NaOH with the help of pH meter
8	To determine the strength of an unknown solution of CuSO4 with the help of Sodium Thiosulphate (hypo) solution and determine the amount of Cu in the copper ore.

TEXT BOOKS:

1. Vogel's Text Book of Quantitative Chemical Analysis - Orient Longman.

REFERENCES BOOKS:

1. Practical Chemistry –Giri Pandey Bajpai (S. Chand)
2. Practical chemistry –Sunita Rattan (Dhanpat Rai)

Jodhpur Institute of Engineering & Technology
SYLLABUS
I Semester

Common to all branches of UG Engineering
1FY3-23: Computer Programming Lab

Credit: 1.5 **Max. Marks: 75 (IA: 45, ETE: 30)**
0L+0T+3P

Course outcomes:

CO1: Formulate simple algorithms for arithmetic and logical problems.
CO2: Write programs with I/O, Branching, and looping, using C Language.
CO3: Test and execute the programs and correct syntax and logical errors.
CO4: Make use of functions, and parameter passing to functions
CO5: Apply the concepts of arrays and structures for solving problems like searching and sorting.
CO6: Create applications using the data file.

S.N.	CONTENTS	EXERCISES*
1	Familiarization with programming environment, C Program Structure, Input Output statements, Data types, Simple computational problems using arithmetic expressions	Write hello world program. Calculates the area of a circle. Calculates simple interest. Swap two numbers. Converts Centigrade to Fahrenheit Takes hours and minutes as input, and calculates the total number of minutes.
2	Problems involving if-then-else, switch statements	Determines largest of 2 numbers, 3 numbers. Determines whether a number is even or odd. Finds whether a year is a leap year Finds the roots of a quadratic equation. Implements a simple calculator
3	Problems involving loops	Generates and Finds if the given number is a prime number, Determines whether a number is Armstrong number or not Sum of first n natural numbers Finds GCD, LCM of a given number Computes sum of series like 1! +2! +3! +..N! etc.
4	Problems involving nested loops	Displays the multiplication table vertically from 1 to n. Displays Pascal's triangle, diamond shaped pattern, pyramid Pattern etc.
5	Array manipulation: 1D array	Performs Linear Search on a list of n elements. Finds largest, smallest element from a given list of elements Sorts a list of n elements in ascending/ descending order using bubble sort.
6	String operations	Finds length of a string, String reversing, String comparison, Finds whether the given string is palindrome or not
7	2D Array manipulation	Programs involving Matrix operations [addition,

		multiplication]
8	Pointers:	Demonstration the use of & (address of) and *(value at address) operator in a program. Storing n elements in an array and print them using pointer. Computing the sum of all elements in an array using pointers.
9	Functions: Programs involving simple functions involving return statement and no return statement	Swapping two numbers, Determining square and cube of a number using functions. Determining number of vowels, consonants and special characters in a string.
10	Recursive functions	Finding Factorial, Fibonacci series, Ackerman function etc.
11	Structures	Arithmetic operations on Complex numbers, rational numbers, Operations on student records
12	File operations	Programs using the concepts of file handling

*These are suggestive exercises, depending on the requirement and availability of time the instructor can choose to do additional exercises.

TEXT BOOKS:

1. E. Balaguruswamy, Programming in ANSI C, Tata McGraw-Hill.

REFERENCES BOOKS:

1. Byron Gottfried, Schaum's Outline of Programming with C, McGraw-Hill.
2. The C Programming Language, Brian W. Kernighan and Dennis M. Ritchie, Prentice Hall of India.

Jodhpur Institute of Engineering & Technology
SYLLABUS
II Semester
Common to all branches of UG Engineering
2FY3-23: Python Programming Lab

Credit: 1 **Max. Marks: 50 (IA: 30, ETE: 20)**
0L+0T+2P

Course outcomes:

CO1: Interpret the fundamental Python syntax and semantics and be fluent in the use of Python control flow statements.
CO2: Express proficiency in the handling of strings and functions.
CO3: Determine the methods to create and manipulate Python programs by utilizing the data structures like lists, dictionaries, tuples and sets.
CO4: Identify the commonly used operations involving file systems and regular expressions.
CO5: Articulate the Object-Oriented Programming concepts such as encapsulation, inheritance and polymorphism as used in Python.

S.N.	CONTENTS	EXERCISES*
1	Basics of Python	1. Write a Python commands to get the Python version you are using. 2. Write a Python commands to display the current date and time. 3. Write a Python program which accepts the radius of a circle from the user and compute the area. 4. Write a Python program that accepts an integer (n) and computes the value of n+ nn+ nnn. *Sample value of n is* 5 *Expected Result :* 615 5. Write a Python program to calculate number of days between two dates. *Sample dates* : (2014, 7, 2), (2014, 7, 11) *Expected output* : 9 days 6. Write a Python program to swap two variables
2	Decision Statement, Loops	1. Write a Python program to get the difference between a given number and 17, if the number is greater than 17 return double the absolute difference. 2. Write a Python program to test whether the input number is near 100 or 1000 or 2000. 3. Write a Python program to calculate the sum of three given numbers, if the values are equal then return three times of their sum. 4. Write a Python program to compute the greatest common divisor (GCD) of two positive integers. 5. Write a Python program to calculate the sum of the digits in an integer. 6. Write a Python function to find the maximum and minimum numbers from a sequence of numbers. Note: Do not use built-in function

3	String data type	1. Write a Python program that takes a string input and displays the string in a specific format. *Sample String:*"Twinkle, twinkle, little star, How I wonder what you are! *Output :*Twinkle, twinkle, little star, How I wonder what you are! 2. Write a Python program to accept a filename from the user and print its extension. *Sample input : abc.py Output: py* *Write* a Python program to get a new string from a given string where "Is" has been added to the front. If the given string already begins with "Is" then return the string unchanged
4	Data Structures :List, Tuple, Dictionary, Set	1. Write a Python program which accepts a sequence of comma-separated numbers from user and generate a list and a tuple with those numbers. *Sample data :* 3, 5, 7, 23 *Output :* List : ['3', ' 5', ' 7', ' 23'] Tuple : ('3', ' 5', ' 7', ' 23') 2. Write a Python program that counts the frequency of a number x in a given list of n elements. 3. Write a Python program to print all even numbers from a given list of numbers in the same order and stop the printing the numbers that come after the number x in the sequence.
5	Data Structures : Dictionary, Set	1. Write a Python program that takes input in two sets [set A and set B] and prints out elements belonging to set A which are not present in set B. 2. Write a Python program to create a dictionary from a string and display in table format. 3. Write a Python program to print all unique values in a dictionary
6	Functions PART-1	1. Write a Python program to reverse a string. *Sample String*: "1234abcd" *Expected Output*: "dcba4321" 2. Write a Python function that takes a list and returns a new list with unique elements of the first list. *Sample List :*[1,2,3,3,3,3,4,5] *Unique List :* [1, 2, 3, 4, 5] 3. Write a Python program that accepts a hyphen-separated sequence of words as input and prints the words in a hyphen-separated sequence after sorting them alphabetically. *Sample Items*: green-red-yellow-black-white *Expected Result*: black-green-red-white-yellow
7	Functions PART -2	1. Write a Python program to make a chain of function decorators (bold, italic, underline etc.) in Python. 2. Write a Python program that squares and cubes every number in a given list of integers using Lambda. 3. Write a Python program to find if a given string starts with a given character using Lambda.
8	File handling	1. Write a Python program that reads an entire text file. 2. Write a Python program that reads first n lines and last n lines of a file 3. Write a Python program that reads a file line by line and stores it into a list. 4. Write a Python program that counts the number of lines, words, and frequency of each character in a text file.

		5. Write a Python program that copy the contents of a file to another file. 6. Write a Python program that removes newline characters from a file.
9	Regular Expressions	1. Write a Python program to check that a string contains only a certain set of characters (in this case a-z, A-Z and 0-9) 2. Write a Python program that matches a string that has an *a* followed by zero or more b's 3. Write a Python program to find sequences of lowercase letters joined with a underscore 4. Write a Python program where a string will start with a specific number.
10	Introduction to OOP	1. Write a Python class named Rectangle constructed by a length and width and a method which will compute the area of a rectangle. 2. Write a Python class named Circle constructed by a radius and two methods which will compute the area and the perimeter of a circle. 3. Write a Python class to implement pow(x, n) 4. Write a Python class which has two methods get String and print String. get String accept a string from the user and print String print the string in upper case

*These are suggestive Exercises and the instructor may change as per the availability of time and requirement.

TEXT BOOK

1. Let Us Python: Yashwant Kanetkar, Aditya Kanetkar 3rd edition bpb publication

REFERENCES BOOKS:

1. Core Python Programming Textbook by Wesley Chun Prentice Hall.
2. Python: The Complete Reference by Martin C. Brown Mac Graw-Hill, Oxford.

Jodhpur Institute of Engineering & Technology
SYLLABUS
II Semester

Common to all branches of UG Engineering
2FY3-24: Civil Engineering Lab

Credit: 1 **Max. Marks: 50 (IA: 30, ETE: 20)**
0L+0T+2P

Course outcomes:

CO1: Explain the techniques used for linear & angular measurements in surveying.

CO2: Follow the working principles of survey instruments for measurements

CO3: To solve complex problems related to leveling by using different levelling instrument.

CO4: To check various water quality parameters like PH, turbidity and total solids

CO5: Understand the various water supply fittings. and sanitary fitting.

S.N.	EXERCISES*
1	**Linear Measurement by Tape:** a) Ranging and Fixing of Survey Station along straight line and across Obstacles. b) Laying perpendicular offset along the survey line
2	**Compass Survey:** Measurement of bearing of lines using Surveyor's and Prismatic compass
3	**Leveling:** Using Tilting/ Dumpy/ Automatic Level a) To determine the reduced levels in closed circuit. b) To carry out profile leveling and plot longitudinal and cross sections for road by Height of Instrument and Rise & Fall Method.
4	**Exercise:** To study and take measurements using various electronic surveying instruments like EDM, Total Station etc.
5	**Exercise:** To determine pH, hardness and turbidity of the given sample of water
6	**Exercise:** To study various water supply Fittings.
7	**Exercise:** To determine the pH and total solids of the given sample of sewage.
8	**Exercise:** To study various Sanitary Fittings.

TEXT BOOKS:

1 Surveying Vol-1 by B.C. Punmia, Laxmi Publication (P) Ltd.

2 A.K. Dwiwedi, AbhishekArya Basic Civil Engineering, Neelkanth Publishers.

3 Water Supply Engineering by S.K.Garg

4 Basic Civil Engineering by SS Bhavikatti, New age International Publishers

REFERENCES BOOKS:

1 M.S Palanichamy, Basic Civil Engineering, Tata McGraw Hills Publishers.

2 SatheeshGopi, Basic Civil Engineering, Pearson Publishers.

Jodhpur Institute of Engineering & Technology
SYLLABUS
I & II Semester
Common to all branches of UG Engineering
1FY3-25/2FY3-25: Electrical & Electronics Engineering Lab

Credit: 1 **Max. Marks: 50 (IA: 30, ETE: 20)**
0L+0T+2P

Course outcomes:

CO 1	Demonstrate and understanding of the basic knowledge of electrical quantities such as current, voltage, energy and frequency to understand the impact of technology in a global and societal context. Apply the basic concepts of DC Networks in Electrical Engineering for multi-disciplinary tasks.
CO 2	Demonstrate and understanding of the basic concepts of analysis of simple AC circuits used in electrical devices.
CO 3	Demonstrate and understanding of the basic concepts of transformers their application in transmission and distribution of electric power system also some basics of electrical safety and installations.
CO 4	Demonstrate and understanding of the basic concepts of PN Junction Diode, Zener Diode, Photovoltaic Cell and analysis of Half and full-wave uncontrolled single-phase Rectifiers.
CO 5	Demonstrate and understanding of the basics of communication systems, AM, FM and Instrumentation.

LIST OF EXPERIMENTS

S.N.	CONTENTS
1	Assemble house wiring including earthling for 1-phase energy meter, MCB, ceiling fan, tube light, three pin socket and a lamp operated from two different positions. Basic functional study of components used in house wiring.
2	Study different types of electrical loads for domestic purposes and calculate monthly electricity consumption for residential applications.
3	Make suitable connection to verify Kirchhoff's Voltage Law (KVL) and Kirchhoff's Current Law (KCL) in a DC Network.
4	To verify Thevenin's theorem in a D.C. network.
5	To determine power factor of a given choke coil and to improve the power factor using suitable compensating capacitor.
6	Perform Open Circuit and Short Circuit tests on a single-phase transformer, to determine efficiency of the transformer.
7	Study the working of Analog/Digital Multi- Meters, Function/Signal Generator and Cathode ray oscilloscope (CRO), also measure frequency and magnitude of input signal with the help of CRO.

8	Identification, testing and application of Resistors, Inductors, Capacitors, PN-Diode. Zener Diode, LED, LCD, BJT, Photo Diode, Photo Transistor.
9	Make connections to draw the V-I Characteristics of a P-N Junction diode in Forward and Reverse bias conditions.
10	Make connections for a single-phase, half-wave and full-wave bridge rectifier and the analyses effect of L, C and L-C filters on the output voltage of the rectifiers.

TEXT BOOKS:

1. Laboratory Courses in Electrical Engineering, 5/e by P K Kharbanda, S B Bodkhe, S D Naik & S G Tarnekar, S. Chand.
2. Basic Electrical & Electronics Lab by Bharat Bhushan Jain and Harbeer Singh, N.K. Publishers.

REFERENCES BOOKS:

1 Basic Electrical & Electronics Engineering (Including lab experiments), by Dr. Neelam Sharma, Dr. A. K. Sharma and Neha Singh, Ashirwad Publications, third edition.

2 SmarajtGhosh, "Fundamentals of Electrical & Electronics Engineering", Second edition, PHI Learning, 2007.

3 Basic Electrical & Electronics Engineering by Kothari, Nagrath, TMH

4 Basic Electrical and Electronics Engineering by Sukhija and Nagsarkar, Oxford Publication

5 Basic Electrical & Electronics Engineering by V. Jagathesan, K. Vinod Kumar & R. Saravan Kumar, Wiley India.

Jodhpur Institute of Engineering & Technology
SYLLABUS
I & II Semester

Common to all branches of UG Engineering
1FY3-26/2FY3-26: Engineering Graphics & Machine Drawing

Credit: 1 **Max. Marks: 50 (IA: 30, ETE: 20)**
0L+0T+2P
Course outcomes:

CO 1	Understand the basic concept of Engineering Drawing and Computer Graphics and show different types of lines, geometric construction of curves and different scales.
CO 2	Prepare multi view orthographic projections of objects by visualizing them in different positions
CO 3	Prepare pictorial drawings using the principles of isometric and perspective projections to visualize objects in three dimensions.
CO 4	Convert 3D views to orthographic views
CO 5	Obtain multi view projections and solid models of objects using CAD tools

S.N.	CONTENTS	DESCRIPTION	Hours
1	Introduction to Engineering drawing orthographic projection	**Principles of engineering drawing**: Drawing instruments, types of lines, lettering and dimensioning. **Types of scales:** Plane scale, Vernier scale, diagonal scale and scale of chords. **Orthographic Projection:** Theory of projection, alignment of views, first angle and third angle method of projections, sectional views.	**6**
2	Projection of lines & Planes:	**Projection of lines**: lines parallel and perpendicular to reference plane, lines inclined to reference planes. Projection of planes: planes parallel, perpendicular and inclined to reference planes.	**6**
3	Isometric Projection:	**Basics of isometric projection**: Isometric projections of regular plane figure.	**6**
4	Computer Graphics:	**Introduction to Computer Aided Graphics** (different types of tools, commands, toolbars, constraints, menu, status bar etc.) and drawing of 2D and 3D problems on CAD software (AutoCAD/Pro-E /Creo3.0/Solid Works/Fusion-360).	**4**
5	Demonstration of a simple design project using CAD software (Group activity):	Students are required to perform a group activity based on CAD software.	**2**
		TOTAL	**24**

TEXT BOOKS:

1. N D Bhatt and V M Panchal, Engineering Drawing, 43rd Ed., Charator Publishing House, 2001.
2. Lakshmi narayan Mathur, A text of Machine Drawing, Jain Brothers.

REFERENCES BOOKS:

1 K Venugopal, Engineering Drawing and Graphics, 3rd Ed., New Age International, 1998.
2 M B Shah and B C Rana, Engineering Drawing, 2nd Ed., Pearson Education, 2009.
3. T E French, C J Vierck and R J Foster, Graphic Science and Design, 4th Ed., McGraw Hill, 1984
4. W J Luzadder and J M Duff, Fundamentals of Engineering Drawing, 11th Ed., PHI, 1995.
5. A.J. Dhananjay, Engineering Drawing, TMH, 2008.

Jodhpur Institute of Engineering & Technology
SYLLABUS
I & II Semester
Common to all branches of UG Engineering
1FY3-27/2FY3-27: Workshop-Manufacturing Practices

Credit: 1 **Max. Marks: 50 (IA: 30, ETE: 20)**
0L+0T+2P

S.N.	SHOPS	CONTENTS	Hours
1	MACHINE SHOP	Introduction of parts of Lathe Machine, its working principle and tools used in Machine Shop Making Plain turning, Taper turning, Step turning, Facing, Knurling, Drilling, Boring, Mini project – Demonstration of tool layout of different product as per given drawing	**4**
2	FITTING	Introduction of fitting practice and tools used in fitting shop; exercise involving marking, cutting, Fitting practice (Right Angles), tapping practice.Making Square T-Fitting and V- Fitting joints. Mini project – Demonstration of Fitting of different matting parts	**4**
3	CARPENTRY	Various types of timber and practice boards, defects in timber, seasoning of wood; tools, wood operation and various joints; exercises involving use of important carpentry tools to practice various operations and making joints Making T – Lap Joint and Cross Lap Joint. Mini project – Demonstration of different carpentry products	**4**
4	SHEET METAL	Shop development of surfaces of various objects; sheet metal forming and joining operations, joints, soldering and brazing; exercises involving use of sheet metal forming operations for small joints. Making rectangular tray. Mini project - Demonstration of Different sheet metal products	**4**
5	WELDING	Introduction to different welding methods; welding equipment; electrodes; welding joints; welding defects; exercises involving use of gas/electric arc welding.Making butt joint, Lap joint, T-fillet through Arc welding. Mini project - Demonstration of Different welding products	**4**

6	FOUNDARY	Introduction to moulding materials; moulds; use of cores; meltingfurnaces; tools and equipment used in foundry shops; exercises involving preparation of small sand Moulds and casting. Making the molding and Casting. Mini project - Demonstration of Different casting products	**4**
		TOTAL	**24**

TEXT BOOKS:

1. H. Choudhury, Elements of Workshop Technology, Vol. I, Asia Publishing House, 1986.
2. B.S Raghuvanshi, A course in Workshop Technology volume I & II.

REFERENCES BOOKS:

1 H Gerling, All about Machine Tools, New Age International, 1995.
2 W A J Chapman, Workshop Technology, Oxford IBH, 1975.

Jodhpur Institute of Engineering & Technology
SYLLABUS

I &II Semester

Common to all branches of UG Engineering
1FY1-28/2FY1-28: Language Lab

Credit: 1.5 **Max.Marks:75 (IA: 45, ETE: 30)**
0L+0T+3P
Course outcomes:

CO 1	To expose the students to a variety of self-instructional, learner-friendly modesof language learning.
CO 2	To help the students prepare for competitive exams such GRE, TOEFL, GMATetc.
CO 3	To help them shed their inhibitions and self- consciousness while speaking inEnglish and to build their confidence. The focus shall be on fluency ahead ofaccuracy.
CO 4	To train them to use language effectively to face interviews, group discussions, public speaking.
CO 5	To maintain good linguistic competence- through accuracy in grammar, pronunciation and vocabulary.

S. No.	CONTENTS	Hours
1.	**Listening Skills:** Introduction and Importance, Practicing Pronunciations, Telephone Etiquette and Visual Story Interpretation.	**4**
2.	**Speaking Skills:** Extempore, Story-telling, Group Discussion-Introduction, Importance, Practicing GD on various topics and Role Play.	**14**

3.	**Reading Skills:** Importance of Reading, Implementing Reading Techniques, Visual Perception, Reading Skills and Reading Comprehension Passages.	**9**
4.	**Writing Skills and Vocabulary Building:** Sentence formation activities, Practicing the usage of Nouns, Pronouns, Verbs, Articles, Prepositions, Adjectives, Synonyms, Antonyms, Active and Passive voice , Homonyms, Tenses, Phrasal Verbs, Idioms and One word substitutions, E-mail Writing and Script Writing for Role Play.	**9**
	TOTAL	**36**

TEXTBOOKS:

1. Raymond Murphy, English Grammar in Use, Cambridge University Press, Cambridge.
2. Wren & Martin, High School English Grammar and Composition, S. Chand & Company.
3. S.T.Imam, Brush up Your English, Bharati Bhawan Publishers.

REFERENCEBOOKS:

1.Sudarshana, N.P. and Savitha, C., English for Engineers, Cambridge University Press, 2018.
2. Norman Lewis, Speak Better Write Better English.
3. Norman Lewis, Word Power Made Easy.
4. W.Stannard Allen, Keep up your English, BL Language Institute Publication.
5. Deepali Gupta, Spoken English Made Easy, Indra Publishing House, Bhopal, India.

Jodhpur Institute of Engineering & Technology
SYLLABUS
I Semester
1FY9-MC1: Personality Development Skills
Mandatory Non-credit course

Credit: 0 **Max.Marks:100**
(0L+0T+2P)

S. N.	CONTENTS	Hours
1.	**Unit I:** SWOT Analysis a. What are strengths, weakness, opportunities and threats b. Importance of SWOT c. Tools used to identify SWOT d. SWOT in practice & Counselling	**3**
2.	**Unit II:** Goal Setting Spoken English a. How to enhance spoken English b. Spoken English activities c. Developing Reading habit for Knowledge Up gradation	**3**

3.	**Unit III:** Personality Development a. What is personality? b. Importance of personality c. Self – confidence and self- esteem d. Opportunity to interact with Personality live	**4**
4.	**Unit IV**: Interpersonal Skills a. Public speaking b. PowerPoint presentation skills c. Self-Introduction	**3**
5.	**Unit V:** Business Etiquettes a. Telephone etiquettes, Hand shake Etiquette, Cubical Etiquette b. Email & Letter Etiquettes, Business Card Etiquette, Dressing Etiquette	**2**
6.	**Unit VI :** Interview Skills a. What is an interview & how to face that? b. Expected general questions Body Language a. Basics of body language b. Hard skills v/s Soft skills	**6**
7.	**Unit VII:** Professional writing Skills Resume Building, a. Basic resume formats b. Difference between resume , CV, Bio data c. Job Application/ Cover Letter, Email Writing	**3**
	TOTAL	**24**

TEXT / REFERENCES BOOKS:

1. Business Communication by R K Madhukar, published by Vikas Publication
2. IQ and Personality Test by Philip Carter, published by Kogan Page India
3. Personal development for life and work by Masters Wallace, published by
4. Spoken English, 4/e, M C Sreevalsan, published by Vikas Publication
5. Training in Interpersonal Skills by Stephen Robbins, published by Pearson Publication.

Jodhpur Institute of Engineering & Technology
SYLLABUS
I Semester
1FY9-MC2: TECHNO COMMUNICATION
Mandatory Non-credit course

Credit: 0 **Max.Marks:100**
(0L+0T+2P)

S. N.	CONTENTS	Hours
1.	**MS WORD**: Introductory commands : Cut, copy, font size, style, format painter, bold, italic, underline, find, Replace Inserting Shapes and Symbols, working with equations, Setting of Page layout, margins, page number, cover page, headers and footers, hands on practice, printing and viewing preferences, protection of files, review and tile files vertically and horizontally.	**6**
2.	**MS EXCEL**: Vocabulary status bar modes, keyboard navigation ribbon, clipboard Formatting cells : cells structures, Inserting, Deleting cells, Cell Size (Row Height/Column Width) Construction of an Equation , Type in the exact cell address, Use the mouse to point to the cell address, Mathematical Operations, AutoSum	**6**
3.	**POWER POINT PRESENTATION:** Introductory commands, Insert table, chart, picture and shapes in presentation, Transition and animation, Use of Header & footer, Date and time, Page no, equation and symbols	**5**
4.	**MS PUBLISHER**: Getting started with Microsoft publisher, adding content to a publication, formatting text and paragraphs in a publication, managing text in a publication, working with graphics in a publication, preparing a publication for sharing and printing.	**7**
	TOTAL	**24**

TEXT / REFERENCES BOOKS:

1. Computer Fundamentals MS OFFICE by Anupam Jain and Navneet Mehra published by Vitasta Publishing Pvt. Ltd.
2. Mastering MS Office: Concise Handbook by Bittu Kumar published by V&S Publishers.
3. Microsoft Office 2019 by Wallace Wang published by Wiley publishers.
4. Ms-Office 2010 Training Guide by Satish Jain, M. Geeta, Kratika published by BPB Publications.

Jodhpur Institute of Engineering & Technology
SYLLABUS
I Semester
1FY9-MC3: Graphics Programming in C
Mandatory Non-credit course

Credit: 0 **Max. Marks: 100**
(0L+0T+2P)

S. N.	CONTENTS	Hours
1.	Module I: Introduction to computer graphics & graphics systems Overview of computer graphics, representing pictures, preparing, presenting & interacting with pictures for presentations; Visualization & image processing; Basic structure of Graphics program.	**4**
2.	WAP to draw a pixel (x, y) and display the color in which pixel (x,y) is illuminated on the screen. Colors in graphic programming.	**2**
3.	Points & lines, Line drawing algorithms; DDA algorithm, Bresenham's line algorithm, Circle generation algorithm; Ellipse generating algorithm and Color fill algorithm. WAP to draw a Line and also draws different styles of lines in C.	**3**
4.	WAP to draw a Triangle and also a Rectangle using a function.	**2**
5.	WAP to draw Polygon of various shapes using a function and Hut using (line, triangle & rectangle) function.	**2**
6.	WAP to draw Ellipse. And also draw Candy.	**2**
7.	WAP to draw a Circle and also draw circles inside various circles.	**3**
8.	Basic transformations: translation, rotation, scaling; Matrix representations & homogeneous coordinates, transformations between coordinate systems. WAP to print text on screen with different colors and WAP to print text in different fonts.	**3**
9.	WAP to create bar charts, pie charts and progress bars and also any object and perform filling and Design a Project in Computer Graphics to implement a moving car using arrow keys.	**3**
	TOTAL	**24**

TEXT / REFERENCES BOOKS:

1. Hearn, Baker "Computer Graphics (C version 2nd Ed.)" – Pearson education.
2. Z. Xiang, R. Plastock – "Schaum's outlines Computer Graphics (2nd Ed.)" – TMH.

Jodhpur Institute of Engineering & Technology
SYLLABUS

II Semester
2FY9-MC1: Analytical and Logical Thinking Skills
Mandatory- Non-credit course

Credit: 0 **Max.Marks:100**
0L+0T+2P

S.N.	CONTENTS	Hours
1	**Quantitative Reasoning:** (Permutation and Combination , Number System and Number Series, Remainder theorem and unit digit Concept, HCF and LCM of Numbers, Surds, Numbers And Divisibility, Simplification, Percentage, Average, Ratio and Proportion)	10
2	**Reasoning** : Sequences and Series, Coding and Decoding Problems, Calendars and Clocks, Counting of Figures (Square, Triangles, Rectangle etc.), Counting of Straight Lines, Series of Figure, Missing Figures, Mirror Image, Water Image	10
	TOTAL	20

TEXT BOOKS:

1. Quantitative Aptitude for Competitive Examinations with A Modern Approach to Logical Reasoning R S Agarwal S. Chand Publishing 2018 -2019
2. Quantitative Aptitude for All Competitive Examinations by Abhijit Guha, Publication : TMH
3. Text Book of Quickest Mathematics by Kiran Prakashan

REFERENCES BOOKS:

1. LOGITICA : Improve Your Critical Thinking and Problem Solving Skills: The Brain Behind the Brain Paperback – January 8, 2019 by Neelabh Kumar (Author)
2. Analytical Reasoning by M.K Pandey
3. Verbal and Non-Verbal Reasoning by Dr. RS Agarwal, Publisher : S. Chand

Jodhpur Institute of Engineering & Technology
SYLLABUS
II Semester
2FY9-MC2: Technical Writing
Mandatory Non-credit course

Credit: 0 **Max. Marks: 100**
(0L+0T+2P)

S. N.	CONTENTS	Hours
1.	**Proposals:** Some Preliminaries, Typical Scenarios for the Proposal, Common Sections in Proposals, Organization of Proposals, Format of Proposals, Special Assignment Requirements, Revision Checklist for Proposals.	**6**
2.	**Progress reports:** Functions and Contents, Timing and Format, Organizational Patterns, Other Parts of Progress Reports, Revision Checklist for Progress Reports.	**5**
3.	**Recommendation reports:** Organizational Plans for recommendation Reports, Revision Checklist for recommendation Reports	**4**
4.	**Feasibility reports:** Organizational Plans for Feasibility Reports, Revision Checklist for Feasibility Reports	**4**
5.	**Proposals:** Some Preliminaries, Typical Scenarios for the Proposal, Common Sections in Proposals, Organization of Proposals, Format of Proposals, Special Assignment Requirements, Revision Checklist for Proposals.	**5**
	TOTAL	**24**

TEXT BOOKS:

1. Technical Report-Writing: Methods and Procedures, A.L. Moorthy C.R. Karisiddappa, Ess Ess Publications
2. *Technical Writing Essentials*, Suzan Last, Press books

REFERENCES BOOKS:

1. How to Write Reports and Proposals: Create Attention-Grabbing Documents that Achieve Your Goals, Patrick Forsyth, Kogan Page publishers.
2. Report Writing, MICHELLE REID, Red Globe Press.

Jodhpur Institute of Engineering & Technology
SYLLABUS
II Semester
2FY9-MC3: GUI Programming using Tkinter (Python)
Mandatory Non-credit course

Credit: 0 **Max. Marks: 100**
(0L+0T+2P)

S. N.	CONTENTS	Hours
1.	**Introduction to Programming in Python:** Introduction to Programming in Python: What Is Python? Features of Python, Python environment set up: Installing Python, Running Python, Python Documentation, and Structure of a Python Program Basics of Programming in Python: Input statement, output statement, variables, operators, numbers, Literals, strings, lists and tuples, dictionaries.	**1**
2.	**Conditionals, Loops and Functions. Conditionals and Loops:** If statement, else Statement, elif Statement, while Statement, for Statement break Statement, continue Statement, pass Statement. Functions: Built-in Functions, User defined functions: Defining a Function, Calling a Function, Various Function Arguments.	**6**
3.	**Files, Modules and Introduction to Advanced Python Files:** File Objects, File Built-in Methods, File Built-in Attributes, Standard Files. Command-line Arguments Modules: Modules and Files, Namespaces, Importing Modules, Importing Module Attributes, Module Built-in Functions, Packages. Introduction to Advanced Python: Classes and objectsdeclaration, Inheritance, Regular Expressions.	**5**
4.	**Python GUI & CGI Programming and Python database connectivity:** Python GUI Programming (Tkinter): Tkinter Programming example, Tkinter widgets, standard attributes, geometry management Python CGI Programming: CGI Architecture, First CGI Program, HTTP Header, CGI Environment Variables, GET and POST Methods, Simple FORM Example: Using GET Method, Passing Information Using POST Method Python database connectivity.	**4**

5.	**PROGRAMMING PROJECTS: sample projects-** **Project #1** is to design a console program in Python that solves a problem. **Project #2** is to design a simple animation program utilizing Python and the Pygame library. **Project #3** is to design a program using Python and the Tkinter graphical user interface library. **Project #4** is to design a fully functional, unique, 2D video game.	**8**
	TOTAL	**24**

TEXT/REFERENCE BOOKS:

1. Core Python Programming Wesley J. Chun Publisher: Prentice Hall PTR First Edition.

2. T. Budd, Exploring Python, TMH, 1st Ed, 2011.

3. Python Tutorial/Documentation www.python.or 2010.

4. Allen Downey, Jeffrey Elkner, Chris Meyers, How to think like a computer scientist: learning with Python, available online, 2015.

Jodhpur Institute of Engineering & Technology
SYLLABUS
II Semester
2FY9-MC4: Basics of Management
Mandatory Non-credit course

Credit: 0 **Max. Marks: 100**
(0L+0T+2P)

Unit	CONTENTS	Hours
1.	**Nature of Management:** Concept, Significance, Role & Skills, Levels of Management, Concepts of POSDCORB (Planning, Organizing, Staffing, Directing, Coordinating, Reporting and Budgeting). Overview of Decision making, Evolution of Management thoughts, Contribution of F.W Taylor, Henri Fayoland Contingency Approach. Overview of Indian thoughts on Management, Management by Objectives (MBO).	**8**
2.	**Planning:** Meaning, Importance, Elements and Processes.	**4**
3.	**Organizing:** Concepts, Structure (Formal & Informal, Line & Staffand Matrix), Meaning, Advantages and Limitations of organizing. Department Process: Meaning, Basis and Significance. Span of Control: Meaning, Factors affecting span of Control, Centralization v/s Decentralization, Delegation: Authority & Responsibility relationship	**6**
4.	**Directing, Co-ordination and Controlling:** Leading: Concept of leadership, Directing: Meaning and Process, Co-ordination as an Essence of Management, Controlling: Meaning, Process and Technique.	**6**
5.	**Functional Management:** Introduction to different functional aspects of management-Finance, Operations, Marketing, Human Resource and Strategic Management.	**6**
	TOTAL	**30**

Text Books:

1. Koontz & Weihrich, Essentials of Management; Tata Mc Graw Hill.
2. Tripathy & Reddy, Principles of Management; Tata Mc Graw Hill.

Reference Books:

1. Kreitner & Mohapatra, Management; Biztantra.
2. Robbins, Decenzo & Coulter, Fundamentals of Management; Pearson Education.
3. Stoner, Freeman& Daniel R Gilbert, Management; Pearson Education.