



SAMRAT ASHOK TECHNOLOGICAL INSTITUTE

(Engineering College), VIDISHA M.P.

(An Autonomous Institute Affiliated to RGPV Bhopal)


Department of Applied Science

SYLLABUS FOR CE, ME and AE Programs

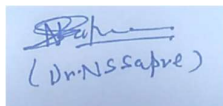
Subject Category	BSC	Subject Code:	CHB102	Subject Name:	Chemistry				
Maximum Marks Allotted						Contact Hours			Total Credits
Theory			Practical		Total Marks	L	T	P	
End Sem	Mid-Sem	Quiz/Assignment	End Sem	Lab-Work					3
60	20	20	30	20	150				
Prerequisites:									
Students who have completed 12th with Science stream or Chemistry of 12th standard or equivalent									
Course Objective:									
The main aim of Engineering Chemistry is to make Students familiar with basic concepts of Chemistry, the students face in industry and engineering field. With this background the Students will be able to explain Scientifically the various chemistry related problems in industry/engineering field.									
Course Outcomes:									
Student after successful completion of course shall possess skills to think critically and analyse chemistry problems in engineering field. Students are expected to solve the chemistry problems with an engineering purview. Laboratory work is intended for students to learn conducting experiments and analyse experimental data.									
Sno.	CO's Description								
CO1	Differentiate hard & soft water, solve the related numerical on water treatment and have knowledge regarding its Significance in industry and daily life.								
CO2	Apply their knowledge regarding various types of fuels including petroleum fuels, Fuels Cells, Electrical Vehicle Batteries								
CO3	Acquire basic knowledge of various types of polymers, with mechanism and applications.								
CO4	To know basic concept of lubrication and its properties. To have knowledge about cement and refractories to appreciate its applications in various industries.								
CO5	Analyze the need of instruments. Identify and estimate about the unknown/new compounds with the help of spectroscopy/ chromatography.								
UN ITs	Descriptions						Hrs.	CO's	Remarks
I	WATER TECHNOLOGY: Sources, Availability, impurities in Water, Types of hardness, Units of hardness. Concentration expression: Normality, Molarity, Molality. Water analysis techniques – Hardness determination by EDTA method, Alkalinity determination. Defects in boiler due to Hard water. External Treatment (Lime-soda, Zeolite & Ion exchange resin method) & Internal Treatment of Boiler feed water. Numerical Problems.						8	1	
II	FUELS & ENERGY STORAGE SYSTEMS: Characteristics of fuels. Classification of fuels, Calorific Value, HCV, NCV. Proximate and ultimate analysis of coal. Petroleum & its refining. Knocking, Octane Number & Cetane Number, Numerical problems. Electrochemistry: Introduction, EMF of cell, Single electrode potential. Classification of batteries (primary, secondary and reserved batteries), Introduction to Fuel Cell, Electrical Vehicle Batteries their components and materials used.						8	2	
III	POLYMERS AND NANOMATERIALS: Polymers: Nomenclature & classification of polymers. Thermoplastics and						8	3	

	Thermosetting polymers. Preparation, properties and applications of PE, PVC, PS, Teflon, Nylon 6:6, PU, SBR, NBR, Bakelite, Silicone resin. Rubber and its types. Vulcanization of Rubber, Applications of rubber. Photoactive polymers, Photovoltaic materials: solar cells and dye sensitized solar cells- principle and applications. Nanomaterials: Introduction, Synthesis and applications of nano materials. Introduction to smart materials and its application.			
IV	LUBRICANTS AND CEMENTING MATERIAL: Introduction, Classification & functions, Mechanism of lubrication, Lubricating oils, grease, semisolid lubricant and solid lubricants. Properties of lubricating oils with significance: Viscosity Index, Flash point, Fire point, Aniline point, Cloud & pour point, Steam Emulsion Number (S.E.N), Numerical problems. Composition of Cement, Manufacture of Portland cement. Chemistry of Setting and hardening of cement.	8	4	
V	INSTRUMENTAL METHODS OF ANALYSIS: Importance of Instrumental techniques. Classification of Instrumental techniques. Introduction to Electroanalytical and Spectroscopic Methods. Principle, Instrumentation, Working and applications of following techniques: Colorimetry, IR Spectroscopy, Conductometry, pH metry, Chromatography and Gas Chromatography.	8	5	
Guest Lectures (if any)				
Total Hours		40		
Suggestive list of experiments:				
LABORATORY EXPERIMENTS:(Any 10 experiments to be performed)				
<ol style="list-style-type: none"> To determine strength of unknown Ferrous Ammonium Sulphate $\text{FeSO}_4 \cdot (\text{NH}_4)_2\text{SO}_4 \cdot 6\text{H}_2\text{O}$ (Mohr's Salt) solution by titrating it against intermediate Potassium Dichromate ($\text{K}_2\text{Cr}_2\text{O}_7$) solution using Di Phenyl Amine(DPA) as internal indicator.[Redox Titration] To determine Temporary, Permanent and Total Hardness in given sample of water by E.D.T.A. method.[Complexometric Titration] To determine strength of Sodium Carbonate and Sodium Bicarbonate in given alkaline solution by titrating with standard HCl using phenolphthalein and Methyl Orange indicators. Or To determine alkalinity in given water sample using Phenolphthalein and Methyl Orange indicators.[Acid Base Titration] To determine strength of unknown CuSO_4 solution by titrating it against intermediate sodium thiosulphate (Hypo) solution using starch as final indicator.[Iodometric Titration] To determine the chloride content of the given sample of water using silver nitrate solution with potassium chromate solution as an indicator.[Precipitation Titration] To determine Moisture content in given sample of coal.[Proximate Analysis] To determine Ash content in given sample of coal.[Proximate Analysis] To determine the Viscosity Index of give lubricating oil by Redwood Viscometer No.1 and Redwood Viscometer 2.[Lubricating Oil Analysis] To determine the Flash Point and Fire Point of lubricating oil by Abel's Apparatus.[Lubricating Oil Analysis] To determine the Flash Point and Fire Point of lubricating oil by Pensky Martin's Apparatus.[Lubricating Oil Analysis] To determine S.E.N. of given lubricating oil[Lubricating Oil Analysis]. To separate mixture of pigments by Thin Layer Chromatography [Instrumental Methods]. To separate mixture of pigments by Paper Chromatography [Instrumental Methods]. To verify Beer Lambert's law of colorimetry [Instrumental Methods]. To determine amount of Iron by colorimetry [Instrumental Methods]. To estimate amount of Iron by UV spectrophotometer. [Instrumental Methods] To determine pH of given solution using pH meter. [Instrumental Methods] To determine strength of acid/base by conductometric titrations. [Instrumental Methods] 				
TEXT BOOKS:				
<ul style="list-style-type: none"> Engineering Chemistry – Jain & Jain – Dhanpat Rai & Company Pvt. Ltd, New Delhi. A Text Book of Engineering Chemistry – S.S. Dara – S. Chand Publication, Delhi. 				

<ul style="list-style-type: none"> • Engineering Chemistry- Shashi Chawla, Dhanpat Rai & Company Pvt. Ltd, Delhi. • Engineering Chemistry – Uppal – Khanna Publishers. • A Text book of Engg. Chemistry- Agarwal, C.V, Murthy C.P, Naidu, BS Publication, Hyderabad. • B. Sivasankar, Engineering Chemistry 1 st Edition, Mc Graw Hill Education (India), 2008 • O.G. Palanna, McGraw Hill Education (India) Private Limited, 9 th Reprint, 2015 	
REFERENCE BOOKS:	
<ul style="list-style-type: none"> • Chemistry in Engineering and Technology, Kuriacose J.C. and Rajaram J., Tata McGraw Hill. • Applied Chemistry- Theory and Practice, O.P. Viramani, A.K. Narula, New Age International Pvt. Ltd. Publishers, New Delhi. • Chemistry of Engineering Material-C.V. Agarwal, Andranaidu C. Parameswara Moorthy –B.S. Publications. • William Kemp, Organic Spectroscopy, 3 rd edition, Palgrave, New York, 2005. 	
Modes of Evaluation and Rubric	
Evaluation will be continuous as an integral part of the class as well through external assessment. Laboratory assessment will be based on assignments, presentations, and viva of each candidate.	
List/Links of e-learning resource	
<ul style="list-style-type: none"> • Engineering Chemistry (NPTEL Web-book), by B.L. Tembe, Kamaluddin and M.S. Krishnan • https://nptel.ac.in/course.html • https://iln.ieee.org/resources/e-learning • https://www.researchgate.net/publication/221928462_ELearning_Usage_During_Chemical_Engineering_Courses • https://learncheme.com/ • https://www.anits.edu.in/elearn_c.php 	
Recommendation by Board of studies on	14.6.2022 (Tuesday)
Approval by Academic council on	16.6.2022 (Thursday)
Subject handled by department	Applied Science (Chemistry)



Dr Manju Singh
Prof & Head, Chemistry
UIT, RGPV, Bhopal




Dr Nitin Sapre
Prof & Head, Chemistry
SGSITS, Indore



Dr J Parashar
Dean, Academics
SATI, Vidisha



Dr Manoj Datar
Prof & Head, Chemistry
SATI, Vidisha

 SAMRAT ASHOK TECHNOLOGICAL INSTITUTE (Engineering College), VIDISHA M.P. (An Autonomous Institute Affiliated to RGPV Bhopal) Department of Electrical Engineering												
Semester/Year		I / I		Program				B.Tech				
Subject Category		B.Tech		Subject Code:		EEA101		Subject Name:		Electrical & Electronics Engineering		
Maximum Marks Allotted										Contact Hours		Total Credits
Theory				Practical				Total Marks		L	T	
End Sem	Mid-Sem	Quiz	Assig	End Sem	LW	Quiz	Total Marks		L	T	P	Total Credits
60	20	10	10	30	10	10	150		3	0	2	4
Prerequisites:												
Basics of Physics and Mathematics Basics of electrical and electronic components												
Course Objective:												
1. Familiarize with the basic concept of DC circuits. 2. Impart the knowledge of 1- ϕ and 3- ϕ AC circuits. 3. Impart the knowledge of Transformer and Rotating Machines 4. To explain the basic concepts of electronic devices and number systems.												
Course Outcomes:												
CO1: Acquire knowledge and apply the concept of DC circuits in complex solving. CO2: Understand and apply the concept of AC circuits for solving the circuits. CO3: Acquire and able to evaluate the performance parameters of transformer. CO4: Understand and able to analyze the different types of DC motor and Generator. CO5: Understand and able to apply logic gates for minimization of circuits.												
UNITs	Descriptions										Hrs.	CO's
I	DC Circuits- Electrical circuit elements (R, L and C), voltage and current sources, Kirchhoff's current and Voltage laws, source conversion, DC circuits analysis using mesh & nodal method, Theorems using DC power supply Superposition, Thevenin, star-delta transformation.										10	CO1,C O4
II	AC Circuits- Representation of sinusoidal waveforms, peak and RMS values, phasor representation, real power, reactive power, apparent power, power factor. Analysis of single-phase ac circuits consisting of R, L, C, RL, RC, RLC combinations (series). Three-phase balanced circuits, voltage and current relations in star and delta connections.										06	CO2, CO4
III	Transformer- Review of laws of electromagnetism, MMF, flux, and their relation, analysis of magnetic circuits. Single-phase transformer basic concepts and construction features, voltage, current and impedance transformation, equivalent circuit, losses in transformers, regulation and efficiency										09	CO2,C O3,CO 4
IV	Rotating Electric machines- Constructional details of DC machine, working of induction machine and synchronous machine, working principle of DC machines, classification of DC machine, EMF equation, and characteristic of separately excited and self excited generators. Working principle of DC motor, Importance of back EMF, Starting of DC motor.										07	CO3,C O4
V	Electronics- Types of Resistor, Inductor and capacitor, color coding of resistor and capacitor P-type and N-type semiconductor, semiconductor diode its operation in forward and reverse bias, V-I characteristics, half wave and full wave rectification, application. Binary Number system binary addition, subtraction, multiplication and division, subtraction operation using 1's and 2's complement forms, Octal number system, hexadecimal number system conversion of number system from one number system to another number system, Logic Gates and Universal Gates and its operations.										08	CO2, CO4
Guest Lectures (if any)												
Total Hours											40	
Suggestive list of experiments:												
1. To verify Kirchhoff's voltage law and Kirchhoff's current law (CO4) 2. To verify Thevenin's Theorem by experimental Kit (CO4) 3. To determine active power, reactive power, of a single phase R-L series circuit. (CO2)												



<p>4. To determine the line current, phase current, line voltage, phase voltage, phase current and total power of a three phase balanced star connected load. (CO2)</p> <p>5. To determine the transformation ratio and perform polarity test on a single phase transformer. (CO2)</p> <p>6. To conduct open circuit test and short circuit test on single phase transformer and calculate iron losses and copper loss (CO2)</p> <p>7. To perform load test on single phase transformer and determine voltage regulation and efficiency. (CO3)</p> <p>8. To determine the armature circuit resistance of series field winding resistance, shunt field winding resistance of DC machines. (CO2)</p> <p>9. Design and verify Logic gates using diodes. (CO2, CO4)</p> <p>10. Design and verify Logic gates using transistors. (CO2, CO4)</p> <p>11. To find out resistance value using colour code.</p>																							
<p>Text Book-</p> <ul style="list-style-type: none"> • Basic Electrical & Electronics Engineering by V.N. Mittle & Arvind Mittle. • A text book of electrical technology volume 2 by B L thereja and A K thereja. • Ghosh, Fundamentals of Electrical and Electronics Engineering, PHI, II Edition. 																							
<p>Reference Books-</p> <ol style="list-style-type: none"> 1. Engineering Circuit Analysis by William H hayt and Kimberly 2. Electrical machinery by Dr P S Bhimbra 3. Millman, Halkias & Parikh, Integrated Electronics, Mc Graw Hill, II Edition 4. Nagrath & Kothari, Basic Electrical Engineering, III Edition TMH. 5. Hughes, Electrical and Electronic Technology, Pearson Education IX Edition 																							
<p>Modes of Evaluation and Rubric</p>																							
<table border="1"> <tr> <td rowspan="3">Theory</td> <td>Attendance (5)</td> <td>Midsem (10)</td> <td>Performance (5)</td> <td>Total (20)</td> </tr> <tr> <td>Attendance (5)</td> <td>Assignmet (5)</td> <td>-</td> <td>Total (10)</td> </tr> <tr> <td></td> <td>Quiz (10)</td> <td>-</td> <td>Total (10)</td> </tr> <tr> <td rowspan="2">Practical</td> <td>Attendance (5)</td> <td>Lab Work (5)</td> <td colspan="2">Total (10)</td> </tr> <tr> <td></td> <td>Quiz (10)</td> <td colspan="2">Total (10)</td> </tr> </table>		Theory	Attendance (5)	Midsem (10)	Performance (5)	Total (20)	Attendance (5)	Assignmet (5)	-	Total (10)		Quiz (10)	-	Total (10)	Practical	Attendance (5)	Lab Work (5)	Total (10)			Quiz (10)	Total (10)	
Theory	Attendance (5)		Midsem (10)	Performance (5)	Total (20)																		
	Attendance (5)		Assignmet (5)	-	Total (10)																		
		Quiz (10)	-	Total (10)																			
Practical	Attendance (5)	Lab Work (5)	Total (10)																				
		Quiz (10)	Total (10)																				
<p>List/Links of e-learning resource</p> <ul style="list-style-type: none"> • https://nptel.ac.in/courses/108/108/108108076/ • IISC banglore • https://nptel.ac.in/courses/108/105/108105132/ • IIT kharagpur 																							
Recommendation by Board of studies on	14/6/22																						
Approval by Academic council on	16/6/22																						
Compiled and designed by	Dr. Monika Jain																						
Subject handled by department	Electrical Engg. Dept.																						



SAMRAT ASHOK TECHNOLOGICAL INSTITUTE

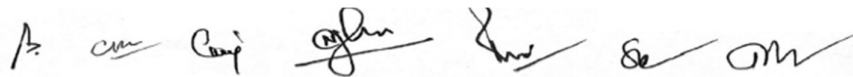
(Engineering College), VIDISHA M.P.

(An Autonomous Institute Affiliated to RGPV Bhopal)

Mechanical Engineering

Semester/Year		I/II		Program			B. Tech				
Subject Category	BSC	Subject Code:	MEA102	Subject Name:	Engineering Graphics						
Maximum Marks Allotted								Contact Hours			Total Credits
Theory				Practical			Total Marks	L	T	P	
End Sem	Mid-Sem	Quiz	Assignment	End Sem	Lab-Work	Quiz					
60	20	10	10	30	10	10	150	03	0	02	04
Prerequisites:											
Basic geometrical construction.											
Course Objective:											
The objective of Engineering Graphics to Enhance imagination and thinking power to create Design of system in any field of engineering, with basic concepts of Engineering Graphics and Design, the students will solve and create models so solve industrial and real-life problems.											
Course Outcomes:											
<ol style="list-style-type: none"> 1. Students should able to understand the various types of Engineering Scales, R.F., Construction of Ellipse and Parabola etc. 2. Learn the fundamentals of points and Straight line and their Importance in Engineering Profession. 3. Understand the Projection of Plane and Solids and their Application 4 Understand the Principal of Development of Surface and Section of Solids 5. Learn about the Isometric Projection and and basic fundamental of CAD/CAM 											
UNITS	Descriptions							Hrs.	CO's		
I	Basic introduction about Drawing, and various instruments required for drawing. Scales: Representative factor, Plain Scales, Diagonal Scales, Scale of Chords Conic Section: Construction of Ellipse, Parabola, hyperbola by different methods; Normal and tangent Special Curves: Cycloid, Epicycloid, Hypocycloid, Involutés, Archimedean, and Logarithmic Spirals							8	1		
II	Projection of points and Straight lines: Projection of Points, concepts of orthogonal projection system. Projection of Lines, Projection of parallel Line, perpendicular line and oblique Line, line placed in two quadrants, line contained by Profile Plane, Traces of lines, methods of determining T.L. and T.I. of oblique line, Rotating line method, Trapezoidal method							8	2		
III	Projection of planes: Projection of perpendicular and oblique plane. Traces of plane. Projection of Solids: Classification of Solids, Position of solids with respect to R.P. projection of platonic solids, polyhedrons, Solids of revolution, projection of solids on Auxiliary plane, Projection of Combination of Solids.							8	3		
IV	Development of Surfaces: Principle of development of surfaces, method of development Parallel line and radial line method for right solid, solids with cutouts, Intersection of cylinders. Section of Solids: Classification of section planes, B.I.S representation, Section of right solids by normal and inclined planes,							8	4		

	Section of platonic solids, True and apparent shape of section.		
V	Isometric projections: Isometric scales, isometric axis, Isometric Projection from orthographic drawing. Computer Aided Drafting (CAD): Introduction, benefits, software's basic command of drafting entities like line, circle, polygon, polyhedron, cylinders, transformations and editing commands like move, rotate, mirror array, solution of projection problems on CAD.	8	5
Guest Lectures (if any)			
Total Hours		40	
Suggestive list of experiments:			
1. Scale 2. Conic Section 3. Engineering Curves 4. Projection of Points 5. Projection of Lines 6. Projection of Planes. 7. Projection of Solids 8. Section of Solids 9. Development of Surfaces 10. Isometric Projection.			
Text Book-			
1. Engineering Drawing by CM Agrawal and Basant Agrawal TMH Publications. 2. A Textbook of Engineering Drawing by R.K. Dhawan			
Reference Books-			
1. N.D. Bhatt and V.M. Panchal, Engineering Drawing Plane and Solid Geometry, Charotar Publishing House. Engineering Drawing and Graphics by K. Venugopal 2. Engineering Graphics by B. Bhattacharyya 3. Technical Drawing with Engineering Graphics by Frederick E Giesecke and Ivan L Hill 4. Engineering Graphics by T. Jeyapooan, S. Gowri			
Modes of Evaluation and Rubric			
There will be continuous evaluation for during the semester for 40 sessional marks and 60 semester End term Marks. The practical marks are 50, out of which 30 marks will be awarded for viva voce and 20 marks for lab work. Out of 40 sessional marks, 20 shall be awarded for Mid semester, 20 marks to be awarded for day to day performance and Quiz/Assignments. For the 60 Marks, there will be a semester – End examination as per the norms of AICTE.			
Recommendation by Board of studies on			
Approval by Academic council on			
Compiled and designed by			
Subject handled by department			





SAMRAT ASHOK TECHNOLOGICAL INSTITUTE
(Engineering College), VIDISHA M.P.
(An Autonomous Institute Affiliated to RGPV Bhopal)
Department of Humanities and Management

Semester/Year		I/II	Program			B.Tech.				
Subject Category	Hum	Subject Code:	HUB102	Subject Name:	Communication and Report Writing					
Maximum Marks Allotted										
Theory				Practical -		Total Marks	Contact Hours			Total Credits
End Sem	Mid-Sem	Quiz	Assignment	End Sem	Lab-Work		L	T	P	
60	20	10	10	-	-	100	3	-	2	4
Prerequisites:										
In this era of Globalization and Information Technology, English has a special and predominant role in the communicative sphere and thus English commands the most prestigious position in the world in the exchange of information across geographical boundaries. The syllabus has been designed to develop linguistic and communicative competence of Engineering Students.										
Course Objective:										
<ol style="list-style-type: none"> 1. To improve the language proficiency of the students in English with emphasis on LSRW Skills. 2. To enable the students to study and comprehend the prescribed lessons and subjects more effectively relating to their theoretical and practical components. 3. To develop the communication skills of the students in both formal and informal situations. 										
Course Outcomes:										
<ol style="list-style-type: none"> 1. Students will develop the ability to listen, speak, read and write effectively in both academic and non-academic environment. 2. The students will have an understanding of multidisciplinary contexts. 3. They will be able to successfully handle real life situations of business correspondence. 4. They will also develop the ability to analyse and interpret any technology related subjects. 5. Students will be in a position to make presentations on topics of technical and general interests; current issues related to politics; work and business environment. 										
UNITs	Descriptions						Hrs.	CO's		
I	Significance of Communication: Process of Communication, The importance of Effective Communication in Business, Verbal and Non-Verbal Communication, Oral and Written Communication, Barriers to Communication.						10	1		
II	Employability Traits: Job Interview (Body Language), Types of Interviews, Interview Skills, Employability Skills, Group Discussion.						6	2		
III	Soft Skills: Goal Setting, Qualities of a good leader, Time Management, Time Wasters, Problem Solving.						8	3		
IV	Report Writing: Definition, Importance, Types of Reports, Structure and Layout, Technical Writing, Essay Writing.						8	4		
V	Applied Grammar in Communication: Articles, Punctuations, Question Tags, Subject-Verb, Agreement, Prepositions, Narration.						8	5		
Guest Lectures (if any)										
Total Hours							40			
Suggestive list of experiments: NA										
1. NA										
Text Book-										
1. A.J. Thomson and A.V. Martinet, A Practical English Grammar, Oxford IBH Pub Sanjay Kumar PushpLata, English for Effective Communication, Oxford.										
Reference Books-										
<ul style="list-style-type: none"> • Language and Life: A Skills Approach Board of Editors, Orient Black Swan Publishers, India. 2018. • 3. Business Correspondence and Report Writing - By R C Sharma; TMH. • 4. Living English Structure – By W.S. Allen; Longmans. • 5. English Grammar – Ehrlich, Schaum Series; TMH. 										

<ul style="list-style-type: none"> • 6. Spoken English for India – By R.K. Bansal and IB Harrison Orient Longman. • 7. New International Business English – by Joans and Alexander; OUP. • 8. Effective Technical Communication – Rizvi; TMH • 9. Body Language – Vinay Mohan Sharma 	
Modes of Evaluation and Rubric	
Two mid semester tests, Quiz, Sessional an end semester examination.	
List/Links of e-learning resource	
<ul style="list-style-type: none"> • https://onlinecourses.nptel.ac.in • https://www.classcentral.com (swayam) 	
Recommendation by Board of studies on	26/02/2022
Approval by Academic council on	
Compiled and designed by	Dr. Amitish Singh, Dr. Manorama Saini and Dr. Veena Datar
Subject handled by department	Department of Humanities

H. V.
15/06/2022

[Handwritten signature]

[Handwritten signature]

[Handwritten signature]



SAMRAT ASHOK TECHNOLOGICAL INSTITUTE
(Engineering College), VIDISHA M.P.
 (An Autonomous Institute Affiliated to RGPV Bhopal)
Computer Science and Engineering

Semester/Year				Program			B.Tech.				
Subject Category	ESC	Subject Code:	ITC110	Subject Name:			Python Programming Lab				
Maximum Marks Allotted								Contact Hours			Total Credits
Theory				Practical							
End Sem	Mid-Sem	Assignment	Quiz	End Sem	Lab-Work	Quiz	Total Marks	L	T	P	
-	-	-	-	30	10	10	150	1	0	2	2
Prerequisites:											
<ul style="list-style-type: none"> • High School Level Mathematics • Elementary Knowledge of Computer 											
Course Objective:											
This course introduces core programming basics—including data types, control structures, algorithm development, and program design with functions via the Python programming language. The course discusses the fundamental principles of Object-Oriented Programming.											
Course Outcomes:											
Upon completion of this course, the student will be able to:											
CO-1: Ability to install python and its different packages.											
CO-2: Implement solution logic of problem and draw it in the form of algorithm.											
CO-3: Design and write a python program for given algorithm.											
CO-4: Understand and apply the list logics to problem solution.											
UNITs											
		Descriptions						Hrs.		CO's	
I		Introduction to computer science, algorithms, data representation in computers, hardware, software and operating system. Installation of python- interactive shell, IDLE, saving, editing, and running a script. The concepts of datatypes: variables, immutable variables, numerical types, operators, expressions, Indentation and comments in the program.						8		CO1	
II		Conditional Statements- Conditions, Boolean Logic, Logical operators and Ranges. Control Statements- Break, Continue and Pass. Flow Control-if, if-else, nested if-else, Loop statements- for loop, while loop, Nested loops.						8		CO2	
III		String: subscript operator, indexing, slicing a string; strings and number system: converting strings to numbers and vice versa. Strings and text files, manipulating files and directories, os and sys modules, text files: reading/writing text and numbers from/to a file, creating and reading a formatted file (csv or tab-separated).						9		CO3	
IV		Lists, tuples, and dictionaries. Basic list operators, replacing, inserting, removing an element, searching and sorting lists, dictionary literals, adding and removing keys, accessing and replacing values, traversing dictionaries.						7		CO4	
V		Functions- Definition and Calling, Recursion, Modules and Package-Design and usages.						5		CO4	
Guest Lectures (if any)								--			
Total Hours								40			
List of Experiments											
<ol style="list-style-type: none"> 1. Write a program in python to check a number whether it is prime or not. 2. Write a program to check a number whether it is palindrome or not. 3. Write a function to swap the values of two variables through a function. 4. Write a python program to Read a file line by line and print it. 5. Write a program to display the number of lines in the file and size of a file in bytes. 											

Dr. Kanak Saxena
 Chairperson

6. Write a program to calculate the factorial of an integer using recursion.
7. Write a program to print Fibonacci series using recursion.
8. Write a program for binary search.
9. Python Program for Sum of squares of first n natural numbers.
10. Python Program to find sum of array.
11. Python program to read character by character from a file.
12. Python Program to print with your own font.
13. Python program to print even length words in a string.
14. Python program to check if a string is palindrome or not.
15. Program to print ASCII Value of a character.
16. Python program to find smallest and largest number in a list.
17. Python program to find the size of a Tuple.

Text Books-

- M. Mano, "Digital Logic and Computer Design", Pearson Education.
- T. L. Floyd, "Digital Fundamentals", Pearson Education.
- A. Anand Kumar, "Fundamentals of Digital Circuits", PHI.

Modes of Evaluation and Rubric

The evaluation modes consist of performance in Two mid-semester Tests, Quiz/ Assignments, term work, end-semester examinations, and end-semester practical examinations.

List/Links of e-learning resource

List and Links of e-learning resources:

4. <https://nptel.ac.in/courses/108/105/108105132/>
5. <https://de-iitr.vlabs.ac.in/>

Recommendation by Board of studies on	June-2022
---------------------------------------	-----------

Approval by Academic council on	June-2022
---------------------------------	-----------

Compiled and designed by	CS & IT
--------------------------	---------

Subject handled by department	CS & IT
-------------------------------	---------

Dr. Kanak Saxena

Dr. Kanak Saxena

Sunil

Dr. Kanak Saxena
Chairperson



SAMRAT ASHOK TECHNOLOGICAL INSTITUTE
(Engineering College), VIDISHA M.P.
(An Autonomous Institute Affiliated to RGPV Bhopal)
Department of Humanities and Management

Semester/Year		II Year		Program			B.Tech All Branches				
Subject Category	MAC	Subject Code:	MAC102	Subject Name:	Professional Ethics and Social Responsibility						
Maximum Marks Allotted								Contact Hours			Total Credits
Theory				Practical			Total Marks	L	T	P	
End Sem	Mid-Sem	Quiz	Assignment	End Sem	Lab-Work	Quiz					
00	00	00	00	30	10	10	50	0	0	2	Grade
Prerequisites:											
To enable the students to instill moral, to create an awareness of professional ethics, human values, loyalty and social responsibility.											
Course Objective:											
At the end of the course, the students will be able to:											
<ol style="list-style-type: none"> 1. To learn the importance of values and ethics in personal life and professional careers. 2. To gain knowledge of ethical behavior. 3. To acquire the basics of social responsibility. 											
Course Outcomes:											
<ol style="list-style-type: none"> 1. To imbibe and internalize the basic purpose of human values. 2. To appreciate professional rules and codes of conduct in personal life and professional careers. 3. To know the importance of values and ethics in professional behavior. 4. To impart norms of professional ethics in life through rationality, consistency and impartiality. 5. To inculcate the sense of social responsibility. 											
UNITs	Descriptions							Hrs.	CO's		
I	Principles of professional ethics: honesty, trustworthiness, loyalty, being law-abiding, no sinister motives, socially responsible, respect, accountability and fairness to all							8	1		
II	Codes of conduct: public, clients, professional community, profession, workplace rights and responsibilities, other stakeholders.							6	2		
III	Factors necessitating professional ethics: advisory responsibilities, contractual duties; The importance of ethical behavior in business.							4	3		
IV	Personal ethics: impartiality, rationality, consistency and reversibility Norms of professional ethics in our life.							8	4		
V	Corporate social responsibility: environmental, philanthropic, ethical,							9	5		

	and economic responsibility.		
Guest Lectures (if any)		2	
Total Hours		40	
Suggestive list of experiments:			
1. N.A			
1. Text Book- Professional ethics includes Human values, R. Subramanian, Oxford higher education.			
Reference Books-			
2. Professional Ethics and Social Responsibility, Daniel E. Wueste, Rowman and Littlefield Publication, INC			
3. Professional ethics and human values, R. S. Naagarazan, New age international (P) limited ,New Delhi,2006.			
4. Human values and professional ethics,Jayshree Suresh, B. S. Raghvan,S. Chand			
5. http://www.slideword.org/slidestag.aspx/human-values-and-Professional-ethics .			
Modes of Evaluation and Rubric			
Questionnaire,Quiz,Presentation and standard procedure will be followed .			
List/Links of e-learning resource			
<ul style="list-style-type: none"> • https://onlinecourses.nptel.ac.in • https://www.classcentral.com (swayam) 			
Recommendation by Board of studies on	26/02/2022		
Approval by Academic council on			
Compiled and designed by	Dr. Manorama Saini and Dr. VeenaDatar		
Subject handled by department	Humanities and Management		

H. S.
15/06/2022

S. S.

S. S.

S. S.