VASAVI COLLEGE OF ENGINEERING
(AUTONOMOUS)

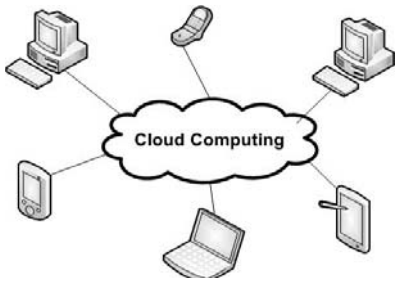
IBRAHIMBAGH, HYDERABAD-500 031

ACCREDITED BY NAAC WITH A++ GRADE

Approved by A.I.C.T.E., New Delhi and
Affiliated to Osmania University, Hyderabad-07

Sponsored by
VASAVI ACADEMY OF EDUCATION
Hyderabad

SCHEME OF INSTRUCTION AND SYLLABI UNDER CBCS FOR
B.E. (IT) I and II Semesters with effect from 2021-2022
(For the batch admitted in 2021-22)
(R-21)



DEPARTMENT OF INFORMATION TECHNOLOGY
+91-40-23146050, 23146051
Fax: +91-40-23146090
Website: www.vce.ac.in

VASAVI COLLEGE OF ENGINEERING
(AUTONOMOUS)
IBRAHIMBAGH, HYDERABAD-500 031

Vision

Striving for a symbiosis of technological excellence and human values.

Mission

To arm young brains with competitive technology and nurture holistic development of the individuals for a better tomorrow.

Quality Policy

Education without quality is like a flower without fragrance. It is our earnest resolve to strive towards imparting high standards of teaching, training and developing human resources.

DEPARTMENT OF INFORMATION TECHNOLOGY

Vision

To be a centre of excellence in core Information Technology and multidisciplinary learning and research, where students get trained in latest technologies for professional and societal growth.

Mission

To enable the students acquire skills related to latest technologies in IT through practice- oriented teaching and training.

VASAVI COLLEGE OF ENGINEERING
(AUTONOMOUS)
IBRAHIMBAGH, HYDERABAD-500 031

DEPARTMENT OF INFORMATION TECHNOLOGY

Programme Educational Objectives (PEOs) for IT Program

The Programme will produce graduates

PEO1. With theoretical and practical knowledge to obtain employment or pursue higher studies and solve problems in Information Technology.

PEO2. With effective written and oral communication skills that will help them to work in diversified and dynamic working environments.

PEO3. With competence to succeed in their professional lives with ethical values.

Program Specific Outcomes (PSOs) for IT Program

The Students will demonstrate

PSO1. Competency in programming using different programming languages to implement algorithms.

PSO2. Competency in the analysis and design of a software solution using different modelling tools.

PSO3. Competency in Electronic Design and Embedded System Design using different simulation tools.

Program Outcomes (POs) for IT Program

At the end of the program, the graduates will demonstrate

1. **Engineering knowledge:** Apply the knowledge of mathematics, science, engineering fundamentals, and an engineering specialization to the solution of complex engineering problems.
2. **Problem analysis:** Identify, formulate, review research literature, and analyze complex engineering problems reaching substantiated conclusions using first principles of mathematics, natural sciences, and engineering sciences.
3. **Design/development of solutions:** Design solutions for complex engineering problems and design system components or processes that meet the specified needs with appropriate consideration for the public health and safety, and the cultural, societal, and environmental considerations.

4. **Conduct investigations of complex problems:** Use research-based knowledge and research methods including design of experiments, analysis and interpretation of data, and synthesis of the information to provide valid conclusions.
5. **Modern tool usage:** Create, select, and apply appropriate techniques, resources, and modern engineering and IT tools including prediction and modeling to complex engineering activities with an understanding of the limitations.
6. **The engineer and society:** Apply reasoning informed by the contextual knowledge to assess societal, health, safety, legal and cultural issues and the consequent responsibilities relevant to the professional engineering practice.
7. **Environment and sustainability:** Understand the impact of the professional engineering solutions in societal and environmental contexts, and demonstrate the knowledge of, and need for sustainable development.
8. **Ethics:** Apply ethical principles and commit to professional ethics and responsibilities and norms of the engineering practice.
9. **Individual and team work:** Function effectively as an individual, and as a member or leader in diverse teams, and in multidisciplinary settings.
10. **Communication:** Communicate effectively on complex engineering activities with the engineering community and with society at large, such as, being able to comprehend and write effective reports and design documentation, make effective presentations, and give and receive clear instructions.
11. **Project management and finance:** Demonstrate knowledge and understanding of the engineering and management principles and apply these to one's own work, as a member and leader in a team, to manage projects and in multidisciplinary environments.
12. **Life-long learning:** Recognize the need for, and have the preparation and ability to engage in independent and life-long learning in the broadest context of technological change.

VASAVI COLLEGE OF ENGINEERING (AUTONOMOUS)
SCHEME OF INSTRUCTION AND EXAMINATION (R-21)
B.E. – INFORMATION TECHNOLOGY : FIRST SEMESTER (2021 - 2022)

B.E (IT) I Semester								
Course Code	Name of the Course	Scheme of Instruction			Scheme of Examination			
		Hours per Week			Duration in Hrs	Maximum Marks		Credits
		L	T	P/D		SEE	CIE	
THEORY								
U21HS110EH	English Language and Communication	2	-	-	3	60	40	2
U21BS110MA	Calculus and Linear Algebra	3	-	-	3	60	40	3
U21BS110PH	Semiconductor Physics and Optoelectronic Devices	3	-	-	3	60	40	3
U21ES120CS	Programming for Problem Solving	3	-	-	3	60	40	3
U21ES010EE	Basic Electrical Engineering	2	-	-	3	60	40	2
U21ES030CE	Basic Engineering Drawing	1	-	2	3	60	40	2
U21MC010ME	Introduction to Entrepreneurship	1	-	-	2	40	30	-
PRACTICALS								
U21HS111EH	English Language and Communication Skills Lab	-	-	2	3	50	30	1
U21BS111PH	Semiconductor Optoelectronics Lab	-	-	2	3	50	30	1
U21ES121CS	Programming for Problem Solving Lab	-	-	2	3	50	30	1
U21ES011EE	Basic Electrical Engineering Lab	-	-	2	3	50	30	1
Library / Sports / Personality Development Programme / Mentor Interaction		-	-	-	-	-	-	-
Total		**15**	**-**	**10**	--	**600**	**390**	**19**
Grand Total		**25**			--	**990**		

Note:
1. One hour is allotted to Library / Sports / Personality Development Programme / Mentor Interaction.
2. The left over hours are to be allotted to CC / RC / TC based on the requirement.

VASAVI COLLEGE OF ENGINEERING (AUTONOMOUS), HYDERABAD
DEPARTMENT OF HUMANITIES & SOCIAL SCIENCES

ENGLISH LANGUAGE AND COMMUNICATION
(Common to all branches) I SEMESTER – 6 branches
II SEMESTER – 7 branches
SYLLABUS FOR B.E. 1/4

L:T:P (Hrs./week): 2:0:0	SEE Marks : 60	Course Code : **U21HS110EH**
Credits : 2	CIE Marks : 40	Duration of SEE : 3 Hours

COURSE OBJECTIVES	**COURSE OUTCOMES**
The course will enable the learners to:	**At the end of the course the learners will be able to: -**
1. Understand the role and importance of communications skills.	1. Communicate effectively, appropriately and ethically in both professional & personal spheres.
2. Develop the habit of listening effectively to various speakers and lectures.	2. Listen for gist and make inferences from various speeches and converse intelligibly in various contexts.
3. Develop reading strategies in order to understand various types of texts	3. Comprehend, appreciate, evaluate and infer various text types.
4. Understand the various features and formats of writing.	4. Compose letters and essays, coherently and cohesively using discourse marks.
5. Comprehend grammar constructs and vocabulary used in different contexts.	5. Construct grammatically correct sentences using adequate vocabulary.

UNIT-1 1.0 Effective communication and Interpersonal skills

1.1 Role and Importance of language and Communication; Functions of communication; Process of Communication; Types of communication; Styles of Communication; Channels of communication; Barriers in communication and how to overcome them. Politeness theory.

1.2 Johari Window

1.3 Team building skills and team work

1.4 Persuasion techniques

UNIT-2 2.0 Listening and Speaking skills

2.1 Importance of listening for effective communication; Elements of Active listening.

2.2 Speaking skills: -Speaking strategies; Telephone etiquette.

UNIT-3 3.0 Reading and Writing skills

3.1 Sub-skills of Reading; Understanding the functions of different texts, Reading Comprehension-Global and Local.

3.2 Features of Writing: -

Organizing principles of writing paragraphs-Coherence, Cohesion & Unity; Use of appropriate linkers. Paraphrasing and Summarizing skills.

3.3 Written Communication:

- Email etiquette
- Request letters
- Creative writing- Pictionary, Taglines, Script Writing

UNIT-4 4.0 Vocabulary Building and Grammar

4.1 **Vocabulary Building**: The concept of Word Formation-Prefixes and Suffixes; Synonyms, Antonyms, and Standard abbreviations. Word origin-Etymology; One-word substitutes; Collocation; Idioms.

4.2 **Functional Grammar**: Articles, Prepositions; Tense and Aspect; Subject- Verb agreement; Connectives; Direct and Indirect Speech; Active-Passive

All these aspects will be taught as common errors.

UNIT-5 5.0 Reading for appreciation of literary texts

5.1 Prose text- On Shaking Hands- A G Gardiner.

5.2 Poem-What life should be-Patricia A Fleming.

Prescribed textbook for theory:

Technical communication - Principles and Practice (2nd Edition 2014) - Meenakshi Raman and Sangeeta Sharma-Oxford University Press.

Suggested Reading

E.Suresh kumar, P. Sreehari and J. Savithri - Essential English
Reading comprehension - Nuttal.J.C - Orient Blackswan
Sunitha Mishra,C. Murali Krishna, Communication Skills for Engineers, Pearson, 2004.
M. Ashraf Rizvi. Effective Technical Communication. Tata Mcgraw Hill, 2005.
Allen and Waters., How English Works.
Willis Jane., English through English.
Brown, Penelope and Stephen C. Levinson. 1978. Universals in language usage: politeness phenomena: Cambridge University Press

The break-up of CIE: Internal Tests+ Assignments + Quizzes

1	No. of Internal Tests:	02	Max.Marks for each Internal Tests:	30
2	No. of Assignments:	03	Max. Marks for each Assignment:	05
3	No. of Quizzes:	03	Max. Marks for each Quiz Test:	05

Duration of Internal Test: **120 Minutes**

VASAVI COLLEGE OF ENGINEERING (AUTONOMOUS)
Accredited by NAAC with A++ Grade
9-5-81, Ibrahimbagh, Hyderbad-500031, Telangana State
DEPARTMENT OF MATHEMATICS

CALCULUS & LINEAR ALGEBRA
for B.E., I- Sem., (CBCS)
(Common to CSE, CSE-AIML & IT)

L:T:P (Hrs./week): 3:1:0	SEE Marks : 60	Course Code : **U21BS120MA**
Credits : 3	CIE Marks : 40	Duration of SEE : 3 Hours

COURSE OBJECTIVES	COURSE OUTCOMES
The course will enable the students to:	***At the end of the course students should be able to:***
1. Understand The concepts of curvature, radius of curvature, evolutes and to expand functions using Taylor's series. **2. Acquire** knowledge of partial derivatives, and expand functions using Taylor's series functions of two real variables and maxima- minima. **3.Study** the concepts of Vector Spaces, Subspaces, and use in Linear transformations and study Rank-Nullity theorem **4. Learn** Inner Product Spaces, Orthonormal sets, Gram-Schmidt's Orothogonalization process. **5. Identify** convergence of infinite series using various tests.	**1. Compute** radius of curvature, evolute of a given curve and also to expand given function using Taylor's series. **2. Expand** the given function in terms of Taylor's series and find Maxima and minima of functions of several variables also using Lagrange's method of multipliers. **3. Apply** concepts of Vector Spaces on Linear transformations and Rank-Nullity theorem **4. Determine** distance using Inner product space and construct Orthonormal basis using Gram-Schmidt's Orothogonalization process. **5. Apply** an appropriate test to check the nature of the infinite series.

UNIT- I

DIFFERENTIAL CALCULUS
Taylor's Series – Maclaurin's Series- Curvature- Radius of Curvature – Centre of Curvature –Evolutes. (Cartesian and Parametric co-ordinates)

UNIT –II

FUNCTIONS OF SEVERAL REAL VARIABLES
Limits- Continuity -Partial Derivatives-Higher Order Partial Derivatives-Total Derivates - Derivatives of Composite and implicit functions - Taylor's series of functions of two variables - Maxima and Minima of functions of two variables - Lagrange's Method of multipliers.

UNIT-III:

VECTOR SPACES
Definition of Vector Space - Vector Subspaces –Linear Dependence and Independence of vectors- Basis of a Vector Space –Dimension of a Vector Space – Linear Transformation- Inverse Linear Transformation- Range and kernel of a linear map – Dimension of Range and Kernel - Rank and nullity – Rank nullity theorem (without proof)

UNIT-IV

MATRICES
Rank of a Matrix- Characteristic equation- -Eigen values and Eigenvectors-Orthogonal Transformation -Diagonalization using Similarity Transformation- Inner Product Space- Gram-Schmidt's Ortho-normalization process.

UNIT-V

INFINITE SERIES
Definition of Sequences- Series – Convergence and Divergence- Series of positive terms-Geometric series- p-series test - Comparison tests - D'Alemberts Ratio Test – Cauchy's root test - Alternating Series – Leibnitz test – Absolute and Conditional convergence.

Text Books:

1. Advanced Engineering Mathematics, Third Edition, R. K. Jain and S. R. K. Iyengar, Narosa Publishing House.
2. Higher Engineering Mathematics, B. S. Grewal 40th. Edition, Khanna Publishers.
3. Introduction to linear algebra with applications, Jim DeFranza, Daniel Gagliardi, Tata McGraw-Hill
4. Operational Mathematics by R.V. Churchill, Mc Graw-Hill Book Company, INC.

Reference Books:

1. Advanced Engineering Mathematics 8th Edition by Erwin Kreyszig , John Wiley & Sons.
2. Differential Calculus by Shanti Narayan S. Chand & Co
3. Elementary Linear algebra, Anton and Rorres, Wiley India Edition
5. An introduction to Linear Algebra, V.P Mainra, J.L Arora, Affiliated to East-West Press Pvt Ltd

Online Resources :

1. **http://mathworld.wolfram.com/topics**
2. **http://www.nptel.ac.in/course.php**
3. **https://www.coursera.org/in**
4. **https://codingthematrix.com**

The break-up of CIE: Internal Tests+ Assignments + Quizzes

1	No. of Internal Tests:	02	Max.Marks for each Internal Tests:		30
2	No. of Assignments:	03	Max. Marks for each Assignment:		05
3	No. of Quizzes:	03	Max. Marks for each Quiz Test:		05

Duration of Internal Test: **90 Minutes**

VASAVI COLLEGE OF ENGINEERING (AUTONOMOUS)
IBRAHIMBAGH, HYDERABAD-31

DEPARTMENT OF PHYSICS

B.E Syllabus for CSE and IT Branches w.e.f 2021-2022

SEMICONDUCTOR PHYSICS AND OPTOELECTRONIC DEVICES

L:T:P (Hrs./week): 3:1:0	SEE Marks : 60	Course Code : **U21BS110PH**
Credits : 3	CIE Marks : 40	Duration of SEE : 3 Hours

Course Objectives	Course Outcomes
1. Demonstrate the use of crystal structure in devices applications	1. Classify crystals based on their structure and apply effects of defects on manipulation of properties of solids.
2. Appreciate the merits of quantum mechanics over classical mechanics	2. Apply Schrodinger wave equation to quantum mechanical systems and obtain eigen values
3. Explain classification of solids based on band theory of solids.	3. Illustrate types of semiconductors along with energy band diagrams.
4. Describe working of optoelectronic devices	4. Categorize optoelectronic devices and explain their device structure
5. Distinguish types of optical fibers and list loses optical fibers	5. Summarize merits and demerits of optical fibers and interpret losses in optical fibers.

UNIT-I: FUNDAMENTALS OF CRYSTALLOGRAPHY

Introduction-Space lattice, Basis, primitive and non-primitive unit cells, Bravais lattices and crystal systems, Miller Indices, expression for inter planar spacing (d_{hkl}), X-ray diffraction: Bragg's law, powder x- ray diffraction, crystalline, polycrystalline and amorphous materials, Diamond Structure, Point Defects, expression for concentration of Schottky and Frankel defects.

UNIT-II: INTRODUCTION TO QUANTUM MECHANICS AND SOLID STATE PHYSICS

Quantum Mechanics: Wave-particle duality, de Broglie Hypothesis, uncertainty principle, wave function and its significance, bra and ket vector notation, Schrodinger time dependent and independent wave equations, basics of quantum mechanical operators, Eigen values and Eigen functions of infinite square-well potential (particle in a box).

Solid State Physics: Band theory, Kronig-Penny model-introduction to origin of band gap, E-k diagram, effective mass, energy bands in solids and classification of materials as conductors, semiconductors, and insulators.

UNIT-III: SEMICONDUCTOR PHYSICS

Intrinsic semiconductors, extrinsic semiconductors-doping, acceptor and donor impurities, Fermi energy level, density of states, expression for intrinsic and extrinsic carrier concentration (equilibrium carrier statistics), conductivity of intrinsic and extrinsic semiconductor, law of mass action, variation of Fermi level with doping and temperature, Direct and indirect band gap semiconductors, non- radiative and radiative recombination in semiconductors, Hall effect and its applications, energy band diagram of an unbiased PN junction.

UNIT-IV: OPTOELECTRONIC DEVICES

Light Emitting Diode (LED): Electro-luminescence, differences between homo and hetero junction LEDs, construction and working of homo junction LED, characteristics of LED, quantum efficiency of LED, advantages and applications of LED.

Lasers: induced absorption, spontaneous and stimulated emissions**,** characteristics of lasers, meta-stable states, population inversion, pumping, components of laser, types of lasers, construction and working of Ruby laser, He-Ne laser, semiconductor laser, advantages, and applications of lasers.

Photodetectors: Principle of a photodetector, construction and working of a photo-detectors:- photo-diode and PIN diode, applications of photo-detectors.

Solar Cell: Photovoltaic effect, construction and working of solar cell, V-I characteristics of solar cell, conversion efficiency, fill factor, generations of solar cells, applications of solar cells.

UNIT-V: FIBER OPTICS

Introduction, total internal reflection, propagation of light in optical fibre, numerical aperture, acceptance angle, types of optical fibres, evanescent field, light sources for optical fibers, various signal losses in optical fibers: Attenuation-Absorption, Scattering, bending, alignment losses, Signal distortion: intermodal and intra model dispersions, block diagram of optical communication system, advantages and application of optical fibers.

Learning Resources:

1. Charles Kittel, Introduction to Solid State Physics, 7th Edition, John Wiley & Sons, 2008.
2. Arthur Beiser, Shobhit Mahajan and S Rai Choudhury, Concepts of Modern Physics, Tata McGraw 6th Edition Tata McGraw,2009.
3. Donald A Neamen, Semiconductor Physics and Devices, , 3rd Edition, Tata McGraw 2008.
4. S.O. Kasap, Optoelectronic and Photonics: Principles and Practices, Pearson, 2012
5. Gerd Keiser, Optical Fiber Communications, 4th edition, Tata McGraw, 2010
6. M.N. Avadhanulu and P.G. Kshirsagar and TVS Arun, Murthy A Textbook Engineering Physics, 11th Edition, S. Chand, 2018.
7. R. Murugeshan and K Sivaprasath, Modern Physics, S. Chand, 18th Edition, 2019.
8. M.R Shenoy, NPTEL MOOCS course, Semiconductor opto-electronics. 2020

The break-up of CIE: Internal Tests+ Assignments + Quizzes

1	No. of Internal Tests:	02	Max.Marks for each Internal Tests:	30
2	No. of Assignments:	03	Max. Marks for each Assignment:	05
3	No. of Quizzes:	03	Max. Marks for each Quiz Test:	05

Duration of Internal Test: **90 Minutes**

VASAVI COLLEGE OF ENGINEERING (AUTONOMOUS)
IBRAHIMBAGH, HYDERABAD – 500 031

Department of Computer Science & Engineering
Course Name: PROGRAMMING FOR PROBLEM SOLVING

SYLLABUS FOR B.E. I-SEMESTER
(Common to CSE, AI&ML, IT, ECE and EEE)

L:T:P (Hrs./week): 3:0:0	SEE Marks : 60	Course Code :**U21ES120CS**
Credits : 3	CIE Marks : 40	Duration of SEE : 3 Hours

COURSE OBJECTIVES	**COURSE OUTCOMES** *On completion of the course, students will be able to*
1. Acquire problem solving skills 2. Develop flow charts. 3. Understand structured programming concepts. 4. Write programs in C Language.	1. Design flow charts and algorithms for solving a given problem using the fundamentals of programming. 2. Apply decision making, looping constructs and functions to develop programs for a given problem. 3. Store data using arrays and perform searching and sorting operations on the data 4. Design programs on string handling and operations on arrays using dynamic 5. Develop programs to store data and perform operations using structures and files.

UNIT-I:
Introduction to Computers: Computer Systems, Computing Environments, Computer Languages, Creating and Running Programs, Software Development, Flowcharts. Number Systems (Binary, Octal, Decimal and Hexadecimal), Representation of Numbers (Fixed and Floating Point).
Introduction to C Language: Background, C Programs, Identifiers, Types, Variables, Constants, Input/Output, Expressions, Precedence and Associativity, Side Effects, Evaluating Expressions, Type Conversion, Statements, Bitwise Operators.

UNIT-II:
Selection: Logical Data and Operators, if... else, switch Statements, Standard Functions. **Repetition:** Loops, while, for, do-while Statements, Loop Examples, break, continue, goto.
Functions: Designing Structured Programs, Functions Basics, User Defined Functions, Inter-Function Communication, Standard Functions, Scope, Storage Classes-Auto, Register, Static, Extern, Scope Rules and Type Qualifiers.

UNIT-III:
Recursion: Recursive Functions, Preprocessor Commands.
Arrays: Concepts, Using Arrays in C, Inter-Function Communication, Array Applications, Two-Dimensional Arrays, Multi dimensional Arrays, Linear Search and Binary Search, Selection Sort and Bubble Sort.

UNIT-IV:
Pointers: Introduction, Pointers for Inter-Function Communication, Pointers to Pointers, Compatibility, LValue and RValue, Arrays and Pointers, Pointer Arithmetic and Arrays, Passing on Array to a Function, Memory Allocation Functions, Array of Pointers, Programming Applications, Pointers to void, Pointers to Functions, Command Line Arguments.
Strings: Concepts, C Strings, String Input/Output, Functions, Arrays of Strings, String Manipulation functions

UNIT-V:
Type Definition (typedef), Enumerated Types.
Structure: Definition and Initialization of Structures, Accessing Structures, Nested Structures, Arrays of Structures, Structures and Functions, Pointers to Structures, Self Referential Structures, Unions.

Input and Output: Files, Streams, Standard Library Input/Output Functions, Character Input/Output Functions.

Learning Resources:

1. Forouzan B.A& Richard F.Gilberg, A Structured Programming Approach using C,3rd Edition(2013), Cengage Learning.
2. Brian W. Kernighan and Dennis M. Ritchie, The C Programming Language, 2ndEdition (2006), Prentice-Hall.
3. Rajaraman V, The Fundamentals of Computer, 4th Edition(2006), Prentice-Hall of India
4. Steve Oualline, Practical C Programming, 3rd Edition(2006),O'Reilly Press.
5. Jeri R.Hanly, Elliot B.Koffman, Problem Solving and Program Design in C, 5th Edition(2007), Pearson Education.
6. Balagurusamy E, Programming in ANSI C, 4th Edition(2008),TMG.
7. Gottfried, Programming with C, 3rd Edition(2010), TMH.
8. R G Dromey, How to Solve it byComputer,1st Edition(2006), Pearson Education.

The break-up of CIE: Internal Tests+ Assignments + Quizzes

1	No. of Internal Tests:	02	Max.Marks for each Internal Tests:	30
2	No. of Assignments:	03	Max. Marks for each Assignment:	05
3	No. of Quizzes:	03	Max. Marks for each Quiz Test:	05

Duration of Internal Test: **90 Minutes**

VASAVI COLLEGE OF ENGINEERING (Autonomous)
IBRAHIMBAGH, HYDERABAD – 500 031

Department of Electrical & Electronics Engineering
Basic Electrical Engineering

SYLLABUS FOR B.E I – SEMESTER
(for IT Branch)

L:T:P(Hrs/week):2:0:0	SEE Marks:60	Course Code: **U21ES010EE**
Credits : 2	CIE Marks:40	Duration of SEE: 3 Hours

COURSE OBJECTIVES	COURSE OUTCOMES On completion of the course, students will be able to
1. To provide an understanding of basics in Electrical circuits 2. To explain the working principles of Electrical Machines.	1. Analyze Electrical Dc circuits using different analyzing methods and theorems. 2. Analyze Electrical single phase and three phase AC circuits 3. Comprehend the working principles of DC machines 4. Comprehend the working of single phase transformer and various Electrical switchgear, electrical energy consumption and power factor improvement 5. Comprehend the working principles of AC machines

Unit-I: D.C. Circuits:
Electrical circuit elements (R, L and C), independent voltage and current sources, Kirchhoff current and voltage laws, Source transformation, Mesh Analysis, Nodal analysis, Superposition theorem, Thevinin's and Norton's Theorem, Maximum power transfer theorem, Tellegen's theorem.

Unit II: A.C. Circuits:
Representation of sinusoidal waveform - peak and rms values, form factor, phasor representation, real power, reactive power, apparent power, power factor, Analysis of single-phase ac series combinations of R-L-C circuits, Three-phase balanced circuits, voltage and current relations in star and delta connections.

Unit III: DC Machines:
Construction, Working principle of DC Generator and DC motor , EMF equation, Types of DC Generators & motors, Torque in a DC motor, Torque – speed characteristic of DC Shunt motor, Speed control of DC shunt motor.

Unit IV: Single Phase Transformers and Electrical Installation:
Principle of operation, Ideal and practical transformer on No-load and Load, Equivalent circuit, losses in transformers, efficiency.
Components of LT Switchgear: Switch fuse unit (SFU), MCB, Earthing, elementary calculations for Energy consumption, power factor improvement.

Unit V: Induction Motors and Stepper Motors:
Generation of rotating magnetic fields, Construction and working of a three-phase induction motor, torque-slip characteristics.
General construction, working and applications of Stepper motor and BLDC motor.

Learning Resources:
1. D. P. Kothari and I. J. Nagrath, "Basic Electrical Engineering", Tata McGraw Hill, 2010.
2. D. C. Kulshreshtha, "Basic Electrical Engineering", McGraw Hill, 2009.
3. L. S. Bobrow, "Fundamentals of Electrical Engineering", Oxford University Press, 2011.
4. E. Hughes, "Electrical and Electronics Technology", Pearson, 2010.
5. V.K Mehta, Rohit Mehta, "Principles of Electrical Engineering and Electronics", S Chand & Company Ltd, 2006.
6. J.B. Guptha, A course in electrical installation estimating and costing, reprint 2013, published by S.K. Kataria & Sons.
7. V. D. Toro, "Electrical Engineering Fundamentals", Prentice Hall India, 1989.

The break-up of CIE: Internal Tests+ Assignments + Quizzes

1	No. of Internal Tests:	02	Max.Marks for each Internal Tests:		30
2	No. of Assignments:	03	Max. Marks for each Assignment:		05
3	No. of Quizzes:	03	Max. Marks for each Quiz Test:		05

Duration of Internal Test: **90 Minutes**

VASAVI COLLEGE OF ENGINEERING (AUTONOMOUS)
IBRAHIMBAGH, HYDERABAD – 500 031

DEPARTMENT OF CIVIL ENGINEERING
BASIC ENGINEERING DRAWING
(Common to CSE & IT)
SYLLABUS FOR B.E. I-SEMESTER

L : T : P (Hrs./week):1:0:2	SEE Marks:60	Course Code: U21ES030CE
Credits: 2	CIE Marks:40	Duration of SEE : 3 Hrs

COURSE OBJECTIVES	COURSE OUTCOMES
Objectives of this course are to:	At the end of the course, students will be able to:
1. Impart skills in using drawing instruments to convey exact and complete information of the object. 2. Construct conic sections and regular polygons. 3. Construct the orthographic projections of points, lines, planes and solids. 4. Draw sections and development of regular solids. 5. Visualize and construct isometric projections from orthographic projections of regular solids.	1. Acquire proficiency in instrumental drawing and will be able to visualize the object, draw conic sections and regular polygons. 2. Draw the orthographic projections of points, lines and planes. 3. Draw orthographic projections of regular and right solids 4. Draw the sections and development of regular solids 5. Visualise and draw the isometric view from the orthographic views of regular solids and combinations of solids.

UNIT-I: Introduction to Engineering Drawing: Necessity of Engineering Drawing for engineers, Use of Drawing Instruments, Types of Lines, Lettering practice, Dimensioning and its methods, Conic sections by eccentricity method, Regular polygons given the length of side.

UNIT-II: Orthographic Projections: Principles of orthographic projections, conventions, projections of points placed in different quadrants.
Projections of straight lines inclined to one and two reference planes placed in first quadrant only, Traces (By conventional methods only). Projections of perpendicular planes, oblique planes and their traces.

UNIT-III: Projections of Regular Solids: Projections of prism, cylinder, pyramid and cone in simple positions and axis inclined to one reference plane only.

UNIT-IV: Sections and Developments of Solids: Sections of solids in simple positions only for prism, pyramid, cylinder and cone and their development.

UNIT-V: Isometric Projections: Principles of isometric projections – Isometric scale, Isometric axes, Isometric planes, Isometric view. Isometric views of lines, planes, regular solids, and combination of two solids.

Learning Resource:

1. Bhatt N.D. "Elementary Engineering Drawing", Charotar Publishers, 2014.
2. Thomas E French, Charles J Vierck, Robert J. Foster, "Engineering Drawing and Graphic Technology", McGraw Hill Education, 1993.
3. Gill P.S. "Engineering Drawing: Geometrical Drawing", SK Kataria & sons, 2012.
4. Venugopal.K "Engineering Drawing and Graphics Plus Autocad", New Age International (P) Ltd., New Delhi, 2010.
5. Siddiquee A.N "Engineering Drawing with a Primer on Autocad", Prentice hall of India Ltd., New Delhi, 2004.
6. Basanth Agrawal, Agrawal C.M "Engineering Graphics" First Edition, Tata McGraw Hill, 2012
7. BVR Gupta, M Raja Roy, "Engineering Drawing with AutoCad", IK Int Pvt Ltd, 2009.
8. NPTEL Course (www.nptel.ac.in)
9. Virtual labs (www.vlab.co.in)

The break-up of CIE: Internal Tests+ Assignments + Quizzes

1	No. of Internal Tests:	02	Max.Marks for each Internal Tests:		30
2	No. of Assignments:	03	Max. Marks for each Assignment:		05
3	No. of Quizzes:	03	Max. Marks for each Quiz Test:		05

Duration of Internal Test: **90 Minutes**

VASAVI COLLEGE OF ENGINEERING (Autonomous)
IBRAHIMBAGH, HYDERABAD – 500 031

Department of Mechanical Engineering

INTRODUCTION TO ENTREPRENEURSHIP
SYLLABUS FOR B.E.I-SEMESTER

L:T:P(Hrs/week):1:0:0	SEE Marks:40	Course Code: **U21MC010ME**
Credits : --	CIE Marks:30	Duration of SEE: 02Hours

COURSE OBJECTIVE *The objective of the course is to*	**COURSE OUTCOMES** *On completion of the course, students will be able to*
inspire students develop an entrepreneurial mind-set, educate about the resources and schemes available to start enterprises in India.	1 get awareness about entrepreneurship and potentially become an entrepreneur. 2 discern the characteristics required to be a successful entrepreneur 3 know the importance of effective communication. 4 demonstrate effective sales skills

Unit-I: Sources of new ideas, techniques for generating ideas.

Team formation, how entrepreneurship has changed the country and world, entrepreneurial myths, E-cells and their significance, success story of entrepreneurs, eg: Practo, global entrepreneurs, entrepreneurial journeys, challenges, and successes, characteristics of a Successful Entrepreneur, entrepreneurial styles, introduction to business model.

Unit-II: Importance of effective communication for entrepreneurs, communication barriers, miscommunication, incorrect assumptions about people, importance of listening, design thinking-a problem solving process, sales skills, understanding the customer-centric approach, personal selling techniques, show and tell, elevator pitch, managing risks and learning from failures, women entrepreneurs.

Learning Resources:

1. Bruce R. Barringer and R. Duane Ireland, "Entrepreneurship: successfully launching new ventures", 3rd edition, Pearson Prentice Hall, 2009.
2. P. Denning and R. Dunham, "The Innovator's Way", MIT Press: Cambridge, Massachusetts, 2010.
3. Arya Kumar, "Entrepreneurship", Pearson Education, Delhi, 2012.
4. Michael H. Morris, D.F.Kuratko, J G Covin, "Corporate Entrepreneurship and Innovation", Cengage learning, New Delhi,2010
5. Peter F. Drucker, "Innovation and Entrepreneurship", Routledge Classics, 2015.
6. Eric Ries, "The Lean Start-up", Currency, 1st edition, 2011.

Web Resources:

7. http://www.learnwise.org

The break-up of CIE: Internal Tests + Assignments + Quizzes

1	No. of Internal Tests:	01	Max. Marks for each Internal Test:	20
2	No. of Assignments:	01	Max. Marks for each Assignment:	05
3	No. of Quizzes:	01	Max. Marks for each Quiz Test:	05

Duration of Internal Test: **1 Hour**

VASAVI COLLEGE OF ENGINEERING (Autonomous)
IBRAHIMBAGH, HYDERABAD – 500 031
DEPARTMENT OF HUMANITIES & SOCIAL SCIENCES
Course Name: English Language and Communication Skills Laboratory

(Common to all branches) I SEMESTER – 6 branches
II SEMESTER – 7 branches
SYLLABUS FOR B.E. ¼

L : T : P (Hrs/Week) : 2	SEE Marks : 50	Course Code: **U21HS111EH**
Credits: 1	CIE Marks : 30	Duration of SEE : Hours : 3

COURSE OBJECTIVES	COURSE OUTCOMES
The course will enable the students to:	**On completion of the course, students will be able to:**
1. Learn the speech sounds, parts of speech and distinguish between vowel and consonant sounds in the English language to reduce mother tongue influence when speaking English.	1. Speak well using 'generally acceptable English' in terms of pronunciation and use of diction.
2. Understand and follow the rules in debates, group discussions, interviews.	2. Participate effectively in group discussions, public speaking, debates (formal and informal).
3. Develop reading skills and analyse various text types.	3. Analyse, evaluate and infer meaning from different types of texts.

1.0 PHONETICS LAB- TOPICS

1.1 **Introduction to English Phonetics:**
Introductory to auditory, acoustic and articulatory phonetics. Organs of speech: the respiratory, articulatory and phonatory systems.

1.2 **Aspects of language learning and ear training activities-** Homophones, homonyms. Words often confused. Parts of speech- Identification and pronunciation of nouns, adjectives, verbs and adverbs.
Longman Dictionary of Contemporary English- 6th Edition, 2020.

2.0 INTERACTIVE COMMUNICATION SKILLS LAB-TOPICS

2.1 **Group discussion:**
Objectives of GD, Types of GDs; Initiating, Continuing, and concluding a GD.

2.2 **Debate:**
Understanding the difference between a debate and a group discussion, essentials of debates.

2.3 **Public speaking:**
Dos and don'ts of public speaking. Listening and analysing speeches of great personalities in history, TED talks, Documentaries and Movies.

2.4 **Interview Skills - Basic HR questions.**
Viva questions will be asked in internal and external exams.

3.0 READING SKILLS LAB - TOPICS

3.1 Teaching different types of texts for comprehension
3.2 **Poster Reading-** Analysing data, specific vocabulary items & pictorial forms and convert the same to a reading text and vice versa.
Viva questions will be asked in internal and external exams.
Longman Dictionary of Contemporary English - 6th Edition, 2020.

[[
Prescribed textbook for laboratory:
Speak Well: Jayshree Mohanraj, Kandula Nirupa Rani and Indira Babbellapati - Orient Black Swan
Longman Dictionary of Contemporary English - 6th Edition, 2020. (The students will be given the PDF format)

Learning Resources:
1. Balasubramanian: A textbook of English phonetics for Indian students, Macmillan, 2008.
2. Priyadarshini Patnaik : Group discussion and interviews, Cambridge University Press India private limited 2011.

3. Daniel Jones: Cambridge English Pronouncing Dictionary - A Definitive guide to contemporary English Pronunciation.
4. Reading Cards (Eng400): Orient Black Swan. Reading Squabble - Hadfield.

The break-up of marks for CIE:

Internal Tests (1); Quiz Tests (1) + Assignments (1)
No. of Internal Tests : 1 Max. Marks for Internal Test : 30
Duration of Internal Test : 120 Minutes

VASAVI COLLEGE OF ENGINEERING (AUTONOMOUS)

IBRAHIMBAGH, Hyderabad-31

DEPARTMENT OF PHYSICS

B.E Syllabus for **CSE and IT Branches** w.e.f academic year 2021-2022

SEMICONDUCTOR OPTOELECTRONICS LAB

L : T : P (Hrs/Week) : 0:0:2	SEE Marks : 50	Course Code: **U21BS111PH**
Credits: 1	CIE Marks : 30	Duration of SEE : Hours : 3

Course Outcomes
The students acquire the ability to
1. Conduct experiment independently and record the measurements.
2. Outline the precautions required to be taken for each experiments
3. Compare the experimental results with standard values and estimate errors.
4. Draw graphs and interpret the results with respect to graphical and theoretical values
5. Write the summary of the experiment and draw appropriate conclusions

1. Study I-V characteristics of P-N Junction diode
2. Study I-V characteristics of Zener Diode
3. Determination of wavelength of Semiconductor lasers.
4. Calculation of numerical aperture, acceptance angle and power loss due to bending of an optical fibre.
5. Study of I-V characteristics of LED
6. Study of I-V characteristics of solar cell and to calculate fill factor and efficiency
7. Study I-V Characteristics of Photodiode at different intensities
8. Determination of Planck's constant using Photocell
9. Determination of Hall's coefficient- Hall's effect
10. Study of resonance in LCR series and to find resonant frequency & Q- factor
11. Study of resonance in LCR parallel and to find resonant frequency & Q- factor
12. Helmholtz coil –calculation of magnetic field along the axis of solenoid
13. Determination of energy gap of a given semiconductor by four probe method
14. Estimation of Thermistor constants
15. Determination of e/m of electron by Thomson's method

Each student should perform at least 12 (Twelve) experiments.

VASAVI COLLEGE OF ENGINEERING(AUTONOMOUS)
IBRAHIMBAGH, HYDERABAD – 500 031

Department of Computer Science & Engineering
Course Name: PROGRAMMING FOR PROBLEM SOLVING LAB

SYLLABUS FOR B.E. I-SEMESTER
(Common to CSE, AI&ML, IT, ECE and EEE)

L:T:P (Hrs./week): 0:0:2	SEE Marks : 50	Course Code :**U21ES121CS**
Credits : 1	CIE Marks : 30	Duration of SEE : 3 Hours

COURSE OBJECTIVES	**COURSE OUTCOMES** *On completion of the course, students will be able to*
1 Understand the fundamentals of programming in C Language	1 Choose appropriate data type for implementing programs in C language.
2 Write, compile and debug programs in C	2 Design and implement modular programs involving input output operations, decision making and looping constructs.
3 Formulate solution to problems and implement in C.	3 Implement search and sort operations on arrays. 4 Apply the concept of pointers for implementing programs on dynamic memory management and string handling.
4 Effectively choose programming components to solve computing problems.	5 Design and implement programs to store data in structures and files

Programming Exercise:

1. Finding maximum and minimum of given set of numbers, finding roots of quadratic equation.
2. Sin x and Cos x values using series expansion.
3. Conversion of binary to decimal, octal, hexadecimal and vice versa.
4. Generating Pascal triangle, pyramid of numbers.
5. Recursion: factorial, Fibonacci, GCD.
6. Matrix addition and multiplication using arrays, linear search and binary search using recursive and non-recursive procedures.
7. Bubble sort and selection sort.
8. Programs on pointers: pointer to arrays, pointer to functions.
9. Functions for string manipulations.
10. Programs on structures and unions.
11. Finding the number of characters, words and lines of given text file.
12. File handling programs.

Learning Resources:

1. Forouzan B.A& Richard F.Gilberg, A Structured Programming Approach using C, 3rd Edition(2013), Cengage Learning.
2. Brian W. Kernighan and Dennis M. Ritchie, The C Programming Language, 2nd Edition (2006), Prentice-Hall.
3. Steve Oualline, Practical CProgramming,3rd Edition(2006),O'Reilly Press.
4. Balagurusamy E, Programming in ANSI C, 4th Edition(2008),TMG.

No. of Internal Test:	01	Max. Marks for Internal Test:	12
Marks for day-to-day laboratory class work			18
Duration of Internal Test: 2 Hours			

VASAVI COLLEGE OF ENGINEERING (AUTONOMOUS)
IBRAHIMBAGH, HYDERABAD – 500 031

Department of Electrical & Electronics Engineering
Basic Electrical Engineering Laboratory

SYLLABUS FOR B.E I – SEMESTER (IT Branch)
SYLLABUS FOR B.E II – SEMESTER (CSE and ECE Branches)

L:T:P(Hrs./week):0:0:2	SEE Marks:50	Course Code: **U21ES011EE**
Credits :1	CIE Marks:30	Duration of SEE: 3 Hours

COURSE OBJECTIVES	**COURSE OUTCOMES** On completion of the course, students will be able to
To provide the practical knowledge on operation of DC, AC machines and circuits.	1. Handle basic electrical equipment and apprehend safety precautions 2. Test the performance of various AC and DC machines 3. Apply and Verify various Network theorems 4. Comprehend Measurement of Electrical Energy consumption 5. Comprehend the importance of Power Factor improvement.

List of Experiments

1. Basic safety precautions. Introduction and use of measuring instruments – voltmeter, ammeter, multi-meter, oscilloscope. Real-life resistors, capacitors and inductors.
2. Verification of Kirchoff's Voltage Law & Kirchoff's Current Law.
3. Verification of Superposition theorem and maximum power transfer theorems.
4. Verification of Thevenin's and Tellegen's theorems.
5. Sinusoidal steady state response of R-L and R-C circuits, Measurement of phase angle.
6. Measurement of cumulative three-phase power in balanced three-phase circuits.
7. Demonstration of cut-out sections of machines: dc machine (commutator-brush arrangement), induction machine (squirrel cage rotor), synchronous machine (field winging - slip ring arrangement) and single-phase induction machine.
8. Torque Speed Characteristic of dc shunt motor.
9. Speed control of dc shunt motor.
10. Loading of a transformer: measurement of primary and secondary voltages and currents and power.
11. Torque-Slip Characteristic of a three phase induction motor.
12. Measurement of electrical energy consumption.
13. Improvement of Power factor in R-L-C Circuits.

From the above experiments, each student should perform at least 10 (Ten) experiments.

No. of Internal Tests:	01	Max. Marks for Internal Test:	12
Marks for assessment of each experiment			18
Duration of Internal Test: **3 Hours**			

VASAVI COLLEGE OF ENGINEERING (AUTONOMOUS)
SCHEME OF INSTRUCTION AND EXAMINATION (R-21)
B.E. – INFORMATION TECHNOLOGY : SECOND SEMESTER(2021 - 2022)

B.E (IT) II Semester								
Course Code	Name of the Course	Scheme of Instruction			Scheme of Examination			
		Hours per Week			Duration in Hrs	Maximum Marks		Credits
		L	T	P/D		SEE	CIE	
THEORY								
U21BS210MA	Differential Equations and Vector Calculus	3	-	-	3	60	40	3
U21BS220CH	Material Chemistry	3	-	-	3	60	40	3
U21ES010CE	Basic Engineering Mechanics	3	-	-	3	60	40	3
U21ES210IT	Basic Electronics	3	-	-	3	60	40	3
U21PC210IT	Python Programming	3	-	-	3	60	40	3
U21HS010EH	Human Values & Professional Ethics – I	1	-	-	2	40	30	1
U21MC010CE	Environmental Science	2	-	-	3	60	40	-
PRACTICALS								
U21BS211MA	Mathematics Lab	-	-	2	3	50	30	1
U21BS011CH	Chemistry Lab	-	-	2	3	50	30	1
U21ES211IT	Basic Electronics Lab	-	-	2	3	50	30	1
U21PC211IT	Python Programming Lab	-	-	2	3	50	30	1
	Library / Sports / Personality Development Programme / Mentor Interaction	-	-	-	-	-	-	-
Total		**18**	-	**8**	**--**	**600**	**390**	**20**
Grand Total		**26**				**990**		

Note:
1. One hour is allotted to Library / Sports / Personality Development Programme / Mentor Interaction.
2. The left over hours are to be allotted to CC / RC / TC based on the requirement.

VASAVI COLLEGE OF ENGINEERING (AUTONOMOUS)
IBRAHIMBAGH, HYDERBAD-500031
DEPARTMENT OF MATHEMATICS

DIFFERENTIAL EQUATIONS & VECTOR CALCULUS
for B.E., II- Sem., (CBCS)
(Common to CSE, CSE-AIML & IT)

Instruction : 3+1 Hours per week	**Semester End Exam Marks** : 60	**Subject Reference Code : U21BS220MA**
Credits : 3	**Sessional Marks**: 40	**Duration of Semester End Exam** : 3 Hrs

COURSE OBJECTIVES	COURSE OUTCOMES
The course will enable the students to :	***At the end of the course students should be able to:***
1. Solve first order differential equations using elementary techniques and learn its applications. **2.Use** the various higher order homogeneous and non-homogeneous linear differential equations with constant coefficients to solve it and apply on electrical circuits **3. Study** the concepts of vector differentiation, Gradient, Divergence and Curl. **4.Learn** how to evaluate double and triple integrals, using change of order of integration and apply vector integration to transformation theorems **5.Understand** Beta, Gamma functions and Error functions	**1. Identify** the suitable I.F and solve differential equations, model the real time electrical engineering problems viz., RC & LR Circuits into differential equations and solve. **2. Apply** various higher order Linear Differential equations, to solve LC and LCR circuits. **3. Use** gradient to evaluate directional derivatives and conservative vector field. **4. Apply** concepts of multiple integrals to evaluate area and volume and vector integration to transformation **5. Evaluate** Improper integrals and Beta ,Gamma functions

UNIT – I

ORDINARY DIFFERENTIAL EQUATIONS OF FIRST ORDER
Exact first order differential equations - Integrating factors- Clairaut's equation -Applications of First Order Differential Equations -Orthogonal trajectories (Cartesian families) – LR and RC Circuits.

UNIT – II

HIGHER ORDER LINEAR DIFFERENTIAL EQUATIONS

Solutions of Homogeneous and Non Homogeneous linear equations with constant coefficients- Method of Variation of Parameters –Applications of linear differential equations to LCR circuits.

UNIT – III

VECTOR DIFFERENTIAL CALCULUS

Scalar and Vector point functions -Vector Differentiation-Level Surfaces-Gradient of a scalar point function- Normal to a level surface- Directional Derivative – Divergence and Curl of a Vector field-Conservative vector field.

UNIT – IV

MULTIPLE INTEGRALS: Double and Triple integrals (Cartesian) - Change of order of integration (Cartesian Coordinates).

VECTOR INTEGRATION: Line, Surface and Volume integrals- Green's Theorem – Gauss Divergence theorem - Stokes's Theorem. (all theorems without proof)- Solenoidal and Irrotational vectors.

UNIT – V

BETA-GAMMA FUNCTIONS

Improper integrals-Beta, Gamma functions- Error functions-complimentary error functions

Text Books:

1. Higher Engineering Mathematics 40th Edition Dr. B.S Grewal, Khanna Publishers.
2. Advanced Engineering Mathematics 3rd Edition, R.K.Jain & S.R.K.Iyengar, Narosa Publishing House.
3. A Text book of Engineering Mathematics, N.P.Bali & Manish Goyal, Laxmi Publications.

Reference Books:

1. Advanced Engineering Mathematics, by Wylie & Barrett, Tata Mc Graw Hill, New Delhi.
2. Advanced Engineering Mathematics, 8th Edition by Erwin Kreyszig, John Wiley & Sons, Inc.

Faculty I/c. (Name & Signature) Chairman, BOS

Online Resources:

1. **http://tutorial.math.lamar.edu/Classes/DE/DE.aspx**
2. **http://mathworld.wolfram.com/topics**
3. **http://www.nptel.ac.in/course.php**
4. **https://www.coursera.org/in**

The break-up of CIE: Internal Tests+ Assignments + Quizzes

1	No. of Internal Tests:	02	Max.Marks for each Internal Tests:	30
2	No. of Assignments:	03	Max. Marks for each Assignment:	05
3	No. of Quizzes:	03	Max. Marks for each Quiz Test:	05

Duration of Internal Test: **90 Minutes**

Faculty I/c. (Name & Signature) Chairman, BOS

VASAVI COLLEGE OF ENGINEERING (AUTONOMOUS)
IBRAHIMBAGH, HYDERBAD-500031
DEPARTMENT OF CHEMISTRY
MATERIAL CHEMISTRY
(For CSE, CSE (AI & ML) and IT branches)

L:T:P Hrs/week: 3:0:0	SEE Marks:60	Course Code : **U21BS210CH**
Credits : 3	CIE Marks:40	Duration of SEE : 3 Hrs

LEARNING OBJECTIVES:	**LEARNING OUTCOMES**
The course will enable the students to:	**At the end of the course, students should be able to:**
1. Study types of conductance, variation of electrode potential and EMF and to acquaint with applications of Galvanic Cell. 2. Classify and compare various types of batteries and fuel cells. 3. Get acquainted with different types of polymers and their applications 4. Appraise few engineering materials.	1. Construct a galvanic cell and calculate its EMF and pH wherever applicable. 2. Describe the construction, chemistry and applications of the selected primary, secondary batteries and fuel cells. 3. Categorise the macro molecules and discuss the synthesis of a few macro molecules and their applications. 4. Get expose to basic concepts of engineering materials such as composites and liquid crystals. 5. Familiarize with the classification, synthesis, characterization, properties and applications of nano materials.

UNIT-I: ELECTRODICS AND ITS APPLICATIONS (9)

Introduction, conductance, types of conductance- specific, equivalent, molar conductance and their interrelationship- numericals. Principle and applications of conductometric titrations- strong acid *vs* strong base, weak acid *vs* strong base and mixture of acids *vs* strong base.

Concept of electrode potential, Helmholtz electrical double layer theory, electro motive force (EMF). Electrochemical series – applications. Nernst equation-derivation, applications and numericals. Concentration cells-numericals.

Types of electrodes- construction and working of calomel electrode (CE), quinhydrone electrode and glass electrode (GE). Determination of pH using

glass electrode and quinhydrone electrode. Applications of potentiometry- acid base and redox titration (Fe(II) Vs $KMnO_4$).

UNIT-II: CHEMISTRY OF BATTERIES (9)

Introduction- definition of cell and battery – Types of cells (reversible and irreversible cells). Battery characteristics: free energy change, electromotive force of battery, power density, energy density- numericals.

Primary batteries: Types-acidic, alkaline and reserve batteries. Construction and electrochemistry of Zn-C, Ag_2O-Zn battery and lithium-V_2O_5 battery.

Secondary batteries: Construction and working of lead-acid, Ni-metal hydride, and lithium ion battery – advantages, limitations and applications.

Fuel cells: Concept, types of fuel cells and merits. Construction, working and applications of methanol-oxygen, phosphoric acid fuel cell and molten carbonate fuel cell.

UNIT-III: MACRO MOLECULES (9)

Introduction, degree of polymerization, functionality of monomers and its effect on the structure of polymers. Classification of polymers-a) homo and co-polymers, b) homo chain and hetero chain polymers. c) plastics, elastomers, fibers and resins.

Types of Polymerization - Addition and condensation polymerization.

Glass transition temperature (Tg), factors affecting Tg.

Molecular weight- number average and weight average molecular weight, numericals.

Plastics: Thermo plastics and thermosets - preparation, properties and applications of a) Aramid (Kevlar) b) Phenol-formaldehyde (Bakelite) c) Poly carbonate

Elastomers: Natural rubber- structure – chemistry of vulcanization and its advantages.

Artificial rubbers: Preparation, properties & uses of Buna-S and neoprene.

Biodegradable polymers: Concept, preparation and uses of ploy lactic acid.

Conducting polymers: Definition- classification, mechanism of conduction in polyacetylene and applications.

UNIT-IV: ENGINEERING MATERIALS (7)

Composite materials:

Introduction, constituents of composites, advantages over conventional materials. Applications of composites. Types of composites based on matrix and dispersed phases. Fiber reinforced composites: glass, carbon and aramid reinforced composites. Layered composites- applications. Manufacturing techniques – Hand layup, Resin transfer, pulltrusion and filament winding methods.

Liquid Crystals:

Faculty I/c. (Name & Signature) Chairman, BOS

Introduction, classification of liquid crystals-Thermotropic and Lyotropic liquid crystals - Chemical constitution and liquid crystalline behavior. Molecular ordering in liquid crystals- Nematic, Smectic and Cholesteric liquid crystals - Applications.

UNIT-V: NANOMATERIALS (8)

Introduction - Concept of nanomaterials - quantum confinement and surface volume ratio.

Properties of nanomaterials: Catalytic, electrical, mechanical and optical properties.

Types of Nanomaterials**:** Zero dimensional (0-D), One dimensional (1-D),Two dimensional (2-D),Three Dimensional(3-D).

Synthesis of nanomaterials: Top down and bottom up approaches**-** mechanical grinding by ball milling and sol -gel method.

Graphene: Introduction, synthesis of graphene by chemical vapor deposition (CVD).

Carbon Nanotubes**:** Classification **-** single walled carbon nanotubes (SWCNTs-armchair, zig-zag, chiral) and Multi walled carbon nanotubes (MWCNTs-Russian doll and parchment model).

Synthesis of CNTs- Arc discharge and laser ablation methods- applications of CNTs.

Characterization of nanomaterials- Introduction, Limitations of optical microscopy. Principle and block diagram of Scanning Electron Microscope (SEM), Atomic Force Microscope (AFM).

Learning Resources:

Text Books:

1. PC Jain, M Jain Engineering Chemistry, Dhanapathi Rai and sons (16^{th} edition), New Delhi.
2. O.G. PALANNA, Engineering Chemistry, TMH Edition.

Reference books:

1. Sashi Chawla, Text book of Engineering Chemistry, Dhanapathi Rai &sons, New Delhi.
2. Wiley Engineering chemistry, Wiley India pvt Ltd, II edition.
3 .Chemistry in engineering and technology by J.C. Kuriacose and Rajaram.
4. The chemistry of nano materials-Synthesis, Properties and Applications by C N Rao, Wiley India pvt Ltd.
5. University chemistry, by B. H. Mahan
6. Physical Chemistry, by P. W. Atkins

Faculty I/c. (Name & Signature) Chairman, BOS

7. S. S. Dara, S Chand and sons, Engineering Chemistry, New Delhi.
8. Puri, Sharma and Pathania Principles of physical chemistry, Vishal Publishing Co.
9. Polymer chemistry by Gowariker
10. Introduction to Nanoscience, by S m Lindsay, Oxford University press.

Online Resources:

1. Engineering Chemistry (NPTEL Web-book), by B. L. Tembe, Kamaluddin and M. S. Krishnan
2. NPTEL Polymer Chemistry Course, D. Dhara, IIT Kharagpur.

The break-up of CIE: Internal Tests+ Assignments + Quizzes

1	No. of Internal Tests:	02	Max.Marks for each Internal Tests:	30
2	No. of Assignments:	03	Max. Marks for each Assignment:	05
3	No. of Quizzes:	03	Max. Marks for each Quiz Test:	05

Duration of Internal Test: **90 Minutes**

Faculty I/c. (Name & Signature) Chairman, BOS

VASAVI COLLEGE OF ENGINEERING (Autonomous)
IBRAHIMBAGH, HYDERABAD – 500 031

DEPARTMENT OF CIVIL ENGINEERING
BASIC ENGINEERING MECHANICS
(For IT)

SYLLABUS FOR B.E. II SEMESTER

L:T:P(Hrs./week):3:0:0	SEE Marks:60	Course Code: **U21ES010CE**
Credits:3	CIE Marks:40	Duration of SEE: 3 Hrs

COURSE OBJECTIVES	COURSE OUTCOMES
Objectives of this course are to:	At the end of the course, students will be able to:
1. Explain the resolution of a system of forces (coplanar, spatial, concurrent, non-concurrent) and compute their resultant. 2. Solve particle equilibrium problem using equation of equilibrium 3. Determine forces in the members of a truss 4. Perform analysis of bodies lying on rough surfaces. 5. Locate the centroid of a body and also compute the area moment of inertia of standard and composite sections.	1. Determine resultant of forces acting on a body. 2. Analyse equilibrium of a body subjected to a system of forces. 3. Perform analysis of trusses using method of joints and method of sections. 4. Solve problem of bodies subjected to friction. 5. Find the location of centroid and calculate moment of inertia and polar moment of inertia of a given section.

UNIT-I: Force Systems: Rectangular components, moment, couple and resultant of two dimensional and three dimensional force systems.

UNIT-II: Equilibrium of Force Systems: Free body diagram, Equations of equilibrium, Equilibrium of planar and spatial system.

UNIT-III: Determinate Trusses: Analysis of plane trusses like Warren girder, Pratt truss, Fink truss etc using method of joints and method of sections.

Faculty I/c. (Name & Signature) Chairman, BOS

UNIT-IV: Friction: Laws of friction. Application to simple systems, Connected systems and belt friction, Wedge friction.

UNIT-V: Centroid and Moment of Inertia: Centroids of lines, areas and volumes, Moment of inertia of areas, Composite areas, Polar moment of inertia, Radius of gyration.

Learning Resources:

1. Singer F.L "Engineering Mechanics", Harper & Collins, Singapore, 3rd Edition 2011.
2. Timoshenko S.P and Young D.H "Engineering Mechanics", McGraw Hill International Edition, 2017
3. Andrew Pytel., JaanKiusalaas., "Engineering Mechanics", Cengage Learning, 2014.
4. Beer F.P & Johnston E.R Jr. "VectorMechanics for Engineers", TMH, 2019.
5. Hibbeler R.C, "Engineering Mechanics", Pearson Education, 2017.
6. Tayal A.K., "Engineering Mechanics – Statics & Dynamics", Umesh Publications, 2011.
7. Basudeb Bhattacharyya., "Engineering Mechanics", Oxford University Press, 2014.
8. Meriam. J. L. and Kraige L.G., "Engineering Mechanics", Volume-I Statics, John Wiley & Sons, 2017.
9. NPTEL Course (www.nptel.ac.in)
10. Virtual labs (www.vlab.co.in)

The break-up of CIE: Internal Tests+ Assignments + Quizzes

1	No. of Internal Tests:	02	Max.Marks for each Internal Tests:		30
2	No. of Assignments:	03	Max. Marks for each Assignment:		05
3	No. of Quizzes:	03	Max. Marks for each Quiz Test:		05

Duration of Internal Test: **90 Minutes**

Faculty I/c. (Name & Signature) Chairman, BOS

VASAVI COLLEGE OF ENGINEERING(Autonomous)
IBRAHIMBAGH, HYDERABAD – 500 031
DEPARTMENT OF INFORMATION TECHNOLOGY

BASIC ELECTRONICS
SYLLABUS FOR II-SEMESTER

L:T:P(Hrs./week): 3:0:0	SEE Marks :60	Course Code:**U21ES210IT**
Credits : 3	CIE Marks :40	Duration of SEE : 3 Hours

COURSE OBJECTIVES	COURSE OUTCOMES
The course will enable the students to:	On completion of the course, students will be able to:
Identify different electronic devices, their characteristics and use them in building simple electronic circuits.	1. Design simple circuits like rectifiers, voltage regulators, clipping and clamping circuits for the given specifications based on the operating principles of the diode. 2. Analyze different bipolar junction transistor circuits to determine Input impedance, output impedance, Voltage gain, current gain using exact and approximate h parameter models. 3. Verify the implementation of simple Boolean functions using CMOS circuits with the help of Truth table indicating the different transistors ON/OFF conditions. 4. Determine the kind of feedback used in a given negative feedback amplifier circuit and determine the frequency of oscillation of Hartley, Colpitt and RC phase shift oscillators. 5. Analyze simple operational amplifier circuits to determine the voltages at specific points in the circuit and design simple operational amplifier circuits for given application.

UNIT – I: Diodes

PN junction diode, Biasing, Zener diodes, Rectifier Circuits, Limiting and clamping circuits, Schottky Barrier diode and Varactor diode.

Faculty I/c. (Name & Signature) Chairman, BOS

UNIT – II: Bipolar Junction Transistors

Bipolar junction transistors –characteristics, analysis of transistor circuits at DC, biasing, transistor as amplifier, effect of emitter bypass capacitance, h-parameter model of BJT, approximate analysis of BJT circuits using h-parameter model, transistor as switch, internal capacitance. Pi equivalent circuit, low frequency and high frequency operation, thermal run away

UNIT – III: Field Effect Transistors

MOSFET current-voltage characteristics, MOSFET as an amplifier and as a switch, Digital CMOS logic circuits: Introduction, digital IC technologies and logic circuit families, Voltage Transfer Characteristic (VTC) of inverter, Noise Margins, Propagation delay, static and dynamic operation of CMOS inverter. CMOS logic gate circuits: Basic structure (PUN and PDN), Implementation of 2-input NOR gate, NAND gate, complex gates and exclusive OR gate.

UNIT – IV: Feedback Amplifiers and Oscillators

Feedback – Structure, Properties of negative feedback, Topologies, Advantages of negative feedback amplifiers Sinusoidal Oscillators – Loop gain, Barkhausen criteria, RC Phase shift, LC and Crystal Oscillators.
Power Amplifiers: class A, B and C amplifiers.

UNIT – V : Operational Amplifiers:

Operational Amplifiers: Ideal characteristics, op. amp. as adder, Subtractor, Integrator, differentiator and comparator using op. amp. generation of square and Triangular waveforms, Monostable multi vibrator.
Op. Amp. As Voltage –controlled current switch(VCCS), Current-controlled Voltage source(CCVS), Instrumentation Amplifier, antilogarithmic amplifiers and analog multipliers.

Learning Resources :

1. Jacob Millman, Christos CHalkais, Satybratajit, Electronic Devices and Circuits,Mc Graw Hill India Private Ltd, 3rd Edition
2. Adel S. Sedra, Kenneth C. Smith, Microelectronic Circuits, 5th Edition, Oxford International Student Edition, 2006

Faculty I/c. (Name & Signature) Chairman, BOS

3. D. Roy Choudhury, Shail B. Jain, Linear Integrated Circuits, New Age International Publishers, 4th Edition.
4. Jocob Millman, Arvin grable – Micro Electronics – 2nd Edition, McGraw Hill 1987.
5. Donald L. Schilling, Charles Belove, Electronic Circuits Discrete and Integrated, Tata Mc Graw Hill Education, 3rd Edition
6. https://nptel.ac.in/courses/117103063/

The break-up of CIE: Internal Tests+ Assignments + Quizzes

1	No. of Internal Tests:	02	Max.Marks for each Internal Tests:	30
2	No. of Assignments:	03	Max. Marks for each Assignment:	05
3	No. of Quizzes:	03	Max. Marks for each Quiz Test:	05

Duration of Internal Test: **90 Minutes**

Faculty I/c. (Name & Signature) Chairman, BOS

VASAVI COLLEGE OF ENGINEERING (Autonomous)
IBRAHIMBAGH, HYDERBAD-500031,
DEPARTMENT OF INFORMATION TECHNOLOGY

PYTHON PROGRAMMING
SYLLABUS FOR B.E. II SEMESTER

L:T:P(Hrs./week):3:0:0	SEE Marks :60	Course Code:**U21PC210IT**
Credits : 3	CIE Marks :40	Duration of SEE : 3 Hours

Course Objectives	Course Outcomes
The course will enable the students to:	**At the end of the course student will be able to:**
Acquire problem solving skills for writing python scripts	1) Demonstrate an understanding of fundamental Python syntax and semantics and be fluent in the use of Python control flow statements and functions. 2) Acquire basic knowledge on NumPy array and plotting data in lists. 3) Construct python data structure programs using tuples, dictionaries, and sets. 4) Develop programs using Object oriented paradigm. 5) Handle file related operations and do encoding and decoding of strings.

UNIT – I:
Introduction to Python: Features of Python, variables and identifiers, operators and expressions.
Decision making and repetition: if, if else, nested if-else and else if, while loops and for loops, nested loops, break, continue, pass
Functions: Definition, function call, more on defining functions, recursive functions.

Unit – II:
Strings: Introduction, accessing strings, basic operations, string slice, String function and methods, Regular Expressions.

Faculty I/c. (Name & Signature) Chairman, BOS

Lists and Plotting: Introduction, Operations on lists, nested list, list methods, list comprehension, Functional programming - filter(), map(), reduce() function, Plotting data in lists,
NumPy arrays basics: Importing NumPy, Basic array attributes and operations, 1-D and multi-dimensional arrays, Array slicing and striding, Other array creation functions, Basic array math. Creating matrices using NumPy arrays,accessing elements, accessing rows and columns, setting elements, setting rows and columns, multi-dimensional slicing, and striding.

UNIT – III:
Tuples: Introduction, operations on tuples, packing and unpacking, nested tuples, tuple methods and functions.
Set: Introduction, Set operations.
Dictionaries: Basic operations, sorting items, looping over dictionary, nested dictionaries, built-in dictionary functions.

UNIT – IV:
OOPS Concepts: Introduction, classes and object, class method and self-argument, the __init__()method, class variables and object variables, public and private data members, Inheritance, Operator Overloading.

UNIT – V:
Files and Exceptions: reading and writing files, serialization using JSON andpickle, encoding and decoding, handling exceptions, assertions, modules – math, random, calendar, turtle, built-in and user-defined exceptions.

Learning Resources:
1 Allen Downey, "Think Python: How to Think Like a Computer Scientist", O'Reilly publications,2nd Edition.
2.Reema Thareja, "Python programming using problem solving approach ", Oxford university press.
3. Mark J Guzdial, Introduction to Computing and programming in Python, 3rd Edition (2013), Pearson India
4. https://onlinecourses-archive.nptel.ac.in/noc19_cs09/
5. http://nptel.ac.in/courses/117106113/34
6. https://ocw.mit.edu/courses/electrical-engineering-and-computer-science/6-01sc-introduction-to-electricalengineering-and-computer-science-i-spring-2011/python-tutorial/

The break-up of CIE: Internal Tests+ Assignments + Quizzes

Faculty I/c. (Name & Signature) Chairman, BOS

1	No. of Internal Tests:	02	Max.Marks for each Internal Tests:	30
2	No. of Assignments:	03	Max. Marks for each Assignment:	05
3	No. of Quizzes:	03	Max. Marks for each Quiz Test:	05

Duration of Internal Test: **90 Minutes**

VASAVI COLLEGE OF ENGINEERING (Autonomous)

IBRAHIMBAGH, HYDERABAD – 500 031

DEPARTMENT OF HUMANITIES & SOCIAL SCIENCES

Course Name: Human Values and Professional Ethics-1

Syllabus: COMMON FOR ALL BRANCHES - BE-1/4- **I and II SEMESTER**

L: T: P(Hrs/Week):1:0:0	SEE Marks: 40	Course Code: **U21HS020EH**
Credits: 1	CIE Marks: 30	Duration of SEE: Hours: 02

COURSE OBJECTIVES	COURSE OUTCOMES
The course will enable the students to: -	On completion of this course the student will be able to :
1. Get a holistic perspective of value-based education.	1. Understand the significance of value inputs in a classroom and start applying them in their life and profession
2. Grasp the meaning of basic human aspirations vis-a-vis the professional aspirations.	2. Distinguish between Personal and Professional life goals–constantly evolving into better human beings and professionals.
3. Understand professionalism in harmony with self and society.	3. Work out the strategy to actualize a harmonious environment wherever they work.
4. Develop ethical human conduct and professional competence.	4. Distinguish between ethical and unethical practices, and start implementing ethical practices
5. Enrich their interactions with the world around, both professional and personal.	5. Apply ethics and values in their personal and professional interactions.

UNIT-1 HARMONY WITH SELF AND FAMILY

This unit will cover the basic Human Aspirations: Philosophy, purpose & objective of Life

Faculty I/c. (Name & Signature) Chairman, BOS

Understanding and living in harmony at various levels-with self, family, society and nature. and the **Ethical and moral values:** which include self-sufficiency, self-determination, self-advocacy, self-competence, self-direction, self-efficacy, self-regulation, self-reliance, and self-responsibility. This also includes Family values involving all the ideas of how you want to live your family life, and they are often passed down from previous generations.

UNIT-2 PROFESSIONAL VALUES AND BEHAVIOUR

This unit covers the following components

a) **At the level of individual:** as socially and ecologically responsible engineers and technologists.

b) **Team Work: Developing** Credibility and building trust by having open and truthful communication. This includes recognizing the value of time and respecting time of self and others.

UNIT 3 - SOCIAL VALUES

This unit covers inputs on values of service, social justice, dignity and worth of the person, importance of human relationships, integrity, and competence.

UNIT 4 - SPIRITUAL VALUES

This unit covers on developing individual practice and has to do with having a sense of peace and purpose. Spiritual values, namely, benevolence, charity, dignity, forbearance, hope, humility, kindness, love, modesty, peace, perseverance, piety, repentance, righteous, sacredness, sincerity, steadfastness, striving, trusting, truthfulness, unity, and wisdom.

MODE of DELIVERY

● **Questionnaires** ● **Quizzes** ● **Case-studies** ● **Observations and practice** ● **Home and classroom assignments**	● **Discussions** ● **Skits** ● **Short Movies/documentaries** ● **Team tasks and individual tasks** ● **Research based tasks** ● **Viva**

Relevant Websites, CD's and Documentaries

- https://plato.stanford.edu/

Learning Resources:

Faculty I/c. (Name & Signature) Chairman, BOS

learn.talentsprint.com

The break-up of CIE: Internal Tests+ Assignments + Quizzes

1	No. of Internal Tests:	01	Max.Marks for each Internal Tests:		20
2	No. of Assignments:	-	Max. Marks for each Assignment:		-
3	No. of Quizzes:	02	Max. Marks for each Quiz Test:		05

Duration of Internal Test: **90 Minutes**

VASAVI COLLEGE OF ENGINEERING (Autonomous)
IBRAHIMBAGH, HYDERABAD – 500 031

DEPARTMENT OF CIVIL ENGINEERING

ENVIRONMENTAL SCIENCE

(Common to CSE, Mech., & IT)

SYLLABUS FOR B.E. II-SEMESTER

L:T:P(Hrs./week): 2 : 0 : 0	SEE Marks:60	Course Code: **U21MC010CE**
Credit: - - -	CIE Marks:40	Duration of SEE: 3 Hrs

COURSE OBJECTIVES	**COURSE OUTCOMES**
In this subject the students will	*Upon the completion of this course students will be able to*
1. Describe various types of natural resources available on the earth surface. 2. Explain the concepts of an ecosystem and the biotic and abiotic components of various aquatic ecosystems. 3. Identify the values, threats of biodiversity, endangered and endemic species of India along with the conservation of biodiversity. 4. Explain the causes, effects and control measures of various types of environmental pollutions. 5. Describe the methods for water	1. Describe the various types of natural resources. 2. Differentiate between various biotic and abiotic components of ecosystem. 3. Examine the values, threats of biodiversity, the methods of conservation, endangered and endemic species of India. 4. Illustrate causes, effects, control measures of various types of environmental pollutions. 5. Explain the methods of water conservation, causes, effects of climate change, global warming, acid rain and ozone layer depletion, population explosion.

Faculty I/c. (Name & Signature) Chairman, BOS

conservation, the causes, effects of global warming, climate change, acid rain, ozone layer depletion, population explosion.	

UNIT-I: Environmental Studies: Definition, importance of environmental studies. Natural resources: Water resources; floods, drought, conflicts over water, dams-benefits and problems. Food resources; Effects of modern agriculture, fertilizer-pesticide problems, water logging salinity. Energy resources: Renewable and non-renewable energy resources. Land Resources, soil erosion and desertification.

UNIT-II: Ecosystems: Structure and function of an ecosystem, producers, consumers and decomposers, food chains, food webs, ecological pyramids, aquatic ecosystems (ponds, oceans, estuaries).

UNIT-III: Biodiversity: Genetic, species and ecosystem diversity. Values of biodiversity, threats to biodiversity, endangered and endemic species of India, conservation of biodiversity.

UNIT-IV: Environmental Pollution: Causes, effects and control measures of air pollution, water pollution, soil pollution, noise pollution, thermal pollution and solid waste & e-waste management.

UNIT-V: Social Aspects and the Environment: Water conservation, Climate change, global warming, acid rain, ozone layer depletion. Environmental Impact Assesment, population explosion.

Learning Resources:

1. Deswal S. and Deswal A., A Basic Course on Environmental studies, DhanpatRai& Co Pvt. Ltd. 2016
2. Benny Joseph, Environmental Studies, Tata McGraw-Hill, 2017
3. Suresh K. Dhameja, Environmental Studies, S.K. Kataria& Sons, 2010.
4. De A.K., Environmental Chemistry, New Age International, 2003.
5. Odum E.P., Fundamentals of Ecology, W.B. Sunders Co., USA, 2004.
6. Rajagopalan R., Environmental Studies, Second Edition, Oxford University

Press, 2015

The break-up of CIE: Internal Tests + Assignments + Quizzes

1	No. of Internal Tests	:	2	Max. Marks for each Internal Tests	:	30
2	No. of Assignments	:	2	Max. Marks for each Assignment	:	5
3	No. of Quizzes	:	2	Max. Marks for each Quiz Test	:	5
Duration of Internal Tests		:	90 Minutes			

Faculty I/c. (Name & Signature) Chairman, BOS

VASAVI COLLEGE OF ENGINEERING (AUTONOMOUS)
9-5-81, Ibrahimbagh, Hyderbad-500031, Telangana State
DEPARTMENT OF MATHEMATICS
(B.E. Semester - II)

Mathematics Lab (Calculus, Linear Algebra & Differential equations)

L:T:P(Hrs./week): 0 : 0 : 2	SEE Marks :50	Course Code: U21BS211MA
Credits : 1	CIE Marks: 30	Duration of SEE : 3 Hrs

Course Objectives	**Course Outcomes**
The course will enable the students to:	**At the end of the course student will be able to:**
Demonstrate the linear algebra, calculus and differential equation concepts using SciPy.	1. Demonstrate the knowledge of Linear Algebra module of NumPy/SciPy for numerical analysis and visualization. 2. Apply Matrix basic operations and its analysis. 3. Demonstrate the use of matrix decompositions and solving of linear equations. 4. Apply calculus theorems to examine extreme values of a function. 5. Demonstrate the knowledge of solving Differential equations.

1. Introduction to Anaconda & Jupyter Notebook setup and evaluating elementary functions.
2. Basic operations on Matrix & Vector.
3. Matrix analysis: Rank, Determinant, Trace, Orthogonal basis & Inverse of matrices.
4. Eigen values and Eigenvectors of Matrix.
5. Matrix decompositions: SVD, QR, LU, Pseudo Inverse
6. Solve system of linear equations.
7. Data plotting (2D,3D) of various mathematical functions.
8. Test the convergence of infinite series i.e., power, Taylor.
9. Intro to calculus and examine minima, maxima and saddle points of a given function.
10. Application of definite integrals to area & volume calculations.
11. Solving differential equations.

Faculty I/c. (Name & Signature) Chairman, BOS

Learning Resources:

1. Kong, Qingkai, Timmy Siauw, and Alexandre Bayen. Python Programming and Numerical Methods: A Guide for Engineers and Scientists. Academic Press, 2020.
2. https://numpy.org/doc/1.21/user/tutorials_index.html
3. https://personal.math.ubc.ca/~pwalls/math-python/linear-algebra/linear-algebra-scipy/

System requirements

- Anaconda/Jupyter (software that you are required to install)

No. of Internal Tests:	02	Max. Marks for Internal Test:	12
For day-to-day laboratory class work which will be awarded based on the average of assessment for each experiment considering at the end of the course			18

Faculty I/c. (Name & Signature) Chairman, BOS

VASAVI COLLEGE OF ENGINEERING (AUTONOMOUS)

IBRAHIMBAGH, HYDERBAD-500031

DEPARTMENT OF CHEMISTRY

CHEMISTRY LAB

L:T:P(Hrs./week):0 :0:2	SEE Marks : 50	Course Code: **U21BS011CH**
Credits : 1	CIE Marks : 30	Duration of SEE: 3 Hours

LEARNING OBJECTIVES:	**LEARNING OUTCOMES:**
The course will enable the students to:	**At the end of the course, students should be able to:**
1. Describe the quantitative analytical techniques 2. Learn the skills to handle the instruments 3. Apply the theoretical principles in experiments 4. Examine the accuracy	1. Determine the amount of metals in the given solutions. 2. Analyse the hardness, alkalinity and chloride content of a given sample. 3. Estimate the amount of a substance in a given solution by conductometry, potentiometry and pH metry. 4. Use the principle of colorimetry in the estimation of Permanganate / Copper (II) in a given solution.

1. Preparation of standard FAS or oxalic acid solution and standardization of $KMnO_4$ or NaOH solution.
2. Estimation of ferrous iron in the given solution by permanganometry.
3. Estimationof chromium in the given solution by standardized FAS.
4. Estimation of copper in brass or given solution by hypo.
5. Estimationof available chlorine in bleaching powder.
6. Estimation of total hardness of given water sample.
7. Estimation of alkalinity of a given sample.
8. Conductometric acid-base titrations -Determination of strength of given acids (HCl *Vs* NaOH and CH_3COOH *Vs* NaOH).
9. Conductometric acid-base titrations- Determination of strength of acids in a given mixture of acids
(HCl and CH_3COOH *Vs* NaOH)
10. Determination of strength of a given acid by Potentiometry.
11. Determination of concentration of a given $FeSO_4$ using redox titration by Potentiometry.

Faculty I/c. (Name & Signature) Chairman, BOS

12. Determination of strength of a given acid by pH metry.
13. Determination of strength of permanganate or copper in brass solution by Colorimetry.
14. Determination of concentration of a salt by ion exchange method.
15. Synthesis of Aspirin or Phenol formaldehyde resin.

Learning Resources:

Text Books:

1. Sunita rattan, Experimenta in applied chemistry, S K Kataria & Sons (2010)
2. M S Kaurav, Engineering chemistry with laboratory experiments, PHI learning (P) ltd, New Delhi.

Reference Books:

1. G H Jeffery, J Bassett, J Mendham, R C Denney, Vogel's text book of quantitative chemical analysis, Fifth Edition.
2. A text book on experiments and calculation Engg. S.S. Dara.

Faculty I/c. (Name & Signature) Chairman, BOS

VASAVI COLLEGE OF ENGINEERING(Autonomous)
IBRAHIMBAGH, HYDERABAD – 500 031
DEPARTMENT OF INFORMATION TECHNOLOGY

BASIC ELECTRONICS LAB
SYLLABUS FOR B.E. II SEMESTER

L:T:P(Hrs./week): 0:0:2	SEE Marks :50	Course Code:**U21ES211IT**
Credits : 1	CIE Marks :30	Duration of SEE : 3 Hours

COURSE OBJECTIVES	COURSE OUTCOMES
The course will enable the students to:	On completion of the course, students will be able to
1. Identify the different electronic devices and use them in building different application circuits.	1. Identify and use different electronic devices and measuring equipment. 2. Use PN diode, Zener diode for applications like rectifiers, clipping and clamping circuits and voltage regulators. 3. Use BJT transistor in the design of amplifier circuit. 4. Implement different types of oscillator circuits. 5. Use operational amplifier for different applications and verify the operation of different digital circuits.

EXPERIMENTS:

1. CRO and its applications: Measurement of amplitude, frequency.
2. Characteristics of pn junction diode.
3. Characteristics of Zener diode.
4. Zener diode as a Voltage Regulator.
5. Half-wave Rectifier.
6. Full-wave rectifier.
7. Clipping Circuits.
8. Clamping Circuits.
9. Characteristics of Common Emitter Transistor configuration.
10. Characteristics of Common Base Transistor configuration.
11. Frequency response of Common Emitter amplifier.
12. RC phase shift oscillators.
13. Operational Amplifier as an adder, subtractor, and comparator.

Faculty I/c. (Name & Signature) Chairman, BOS

ADDITIONAL EXPERIMENTS:

1. Truth table verification of logic gates using TTL 74 series ICs.
2. Implementation of Half Adder, Full Adder.
3. Verification of Multiplexer Operation.
4. Implementation of Boolean logic using decoders and MUXes.
5. Truth table verification of D flip flop, T flip-flop and JK flip-flop.

Learning Resources:

1. Paul B Zbar and Alber P Malvino, Michael A Miller, "Basic Electronics: A Text Lab Manual", 7th edition, Tata McGraw Hill, 2009.
2. David A Bell, "Laboratory Manual for Electronic Devices and Circuits", 4th edition, PHI, 2001.
3. Muhammed H Rashid, "SPICE for circuits and electronics using PSPICE", 2nd edition, PHI, 1995.
4. Mithal. G.K, "Practicals in Basic Electronics", G K Publishers Private Limited, 1997.
5. Maheswari. L.K and Anand.M.M.S, "Laboratory Manual for Introductory Electronic Experiments", New Age, 2010.
6. PoornachandraRao.S and Sasikala.B, "Handbook of Experiments in Electronics and Communication Engineering", Vikas publishers, 2003
7. http://www.nptelvideos.in/2012/11/basic-electronics-prof-tsnatarajan.html

No. of Internal Tests:	02	Max. Marks for Internal Test:	12
For day-to-day laboratory class work which will be awarded based on the average of assessment for each experiment considering at the end of the course			18

Faculty I/c. (Name & Signature) Chairman, BOS

VASAVI COLLEGE OF ENGINEERING(Autonomous)
IBRAHIMBAGH, HYDERABAD – 500 031
DEPARTMENT OF INFORMATION TECHNOLOGY

PYTHON PROGRAMMING LAB
SYLLABUS FOR B.E. II SEMESTER

L:T:P(Hrs./week): 0:0:2	SEE Marks :50	Course Code: U20PC211IT
Credits : 1	CIE Marks :30	Duration of SEE : 3 Hours

Course Objectives	Course Outcomes
The course will enable the students to:	**At the end of the course student will be able to:**
Effectively choose programming components to solve computing problems.	1) Solve problems using different decision-making statements, loops and functions. 2) Visualize the data by plotting data in lists. 3) Interpret Object Oriented concepts in Python 4) Understand and perform different File handling operations.

Programming Exercise:
1) Programs on operators and expressions.
2) Programs on decision making.
3) Programs on loops.
4) Programs on functions.
5) Programs on Strings.
6) Programs on Lists
7) Programs Plotting data in lists and NumPy Arrays. Introduction to Jupyter Notebook
8) Programs on Tuples and sets.
9) Programs on Dictionaries.
10) Programs on classes and objects.
11) Programs on Inheritance.
12) Programs on file handling.
13) Programs on exceptions.
14) Programs on writing user defined modules.

Faculty I/c. (Name & Signature) Chairman, BOS

Learning Resources:

1. Allen Downey, "Think Python: How to Think Like a Computer Scientist", O'Reilly publications,2nd Edition.
2. Reema Thareja, "Python programming using problem solving approach ", Oxford university press.
3. Mark J Guzdial, Introduction to Computing and programming in Python, 3rd Edition (2013), Pearson India
4. https://onlinecourses-archive.nptel.ac.in/noc19_cs09/
5. http://nptel.ac.in/courses/117106113/34
6. https://ocw.mit.edu/courses/electrical-engineering-and-computer-science/6-01sc-introduction-to-electricalengineering-and-computer-science-i-spring-2011/python-tutorial/

No. of Internal Tests:	01	Max. Marks for Internal Test:	12
Day-to-day laboratory class work which will be awarded based on the average of assessment for each experiment considering at the end of the course			18
Duration of Internal Test: 3 Hours			

Faculty I/c. (Name & Signature) Chairman, BOS

VASAVI COLLEGE OF ENGINEERING (AUTONOMOUS)
HYDERABAD-500031

DEPARTMENT OF INFORMATION TECHNOLOGY

ACTIVITY CALENDAR FOR THE ACADEMIC YEAR 2021-2022

S. No.	Date	Day	Details of Activity / Public Holiday
July 2021			
1	01-7-2021	Thursday	Semester End lab Exams for IV, VI & VIII Sem students
2	02-7-2021	Friday	Semester End lab Exams for IV, VI & VIII Sem students
3	03-7-2021	Saturday	Semester End lab Exams for IV, VI & VIII Sem students
4	04-7-2021	Sunday	Public Holiday
5	05-7-2021	Monday	Semester End lab Exams for IV, VI & VIII Sem students
6	06-7-2021	Tuesday	Semester End lab Exams for IV, VI & VIII Sem students
7	07-7-2021	Wednesday	Semester End lab Exams for IV, VI & VIII Sem students
8	08-7-2021	Thursday	Semester End lab Exams for IV, VI & VIII Sem students
9	09-7-2021	Friday	Semester End lab Exams for IV, VI & VIII Sem students
10	10-7-2021	Saturday	Mock Interview by Alumni –Vishal for VIII Sem (2022 Batch) students Semester End lab Exams for IV, VI & VIII Sem students
11	11-7-2021	Sunday	**Public Holiday**
12	12-7-2021	Monday	Semester End Theory Exams for IV, VI & VIII Sem students
13	13-7-2021	Tuesday	Semester End Theory Exams for IV, VI & VIII Sem students
14	14-7-2021	Wednesday	Semester End Theory Exams for IV, VI & VIII Sem students
15	15-7-2021	Thursday	Semester End Theory Exams for IV, VI & VIII Sem students
16	16-7-2021	Friday	Semester End Theory Exams for IV, VI & VIII Sem students
17	17-7-2021	Saturday	Mock Interview by Alumni –Santosh, Kiranmayi , Sarika, Akhil & Srikar for VIII Sem (2022 Passed out) students Semester End Theory Exams for IV, VI & VIII Sem students
18	18-7-2021	Sunday	Mock Interview by Alumni –Santosh, Kiranmayi , Sarika, Akhil & Srikar for VIII Sem (2022 Passed out) students
19	19-7-2021	Monday	Mock Interview by Alumni –Abhijeeth for VIII Sem (2022 Batch) students Semester End Theory Exams for IV, VI & VIII Sem students
20	20-7-2021	Tuesday	Mock Interview by Alumni –Abhijeeth for VIII Sem (2022 Batch) students Semester End Theory Exams for IV, VI & VIII Sem students
21	21-7-2021	Wednesday	Semester End Theory Exams for IV, VI & VIII Sem students
22	22-7-2021	Thursday	Semester End Theory Exams for IV, VI & VIII Sem students
23	23-7-2021	Friday	Semester End Theory Exams for IV, VI & VIII Sem students
24	24-7-2021	Saturday	Semester End Theory Exams for IV, VI & VIII Sem students

Faculty I/c. (Name & Signature) Chairman, BOS

S. No.	Date	Day	Details of Activity / Public Holiday
25	25-7-2021	Sunday	PUBLIC HOLIDAY
26	26-7-2021	Monday	Semester End Theory Exams for IV, VI & VIII Sem students
27	27-7-2021	Tuesday	Semester End Theory Exams for IV, VI & VIII Sem students
28	28-7-2021	Wednesday	Semester End Theory Exams for IV, VI & VIII Sem students Recommencement of Classwork for II sem students
29	29-7-2021	Thursday	Semester End Theory Exams for IV, VI & VIII Sem students
30	30-7-2021	Friday	Semester End Theory Exams for IV, VI & VIII Sem students
31	31-7-2021	Saturday	Semester End Theory Exams for IV, VI & VIII Sem students
August 2021			
32	1-8-2021	Sunday	PUBLIC HOLIDAY
33	2-8-2021	Monday	**Bonalu**
34	3-8-2021	Tuesday	
35	4-8-2021	Wednesday	
36	5-8-2021	Thursday	
37	6-8-2021	Friday	
38	7-8-2021	Saturday	
39	8-8-2021	Sunday	PUBLIC HOLIDAY
40	9-8-2021	Monday	
41	10-8-2021	Tuesday	
42	11-8-2021	Wednesday	
43	12-8-2021	Thursday	
44	13-8-2021	Friday	
45	14-8-2021	Saturday	
46	15-8-2021	Sunday	**Independence Day**
47	16-8-2021	Monday	Advance Supplementary Exams for IV, VI & VIII Sem students Second Internal for II sem Students
48	17-8-2021	Tuesday	Advance Supplementary Exams for IV, VI & VIII Sem students Second Internal for II Sem Students
49	18-8-2021	Wednesday	Advance Supplementary Exams for IV, VI & VIII Sem students Second Internal for II sem Students
50	19-8-2021	Thursday	Muharram
51	20-8-2021	Friday	Advance Supplementary Exams for IV, VI & VIII Sem students
52	21-8-2021	Saturday	Advance Supplementary Exams for IV, VI & VIII Sem students
53	22-8-2021	Sunday	PUBLIC HOLIDAY
54	23-8-2021	Monday	Advance Supplementary Exams for IV, VI & VIII Sem students

Faculty I/c. (Name & Signature) Chairman, BOS

S. No.	Date	Day	Details of Activity / Public Holiday
55	24-8-2021	Tuesday	Advance Supplementary Exams for IV, VI & VIII Sem students
56	25-8-2021	Wednesday	Seminar on Demonstration of accessing journals remotely for V-Semester IT A&B, Mr. Ravi Kumar, Librarian, VCE Advance Supplementary Exams for IV, VI & VIII Sem students
57	26-8-2021	Thursday	Certification exam on "Introduction to Network switching and Routing Lab" under CC Activity. Advance Supplementary Exams for IV, VI & VIII Sem students Semester End Theory Exams for II Sem students
58	27-8-2021	Friday	Workshop on Introduction to Data Analytics for V-Semester IT A&B by Mr. Amit Gupta ,Adjunct Faculty, Sr. Data Scientist, CSEO, Microsoft India, Gachibowli (27-29 August 2021) under Professional Body Activity Advance Supplementary Exams for IV, VI & VIII Sem students Semester End Theory Exams for II Sem students
59	28-8-2021	Saturday	Workshop on Introduction to Data Analytics for V-Semester IT A&B by Mr. Amit Gupta ,Adjunct Faculty, Sr. Data Scientist, CSEO, Microsoft India, Gachibowli (27-29 August 2021) under Professional Body Activity Advance Supplementary Exams for IV, VI & VIII Sem students Semester End Theory Exams for II Sem students
60	29-8-2021	Sunday	Workshop on Introduction to Data Analytics for V-Semester IT A&B by Mr. Amit Gupta ,Adjunct Faculty, Sr. Data Scientist, CSEO, Microsoft India, Gachibowli (27-29 August 2021) under Professional Body Activity
61	30-8-2021	Monday	**Janmashtami** Course Registration by V and VII Sem students
62	31-8-2021	Tuesday	Advance Supplementary Exams for IV, VI & VIII Sem students Semester End Theory Exams for II Sem students Course Registration by V and VII Sem students
September 2021			
63	1-9-2021	Wednesday	Workshop on Android Development for V-Sem IT A&B by Mr. R. Dharma Reddy, Asst. Professor, Department of Information Technology, VCE (1-3 September 2021) Under CCA Activity Advance Supplementary Exams for IV, VI & VIII Sem students

Faculty I/c. (Name & Signature) Chairman, BOS

S. No.	Date	Day	Details of Activity / Public Holiday
			Semester End Theory Exams for II Sem students Course Registration by V and VII Sem students
64	2-9-2021	Thursday	Workshop on Android Development for V-Sem IT A&B by Mr. R. Dharma Reddy, Asst. Professor, Department of Information Technology, VCE (1-3 September 2021) Under CCA Activity Advance Supplementary Exams for IV, VI & VIII Sem students Semester End Theory Exams for II Sem students Course Registration by V and VII Sem students
65	3-9-2021	Friday	Workshop on Android Development for V-Sem IT A&B by Mr. R. Dharma Reddy, Asst. Professor, Department of Information Technology, VCE (1-3 September 2021) Under CCA Activity Advance Supplementary Exams for IV, VI & VIII Sem students Semester End Theory Exams for II Sem students Course Registration by V and VII Sem students
66	4-9-2021	Saturday	Advance Supplementary Exams for IV, VI & VIII Sem students Semester End Theory Exams for II Sem students Course Registration by V and VII Sem students
67	5-9-2021	Sunday	Public Holiday
68	6-9-2021	Monday	Commencement of classwork for V and VII Sem Semester End Theory Exams for II Sem students
69	7-9-2021	Tuesday	Semester End Theory Exams for II Sem students
70	8-9-2021	Wednesday	Semester End Theory Exams for II Sem students
71	9-9-2021	Thursday	Semester End lab Exams for II Sem students
72	10-9-2021	Friday	**Ganesh Chaturthi**
73	11-9-2021	Saturday	Workshop on Introduction to Data Analytics(contd) for V-Semester IT A&B by Mr. Amit Gupta ,Adjunct Faculty, Sr. Data Scientist, CSEO, Microsoft India, Gachibowli under professional Body Activity. Semester End lab Exams for II Sem students
74	12-9-2021	Sunday	"VASAVI CODATHON – 2021"-Round-1on Online Programming Quiz in collaboration with M/s. Campus Corporate Connect (CCC) for V and VII Semester students of CSE and IT, for the academic year 2021-22.
75	13-9-2021	Monday	Semester End lab Exams for II Sem students
76	14-9-2021	Tuesday	Semester End lab Exams for II Sem students
77	15-9-2021	Wednesday	Guest Lecture on Software Testing with ML for VII Sem A&B by professor from Manipal University, Jaipur Under CSI

Faculty I/c. (Name & Signature) Chairman, BOS

S. No.	Date	Day	Details of Activity / Public Holiday
			activity Course Registration by III Sem Students
78	16-9-2021	Thursday	Course Registration by III Sem Students
79	17-9-2021	Friday	Course Registration by III Sem Students
80	18-9-2021	Saturday	Guest Lecture on Introduction to Data visualization and Descriptive Statistics for V-Semester IT A&B by Mr. Amit Gupta ,Adjunct Faculty, Sr. Data Scientist, CSEO, Microsoft India, Gachibowli Under Professional Body Activity Guest Lecture on Introduction to CCA Paper Presentation for V-Sem to IT A&B Students by Dr. Raghavendra Kune, Adjunct Faculty & Scientist/Engineer 'SG', Head High performance computing Drones(HPCD), Advanced Data Processing Research Institute (ADRIN), Dept. of Space, ISRO. Course Registration by III Sem Students
81	19-9-2021	Sunday	PUBLIC HOLIDAY
82	20-9-2021	Monday	Commencement of III Sem Classwork
83	21-9-2021	Tuesday	Awareness on Virtual Labs by IIIT Hyderabad for III Sem by Mr. Ravi Shankar under CC Actvity.
84	22-9-2021	Wednesday	
85	23-9-2021	Thursday	
86	24-9-2021	Friday	
87	25-9-2021	Saturday	Alumni Interaction for III Sem students Workshop on Advanced Python by Mr. Amar Sharma for III Sem. under professional Body activity
88	26-9-2021	Sunday	PUBLIC HOLIDAY
89	27-9-2021	Monday	
90	28-9-2021	Tuesday	Microsoft Learn Student Event for III sem by Microsoft Learn Student Ambassadors Taruni & Sonal. K on " Hands-on GitHub" Under CC Activity
91	29-9-2021	Wednesday	Guest Lecture on Theory of Automata by U.S.N.Raju for V-Sem A,B&C students under Professional Body Activity.
92	30-9-2021	Thursday	
October 2021			
93	1-10-2021	Friday	
94	2-10-2021	Saturday	Gandhi Jayanti
95	3-10-2021	Sunday	PUBLIC HOLIDAY
96	4-10-2021	Monday	
97	5-10-2021	Tuesday	Code Chef Event by Student Ambassadors of V-Sem for III-

Faculty I/c. (Name & Signature) Chairman, BOS

S. No.	Date	Day	Details of Activity / Public Holiday
			A,B&C students. Under CC Activity
98	6-10-2021	Wednesday	**First Day of Bathukamma**
99	7-10-2021	Thursday	
100	8-10-2021	Friday	
101	9-10-2021	Saturday	Alumni Interaction for V Sem Students
102	10-10-2021	Sunday	PUBLIC HOLIDAY
103	11-10-2021	Monday	
104	12-10-2021	Tuesday	"VASAVI CODATHON – 2021"-Round-II on Online Coding Challenge in collaboration with M/s. Campus Corporate Connect (CCC) for V and VII Semester students of CSE and IT, for the academic year 2021-22.
105	13-10-2021	Wednesday	
106	14-10-2021	Thursday	
107	15-10-2021	Friday	**Vijaya Dashami**
108	16-10-2021	Saturday	Workshop on Advanced Python by Mr. Amar Sharma for III Sem. under professional Body activity.
109	17-10-2021	Sunday	PUBLIC HOLIDAY
110	18-10-2021	Monday	First spell of offline lab session for V sem students I internal for VII Sem students
111	19-10-2021	Tuesday	**Eid e Milad**
112	20-10-2021	Wednesday	First spell of offline lab session for V sem students I internal for VII Sem students
113	21-10-2021	Thursday	First spell of offline lab session for V sem students I internal for VII Sem students
114	22-10-2021	Friday	Guest Lecture on Compiler Construction by Dr. U. S. N. Raju for VII-Sem A,B students. Under Professional Body Activity First spell of offline lab session for V sem students I internal for VII Sem students
115	23-10-2021	Saturday	Guest Lecture on DCCN by Dr. Radha Krishna, NIT Warangal, for V-Sem A, B &C students. Under CC Activity Guest Lecture on Digital Image Processing by U. S. N. Raju for VII-Sem A, B Students. Under Professional Body Activity First spell of offline lab session for V sem students I internal for VII Sem students
116	24-10-2021	Sunday	PUBLIC HOLIDAY
117	25-10-2021	Monday	Researcher's Forum on "Computational Intelligence" organized by Dept of IT on 25-26 October 2021. Under Professional Body Activity First spell of offline lab session for VII sem students I Internal for V sem Students

Faculty I/c. (Name & Signature) Chairman, BOS

S. No.	Date	Day	Details of Activity / Public Holiday
118	26-10-2021	Tuesday	Researcher's Forum on "Computational Intelligence" organized by Dept of IT on 25-26 October 2021. Under Professional Body Activity
119	27-10-2021	Wednesday	
120	28-10-2021	Thursday	
121	29-10-2021	Friday	
122	30-10-2021	Saturday	
123	31-10-2021	Sunday	PUBLIC HOLIDAY
November 2021			
124	1-11-2021	Monday	First spell of offline lab session for III sem students
125	2-11-2021	Tuesday	First spell of offline lab session for III sem students
126	3-11-2021	Wednesday	First spell of offline lab session for III sem students
127	4-11-2021	Thursday	**Diwali**
128	5-11-2021	Friday	First spell of offline lab session for III sem students
129	6-11-2021	Saturday	First spell of offline lab session for III sem students
130	7-11-2021	Sunday	PUBLIC HOLIDAY
131	8-11-2021	Monday	I internal for III Sem students
132	9-11-2021	Tuesday	I internal for III Sem students
133	10-11-2021	Wednesday	I internal for III Sem students
134	11-11-2021	Thursday	I internal for III Sem students
135	12-11-2021	Friday	"VASAVI CODATHON – 2021"-Round-III Build and Present Application in collaboration with M/s. Campus Corporate Connect (CCC) for V and VII Semester students of CSE and IT, for the academic year 2021-22.
136	13-11-2021	Saturday	Guest Lecture on Operating System by Dr. Emmanuel, Manipal University, Manipal for V-Sem A&B Students. Under CC Activity
137	14-11-2021	Sunday	PUBLIC HOLIDAY
138	15-11-2021	Monday	
139	16-11-2021	Tuesday	
140	17-11-2021	Wednesday	
141	18-11-2021	Thursday	
142	19-11-2021	Friday	**Karthika Purnima / Guru Nanak Jayanti**
143	20-11-2021	Saturday	Parent Teacher Meeting for III Sem students
144	21-11-2021	Sunday	PUBLIC HOLIDAY
145	22-11-2021	Monday	I SEM Induction Program (22- 27 November 2021)
146	23-11-2021	Tuesday	I SEM Induction Program (22- 27 November 2021)
147	24-11-2021	Wednesday	I SEM Induction Program (22- 27 November 2021)

Faculty I/c. (Name & Signature) Chairman, BOS

S. No.	Date	Day	Details of Activity / Public Holiday
148	25-11-2021	Thursday	I SEM Induction Program (22- 27 November 2021)
149	26-11-2021	Friday	I SEM Induction Program (22- 27 November 2021)
150	27-11-2021	Saturday	I SEM Induction Program (22- 27 November 2021) Guest Lecture on DELD for III Sem students.
151	28-11-2021	Sunday	PUBLIC HOLIDAY
152	29-11-2021	Monday	
153	30-11-2021	Tuesday	
December -2021			
154	1-12-2021	Wednesday	
155	2-12-2021	Thursday	
156	3-12-2021	Friday	
157	4-12-2021	Saturday	Alumni Interaction for V-Sem Students of A&B
158	5-12-2021	Sunday	PUBLIC HOLIDAY
159	6-12-2021	Monday	
160	7-12-2021	Tuesday	
161	8-12-2021	Wednesday	
162	9-12-2021	Thursday	
163	10-12-2021	Friday	Android Hackathon for V sem students under CC Activity
164	11-12-2021	Saturday	
165	12-12-2021	Sunday	PUBLIC HOLIDAY
166	13-12-2021	Monday	Second spell of Lab classes for V Sem students
167	14-12-2021	Tuesday	Second spell of Lab classes for V Sem students
168	15-12-2021	Wednesday	Second spell of Lab classes for V Sem students Second Internal for VII sem Students
169	16-12-2021	Thursday	Second spell of Lab classes for V Sem students Second Internal for VII sem Students
170	17-12-2021	Friday	Second spell of Lab classes for V Sem students Second Internal for VII sem Students
171	18-12-2021	Saturday	Second spell of Lab classes for V Sem students Second Internal for VII sem Students
172	19-12-2021	Sunday	PUBLIC HOLIDAY
173	20-12-2021	Monday	Second Internal for V sem Students Second spell of Lab classes for VII Sem students
174	21-12-2021	Tuesday	Second Internal for V sem Students Second spell of Lab classes for VII Sem students
175	22-12-2021	Wednesday	Second Internal for V sem Students Second spell of Lab classes for VII Sem students
176	23-12-2021	Thursday	Second Internal for V sem Students Second spell of Lab classes for VII Sem students

Faculty I/c. (Name & Signature) Chairman, BOS

S. No.	Date	Day	Details of Activity / Public Holiday
177	24-12-2021	Friday	Second Internal for V sem Students Second spell of Lab classes for VII Sem students
178	25-12-2021	Saturday	**Christmas Day**
179	26-12-2021	Sunday	**Boxing Day**
180	27-12-2021	Monday	Semester End lab Exams for V and VII Sem students Second spell of Lab classes for III Sem students
181	28-12-2021	Tuesday	
182	29-12-2021	Wednesday	
183	30-12-2021	Thursday	
184	31-12-2021	Friday	
January 2022			
185	1-1-2022	Saturday	
186	2-1-2022	Sunday	PUBLIC HOLIDAY
187	3-1-2022	Monday	Semester End lab Exams for V and VII Sem students
188	4-1-2022	Tuesday	Second Internal for III sem Students Semester End lab Exams for V and VII Sem students
189	5-1-2022	Wednesday	Second Internal for III sem Students Semester End lab Exams for V and VII Sem students
190	6-1-2022	Thursday	Second Internal for III sem Students Semester End lab Exams for V and VII Sem students
191	7-1-2022	Friday	Second Internal for III sem Students Semester End lab Exams for V and VII Sem students
192	8-1-2022	Saturday	Second Internal for III sem Students Semester End lab Exams for V and VII Sem students International Conference on Computational Intelligence and Data Analytics (ICCIDA) (8-9, Jan-2022)
193	9-1-2022	Sunday	International Conference on Computational Intelligence and Data Analytics (ICCIDA) (8-9, Jan-2022)
194	10-1-2022	Monday	Semester End lab Exams for III Sem students
195	11-1-2022	Tuesday	Semester End lab Exams for III Sem students
196	12-1-2022	Wednesday	Semester End lab Exams for III Sem students
197	13-1-2022	Thursday	Semester End lab Exams for III Sem students
198	14-1-2022	Friday	Semester End lab Exams for III Sem students
199	15-1-2022	Saturday	Semester End lab Exams for III Sem students
200	16-1-2022	Sunday	PUBLIC HOLIDAY
201	17-1-2022	Monday	Semester End lab Exams for III Sem students
202	18-1-2022	Tuesday	Semester End lab Exams for III Sem students
203	19-1-2022	Wednesday	Semester End lab Exams for III Sem students
204	20-1-2022	Thursday	Semester End lab Exams for III Sem students
205	21-1-2022	Friday	Semester End lab Exams for III Sem students

Faculty I/c. (Name & Signature) Chairman, BOS

S. No.	Date	Day	Details of Activity / Public Holiday
206	22-1-2022	Saturday	Semester End lab Exams for III Sem students
207	23-1-2022	Sunday	PUBLIC HOLIDAY
208	24-1-2022	Monday	Semester End Theory exams for III Sem students
209	25-1-2022	Tuesday	Semester End Theory exams for III Sem students
210	26-1-2022	Wednesday	**Republic Day**
211	27-1-2022	Thursday	Semester End Theory exams for III Sem students
212	28-1-2022	Friday	Semester End Theory exams for III Sem students
213	29-1-2022	Saturday	Semester End Theory exams for III Sem students
214	30-1-2022	Sunday	PUBLIC HOLIDAY
215	31-1-2022	Monday	Semester End Theory exams for III Sem students
February 2022			
216	1-2-2022	Tuesday	Semester End Theory exams for III Sem students
217	2-2-2022	Wednesday	Semester End Theory exams for III Sem students
218	3-2-2022	Thursday	Semester End Theory exams for III Sem students
219	4-2-2022	Friday	Semester End Theory exams for III Sem students
220	5-2-2022	Saturday	Semester End Theory exams for III Sem students
221	6-2-2022	Sunday	
222	7-2-2022	Monday	Semester End Theory exams for III Sem students Course Registration by IV Sem Students Outreach Program for Local Youth (7-12, Feb 2022)
223	8-2-2022	Tuesday	Semester End Theory exams for III Sem students Course Registration by IV Sem Students Outreach Program for Local Youth (7-12, Feb 2022)
224	9-2-2022	Wednesday	Semester End Theory exams for III Sem students Course Registration by IV Sem Students Outreach Program for Local Youth (7-12, Feb 2022)
225	10-2-2022	Thursday	Semester End Theory exams for III Sem students Course Registration by IV Sem Students Outreach Program for Local Youth (7-12, Feb 2022)
226	11-2-2022	Friday	Semester End Theory exams for III Sem students Course Registration by IV, VI and VIII Sem Students Outreach Program for Local Youth (7-12, Feb 2022)
227	12-2-2022	Saturday	Semester End Theory exams for III Sem students Outreach Program for Local Youth (7-12, Feb 2022)
228	13-2-2022	Sunday	PUBLIC HOLIDAY
229	14-2-2022	Monday	Commencement of IV, VI and VIII Sem classwork
230	15-2-2022	Tuesday	
231	16-2-2022	Wednesday	
232	17-2-2022	Thursday	
233	18-2-2022	Friday	
234	19-2-2022	Saturday	Alumni Interaction for IV Sem Students

Faculty I/c. (Name & Signature) Chairman, BOS

S. No.	Date	Day	Details of Activity / Public Holiday
			Introduction of Theme Based Projects by Dr. Raghavendra Kune, Adjunct Faculty & Scientist/Engineer 'SG', Head High performance computing Drones(HPCD), Advanced Data Processing Research Institute (ADRIN), Dept. of Space, ISRO. Under CC Activity
235	20-2-2022	Sunday	PUBLIC HOLIDAY
236	21-2-2022	Monday	
237	22-2-2022	Tuesday	
238	23-2-2022	Wednesday	
239	24-2-2022	Thursday	
240	25-2-2022	Friday	
241	26-2-2022	Saturday	Declaration of Results for BE III Sem Students Guest Lecture on "Algo Dynamics " by Dr. Venkatesh Choppalla , IIT Hyderabad. Under Professional Body Activity for IV Sem students.
242	27-2-2022	Sunday	PUBLIC HOLIDAY
243	28-2-2022	Monday	
March 2022			
244	1-3-2022	Tuesday	
245	2-3-2022	Wednesday	
246	3-3-2022	Thursday	Workshop on UML by Dr. Salman Abdul Moiz Professor SCIS, University of Hyderabad, Central University, Hyderabad for IV Sem students between 3-5 march 2022 under Professional Body Activity
247	4-3-2022	Friday	Workshop on UML by Dr. Salman Abdul Moiz Professor SCIS, University of Hyderabad, Central University, Hyderabad for IV Sem students between 3-5 march 2022 under Professional Body Activity
248	5-3-2022	Saturday	Workshop on UML by Dr. Salman Abdul Moiz Professor SCIS, University of Hyderabad, Central University, Hyderabad for IV Sem students between 3-5 march 2022 under Professional Body Activity Alumni Interaction for VI sem students
249	6-3-2022	Sunday	PUBLIC HOLIDAY
250	7-3-2022	Monday	
251	8-3-2022	Tuesday	
252	9-3-2022	Wednesday	
253	10-3-2022	Thursday	
254	11-3-2022	Friday	
255	12-3-2022	Saturday	Guest Lecture on AI & ML by Dr. Raghavendra Kune, Adjunct Faculty & Scientist/Engineer 'SG', Head High

Faculty I/c. (Name & Signature) Chairman, BOS

S. No.	Date	Day	Details of Activity / Public Holiday
			performance computing Drones(HPCD), Advanced Data Processing Research Institute (ADRIN), Dept. of Space, ISRO. Under CC Activity.
256	13-3-2022	Sunday	PUBLIC HOLIDAY
257	14-3-2022	Monday	
258	15-3-2022	Tuesday	
259	16-3-2022	Wednesday	
260	17-3-2022	Thursday	
261	18-3-2022	Friday	Guest Lecture on SQL Querying Hands-on for IV-Sem Students under Professional Bodies Activity by Mr. Amit Gupta ,Adjunct Faculty, Sr. Data Scientist, CSEO, Microsoft India, Gachibowli (18-19 March 2022)
262	19-3-2022	Saturday	Guest Lecture on SQL Querying Hands-on for IV-Sem Students under Professional Bodies Activity by Mr. Amit Gupta ,Adjunct Faculty, Sr. Data Scientist, CSEO, Microsoft India, Gachibowli (18-19 March 2022)
263	20-3-2022	Sunday	PUBLIC HOLIDAY
264	21-3-2022	Monday	
265	22-3-2022	Tuesday	
266	23-3-2022	Wednesday	
267	24-3-2022	Thursday	
268	25-3-2022	Friday	
269	26-3-2022	Saturday	Guest Lecture on AIML to VI-Sem Students under CCA by Dr. Atul Negi, Professor, School of Computer & Information Sciences, University of Hyderabad
270	27-3-2022	Sunday	PUBLIC HOLIDAY
271	28-3-2022	Monday	
272	29-3-2022	Tuesday	
273	30-3-2022	Wednesday	
274	31-3-2022	Thursday	
April 2022			
275	1-4-2022	Friday	
276	2-4-2022	Saturday	Alumni Interaction for IV sem students
277	3-4-2022	Sunday	PUBLIC HOLIDAY
278	4-4-2022	Monday	I Internal exams for IV , VI & VII sem Students
279	5-4-2022	Tuesday	**Babu Jagjivan Ram Jayanti**
280	6-4-2022	Wednesday	I Internal exams for IV , VI & VII sem Students
281	7-4-2022	Thursday	I Internal exams for IV , VI & VII sem Students
282	8-4-2022	Friday	I Internal exams for IV , VI & VII sem Students
283	9-4-2022	Saturday	

Faculty I/c. (Name & Signature) Chairman, BOS

S. No.	Date	Day	Details of Activity / Public Holiday
284	10-4-2022	Sunday	PUBLIC HOLIDAY
285	11-4-2022	Monday	
286	12-4-2022	Tuesday	
287	13-4-2022	Wednesday	
288	14-4-2022	Thursday	**Dr Ambedkar Jayanti**
289	15-4-2022	Friday	
290	16-4-2022	Saturday	Parent teacher Meeting for IV, VI, VIII sem students
291	17-4-2022	Sunday	PUBLIC HOLIDAY
292	18-4-2022	Monday	
293	19-4-2022	Tuesday	
294	20-4-2022	Wednesday	
295	21-4-2022	Thursday	
296	22-4-2022	Friday	
297	23-4-2022	Saturday	
298	24-4-2022	Sunday	PUBLIC HOLIDAY
299	25-4-2022	Monday	
300	26-4-2022	Tuesday	
301	27-4-2022	Wednesday	
302	28-4-2022	Thursday	
303	29-4-2022	Friday	
304	30-4-2022	Saturday	Guest Lecture on Introduction to Web Apps and Hosting a website for VI-Sem Students under Professional Bodies Activity by Mr. Amit Gupta ,Adjunct Faculty, Sr. Data Scientist, CSEO, Microsoft India, Gachibowli
May 2022			
305	1-5-2022	Sunday	PUBLIC HOLIDAY
306	2-5-2022	Monday	
307	3-5-2022	Tuesday	
308	4-5-2022	Wednesday	
309	5-5-2022	Thursday	
310	6-5-2022	Friday	
311	7-5-2022	Saturday	Alumni Interaction for VI sem students
312	8-5-2022	Sunday	PUBLIC HOLIDAY
313	9-5-2022	Monday	
314	10-5-2022	Tuesday	
315	11-5-2022	Wednesday	
316	12-5-2022	Thursday	
317	13-5-2022	Friday	
318	14-5-2022	Saturday	Guest Lecture on Career Counseling and How to prepare for Product Company for VI-Sem Students under CCA by Mr. Amit Gupta ,Adjunct Faculty, Sr. Data Scientist, CSEO,

Faculty I/c. (Name & Signature) Chairman, BOS

S. No.	Date	Day	Details of Activity / Public Holiday
			Microsoft India, Gachibowli
319	15-5-2022	Sunday	PUBLIC HOLIDAY
320	16-5-2022	Monday	
321	17-5-2022	Tuesday	
322	18-5-2022	Wednesday	
323	19-5-2022	Thursday	
324	20-5-2022	Friday	
325	21-5-2022	Saturday	
326	22-5-2022	Sunday	PUBLIC HOLIDAY
327	23-5-2022	Monday	
328	24-5-2022	Tuesday	
329	25-5-2022	Wednesday	
330	26-5-2022	Thursday	
331	27-5-2022	Friday	
332	28-5-2022	Saturday	Workshop on Big Data Analytics using HADOOP for VI-Sem Students under Professional Bodies Activity by Mr. Amar Sharma, Adjunct Faculty, Founder & CEO-M/s. Woir Software India Pvt. Ltd.
333	29-5-2022	Sunday	PUBLIC HOLIDAY
334	30-5-2022	Monday	
335	31-5-2022	Tuesday	II Internal exams for IV , VI & VII sem Students
June 2022			
336	1-6-2022	Wednesday	II Internal exams for IV , VI & VII sem Students
337	2-6-2022	Thursday	II Internal exams for IV , VI & VII sem Students
338	3-6-2022	Friday	II Internal exams for IV , VI & VII sem Students
339	4-6-2022	Saturday	II Internal exams for IV , VI & VII sem Students
340	5-6-2022	Sunday	PUBLIC HOLIDAY
341	6-6-2022	Monday	LAB SEE EXAMS for IV , VI and VIII Sem Studnets
342	7-6-2022	Tuesday	LAB SEE EXAMS for IV , VI and VIII Sem Studnets
343	8-6-2022	Wednesday	LAB SEE EXAMS for IV , VI and VIII Sem Studnets
344	9-6-2022	Thursday	LAB SEE EXAMS for IV , VI and VIII Sem Studnets
345	10-6-2022	Friday	LAB SEE EXAMS for IV , VI and VIII Sem Studnets
346	11-6-2022	Saturday	LAB SEE EXAMS for IV , VI and VIII Sem Studnets
347	12-6-2022	Sunday	PUBLIC HOLIDAY
348	13-6-2022	Monday	LAB SEE EXAMS for IV , VI and VIII Sem Students
349	14-6-2022	Tuesday	LAB SEE EXAMS for IV , VI and VIII Sem Students
350	15-6-2022	Wednesday	LAB SEE EXAMS for IV , VI and VIII Sem Students
351	16-6-2022	Thursday	LAB SEE EXAMS for IV , VI and VIII Sem Students
352	17-6-2022	Friday	LAB SEE EXAMS for IV , VI and VIII Sem Students
353	18-6-2022	Saturday	LAB SEE EXAMS for IV , VI and VIII Sem Students
354	19-6-2022	Sunday	PUBLIC HOLIDAY

Faculty I/c. (Name & Signature) Chairman, BOS

S. No.	Date	Day	Details of Activity / Public Holiday
355	20-6-2022	Monday	Semester End Exams for IV, VI & VIII Sem students FDP on Block Chain / Computer Vision (20-25 June 2022)
356	21-6-2022	Tuesday	Semester End Exams for IV, VI & VIII Sem students FDP on Block Chain / Computer Vision (20-25 June 2022)
357	22-6-2022	Wednesday	Semester End Exams for IV, VI & VIII Sem students FDP on Block Chain / Computer Vision (20-25 June 2022)
358	23-6-2022	Thursday	Semester End Exams for IV, VI & VIII Sem students FDP on Block Chain / Computer Vision (20-25 June 2022)
359	24-6-2022	Friday	Semester End Exams for IV, VI & VIII Sem students FDP on Block Chain / Computer Vision (20-25 June 2022)
360	25-6-2022	Saturday	Semester End Exams for IV, VI & VIII Sem students FDP on Block Chain / Computer Vision (20-25 June 2022)
361	26-6-2022	Sunday	PUBLIC HOLIDAY
362	27-6-2022	Monday	Semester End Exams for IV, VI & VIII Sem students
363	28-6-2022	Tuesday	Semester End Exams for IV, VI & VIII Sem students
364	29-6-2022	Wednesday	Semester End Exams for IV, VI & VIII Sem students
365	30-6-2022	Thursday	Semester End Exams for IV, VI & VIII Sem students
July 2022			
366	1-7-2022	Friday	Semester End Exams for IV, VI & VIII Sem students
367	2-7-2022	Saturday	Semester End Exams for IV, VI & VIII Sem students
368	3-7-2022	Sunday	PUBLIC HOLIDAY
369	4-7-2022	Monday	Semester End Exams for IV, VI & VIII Sem students
370	5-7-2022	Tuesday	Semester End Exams for IV, VI & VIII Sem students
371	6-7-2022	Wednesday	Semester End Exams for IV, VI & VIII Sem students
372	7-7-2022	Thursday	Semester End Exams for IV, VI & VIII Sem students
373	8-7-2022	Friday	Semester End Exams for IV, VI & VIII Sem students
374	9-7-2022	Saturday	Semester End Exams for IV, VI & VIII Sem students
375	10-7-2022	Sunday	PUBLIC HOLIDAY
376	11-7-2022	Monday	Workshop on Introduction to Data Analytics for V-Semester IT A&B by Mr. Amit Gupta ,Adjunct Faculty, Sr. Data Scientist, CSEO, Microsoft India, Gachibowli (11-13 July 2022)
377	12-7-2022	Tuesday	Workshop on Introduction to Data Analytics for V-Semester IT A&B by Mr. Amit Gupta ,Adjunct Faculty, Sr. Data Scientist, CSEO, Microsoft India, Gachibowli (11-13 July 2022
378	13-7-2022	Wednesday	Workshop on Introduction to Data Analytics for V-Semester IT A&B by Mr. Amit Gupta ,Adjunct Faculty, Sr. Data Scientist, CSEO, Microsoft India, Gachibowli (11-13 July

Faculty I/c. (Name & Signature) Chairman, BOS

S. No.	Date	Day	Details of Activity / Public Holiday
			2022
379	14-7-2022	Thursday	
380	15-7-2022	Friday	
381	16-7-2022	Saturday	Mock Interviews by Alumni for (2023 passing out) students
382	17-7-2022	Sunday	Mock Interviews by Alumni for (2023 passing out) students
383	18-7-2022	Monday	
384	19-7-2022	Tuesday	
385	20-7-2022	Wednesday	
386	21-7-2022	Thursday	
387	22-7-2022	Friday	
388	23-7-2022	Saturday	Mock Interviews by Alumni for (2023 passing out) students
389	24-7-2022	Sunday	Mock Interviews by Alumni for (2023 passing out) students

Faculty I/c. (Name & Signature) Chairman, BOS