VASAVI COLLEGE OF ENGINEERING
(AUTONOMOUS)

ACCREDITED BY NAAC WITH 'A++' GRADE
Ibrahimbagh, Hyderabad-31
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. (ECE) I and II Semesters
With effect from 2024-25
(For the batch admitted in 2024-25)
(R-24)

DEPARTMENT OF ELECTRONICS AND COMMUNICATION ENGINEERING
Phones: +91-40-23146040, 23146041
Fax: +91-40-23146090

Institute Vision

Striving for a symbiosis of technological excellence and human values

Institute Mission

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

Department Vision

Striving for excellence in teaching, training and research in the areas of Electronics and Communication Engineering and fostering ethical values

Department Mission

To inculcate a spirit of scientific temper and analytical thinking and train the students in contemporary technologies in Electronics and Communication Engineering to meet the needs of the industry and society with ethical values

B.E (ECE) Program Educational Objectives (PEO's)	
PEO I	Graduates will be able to identify, analyze and solve engineering problems.
PEO II	Graduates will be able to succeed in their careers, higher education, and research.
PEO III	Graduates will be able to excel individually and in multidisciplinary teams to solve industry and societal problems.
PEO IV	Graduates will be able to exhibit leadership qualities and lifelong learning skills with ethical values.

B.E. (ECE) PROGRAM OUTCOMES (PO's)	
Engineering Graduates will be able to:	
PO1	Engineering Knowledge: Apply the knowledge of mathematics, science, engineering fundamentals and an engineering specialization to the solution of complex engineering problems.
PO2	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.
PO3	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.
PO4	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.
PO5	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.
PO6	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.
PO7	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.
PO8	Ethics: Apply ethical principles and commit to professional ethics and responsibilities and norms of the engineering practice.
PO9	Individual and team work: Function effectively as an individual and as a member or leader in diverse teams and in multidisciplinary settings.
PO10	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, give and receive clear instructions.
PO11	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.
PO12	Lifelong learning: Recognize the need, and for have the preparation and ability to engage in independent and lifelong learning in the broadest context of technological change.

B.E (ECE) PROGRAM SPECIFIC OUTCOMES (PSO's)	
PSO I	ECE students will be able to analyze and offer circuit and system level solutions for complex electronics engineering problems, keeping in mind the latest technological trends.
PSO II	ECE students will be able to apply the acquired knowledge and skills in modeling and simulation of communication systems.
PSO III	ECE students will be able to implement signal and image processing techniques for real time applications.

VASAVI COLLEGE OF ENGINEERING (AUTONOMOUS) :: IBRAHIMBAGH, HYDERABAD – 500 031.
DEPARTMENT OF ELECTRONICS AND COMMUNICATION ENGINEERING
SCHEME OF INSTRUCTION AND EXAMINATION **(R-24)** :: B.E. – ECE : FIRST SEMESTER (2024-25)

Course Code	Name of the Course	Scheme of Instruction			Scheme of Examination			
		Hours per Week			Duration in Hrs	Maximum Marks		Credits
		L	T	P		SEE	CIE	
THEORY								
U24HS010EH	English Language and Communication	2	-	-	3	60	40	2
U24BS110MA	Matrices and Calculus	3	-	-	3	60	40	3
U24BS110CH	Engineering Chemistry	3	-	-	3	60	40	3
U24ES120EC	Programming and Problem Solving for Engineers	3	-	-	3	60	40	3
U24ES010CE	Basic Engineering Mechanics	3	-	-	3	60	40	3
U24HS020EH	Human Values and Professional Ethics – I	1	-	-	2	40	30	1
U24MC010CE	Environmental Science	2	-	-	3	60	40	-
PRACTICALS								
U24HS011EH	English Language and Communication Skills Lab	-	-	2	3	50	30	1
U24BS011CH	Chemistry Lab	-	-	2	3	50	30	1
U24ES121EC	Programming and Problem Solving for Engineers Lab	-	-	2	3	50	30	1
U24ES011ME	Engineering Workshop	-	-	2	3	50	30	1
	TOTAL	17	-	8		600	390	19
	GRAND TOTAL	25				990		

Left over hours will be allocated for : Sports / Library / Mentor - Mentee Interaction / CC / RC / TC

Note: 1) Every Student shall complete one NPTEL course certification of 8 weeks duration (equivalent to 2 credits weightage) by the end of VI-Semester.

2) Students willing to Opt B.E (ECE) Honours Degree in System on Chip Design shall complete one NPTEL Course Certification (equivalent to 2 Credits weightage) by the end of IV-Semester.

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DEPARTMENT OF ELECTRONICS AND COMMUNICATION ENGINEERING
SCHEME OF INSTRUCTION AND EXAMINATION **(R-24)** :: B.E. – ECE : FIRST SEMESTER (2024 - 2025)

B.E (ECE) I - SEMESTER								
SERVICE COURSES OFFERED BY ECE TO CSE								
Course Code	Name of the Course	Scheme of Instruction			Scheme of Examination			
		Hours per Week			Duration in Hrs	Maximum Marks		Credits
		L	T	P		SEE	CIE	
THEORY								
U24ES110EC	Introduction to Electronics Engineering	3	-	-	3	60	40	3
PRACTICALS								
U24ES111EC	Introduction to Electronics Engineering Lab	-	-	2	3	50	30	1

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DEPARTMENT OF HUMANITIES & SOCIAL SCIENCES

English Language and Communication

SYLLABUS FOR B.E. I- SEMESTER (Common to all branches)

L:T:P (Hrs/Week): 2:0:0	SEE Marks: 60	Course Code: **U24HS010EH**
Credits: 2	CIE Marks: 40	Duration of SEE: 3 Hours

COURSE OBJECTIVES	COURSE OUTCOMES
The course will enable the learners to: 1. Build greater confidence and proficiency in oral and written communication. 2. Equip themselves with essential language skills to analyze and articulate their point of views. 3. Develop the ability to engage in reading for reflection and enquiry. 4. Construct grammatically correct and contextually appropriate correct sentences. 5. Learn how project reports are written in their related field of study.	At the end of the course the learners will be able to: - 1. Communicate effectively, appropriately and ethically in both professional & personal spheres. 2. Listen to different types of spoken discourses and take notes for future reference. 3. Research, collect data and make effective presentations using, graphs, charts, statistical information and text. 4. Construct grammatically correct sentences using adequate vocabulary to compose written and spoken discourses. 5. Read, comprehend and appreciate various text types using the various techniques.

CO-PO/PSO Mapping

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
CO1									2	3					
CO2									2	3					
CO3									2	3					
CO4									2	3					
CO5									2	3					

UNIT-I: 1.0 Effective communication and Interpersonal skills

1.1 Roleand Importance of Communication – Types of Communication (Verbal-non-verbal, formal- informal, oral, written, visual, intrapersonal, inter personal and extra personal communication); styles, channels and barriers of communication.

1.2 Johari Window.

1.3 Persuasion techniques.

1.4 Stages of Team Building by Bruce Tuckman; Qualities of a team player/leader.

UNIT-II: 2.0 Listening and Speaking skills

2.1 Importance of listening-- Types of listening; Note taking.

2.2 Speaking skills: Presentation Skills (on Projects/ Topics related to the branch).

UNIT-III: 3.0 Reading and Writing skills

3.1 Reading strategies- SQ3R (Survey, Question, Read, Recite &Review); Types of Comprehension - Global, Factual and Inferential.

3.2 Features of Writing-Principles of writing paragraphs (Coherence, Cohesion& Unity); Use of appropriate linkers/connectives; Focus on cause, effects, comparison, definition, classification problem/ solution, process, argument.

3.3 Email-Etiquette.

UNIT-IV: 4.0 Vocabulary Building and Grammar

4.1 Vocabulary Building: Synonyms, Antonyms, One-word substitutes; Words often Confused; Idioms.

4.2 Functional Grammar: Tense and Aspect; Subject-Verb agreement; Sentence types (Declarative sentence, Interrogative sentence, Exclamatory sentence and Imperative sentence)

UNIT-V: 5.0 Reading for appreciation of literary texts

5.1 **Prose text**- The Knowledge Society by APJ Abdul Kalam.

5.2 **Poem**-'What Life should be' by 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:

1. Paul V. Anderson – Technical Communication
2. E.Suresh Kumar, P. Sreehari and J. Savithri - Essential English
3. Reading comprehension - Nuttal.J.C - Orient Blackswan
4. SunithaMishra,C. Murali Krishna, Communication Skills for Engineers, Pearson, 2004.
5. M. Ashraf Rizvi. Effective Technical Communication. Tata McGraw Hill, 2005.
6. Allen and Waters. How English Works.
7. Willis Jane., English through English.
8. 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 : | 2 | Max. Marks for each Internal Tests : | 30 |

2. No. of Assignments : | 3 | Max. Marks for each Assignment : | 5 |

3. No. of Quizzes : | 3 | Max. Marks for each Quiz Test : | 5 |

Duration of Internal Test: 90 Minutes

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DEPARTMENT OF MATHEMATICS

Matrices and Calculus

SYLLABUS FOR B.E. I – SEMESTER (Common to Civil, EEE, ECE and Mech)

L:T(Hrs./week): 3:1:0	SEE Marks : 60	Course Code : **U24BS110MA**
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. Study the concepts of rank of a matrix, System of linear equations and LU-Decomposition method.	1. Find the rank of a given matrix and solution of a system by LU-Decomposition method.
2. Learn the concepts of eigen values, eigen vectors, diagonalization, and canonical forms.	2. Compute the characteristic equation, eigen values, eigenvectors and diagonalize a square matrix using similarity transformation.
3. Develop a deep understanding of the concepts and applications of Taylor's series, Maclaurin's series, curvature, radius of curvature, centre of curvature, and evolutes.	3. Apply the concepts of Taylor's series and Maclaurin's series to approximate functions and calculate the curvature, radius, centre of curvature of curves, and evolutes.
4. Learn the techniques for finding partial derivatives of functions of several variables and Taylor's series for functions of two variables, methods for finding maxima and minima of functions of several variables.	4. Calculate partial derivatives of functions of several variables and apply Taylor's series for functions of two variables, analyze functions to find maxima and minima.
5. Understand the fundamental concepts of sequences and series, including convergence criteria.	5. Identify an appropriate test and determine convergence of the series.

CO-PO/PSO Mapping

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
CO1	3	2										1	1		
CO2	3	2										1	1		
CO3	3	2										1	1		
CO4	3	2										1	1		
CO5	3	2										1	1		

UNIT-I : (08 classes)
MATRICES-I: Rank of a Matrix- Echelon form - Normal Form - Linearly Dependence and Independence of Vectors– Consistency and Inconsistency of Homogeneous and Non-Homogenous system of linear equations – LU-Decomposition method.

UNIT-II : (08 classes)
MATRICES-II: Characteristic equation- Cayley - Hamilton Theorem (without

proof) -Eigen values and Eigenvectors - Diagonalization using Similarity Transformation-Reduction of Quadratic from to Canonical form.

UNIT-III : (08 classes)
DIFFERENTIAL CALCULUS: Taylor's Series – Maclaurin's Series - Curvature - Radius of Curvature – Centre of Curvature – Evolutes (Cartesian and Parametric forms of the curves).

UNIT-IV : (10 classes)
MULTIVARIBLE CALCULUS: Limits- Continuity (Concepts) - Partial Derivatives - Higher Order Partial Derivatives - Total Derivates - Derivatives of Composite and implicit functions - Taylor's series of functions of two variables – Jacobian - Maxima and Minima of functions of two variables - Lagrange's Method of multipliers.

UNIT-V : (08 classes)
INFINITE SERIES: Definition of Sequence, Convergence of sequence. Series – Convergence and Divergence- Series of positive terms-Geometric series- P-series test - Comparison tests – Limit comparison test-D'Alembert's Ratio Test – Cauchy's n^{th} root test - Alternating Series – Leibnitz test – Absolute and Conditional convergence.

Learning Resources:
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.
Reference Books:
1. Advanced Engineering Mathematics   8th Edition by Erwin Kreyszig, John Wiley & Sons.
2. Differential Calculus by Shanti Narayan, S. Chand & Co
3. Vector Calculus – Schaum's outline series.
Online Resources:
1. https://onlinecourses.nptel.ac.in/noc24_ma03/preview
2. https://onlinecourses.nptel.ac.in/noc24_ma31/preview
3. https://onlinecourses.swayam2.ac.in/cec24_ma10/preview

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   : | 3 | Max. Marks for each Assignment   : | 5 |

3. No. of Quizzes   : | 3 | Max. Marks for each Quiz Test   : | 5 |

Duration of Internal Test: 90 Minutes

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DEPARTMENT OF CHEMISTRY

Engineering Chemistry

SYLLABUS FOR B.E. I – SEMESTER (For ECE & EEE branches)

L:T(Hrs./week): 3:0:0	SEE Marks : 60	Course Code : **U24BS110CH**
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. Study types of conductance, variation of electrode potential and EMF and to acquaint with applications of Galvanic Cell.	1. Construct a galvanic cell and calculate its EMF and pH wherever applicable.
2. Classify and compare various types of batteries and fuel cells.	2. Describe the construction, functioning and applications of the selected primary, secondary batteries and fuel cells.
3. Get acquainted with different types of polymers and their applications.	3. Classify the polymers and discuss the synthesis and applications of few polymers.
4. Explain the concepts of engineering materials like nano materials and liquid crystals.	4. Get expose to the classification, properties and applications of nanomaterials and liquid crystals.
5. Know the principles of few analytical techniques.	5. Familiarize with the basic concepts of few analytical techniques.

CO-PO MAPPING FOR ENGINEERING CHEMISTRY

CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
1	3	2	-	-	-	-	-	-	-	-	-	1
2	3	2	-	-	-	-	2	-	-	-	-	2
3	3	2	-	-	-	-	2	-	-	-	-	2
4	3	1	-	-	-	-	1	-	-	-	-	2
5	3	1	-	-	-	-	-	-	-	-	-	1

UNIT-I: ELECTROCHEMISTRY (11)

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

Cells – electrolytic and electrochemical cells. IUPAC convention of cell notation, cell reaction, concept of electrode potential, electromotive force (EMF). Electrochemical series – applications, Nernst equation – derivation, applications and 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.

UNIT-II: BATTERY TECHNOLOGY (8)

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, Memory effect, flat discharge rate.

Primary batteries: Construction and electrochemistry of Zn-C battery – acidic and alkaline battery and lithium-V_2O_5 battery.

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

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

UNIT-III: POLYMER CHEMISTRY (11)

Introduction, degree of polymerization, functionality of monomers and its effect on the structure of polymers. Classification of polymers - i) homo and co-polymers, ii) homo chain and hetero chain polymers. iii) plastics-elastomers, fibers and resins. Types of Polymerizations – Addition and condensation polymerization. Molecular weight – number average and weight average molecular weight, numericals. Glass transition temperature and factors affecting glass transition temperature.

Plastics: thermo plastics and Thermo sets.

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

Conducting polymers: Definition – classification, mechanism of conduction in (p-doped and n-doped) polyacetylene and applications.

Polymer composites: Introduction, advantages of composites over conventional materials, Classification of composites. Manufacturing methods-Hand lay up and RTM method.

UNIT-IV: ENGINEERING MATERIALS (8)

Nanomaterials

Introduction – concept of nanomaterials – quantum confinement and surface volume ratio. Applications of Nanomaterials.

Types of Nanomaterials**:** carbon nanotubes, quantum dots, nanowires, nanocrystals.

Synthesis of nanomaterials: Top down and bottom-up approaches – Mechanical grinding by ball milling, sol gel method.

Carbon Nanotubes**:** Single walled carbon nanotubes (SWCNTs). Multi walled carbon nanotubes (MWCNTs), synthesis of CNTs – arc discharge and laser ablation methods.

Liquid Crystals

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

UNIT-V: INSTRUMENTAL METHODS OF ANALYSIS (8)

Spectroscopy: Principle of Beer-Lamberts law, numericals. Principle, block diagram and Applications of Atomic Absorption Spectroscopy (AAS).

Microscopic techniques: Introduction, Limitations of optical microscopy. Significance of de Broglie's equation, Principle and block diagram of Scanning Electron Microscope (SEM), Atomic Force Microscope (AFM).

Thermo Gravimetric Analysis: Principle, block diagram of Thermogravimetric Analysis (TGA) and analysis of calcium oxalate and copper sulphate.

Text Books:
1. P. C. Jain, M Jain Engineering Chemistry, Dhanapathi Rai publishing company (17th edition), New Delhi.
2. Sashi Chawla, Text book of Engineering Chemistry, Dhanapathi Rai & Co, New Delhi.
3. O. G. PALANNA, Engineering Chemistry, TMH Edition.
4. J.C. Kuriacose and Rajaram, Chemistry in Engineering and Technology.
5. Wiley Engineering Chemistry, Wiley India pvt Ltd, II edition.

Learning Resources:
1. B. H. Mahan, University Chemistry.
2. B. L. Tembe, Kamaluddin and M. S. Krishnan, Engineering Chemistry (NPTEL Web-book).
3. P. W. Atkins, Physical Chemistry.
4. S. S. Dara, S Chand and sons, Engineering Chemistry, New Delhi.
5. Puri, Sharma and Pathania, Principles of Physical Chemistry, Vishal Publishing Co.
6. D. Dhara, IIT Kharagpur, NPTEL Polymer Chemistry Course.
7. Gowarikar V R, Polymer chemistry, V Edition.
8. S M Lindsay, Introduction to Nanoscience, Oxford University press.

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 : 3 Max. Marks for each Assignment : 5

3. No. of Quizzes : 3 Max. Marks for each Quiz Test : 5

Duration of Internal Test: 90 Minutes

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DEPARTMENT OF ELECTRONICS AND COMMUNICATION ENGINEERING

Programming and Problem Solving for Engineers

SYLLABUS FOR B.E. I - SEMESTER

L:T:P(Hrs./week): 3:0:0	SEE Marks : 60	Course Code : **U24ES120EC**
Credits : 3	CIE Marks : 40	Duration of SEE : 3 Hours

COURSE OBJECTIVES	COURSE OUTCOMES
1. Acquire problem solving skills. 2. Develop flow charts and algorithms. 3. Acquire the principles of procedure oriented structured programming. 4. Write programs in C Language.	On completion of the course, students will be able to 1. Design flowcharts 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 to perform searching and sorting operations on data. 4. Design programs on string handling and operations on arrays using dynamic memory management techniques. 5. Develop programs to store data and perform operations using structures and files.

CO-PO/PSO Mapping

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
CO1	2	3	2	1									3	1	
CO2	3	2	2	2									3	1	
CO3	2	1	1	1									3	1	
CO4	3	1	1	1									3	1	
CO5	3	2	2	2									3	1	

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

UNIT-II
Selection: introduction, simple if, if – else, nested – if, else if ladder, switch statements.
Repetition: Loops, while, for, do-while Statements, Loops Examples, break, continue, nested loops.
Functions: Designing Structured Programs, Functions Basics, User Defined Functions, Inter-Function Communication, Standard Functions, Scope.

UNIT-III
Storage Classes-Auto, Register, Static, Extern, Scope Rules and Type Qualifiers, Recursive Functions, Preprocessor Commands.
Arrays: Concepts, Using Arrays in C, Inter-Function Communication, Array Applications, Two-Dimensional Arrays, Multidimensional Arrays, Linear Search and Binary Search, Selection Sort and Bubble Sort.

UNIT-IV
Pointers: Introduction, Pointers for Inter-Function Communication, Pointers to Pointers, Compatibility, Arrays and Pointers, Pointer Arithmetic, Passing on Array to a Function, Memory Allocation Functions, Array of Pointers, Programming Applications.
Strings – Concepts, C Strings, String Input/Output functions, Array 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.
Files: Introduction, Text Streams, Standard Library Input/output Functions, Character Input, output Functions, Command Line Arguments.

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. Rajaraman V, The Fundamentals of Computer, 4th Edition(2006), Prentice-Hall of India.
4. Steve Oualline, Practical CProgramming,3rd Edition(2006),O'Reilly Press.
5. Jeri R. Hanly, Elliot B. Koffman, Problem Solving and Program Design in C, 5thEdition (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   : $\boxed{2}$ Max. Marks for each Internal Tests : $\boxed{30}$

2. No. of Assignments   : $\boxed{3}$ Max. Marks for each Assignment   : $\boxed{5}$

3. No. of Quizzes   : $\boxed{3}$ Max. Marks for each Quiz Test   : $\boxed{5}$

Duration of Internal Test: 90 Minutes

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DEPARTMENT OF CIVIL ENGINEERING

Basic Engineering Mechanics

SYLLABUS FOR B.E. I SEMESTER

(Common to Civil, CSE, ECE, EEE & Mechanical Engineering)

L:T:P(Hrs./week): 3:0:0	SEE Marks:60	Course Code: **U24ES010CE**
Credits: 3	CIE Marks:40	Duration of SEE: 3 Hours

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.	1. Determine resultant of forces acting on a body.
2. Solve particle equilibrium problem using equation of equilibrium	2. Analyse equilibrium of a body subjected to a system of forces.
3. Determine forces in the members of a truss	3. Perform analysis of trusses using method of joints and method of sections.
4. Perform analysis of bodies lying on rough surfaces.	4. Solve problem of bodies subjected to friction.
5. Locate the centroid of a body and also compute the area moment of inertia of standard and composite sections.	5. Find the location of centroid and calculate moment of inertia and polar moment of inertia of a given section.

CO-PO/PSO Mapping

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
CO1	3	1				2		1	1	1					
CO2	3	1						1	1	1					
CO3	3	2						1	1	1					
CO4	3	1						1	1	1					
CO5	3	1				2		1	1	1					

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.

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 2023.
2. Timoshenko S.P and Young D.H "Engineering Mechanics", McGraw Hill International Edition, 2017
3. Andrew Pytel., JaanKiusalaas., "Engineering Mechanics", 4th edition, Cengage Learning, 2015.
4. Beer F.P & Johnston E.R Jr. "VectorMechanics for Engineers", TMH, 2019.
5. Hibbeler R.C, "Engineering Mechanics", 4th edition, Pearson Education, 2017.
6. Tayal A.K., "Engineering Mechanics – Statics & Dynamics", 4th Edition, Umesh Publications, 2011.
7. Basudeb Bhattacharyya., "Engineering Mechanics", Oxford University Press, 2014, 2nd Edition
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   : 2   Max. Marks for each Internal Tests : 30
2. No. of Assignments   : 3   Max. Marks for each Assignment   : 5
3. No. of Quizzes   : 3   Max. Marks for each Quiz Test   : 5

Duration of Internal Test: 90 Minutes

VASAVI COLLEGE OF ENGINEERING (AUTONOMOUS)
ACCREDITED BY NAAC WITH 'A++' GRADE
IBRAHIMBAGH, HYDERABAD – 500 031

DEPARTMENT OF HUMANITIES AND SOCIAL SCIENCES

Human Values and Professional Ethics - I

(Syllabus: Common for All Branches B.E. I & II - SEMESTER)

L:T:P (Hrs./week): 1:0:0	SEE Marks : 40	Course Code: **U24HS020EH**
Credits : 1	CIE Marks : 30	Duration of SEE : 2 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. 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.

CO-PO/PSO Mapping

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
CO1								3		1					
CO2								3		1					
CO3								3		1					
CO4								3		1					
CO5								3		1					

UNIT-1 HARMONY WITH SELF AND FAMILY

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-efficacies, 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.

1.1 Self-Values and Ethics
1.2 Family – Values and Ethics
1.3 Self-Care Practices

UNIT-2   PROFESSIONAL VALUES AND BEHAVIOUR

At the level of individuals: as socially and ecologically responsible engineers and technologists. 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.

2.1 Professional Ethics – Individual

2.2 Professional Behaviour - Body Language and Etiquette

2.3 Professional Ethics – Team

UNIT-3   SOCIAL VALUES

Values of service, social justice, dignity and worth of the person Importance of human relationships, integrity, and competence.

3.1 Understanding Social Values

3.2 Importance of relationship

3.3 Diversity and Inclusion

UNIT -4   SPIRITUAL VALUES

Developing individual practice 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.

4.1 Exploring Different Traditions

4.2 Values in Action

4.3 Spirituality in Everyday Life

MODE of DELIVERY

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

Relevant Websites, CD's and Documentaries

● https://plato.stanford.edu/

Learning Resources:

learn.talentsprint.com

1. Sapiens: A Brief History of Humankind By Yuval Noah Harari
2. How to Think About What You Don't Know: The Art of Counterfactual Thinking by Judith Lichtenberg
3. Ethics in the Professions by Charles E. W. Tessera
4. Thinking in Ethics: A Practical Guide to Right and Wrong by Jeanne Halifax

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

1. No. of Internal Tests   : 1   Max. Marks for each Internal Test : 20

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 Test: 90 Minutes

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DEPARTMENT OF CIVIL ENGINEERING

Environmental Science

SYLLABUS FOR B.E. I-SEMESTER (Common to Civil, ECE, EEE & Mech.)

L:T:P (Hrs./week): 2:0:0	SEE Marks : 60	Course Code: **U24MC010CE**
Credits: -	CIE Marks : 40	Duration of SEE: 3 Hours

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.	1. Describe the various types of natural resources.
2. Explain the concepts of an ecosystem and the biotic and abiotic components of various aquatic ecosystems.	2. Differentiate between various biotic and abiotic components of ecosystem.
3. Identify the values, threats of biodiversity, endangered and endemic species of India along with the conservation of biodiversity.	3. Examine the values, threats of biodiversity, the methods of conservation, endangered and endemic species of India.
4. Explain the causes, effects and control measures of various types of environmental pollutions.	4. Illustrate causes, effects, control measures of various types of environmental pollutions.
5. Describe the methods for water conservation, the causes, effects of global warming, climate change, acid rain, ozone layer depletion, population explosion.	5. Explain the methods of water conservation, causes, effects of climate change, global warming, acid rain and ozone layer depletion, population explosion.

CO-PO/PSO Mapping

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
CO1	3					2	3						2		
CO2	2						3						2		
CO3	2						3	2					2	1	
CO4	2					2	3	2					2	1	
CO5	2					2	3	2					2	1	

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, Eutrophication, Biomagnification, water logging, salinity. Energy resources: Renewable and non-renewable energy resources. Land Resources, soil erosion and desertification.

UNIT-II:

Ecosystems: Definition of ecosystem, classification of ecosystem, Structure and function of an ecosystem, producers, consumers and decomposers, food chains, food webs, ecological pyramids, aquatic ecosystem (ponds), Terrestrial ecosystem(Forest)

UNIT-III:

Biodiversity: Definition, Genetic, species and ecosystem level diversity. Values of biodiversity, threats to biodiversity, endangered and endemic species of India, conservation of biodiversity. Biological diversity Act 2002.

UNIT-IV:

Environmental Pollution: Causes, effects and control measures of air pollution, air pollution control devices (catalytic convertor) water pollution, water pollution monitoring devices, soil pollution, noise pollution, solid waste types, Municipal solid waste & e-waste recycling, Air act and water act.

UNIT-V:

Social Aspects and the Environment: Water conservation, global warming, case study related to self cooling technologies, acid rain, ozone layer depletion, Kyoto protocol, Climate change, Dubai and Paris aggrements. Environmental Impact Assessment. Consumerism, Sustainable development goals (SDG-17), Environmental protection act 1986.

Learning Resources:

1. Deswal S. and Deswal A., A Basic Course on Environmental studies, Dhanpat Rai & Co Pvt. Ltd. 2013.
2. Benny Joseph, Environmental Studies, Tata McGraw-Hill, 2006.
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. Sharma V.K., Disaster Management, National Centre for Disaster Management, IIPE, Delhi, 2013.
7. Rajagopalan R., Environmental Studies, Second Edition, Oxford University Press, 2013.

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

1. No. of Internal Tests : | 2 | Max. Marks for each Internal Test : | 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 Test: 90 Minutes

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DEPARTMENT OF HUMANITIES & SOCIAL SCIENCES

English Language and Communication Skills Lab

SYLLABUS FOR B.E. I – SEMESTER (Common to all branches)

L:T:P (Hrs/Week) :0:0:2	SEE Marks : 50	Course Code: **U24HS011EH**
Credits: 1	CIE Marks : 30	Duration of SEE : 3 Hours

COURSE OBJECTIVES	COURSE OUTCOMES
The course will enable the learners to:	On completion of the course, learners 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 other 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. Read, analyse, evaluate and infer meaning from different types of texts and paraphrase them.

CO-PO/PSO Mapping

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
CO1										3					
CO2										3					
CO3										3					

1.0 PHONETICS LAB- TOPICS

1.1 **Introduction to English Phonetics:**
Classification of consonants and vowel sounds and related symbols. Pronunciation of commonly mispronounced words. Pronunciation of Foreign words in English.

1.2 **Aspects of language learning and ear training activities-**
Word stress and intonation, Pronunciation of silent letters and Foreign words used in English 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 **Public speaking:**
Dos and don'ts of public speaking. Listening and analysing speeches of great personalities in history, TED talks, Documentaries and Movies.

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

3.0 READING SKILLS LAB – TOPICS
3.1 Sub-skills of reading - SQ3R – skimming, scanning, extensive and intensive reading.
3.2 Teaching different types of texts for comprehension-short stories and technical articles.
3.3 Newspaper reading and paraphrasing/summarising.

Prescribed textbook for laboratory:
1. Speak Well: Jayshree Mohanraj, KandulaNirupa Rani and Indira Babbellapati - Orient Black Swan
2. 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 CIE:

1. No. of Internal Tests : 1
2. Max. Marks for Internal tests : 12
3. Marks for day-to-day laboratory class work : 18

Duration of Internal Test: 2 hours

VASAVI COLLEGE OF ENGINEERING (AUTONOMOUS)
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DEPARTMENT OF CHEMISTRY

Chemistry Lab
SYLLABUS FOR B.E. I - SEMESTER

L:T:P(Hrs./week): 0:0:2	SEE Marks: 50	Course Code: **U24BS011CH**
Credits : 1	CIE Marks: 30	Duration of SEE: 03 Hours

COURSE OBJECTIVES	COURSE 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	1. Estimate the amount of metals in the given solutions.
2. Learn the skills to handle the instruments	2. Analyze the hardness, alkalinity and chloride content of a given water sample.
3. Apply the theoretical principles in experiments	3. Determine the concentration 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.

CO-PO MAPPING FOR CHEMISTRY LAB												
CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
1	3	2	-	-	-	-	-	-	2	-	-	1
2	3	2	-	-	-	-	-	-	2	-	-	1
3	3	2	-	-	-	-	-	-	2	-	-	1
4	3	2	-	-	-	-	-	-	2	-	-	1

List of the Experiments:
Note: Minimum of Ten experiments of the following.

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. Estimation of chromium (VI) in the given solution by standardized FAS.
4. Estimation of copper (II) in given solution by hypo.
5. Estimation of 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.
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. Synthesis of Phenol formaldehyde resin / PANI.
15. Chemistry of blue printing.

Text Books:

1. G H Jeffery, J Bassett, J Mendham, R C Denney, Vogel's text book of quantitative chemical analysis, Fifth Edition.
2. M S Kaurav, Engineering chemistry with laboratory experiments, PHI learning (P) ltd, New Delhi.
3. Sunita rattan, Experiments in applied chemistry, S K Kataria & Sons (2010)
4. A text book on experiments and calculation Engg. S.S. Dara.

The break-up of CIE :

1. No. of Internal Tests : 1
2. Max. Marks for Internal tests : 12
3. Marks for day-to-day laboratory class work : 18

Duration of Internal Test : 3 Hours

VASAVI COLLEGE OF ENGINEERING (AUTONOMOUS)
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DEPARTMENT OF ELECTRONICS AND COMMUNICATION ENGINEERING

Programming and Problem Solving for Engineers Lab
SYLLABUS FOR B.E. I - SEMESTER

L:T:P (Hrs./week): 0:0:2	SEE Marks : 50	Course Code : **U24ES121EC**
Credits : 1	CIE Marks : 30	Duration of SEE : 3 Hours

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

CO-PO/PSO Mapping

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
CO1	2	2	2	1	1								3	2	1
CO2	2	2	2	2	1								3	2	1
CO3	3	2	2	2	1								3	2	1
CO4	3	2	2	2	1								3	2	1
CO5	3	2	2	2	1								3	2	1

Programming Exercises:

1. Programs to illustrate operators

2. Programs to illustrate selection control statements

3. Programs to illustrate loop control statements

4. Programs to illustrate nested loop control statements.

5. Programs to illustrate functions and recursion

6. Programs to illustrate one dimensional arrays, searching and sorting.

7. Programs to illustrate two dimensional arrays

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.

New Experiments:

1. Program to add two natural numbers using Recursion.
2. C Program to access and open two text FILEs and merge the contents into an another new file.

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.

The break-up of CIE :

1.	No. of Internal Tests	:	1
2.	Max. Marks for internal tests	:	12
3.	Marks for day-to-day laboratory class work	:	18

Duration of Internal Test : 3 Hours

VASAVI COLLEGE OF ENGINEERING (AUTONOMOUS)
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DEPARTMENT OF MECHANICAL ENGINEERING

Engineering Workshop

SYLLABUS FOR B.E. I – SEMESTER (for ECE)

L:T:P (Hrs./week): 0:0:2	SEE Marks : 50	Course Code : **U24ES011ME**
Credits : 1	CIE Marks : 30	Duration of SEE : 3 Hours

COURSE OBJECTIVES	COURSE OUTCOMES
The course will enable the students to: 1. know basic workshop processes, adopt safety practices while working with various tools 2. identify, select and use various marking, measuring, holding, striking and cutting tools & equipments.	At the end of the course, students will be able to: 1. create models in carpentry, fitting, electrical & electronics and sheet metal trades by using the relevant tools. 2. measure and inspect the finished components using suitable measuring instruments. 3. apply basic electrical and electronics engineering knowledge to make simple electrical circuits and check their functionality along with practice in soldering of electronic components.

CO-PO/PSO Mapping

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
CO1	3	3	2												
CO2	3	2	1												
CO3	3	1	2												

List of the Experiments:

FITTING
1. Template fitting (square fit)
2. V-groove fit
3. Drilling and Tapping

ELECTRICAL & ELECTRONICS:
1. Two lamps in(a)series(b) parallel with 3 pin plug and switches
2. Staircase wiring and Tube light wiring
3. (a) Identification of electronic components
   (b) Soldering practice

CARPENTRY:
1. Half-lap joint
2. Dove-tail joint
3. Bridle joint

SHEET METAL:
1. Rectangular box
2. Rectangular scoop with handle
3. Making a funnel with soldering

Additional Experiments

1. Plastic Moulding: Injection moulding of plastic spoon (demo)
2. Fitting: Assembly of pulley on a shaft with key (demo)
3. Electrical & Electronics: LT Distribution with loads (Demo)
4. Carpentry: Wood turning operation (demo)
5. Sheet Metal: Making a T-Joint (Demo).

Learning Resources:

1. Hajra Choudhury S.K., Hajra Choudhury A.K., Nirjar Roy S.K. "Element of Workshop Technology" Vol-I 2008 & Vol-II 2010 Media Promoters & Publishers Pvt. Limited, Mumbai
2. Kalpakjian S. and Steven S. Schmid, "Manufacturing Engineering and Technology" 4th Edition, Pearson Education India Edition, 2002.
3. Gowri P., Hariharan and Surech Babu A., "Manufacturing Technology-I", Pearson Education 2008.
4. P. Kannaiah & K.L. Narayana "Workshop manual" 2nd Ed., Scitech publications (I) Pvt. Ltd., Hyderabad.
5. B.L. Juneja, "Workshop Practice", Cengage Learning India Pvt. Limited, 2014.
6. www.technologystudent.com

The break-up of CIE :

1. No. of Internal Tests : 01
2. Max. Marks for internal tests : 12
3. Marks for day-to-day laboratory class work : 18

Duration of Internal Test: 2 Hours

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DEPARTMENT OF ELECTRONICS AND COMMUNICATION ENGINEERING

Introduction to Electronics Engineering

SYLLABUS FOR B.E. I – SEMESTER (for CSE)

L:T:P (Hrs/week): 3:0:0	SEE Marks : 60	Course Code: **U24ES110EC**
Credits : 3	CIE Marks : 40	Duration of SEE : 3 Hrs

COURSE OBJECTIVES	COURSE OUTCOMES
1. To understand the characteristics and operation of different electronic devices. 2. To study the working of rectifiers, transistor amplifiers, operational amplifiers and oscillators. 3. To study the working principle of different types of transducers.	On completion of the course, students will be ableto 1. Employ different electronic devices to build electronic circuits such as rectifiers, filters, voltage regulators. 2. Describe the input and output characteristics of BJT and MOSFET. 3. Appreciate the advantages of negative feedback in amplifiers and to design simple RC type, LC type oscillators using BJT. 4. Demonstrate the working of operational amplifier as Differentiator, Integrator etc. 5. Convert real time signals into corresponding electrical signals using different types of transducers and sensors for IOT applications.

CO-PO/PSO Mapping

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
CO1	3	3											3		
CO2	3	3											3		
CO3	3	3											3		
CO4	3	3											3		
CO5	3	3											3		

UNIT - I : Semiconductor Diodes

P-N Junction diode, Biasing, Diode resistance, Transition capacitance and Diffusion capacitance, Applications, Rectifiers: Half wave and Full wave Rectifiers (Bridge, center tapped), ripple factor and efficiency, comparison of rectifiers, Filters: Types of filters, Rectifiers with and without filters, Zener Diode: Characteristics, Zener diode as a voltage regulator, Block diagram of Regulated Power Supply.

UNIT - II : Transistors

Bipolar Junction Transistor (BJT), Construction, Types, Working principle, Configurations, Transistor parameters, Transistor as an amplifier, Problems, h- parameter equivalent circuits. Field Effect Transistor(FET),

Construction and working of FET, Metal Oxide Semiconductor FET (MOSFET), Types (depletion and enhancement), MOSFET characteristics, Comparison of BJTs with MOSFET

UNIT - III : Feedback Concepts

Basic concept of feedback, Types of feedback, Feedback topologies, Advantages of Negative feedback in amplifiers; Oscillators: Classification, LC Type and RC Type Oscillators and Crystal Oscillators (Qualitative treatment only)

UNIT - IV : Operational Amplifiers

Introduction, Characteristics of ideal Operational amplifier, Operational amplifier stages, Parameters, Open loop and closed loop configurations, Applications (Adder, Subtractor, Voltage follower, Integrator, Differentiator)

UNIT - V : Data Acquisition systems

Introduction, Classification of transducers, Temperature transducers (Thermocouple), Piezoelectric transducer, Photoelectric transducer; Ultrasonic Sensors, PIR Sensors, Gas sensors and Humidity Sensors. Display Systems: Constructional details of C.R.O and Applications.

Learning Resource:

1. S. Shalivahan, N. Suresh Kumar, A Vallavea Raj Electronic Devices and Circuits Tata McGraw Hill, 2003.
2. Boylestad and Nashelsky, "Electronic Devices and Circuits", Eleventh Edition, Pearson.
3. Jacob Milman & C., Halkias, Electronic devices Eighth Edition, Reprinted,Mc Graw Hill,1985.
4. Ramakanth A. Gayakwad, Op-AMPS and Linear Integrated Circuits, 3rd edition, Prentice Hall of India,1985.
5. https://nptel.ac.in/courses/117103063/

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   : 3   Max. Marks for each Assignment   : 5
3. No. of Quizzes   : 3   Max. Marks for each Quiz Test   : 5

Duration of Internal Tests: 90 Minutes

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DEPARTMENT OF ELECTRONICS AND COMMUNICATION ENGINEERING

Introduction to Electronics Engineering Lab

SYLLABUS FOR B.E. I – SEMESTER (for CSE)

L:T:P (Hrs/week): 0:0:2	SEE Marks : 50	Course Code: **U24ES111EC**
Credits : 1	CIE Marks : 30	Duration of SEE : 3 Hrs

COURSE OBJECTIVES	COURSE OUTCOMES
1. Verify the characteristics of various electronic devices. 2. Understand the functioning of voltage regulator, rectifiers and oscillators. 3. Perform different arithmetic operations using operational amplifier.	On completion of the course, students will be able to 1. Plot the characteristics of active devices and to compute their parameters. 2. Analyze the functioning of voltage regulators, rectifiers and oscillators. 3. Perform operations such as addition, subtraction, comparison of voltage levels using operational amplifier. 4. Appreciate the usage of CRO for measuring different parameters of signals.

CO-PO/PSO Mapping

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
CO1	3	3											3		
CO2	3	3											3		
CO3	3	3											3		
CO4	3	3											3		

List of Experiments:

1. CRO Applications (measurement of Amplitude, Time constant and Phase)

2. Centre tapped Full wave rectifier with and without filter

3. Full Wave Bridge Rectifier with and without filter

4. Zener Voltage Regulator (Line and Load Regulations)

5. Characteristics of BJT (CB Configuration)

6. Characteristics of BJT (CE Configuration)

7. Characteristics of FET (Drain and Transfer characteristics)

8. RC Phase shift oscillator

9. Hartley oscillator

10. Colpitt's Oscillator

11. Applications of Operational Amplifier: Adder, Subtractor, Comparator

New / Additional experiments planned

1. Positive Diode Clipping Circuits
2. Negative Diode Clipping Circuits

Learning Resources:

1. Paul B. Zbar, Albert P. Malvino , Michael A. Miller, Basic Electronics, A Text-Lab Manual, 7th Edition, TMH, 1994.
2. Paul B. Zbar, Industrial Electronics, A Text – Lab Manual, 3rd Edition, TMH, 1983.
3. https://nptel.ac.in/courses/122106025/

The break-up of CIE :

1.	No. of Internal Tests	**:**	1
2.	Max. Marks for internal tests	**:**	12
3.	Marks for day-to-day laboratory class work	**:**	18

Duration of Internal Test : 3 hours

VASAVI COLLEGE OF ENGINEERING (AUTONOMOUS) :: IBRAHIMBAGH, HYDERABAD – 500 031.
DEPARTMENT OF ELECTRONICS AND COMMUNICATION ENGINEERING
SCHEME OF INSTRUCTION AND EXAMINATION **(R-24)** :: B.E. – ECE : SECOND SEMESTER (2024-25)

Course Code	Name of the Course	Scheme of Instruction			Scheme of Examination			Credits
		Hours per Week			Duration in Hrs	Maximum Marks		
		L	T	P/D		SEE	CIE	
B.E (ECE) II SEMESTER								
THEORY								
U24BS210MA	Differential Equations and Vector Calculus	3	-	-	3	60	40	3
U24BS210PH	Quantum Mechanics and Materials Science	3	-	-	3	60	40	3
U24ES210EC	Problem Solving through Object Oriented Programming	3	-	-	3	60	40	3
U24ES030CE	Basic Engineering Drawing	1	-	2	3	60	40	2
U24PC010EC	Basic Circuit Analysis	3	-	-	3	60	40	3
U24ES220EE	Basic Electrical Engineering for ECE	2	-	-	3	60	40	2
U24MC010ME	Introduction to Entrepreneurship	1	-	-	2	40	30	-
PRACTICALS								
U24BS211PH	Engineering Physics Lab	-	-	2	3	50	30	1
U24ES221EC	Problem Solving through Object Oriented Programming Lab	-	-	2	3	50	30	1
U24PC111EC	Basic Circuit Analysis Lab	-	-	2	3	50	30	1
U24ES221EE	Basic Electrical Engineering for ECE Lab	-	-	2	3	50	30	1
	TOTAL	16	-	10		600	390	20
	GRAND TOTAL	26				990		

Left over hours will be allocated for : Sports / Library / Mentor - Mentee Interaction / CC / RC / TC

Note: 1) Every Student shall complete one NPTEL course certification of 8 weeks duration (equivalent to 2 credits weightage) by the end of VI-Semester.
    2) Students willing to Opt B.E (ECE) Honours Degree in System on Chip Design shall complete one NPTEL Course Certification (equivalent to 2 Credits weightage) by the end of IV-Semester.

VASAVI COLLEGE OF ENGINEERING (AUTONOMOUS)
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DEPARTMENT OF MATHEMATICS

Differential Equations and Vector Calculus

SYLLABUS FOR B.E. II – SEMESTER (Common to Civil, EEE, ECE, Mech)

L:T:P (Hrs./week): 3:0:0	SEE Marks :60	Course Code : **U24BS210MA**
Credits : 3	CIE Marks :40	Duration of SEE : 3 Hours

COURSE OBJECTIVES	COURSE OUTCOMES
The course will enable the students to : **1. Understand** the fundamental concepts and techniques of first-order differential equations, as well as their applications in modeling real-world phenomena. **2. Develop** the ability to solve homogeneous and non-homogeneous linear differential equations with constant coefficients, and the techniques to analyze LCR circuits. **3. Understand** the concepts of Beta, Gamma functions and their properties. **4. Learn** how to evaluate double and triple integrals and study the concepts of vector integration. **5. Study** the concepts of vector differentiation.	On completion of the course, students will be able to **1. Solve** various types of first-order differential equations, model and analyze physical systems such as LR and RC circuits and sketch orthogonal trajectories of Cartesian families of curves. **2. Solve** homogeneous and non-homogeneous linear differential equations with constant coefficients, including those arising in LCR circuits. **3. Evaluate** Improper integrals using Beta, Gamma functions. **4. Apply** the concepts of multiple integrals to evaluate area, volume **5. Find** the gradient of a scalar point function, divergence and curl of vector field and its applications.

CO-PO/PSO Mapping

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
CO1	3	2										1	1		
CO2	3	2										1	1		
CO3	3	2										1	1		
CO4	3	2										1	1		
CO5	3	2										1	1		

UNIT – I (08 classes)
ORDINARY DIFFERENTIAL EQUATIONS OF FIRST ORDER
Exact first order differential equations - Integrating factors - Clairaut's equation - Applications: Orthogonal trajectories (Cartesian families), LR and RC Circuits.

UNIT – II (08 classes)
HIGHER ORDER LINEAR DIFFERENTIAL EQUATIONS
Solutions of Homogeneous and Non-Homogeneous linear equations with constant coefficients: Complimentary function & Particular Integral-Method of Variation of Parameters. LCR circuits.

UNIT – III (08 classes)
SPECIAL FUNCTIONS

Definition of Improper Integrals. Beta function, Gamma function, Relations between Beta & Gamma function, Properties of Beta and Gamma functions.

UNIT – IV (08 classes)
MULTIPLE INTEGRALS

Double integrals (Cartesian) - Change of order of integration (Cartesian Coordinates) - Change of the Variables (Cartesian to polar Coordinates in two dimensions) - Triple integrals (Cartesian).

UNIT – V (10 classes)
VECTOR CALCULUS

Scalar and Vector point function and their derivatives - Level Surface - Gradient of a scalar point function - Normal to a level surface - Directional Derivative – Divergence and Curl of a Vector Field – Solenoidal and Irrotational vectors - Conservative vector field - Line integral - Green's Theorem (Without proof).

Text Books:
1. Advanced Engineering Mathematics 3rd Edition, R.K.Jain & S.R.K. Iyengar, Narosa Publishing House.
2. Higher Engineering Mathematics 40thEdition Dr. B.S Grewal, Khanna Publishers.
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.
3 Complex Variables and applications, J.W.Brown and R.V.Churchill, 7th Edition, Tata Mc Graw Hill, 2004.

Online Resources:
1. https://onlinecourses.swayam2.ac.in/cec24_ma09/preview
2. https://onlinecourses.nptel.ac.in/noc24_ma03/preview

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

1. No. of Internal Tests   : $\boxed{2}$ Max. Marks for each Internal Tests : $\boxed{30}$

2. No. of Assignments   : $\boxed{3}$ Max. Marks for each Assignment   : $\boxed{5}$

3. No. of Quizzes   : $\boxed{3}$ Max. Marks for each Quiz Test   : $\boxed{5}$

Duration of Internal Tests: 90 Minutes

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DEPARTMENT OF PHYSICS

Quantum Mechanics and Materials Science

SYLLABUS FOR B.E. II- SEMESTER (Common to ECE and EEE)

L:T:P(Hrs/week):3:0:0	SEE Marks:60	Course Code: **U24BS210PH**
Credits : 3	CIE Marks:40	Duration of SEE: 3 Hours

CO code	COURSE OBJECTIVES	COURSE OUTCOMES	Highest BTL
BS210PH.1	Demonstrate the significance of crystal structure in device applications.	Classify crystals based on their structure and list appropriate uses	3
BS210PH.2	Appreciate the advantages of quantum mechanics over classical mechanics.	Apply Schrodinger wave equations to quantum mechanical systems.	4
BS210PH.3	Arrive at the expressions for carrier concentration in semiconductors	Apply semiconductor physics to fabricate various devices	3
BS210PH.4	Comprehend lasing action and relate the use of lasers in optical fiber communication	Compare different types of lasers. Summarize merits and demerits of optical fibers.	2
BS210PH.5	Choose appropriate dielectric, magnetic and superconducting materials for required applications	Select various dielectric, magnetic and superconducting materials for specific applications in engineering.	3

CO-PO Mapping

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	3	3	-	-	-	-	-	-	-	-	-	1
CO2	2	2	-	-	-	-	-	-	-	-	-	1
CO3	3	2	-	-	-	-	-	-	-	-	-	1
CO4	3	1	-	-	-	-	-	-	-	-	-	1
CO5	2	1	-	-	-	-	-	-	-	-	-	1

UNIT-I: FUNDAMENTALS OF CRYSTAL STRUCTURE (12 hours)

Introduction to crystallography-Miller Indices, inter planar spacing (d_{hkl}), Bragg's law, x- ray diffraction, Debye-Scherer (powder) method, distinction between crystalline, polycrystalline, and amorphous materials, Point Defects and their effects, expression for concentration of Schottky and Frankel defects and applications relevant to electronics and communication engineering.

UNIT-II: QUANTUM MECHANICS (10hours)

De Broglie Hypothesis, wave packet, Davisson and Germer's experiment,

wave function and its significance, Schrodinger time dependent and independent wave equations, Eigen values and Eigen functions of infinite square-well potential (particle in a box). Potential barrier-quantum tunneling problem. Introduction to bra and ket vector notation, representation of Qubit, applications of quantum computing.

UNIT-III: SEMICONDUCTOR PHYSICS (10 hours)
Classical free electron (Drude) theory and its limitations, density of states, Kronig-Penney model, formation of energy bands, E-k diagram, Fermi-Dirac statistics (Qualitative), types of semiconductors, Fermi energy level, variation of Fermi energy level with temperature and doping concentration, expression for equilibrium carrier concentration in intrinsic and extrinsic semiconductors, conductivity of intrinsic and extrinsic semiconductors, formation of P-N Junction, Hall effect and its applications, Applications of semiconductor devices in electronic engineering.

UNIT-IV: LASERS AND OPTICAL FIBRES (10 hours)
Lasers: Induced absorption, spontaneous and stimulated emissions, characteristics of lasers, population inversion, meta-stable states, pumping mechanisms, components of laser, Properties of laser beam, types of lasers, construction and working of He-Ne laser and semiconductor laser, advantages, and applications of lasers.

Optical Fibers: principle of optical fiber, propagation of light in optical fiber, numerical aperture, acceptance angle, types of optical fibers, V-number, signal losses in optical fibers: Attenuation-absorption, scattering, bending, alignment losses, Signal distortion: intermodal and intra modal dispersions, block diagram of optical communication system, advantages and application of optical fibers.

UNIT-V: MATERIALS SCIENCE (10 hours)
Dielectric Materials: Polar and non-polar dielectrics, types of dielectric polarizations, Expressions for electronic polarizability and ionic polarizability, Frequency and temperature dependence of dielectric polarizations, applications of dielectric materials.
Magnetic Materials: Origin of magnetism, Ferromagnetic materials, antiferromagnetic materials and ferri-magnetic (ferrites) materials, Weiss molecular field theory of ferromagnetism, magnetic domains, hysteresis curve, soft and hard magnetic materials and their applications.
Superconductivity: Introduction to superconductivity, General properties of superconductors, Meissner effect, Type I and Type II superconductors-fundamentals of BCS Theory - Josephson's Junctions-Josephson's effects–SQUID- Applications of superconductors.

Learning Resources:

1. Charles Kittel, Introduction to Solid State Physics, 8th edition, John Wiley & Sons, 2012
2. S O Pillai, Solid State Physics, 8th edition, New Age International Publishers, 2018
3. M.N. Avadhanulu and P.G. Kshirsagar and TVS Arun Murthy, A Textbook Engineering Physics, 11th edition, S. Chand, 2019.
4. NPTEL MOOCS, Introduction to Solid State Physics, Satyajit Banerjee
5. NPTEL MOOCS, Concepts in Magnetism and Superconductivity, Prof Arghya Taraphder.
6. NPTEL MOOCS, Solid State Physics, Prof. Amal Kumar Das.

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

1. No. of Internal Tests : 2   Max. Marks for each Internal Test : 30

2. No. of Assignments : 3   Max. Marks for each Assignment : 5

3. No. of Quizzes : 3   Max. Marks for each Quiz Test : 5

Duration of Internal Tests: 90 Minutes

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DEPARTMENT OF ELECTRONICS AND COMMUNICATION ENGINEERING

Problem Solving through Object Oriented Programming
SYLLABUS FOR B.E. II - SEMESTER

L:T:P (Hrs./week): 3:0:0	SEE Marks : 60	Course Code : **U24ES210EC**
Credits : 3	CIE Marks : 40	Duration of SEE : 3 Hours

COURSE OBJECTIVES	COURSE OUTCOMES
1. Understand basic notions of object-oriented programming. 2. Acquire object-oriented problem-solving skills. 3. Write programs in C++.	On completion of the course, students will be able to: 1. Explain Object Oriented Programming concepts using C++. 2. Design programs using functions, Arrays and Create classes using Object Oriented design principles. 3. Construct C++ objects, and overload different operators. 4. Implement programs using Inheritance and Polymorphism. 5. Handle Exceptions and describe different Data Structures using OOPs concepts.

CO-PO/PSO Mapping

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
CO1	3	2	3									1	3	2	
CO2	3	2	3									1	3	2	
CO3	3	2	3									1	3	2	
CO4	3	2	3									1	3	2	
CO5	3	2	3									1	3	2	

UNIT-I
Introduction to Object Oriented Programming, features of OOP.

Introduction to C++ Programming, Structure of C++ Program, Tokens, Keywords, Identifiers, Constants, variables, Reference Variable, Operators, Scope Resolution Operator, Control Structures: Conditional statements, iterative statements.

UNIT-II
Functions in C++: Function Prototyping - Call by reference, Return by reference, Inline functions, Default arguments, Function Overloading, Recursion.

Arrays: Introduction, one-dimensional and multi-dimensional arrays.

Classes and Objects: Introduction, Abstract Data Type, Member functions,

Static members, Array of Objects, Objects as function arguments, friend functions.

UNIT-III
Constructors: Default, Parameterized and Copy Constructors, Destructors

Introduction to Pointers: Dynamic Memory Allocation, pointer to objects

Operator Overloading - unary and binary operator Overloading Using member function and Friend functions

UNIT-IV
Strings: Introduction, operations on strings.

Inheritance: The notion of Inheritance, Derived Classes, Overriding, Virtual Base Class, Runtime Polymorphism, Virtual Functions

Templates: Function Templates, Class Templates

UNIT-V
Exception handling: Exception handling basics, Programming techniques for Exception Handling

Implementation of Stacks and Queues using Arrays.

Linked lists: Singly Linked List, Nodes, operations on Linked Lists

Learning Resources:

1. Walter Savitch, "Problem solving with C++", 6th Edition, Pearson Education, 2009.
2. Behrouz A.Forouzan, Richard F. Gilberg, "Computer Science, A Structured Approach using C++", 2nd Edition, Cengage Learning, 2010.
3. E. Balaguruswamy, "Object-Oriented Programming with C++", 6th Edition, Tata Mc-Graw Hill, 2013.
4. S.B. Lippman. J Lajoie, "C++ Primer" 3rd Edition, AW Publishing Company, 2007.
5. Paul Dietel, Harvey Dietel, "C How to Program", 6th Edition, PHI, 2010.
6. Bjarne Stroustrup, "The C++ Programming Language", 4th Edition, Addison-Wesley, 2013.

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

1. No. of Internal Tests : $\boxed{2}$ Max. Marks for each Internal Test : $\boxed{30}$

2. No. of Assignments : $\boxed{3}$ Max. Marks for each Assignment : $\boxed{5}$

3. No. of Quizzes : $\boxed{3}$ Max. Marks for each Quiz Test : $\boxed{5}$

Duration of Internal Tests: 90 Minutes

VASAVI COLLEGE OF ENGINEERING (AUTONOMOUS)
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DEPARTMENT OF CIVIL ENGINEERING

Basic Engineering Drawing

SYLLABUS FOR B.E. II-SEMESTER (Common to ECE & EEE)

L:T:P (Hrs./week): 1:0:2	SEE Marks: 60	Course Code: **U24ES030CE**
Credits: 2	CIE Marks: 40	Duration of SEE: 3Hrs

COURSE OBJECTIVES	COURSE OUTCOMES
Objectives of this course are 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. Visualize and construct isometric projections.	At the end of the course, students will be able to: 1. Understand the fundamentals of drawing, Draw polygons and Conics. 2. Draw the orthographic projections of points and straight lines. 3. Draw the orthographic projections of planes inclined to both reference planes. 4. Draw the orthographic projections of solids inclined to one reference plane. 5. Draw the isometric projections of lines, planes and solids.

CO-PO/PSO Mapping

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
CO1	3	2								1			2		1
CO2	2	1			3					1			2		1
CO3	2	1								1			2		1
CO4	3	2								1			2		1
CO5	2	2			3					1			2		1

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).

UNIT-III:
Projections of Planes: Projections of perpendicular planes, oblique planes and their traces.

UNIT-IV:
Projections of Regular Solids: Projections of prism, cylinder, pyramid and cone in simple positions and axis inclined to one reference plane. Development of lateral surfaces of full solids.

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,54th Edition, 2023.
2. Basanth Agrawal, Agrawal C.M " Engineering Drawing" Second Edition, Tata McGraw Hill,2019
3. Thomas E French, Charles J Vierck, Robert J. Foster, "Engineering Drawing and Graphic Technology", Mc Graw Hill Education, 1993.
4. Gill P.S."Engineering Drawing: Geometrical Drawing",S K Kataria &sons,13th Edition, 2021.
5. Venu gopal. K "Engineering Drawing and Graphics Plus Autocad", New Age International (P) Ltd., New Delhi,2011.
6. Siddiquee A.N "Engineering Drawing with a Primer on Autocad", Prentice hall of India Ltd., New Delhi, 2004.
7. BVR Gupta, M RajaRoy, "Engineering Drawing with AutoCad", IKInt Pvt Ltd, 2020.
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   : 2   Max. Marks for each Internal Tests : 30

2. No. of Assignments   : 3   Max. Marks for each Assignment   : 5

3. No. of Quizzes   : 3   Max. Marks for each Quiz Test   : 5

Duration of Internal Tests: 90 Minutes

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DEPARTMENT OF ELECTRONICS AND COMMUNICATION ENGINEERING

Basic Circuit Analysis

SYLLABUS FOR B.E. II - SEMESTER

L:T:P(Hrs/week): 3:0:0	SEE Marks:60	Course Code: **U24PC010EC**
Credits : 3	CIE Marks:40	Duration of SEE: 3 Hours

COURSE OBJECTIVES	COURSE OUTCOMES
Students will be able to analyze the response of the circuits and networks using various concepts such as mesh & nodal analysis, network theorems and the frequency response of the circuit.	On completion of the course, students will be able to 1. Calculate circuit parameters of any given circuit. 2. Solve the given circuits using network theorems. 3. Determine two port network parameters from given network 4. Analyze given circuit in time domain using Transient and steady state analysis. 5. Design and analyze a given circuit in frequency domain.

CO-PO/PSO Mapping

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
CO1	3	3											3		
CO2	3	3											3		
CO3	3	3											3		
CO4	3	3											3		
CO5	3	3											3		

UNIT - I: Basic concepts of Electric Circuits:

Classification of Basic circuit elements, Dependent and independent voltage and current sources, Energy and power, Ohm's law, Kirchhoff's laws, network reduction techniques, nodal and super nodal analysis, mesh and super mesh analysis.

UNIT - II: Network Theorems to DC and AC circuits:

Thevenin's and Norton's theorem, maximum power transfer theorem, Super position theorem, Reciprocity theorem, Tellegen's theorem, Substitution Theorem.

UNIT - III: Two port networks:

z,y,h,g, ABCD parameters. Equivalence of two port networks, conversion between network parameters. Inter connection of two ports.

UNIT – IV: Time Domain Analysis of Circuits:

Response of circuits for Unit step and sinusoidal input: Transient and Steady state response of circuits: Zero input response (ZIR), Zero state response (ZSR), and complete response. Transient and steady state analysis of RL, RC and RLC circuits for unit step, sinusoidal inputs.

UNIT - V: Frequency Domain Analysis:

Resonance: Analysis of Series and Parallel resonance, Q-factor, Selectivity, and bandwidth.
Passive Filters: Classification and analysis of low pass and high pass filters, Response of RC and RL low pass filters and high pass filters. Filters as Integrating and differentiating circuits.

Learning Resources:

1. William H. Hayt, Jr., Jack E. Kemmerly and Steven M. Durbin, Engineering Circuit Analysis, 5th edition, McGraw Hill, 2010.
2. Van Valkenberg M.E., Network Analysis, PHI, New Delhi, 3rd edition 2002.
3. Chakrabarti, Ciruit Theory Dhanapati Rai & Co(Pvt.)Ltd., Educational & Technical Publishers.
4. Charles A. Desoer and Ernest S Kuh, Basic Circuit Theory, McGraw Hill, 2009.
5. Raymond A. DeCarlo and Penmin Lin, Linear Circuit Analysis, 2nd edition, Oxford Univ. Press, 2003.
6. Lawrence P. Huelsman, Basic Circuit Theory, 3rd edition, 2009.

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

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

Duration of Internal Tests: 90 Minutes

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DEPARTMENT OF ELECTRICAL AND ELECTRONICS ENGINEERING

Basic Electrical Engineering for ECE
SYLLABUS FOR B.E. II – SEMESTER

L:T:P(Hrs/week): 2:0:0	SEE Marks:60	Course Code: **U24ES220EE**
Credits : 2	CIE Marks:40	Duration of SEE: 3 Hours

COURSE OBJECTIVES	COURSE OUTCOMES
The course will enable the students to: 1. To provide an understanding of basics in Electrical circuits 2. To explain the working principles of Electrical Machines.	On completion of the course student will be able to 1. Analyze AC network parameters and power in single phase circuits. 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

CO-PO/PSO Mapping

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
CO1	3	2	1									1			
CO2	3	2	1									1			
CO3	3	2	1									1			
CO4	3	2	1									1			
CO5	3	2	1									1			

UNIT-I : A.C. Circuit fundamentals:
Electrical circuit elements (R, L and C), Kirchhoff current and voltage laws, Representation of sinusoidal waveform – peak value and RMS value, form factor, peak factor, phasor representation, real power, reactive power, apparent power, power factor.

UNIT-II : A.C. Circuits analysis:
Analysis of single-phase ac series circuits: R, L, C, R-L, R-C, R-L-C circuits, Three-phase balanced circuits, voltage and current relations in star and delta connections, analysis of three phase balanced star and delta connected loads.

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 derivation, losses and efficiency, torque-slip characteristics.
General construction, working and applications of Stepper motor and BLDC motor

<u>Learning Resources:</u>

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 : 2 | Max. Marks for each Internal Tests : 30
2. No. of Assignments   : 3 | Max. Marks for each Assignment   : 5
3. No. of Quizzes   : 3 | Max. Marks for each Quiz Test   : 5

Duration of Internal Tests: 90 Minutes

VASAVI COLLEGE OF ENGINEERING (AUTONOMOUS)
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DEPARTMENT OF MECHANICAL ENGINEERING

Introduction to Entrepreneurship

SYLLABUS FOR B.E. II - SEMESTER

L:T:P(Hrs/week): 1:0:0	SEE Marks:40	Course Code: **U24MC010ME**
Credits : -	CIE Marks:30	Duration of SEE: 2 Hours

COURSE OBJECTIVES	COURSE OUTCOMES
The objective of the course is to inspire students to develop an entrepreneurial mind-set, educate about the resources and schemes available to start enterprises in India.	On completion of the course, students will be able to 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

CO-PO/PSO Mapping

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
CO1									1		1				1
CO2												1		1	
CO3												1			
CO4						1		1				1			

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, 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:

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.

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

1. No. of Internal Tests : 1 Max. Marks for each Internal Tests : 20
2. No. of Assignments : 1 Max. Marks for each Assignment : 5
3. No. of Quizzes : 1 Max. Marks for each Quiz Test : 5

Duration of Internal Tests: 90 Minutes

VASAVI COLLEGE OF ENGINEERING (AUTONOMOUS)
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DEPARTMENT OF PHYSICS

Engineering Physics Lab

SYLLABUS FOR B.E. II - SEMESTER (Common to ECE and EEE)

L:T:P(Hrs./week): 0:0:2	SEE Marks: 50	Course Code: **U24BS211PH**
Credits : 1	CIE Marks: 30	Duration of SEE: 3 Hours

COURSE OBJECTIVES	COURSE OUTCOMES	BTL
• to study and discuss the characteristics of a given device	1. Conduct experiment independently and in team to record the measurements	2
• to identify probable errors and take in the readings and known possible precautions	2. Outline the precautions required to be taken for each experiment	1
• to compare the experimental and theoretical values and draw possible conclusions.	3. Compare the experimental results with standard values and estimate errors	2
• To interpret the results from the graphs drawn using experimental values.	4. Draw graphs and interpret the results with respect to graphical and theoretical values	2
• To write the record independently with appropriate results.	5. Write the summary of the experiment and draw appropriate conclusions	1

CO-PO Mapping

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	2	-	-	-	-	-	-	-	2	-	-	2
CO2	3	-	-	-	-	-	-	-	-	-	-	1
CO3	2	2	-	-	-	-	-	-	-	-	-	1
CO4	3	-	-	-	-	-	-	-	-	-	-	1
CO5	2	-	-	-	-	-	-	1	-	-	-	2

List of the Experiments:

1. Determination of wavelength of Laser light.

2. Calculation of NA, acceptance angle and power loss due to bending of an optical fibre.

3. Determination of energy gap of a given semiconductor by four probe method

4. Study of I-V characteristics of solar cell and to calculate fill factor and efficiency.

5. Determination of Hall coefficient using Hall effect.

6. Determination of e/m of an electron by Thomson's method

7. Study of resonance in LCR series circuits and estimation of band width & Q- factor

8. Study of resonance in LCR parallel circuits

9. Determination of wavelength of a light source by Michelson interferometer

10. Determination of Seebeck coefficient

11. Determination of Dielectric constant.

12. Helmholtz coil –calculation of magnetic field along the axis of a solenoid

13. B-H curve-estimation of Hysteresis loss of a ferromagnetic sample

14. Study of I-V characteristics of P-N Junction diode.

15. Study of I-V characteristics of Zener Diode

*Each student should perform at least 10 (Ten) experiments.

The break-up of CIE :

1.	No. of Internal Tests	:	1
2.	Max. Marks for internal tests	:	12
3.	Marks for day-to-day laboratory class work	:	18

Duration of Internal Tests: 3 Hours

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DEPARTMENT OF ELECTRONICS AND COMMUNICATION ENGINEERING

Problem Solving through Object Oriented Programming Lab

SYLLABUS FOR B.E. II - SEMESTER

L:T:P (Hrs./week): 0:0:2	SEE Marks : 50	Course Code : **U24ES221EC**
Credits : 1	CIE Marks : 30	Duration of SEE : 3 Hours

COURSE OBJECTIVES	COURSE OUTCOMES
1. Write, compile and debug programs in C++. 2. Formulate problems and implement in C++. 3. Acquire skills to solve computing problems.	On completion of the course, students will be able to 1. Write and debug programs in C++ language 2. Choose appropriate data types, functions, decision and looping constructs to develop C++ programs 3. Implement OOP functionalities such as class, overloading, dynamic memory allocation 4. Develop programs using inheritance, polymorphism, file I/O, templates and exception handling techniques. 5. Implement operations on basic data structures

CO-PO/PSO Mapping

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
CO1	3	2	3						1			1	3	1	
CO2	3	2	3						1			1	3	1	
CO3	3	2	3						1			1	3	1	
CO4	3	2	3						1			1	3	1	
CO5	3	2	3						1			1	3	1	

Programming Exercise:

1. Programs on matrix and complex numbers using classes.
2. Programs using constructors, destructors and copy constructors.
3. Programs on dynamic memory allocation for arrays.
4. Programs on static data members and string manipulations.
5. Programs on friend class.
6. Programs on function overloading and operator overloading.
7. Programs on inheritance.
8. Programs on virtual functions, dynamic polymorphism.
9. Programs on function templates, class templates and exception handling.

10. Programs on bubble sort, selection sort and insertion sort.
11. Program on operations in a singly linked list.
12. Program on implementation of stacks and queues using arrays and linked list.

New Experiments

1. Basic programs using Qt Library functions for GUI programming.
2. Implementation of Stack using Singly Linked List.

Learning Resources:

1. Walter Savitch, "Problem solving with C++", 6th Edition, Pearson Education, 2009.
2. Behrouz A. Forouzan, Richard F. Gilberg, "Computer Science, A Structured Approach using C++", 2nd Edition, Cengage Learning, 2010.
3. E. Balaguruswamy, "Object-Oriented Programming with C++", 6th Edition, Tata Mc-Graw Hill, 2013.
4. S.B. Lippman. J Lajoie, "C++ Primer" 3rd Edition, AW Publishing Company, 2007.
5. Paul Dietel, Harvey Dietel, "C How to Program", 6th Edition, PHI, 2010.
6. Bjarne Stroustrup, "The C++ Programming Language", 4th Edition, Addison- Wesley, 2013.

The break-up of CIE :

1. No. of Internal Tests   : 1
2. Max. Marks for internal tests   : 12
3. Marks for day-to-day laboratory class work   : 18

Duration of Internal Test : 3 Hours

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DEPARTMENT OF ELECTRONICS AND COMMUNICATION ENGINEERING

Basic Circuit Analysis Lab

SYLLABUS FOR B.E. II - SEMESTER

L:T:P(Hrs./week): 0:0:2	SEE Marks: 50	Course Code: **U24PC111EC**
Credits : 1	CIE Marks: 30	Duration of SEE: 3 Hours

COURSE OBJECTIVES	COURSE OUTCOMES
To apply the concepts of circuit theory for a given complex circuit and verify its response using discrete components and MULTISIM.	On completion of the course, students will be able to 1. Analyze the given circuits using network theorems. 2. Study the performance of circuits in frequency domain. 3. Determine different two port network parameters for a given network. 4. Simulate and find the response of a given circuit using MULTISIM.

CO-PO/PSO Mapping

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
CO1	3	3											3		
CO2	3	3											3		
CO3	3	3											3		
CO4	3	3											3		

List of Experiments:

1. Verification of Kirchhoff's Laws, Nodal and Mesh analysis

2. Verification of Thevenin's theorems and maximum power transfer theorem

3. Verification of superposition theorem

4. Verification of Tellegen's theorem

5. Design & verification of Series Resonance

6. Design & verification of Parallel Resonance

7. Measurement of two-port network parameters

Part –B (using MULTISIM)

1. Verification of Nodal and Mesh Analysis in the presence of dependent sources.

2. Verification of Thevenin's & maximum power transfer theorem in the presence of dependent sources.

3. Verification of Norton's theorems in the presence of dependent sources.

4. Verification of superposition & Tellegen's theorem in the presence of dependent sources.

5. Transient response of RL and RC circuits.

6. Measurement of two-port network parameters in the presence of dependent sources and ac sources

New / Additional Experiments

1. Design of Integrator using RC circuits.
2. Design of Differentiator using RC circuits.

The break-up of CIE :

1. No. of Internal Tests   **:**   1

2. Max. Marks for Internal Test   **:**   12

3. Marks for day-to-day laboratory class work   **:**   18

Duration of Internal Test : 3 Hours

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DEPARTMENT OF ELECTRICAL AND ELECTRONICS ENGINEERING

Basic Electrical Engineering for ECE Lab

SYLLABUS FOR B.E II – SEMESTER

L:T:P(Hrs./week): 0:0:2	SEE Marks: 50	Course Code: **U24ES221EE**
Credits : 1	CIE Marks: 30	Duration of SEE: 3 Hours

COURSE OBJECTIVES	COURSE OUTCOMES
The course will enable the students to: To provide the practical knowledge on operation of DC, AC machines and circuits	On completion of the course student will be able to: 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.

CO-PO/PSO Mapping

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
CO1	3	1		1					3			1			
CO2	3	1		1					3			1			
CO3	3	1		1					3			1			
CO4	3	1		1					3			1			
CO5	3	1		1					3			1			

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. Measurement of real, reactive and apparent power in single phase system.

4. Measurement of voltage across various elements in series R-L-C circuit.

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.

14. Measurement of impedance using Star-Delta transformation techniques

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

The break-up of CIE :

1. No. of Internal Tests **:** 1

2. Max. Marks for Internal Test **:** 12

3. Marks for assessment of each experiment **:** 18

Duration of Internal Test : 3 Hours

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DEPARTMENT OF ELECTRONICS AND COMMUNICATION ENGINEERING

Academic Activity Planner / Calendar for the Academic Year 2024-25

S.No.	Month	Activities planned
		ODD Semester
1	August	Introduction and objectives of CCA activities and Awareness on Library learning Resources by Mr. Ravi Kumar Librarian, VCE.
2	August	Poster Presentation on "IoT Solutions in Agriculture" in association with IETE Students' Forum (ISF)
3	August	Alumni lecture on "Pre-requisites for CAT Entrance" by Mr. Ajith, IIM Ahmedabad (2021)
4	August	Guest lecture on Being Professional a framework of Engineers mindset by Dr. T.P. Sashi Kumar, Former Scientist, Dept of Space, ISRO.
5	September	Guest lecture on "6G technologies and its challenges" by Dr. Humaira Nishat, Prof., ECE CVR College of Engineering
6	September	"Logical Wizard", A technical event conducted in association with IEEE SB VCE Unit.
7	September	Alumni lecture on "Carrier Guidance in Software Domain" by Mr. Manoj (2023), Traniee Engineer at Principal Global Solutions, Hyderabad
8	October	Guest Lecture on "Advanced Embedded Systems using STM32" by Dr. Thottempudi Pardhu, for V -sem students Assistant professor, BVRIT, HYD
9	October	Technical Essay Writing Competition "Technology in Professional Ethics– need of the hour" in association with IETE Students' Forum (ISF)
10	October	Alumni lecture "Carrier Guidance in product based companies" by Mr. Anudeep (2020) SAP Consultant at L&T.
11	October	Guest lecture on "Life Skills" by Mr. V.T. Shiva, Managing Director, RC All-Tech Power Systems Pvt. Ltd.
12	November	Hackerrank™ based coding contest "Hackathon 2024" for BE ECE Sem-III students in association with IEEE SB.
13	November	A Guidance program on "Career Opportunities after B.Tech" by Mr. S. Manimohan Trinath, GATE/ESE Trainer, motivational speaker
14	November	Hackerrank™ based coding contest "Hackathon 2024" for BE ECE Sem-1 students in association with IEEE SB.
15	November	Alumni lecture on Time Management by Keshava Murthy (1988) Freelancer Consultant, Mysuru

S.No.	Month	Activities planned
		EVEN Semester
16	January	Guest lecture on IOT implementation using node MCU by Dr. shyam sunder, Associate Professor, ECE Dept, Osmania University, HYD.
17	January	"Hardware circuit design contest" in association with IEEE SB of VCE Unit.
18	January	Alumni Technical talk" by N. Anagha (2023)
19	February	Guest Lecture Introduction to RF Design, Mr. Sourabh Joshi, Senior Team Lead, MathWorks, Hyderabad
20	February	"Tech Lipi – A technical contest" in association with IETE Students' Forum
21	February	Alumni lecture on "Career in ML and Data science" Mr. N Karthik Founding Engineer at Applied AI, Hyd.
22	March	Guest lecture on Communication related by Dr. Chayan Bhar, for VI-sem students Prof. NIT Warangal.
23	March	Guest Lecture on "Developing Business Models for Sustainability in Startup's" by Dr. B. Madhura, Assistant Professor ,School of Management Studies, Hyderabad
24	March	Poster Presentation on "AI & ML solutions for Societal Problems" in association with IETE Students' Forum
25	March	Alumni lecture "Carrier Guidance "by Mr. Shiva (2008) RPO, Vijayawada
26	April	Guest Lecture on "Alumini talk on how to get into core companies" by Mr. Neeraj (2022), Silicon Labs
27	April	Hackerrank™ based coding contest "Top Coder 2025" students in association with IEEE SB
28	April	Alumni lecture "Carrier Guidance" by Mr. Praneeth (2023), Hyundai Mobi's