

**VASAVI COLLEGE OF ENGINEERING
(AUTONOMOUS)**

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. (EEE) I & II Semesters
With effect from 2021-22
(For the batch admitted in 2021-22)
(R-21)**



DEPARTMENT OF ELECTRICAL AND ELECTRONICS ENGINEERING
Phones: +91-40-23146030, 23146031
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

Excellence in quality education by keeping pace with rapidly changing technologies and to create man power of global standards in the field of Electrical and Electronics Engineering.

DEPARTMENT MISSION

To impart in-depth knowledge to students through inductive teaching and learning practices, so that they acquire the skill to innovate, excel and lead in their profession with values and ethics that will benefit society.

PROGRAM EDUCATIONAL OBJECTIVES (PEOs)

PEO 1: Graduates will acquire technical competence to analyze, design and solve engineering problems in the field of Electrical and Electronics engineering and use modern engineering tools, techniques and software.

PEO 2: Graduates will be able to acquire necessary skills and obtain employment and will be productive in the professional practice of Electrical and Electronics Engineering and related fields.

PEO 3: Graduates will be sensitive to professional and social contexts, committed to ethical action and engaged in lifelong learning skills.

PROGRAM SPECIFIC OUTCOMES (PSOs)

- EEE students will be able to design, analyze Power Systems & Electrical Machines to solve complex engineering problems.
- EEE students will be able to design and analyze Electrical and Power Electronic Circuits.
- EEE students will be able to use and apply modern software tools and techniques related to Electrical Engineering.

B.E. (EEE) PROGRAM OUTCOMES (PO's)

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.
P10	Communication: Communicate effectively on complex engineering activities with the engineering community and with society at large, such as, being able to comprehend and write effective reports and design documentation, make effective presentations, and give and receive clear instructions.
P11	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.
P12	Lifelong learning: Recognize the need for, and have the preparation and ability to engage in independent and lifelong learning in the broadest context of technological change.

With effect from the Academic Year 2021-22

VASAVI COLLEGE OF ENGINEERING (AUTONOMOUS):: IBRAHIMBAGH, HYDERABAD – 500 031.
 DEPARTMENT OF ELECTRICAL AND ELECTRONICS ENGINEERING
 SCHEME OF INSTRUCTION AND EXAMINATION (R-21)::B.E. - EEE : FIRST SEMESTER(2021 - 22)

B.E (EEE) I Semester										Credits
Course Code	Name of the Course	Scheme of Instruction			Scheme of Examination			Duration in Hrs	Maximum Marks	
		Hours per Week			SEE	CIE				
		L	T	P/D						
THEORY										
U21HS110EH	English Language and Communication	2	-	-	3	60	40	2		
U21BS110MA	Calculus	3	-	-	3	60	40	3		
U21BS110CH	Engineering Chemistry	3	-	-	3	60	40	3		
U21ES120CS	Programming for Problem Solving	3	-	-	3	60	40	3		
U21ES010CE	Basic Engineering Mechanics	3	-	-	3	60	40	3		
U21MC010CE	Environmental Science	2	-	-	3	60	40	-		
U21MC010ME	Introduction to Entrepreneurship	1	-	-	2	40	30	0		
PRACTICALS										
U21HS111EH	English Language and Communication Skills Lab	-	-	2	3	50	30	1		
U21BS011CH	Chemistry Lab	-	-	2	3	50	30	1		
U21ES121CS	Programming for Problem Solving Lab	-	-	2	3	50	30	1		
U21ES111ME	Engineering Workshop-I	-	-	2	3	50	30	1		
	Library/Sports/Proctorial Interaction	-	-	-	-	-	-	-		
	PDC/CC/TC/RC	-	-	-	-	-	-	-		
TOTAL		17	-	8		600	390	18		
GRAND TOTAL		25				990	18			

Note: Left over hours are allocated for Library/Sports/Proctorial Interaction/PDC/C/TC /RC

With effect from the Academic Year 2021-22
VASAVI COLLEGE OF ENGINEERING (AUTONOMOUS)
 9-5-81, Ibrahimbagh, Hyderabad-500031, Telangana State

DEPARTMENT OF HUMANITIES & SOCIAL SCIENCES
 English Language and Communication

SYLLABUS FOR B.E. I SEMESTER

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

COURSE OBJECTIVES	COURSE OUTCOMES
The course will enable the students to:	At the end of the course the learners will be able to:
<ol style="list-style-type: none"> 1. Understand the role and importance of communications skills. 2. Develop the habit of listening effectively to various speakers and lectures. 3. Develop reading strategies in order to understand various types of texts 4. Understand the various features and formats of writing. 5. Comprehend grammar constructs and vocabulary used in different contexts. 	<ol style="list-style-type: none"> 1. Communicate effectively, appropriately and ethically in both professional & personal spheres. 2. Listen for gist and make inferences from various speeches and converse intelligibly in various contexts. 3. Comprehend, appreciate, evaluate and infer various text types. 4. Compose letters and essays, coherently and cohesively using discourse marks. 5. Construct grammatically correct sentences using adequate vocabulary.

UNIT-11.0 Effective communication and Interpersonal skills

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

1.2Johari Window

1.3 Team building skills and team work

1.4 Persuasion techniques

UNIT-2 - 2.0 Listening and Speaking skills

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

2.2 Speaking skills: -Speaking strategies; Telephone etiquette.

UNIT-3- 3.0 Reading and Writing skills

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

3.2 Features of Writing: -

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

3.3 Written Communication:

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

UNIT-4 4.0 Vocabulary Building and Grammar

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

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

All these aspects will be taught as common errors.

UNIT-5 5.0 Reading for appreciation of literary texts

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

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

Prescribed textbook for theory:

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

Learning Resources

1. E.Sureshkumar, P. Sreehari and J. Savithri - Essential English
2. Reading comprehension - Nuttal.J.C - Orient Blackswan
3. Sunitha Mishra,C. Murali Krishna, Communication Skills for Engineers, Pearson, 2004.
4. M. Ashraf Rizvi. Effective Technical Communication. Tata Mcgraw Hill, 2005.
5. Allen and Waters., How English Works.
6. Willis Jane., English through English.
7. 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	:	<table border="1"><tr><td>2</td></tr></table>	2	Max. Marks for each Internal Test	:	<table border="1"><tr><td>30</td></tr></table>	30
2							
30							
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5							
3. No. of Quizzes	:	<table border="1"><tr><td>3</td></tr></table>	3	Max. Marks for each Quiz Test	:	<table border="1"><tr><td>5</td></tr></table>	5
3							
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Duration of Internal Test: 90 minutes

With effect from the Academic Year 2021-22
VASAVI COLLEGE OF ENGINEERING (AUTONOMOUS)
 9-5-81, Ibrahimbagh, Hyderabad-500031, Telangana State

DEPARTMENT OF MATHEMATICS

CALCULUS

(Common to Civil, EEE, ECE, Mech.)

SYLLABUS FOR B.E. I SEMESTER

L:T: P (Hrs/Week):3:0:0	SEE Marks: 60	Course Code: U21BS110MA
Credits: 3	CIE Marks: 40	Duration of SEE : 3 Hours

COURSE OBJECTIVES	COURSE OUTCOMES
	On completion of the course, students will be able to
<p>1. Understand The concepts of curvature, radius of curvature, evolutes and to expand functions using Taylor's series.</p> <p>2. Acquire know ledge of partial derivatives, and expand functions using Taylor's series functions of two real variables and, maxima- minima.</p> <p>3. Study the concepts of vector differentiation, Gradient, Divergence and Curl.</p> <p>4. Learn how to evaluate double and triple integrals, using change of order of integration and apply vector integration to transformation theorems</p> <p>5. Identify convergence of infinite series using various tests.</p>	<p>1. Compute radius of curvature, evolute of a given curve and also to expand given function using Taylor's series.</p> <p>2. Expand the given function in terms of Taylor's series and find Maxima and minima of functions of several variables also using Lagrange's method of multipliers.</p> <p>3. Use gradient to evaluate directional derivatives and conservative vector field.</p> <p>4. Apply concepts of multiple integrals to evaluate area and volume and vector integration to transformation.</p> <p>5. Apply an appropriate test to check the nature of the infinite series.</p>

UNIT- I

DIFFERENTIAL CALCULUS

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

UNIT –II

FUNCTIONS OF SEVERAL REAL VARIABLES

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

UNIT – III

VECTOR DIFFERENTIAL CALCULUS

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

UNIT – IV

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

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

UNIT-V (08 classes)

INFINITE SERIES

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

Learning Resources:

1. Advanced Engineering Mathematics, Third Edition, R. K. Jain and S. R. K. Iyengar, Narosa Publishing House.
2. Higher Engineering Mathematics, B. S. Grewal 40th. Edition, Khanna Publishers.
3. Advanced Engineering Mathematics 8th Edition by Erwin Kreyszig , John Wiley & Sons.

With effect from the Academic Year 2021-22

4. Differential Calculus by Shanti Narayan S. Chand & Co
5. Vector Calculus – Schaum's outline series.
6. <http://mathworld.wolfram.com/topics>
7. <http://www.nptel.ac.in/course.php>
8. <https://www.coursera.org/in>

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

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3							
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Duration of Internal Test: 90 minutes

With effect from the Academic Year 2021-22
VASAVI COLLEGE OF ENGINEERING (AUTONOMOUS)

9-5-81, Ibrahimbagh, Hyderabad-500031, Telangana State

DEPARTMENT OF CHEMISTRY
ENGINEERING CHEMISTRY

SYLLABUS FOR B.E. I SEMESTER

L:T: P (Hrs/Week):3:0:0	SEE Marks: 60	Course Code: U21BS110CH
Credits: 3	CIE Marks: 40	Duration of SEE : 3 Hours

COURSE OBJECTIVES The objectives of the course are:	COURSE OUTCOMES Upon the completion of this course students will be able to
<ol style="list-style-type: none">1. Study types of conductance, variation of electrode potential and EMF and to acquaint with applications of Galvanic Cell.2. Classify and compare various types of batteries and fuel cells.3. Get acquainted with different types of polymers and their applications.4. Explain the concepts of engineering materials like nano materials and liquid crystals.5. Know the principles of few analytical techniques.	<ol style="list-style-type: none">1. Construct a galvanic cell and calculate its EMF and pH wherever applicable.2. Describe the construction, functioning and applications of the selected primary, secondary batteries and fuel cells.3. Categorise the polymers and discuss the synthesis of few polymers along with their applications.4. Get expose to the classification, properties and applications of nano materials and liquid crystals.5. Familiarize with the working principle of IR, UV and Thermal analytical techniques.

UNIT-I: ELECTROCHEMISTRY

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

With effect from the Academic Year 2021-22

Cells- electrolytic and electrochemical cells. IUPAC convention of cell notation, cell reaction, concept of electrode potential, electro motive 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. Principle and Applications of potentiometry- acid base and redox reaction (Fe(II) Vs KMnO_4).

UNIT-II: BATTERY TECHNOLOGY

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, Zn- Ag_2O battery and lithium- V_2O_5 battery.

Secondary batteries: Construction and working of lead-acid, Ni-Cd 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, phosphoric acid fuel cell and Molten carbonate fuel cell.

UNIT-III: POLYMER CHEMISTRY

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

Types of Polymerization - Addition and condensation polymerization.

Glass transition temperature (T_g), factors affecting T_g .

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

Plastics: Thermo plastics and thermosets - preparation, properties and applications of a) Aramid (Kevlar) b) Poly methyl methacrylate (PMMA)

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.

With effect from the Academic Year 2021-22

Polymer composites: Introduction, advantages of composites over conventional materials, fiber reinforced composites Kevlar, Carbon and Glass FRCs and their applications.

UNIT-IV: ENGINEERING MATERIALS

Nano Materials

Introduction - concept of nanomaterials - quantum confinement and surface volume ratio - catalytic and electrical properties.

Types of Nano materials: carbon nano tubes, quantum dots, nanowires, nano crystals.

Synthesis of nano materials: Top down and bottom up approaches-mechanical grinding by ball milling, sol gel method.

Carbon Nano tubes: Single walled carbon nanotubes (SWCNTs). Multi walled carbon nanotubes (MWCNTs), synthesis of CNTs- arc discharge and laser ablation methods, applications.

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

Spectroscopy: Principle, block diagram, applications of Atomic absorption spectroscopy.

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).

Thermal Analysis: Principle, block diagram of Thermo Gravimetric Analysis (TGA) and analysis of calcium oxalate. Principle, block diagram of Differential Scanning Calorimetry (DSC) and analysis of TG of a polymer.

Learning Resources:

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

With effect from the Academic Year 2021-22

3. Sashi Chawla, Text book of Engineering Chemistry, Dhanapathi Rai & sons, New Delhi.
4. Wiley Engineering chemistry, Wiley India pvt Ltd, II edition
5. Chemistry in engineering and technology by J.C. Kuriacose and Rajaram.
6. University chemistry, by B. H. Mahan
Physical Chemistry, by P. W. Atkins
7. S. S. Dara, S Chand and sons, Engineering Chemistry, New Delhi.
8. Puri, Sharma and Pathania Principles of physical chemistry, Vishal Publishing Co.
9. Polymer chemistry by Gowariker
10. Introduction to Nanoscience, by S m Lindsay, Oxford University press.
11. Engineering Chemistry (NPTEL Web-book), by B. L. Tembe, Kamaluddin and M. S. Krishnan
12. NPTEL Polymer Chemistry Course, D. Dhara, IIT Kharagpur.

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 Test: 90 minutes

With effect from the Academic Year 2021-22
VASAVI COLLEGE OF ENGINEERING (AUTONOMOUS)
9-5-81, Ibrahimbagh, Hyderabad-500031, Telangana State

Department of Computer Science & Engineering
PROGRAMMING FOR PROBLEM SOLVING

SYLLABUS FOR B.E. I SEMESTER

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

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

UNIT-I:

Introduction to Computers: Computer Systems, Computing Environments, Computer Languages, Creating and Running Programs, Software Development, Flowcharts. Number Systems (Binary, Octal, Decimal and Hexadecimal), Representation of Numbers (Fixed and Floating Point).

Introduction to C Language: Background, C Programs, Identifiers, Types, Variables, Constants, Input/Output, Expressions, Precedence and

With effect from the Academic Year 2021-22

Associativity, Side Effects, Evaluating Expressions, Type Conversion, Statements, Bitwise Operators.

UNIT-II:

Selection: Logical Data and Operators, if... else, switch Statements, Standard Functions. **Repetition:** Loops, while, for, do-while Statements, Loop Examples, break, continue, goto.

Functions: Designing Structured Programs, Functions Basics, User Defined Functions, Inter-Function Communication, Standard Functions, Scope, Storage Classes-Auto, Register, Static, Extern, Scope Rules and Type Qualifiers.

UNIT-III:

Recursion: Recursive Functions, Preprocessor Commands.

Arrays: Concepts, Using Arrays in C, Inter-Function Communication, Array Applications, Two-Dimensional Arrays, Multi dimensional Arrays, Linear Search and Binary Search, Selection Sort and Bubble Sort.

UNIT-IV:

Pointers: Introduction, Pointers for Inter-Function Communication, Pointers to Pointers, Compatibility, LValue and RValue, Arrays and Pointers, Pointer Arithmetic and Arrays, Passing on Array to a Function, Memory Allocation Functions, Array of Pointers, Programming Applications, Pointers to void, Pointers to Functions, Command Line Arguments.

Strings: Concepts, C Strings, String Input/Output, Functions, Arrays of Strings, String Manipulation functions

UNIT-V:

Type Definition (typedef), Enumerated Types.

Structure: Definition and Initialization of Structures, Accessing Structures, Nested Structures, Arrays of Structures, Structures and Functions, Pointers to Structures, Self Referential Structures, Unions.

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

With effect from the Academic Year 2021-22

Learning Resources:

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

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

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Duration of Internal Test: 90 minutes

With effect from the Academic Year 2021-22
VASAVI COLLEGE OF ENGINEERING (AUTONOMOUS)
9-5-81, Ibrahimbagh, Hyderabad-500031, Telangana State

DEPARTMENT OF CIVIL ENGINEERING
BASIC ENGINEERING MECHANICS
(Common to Civil, CSE, ECE, EEE & Mechanical Engineering)

SYLLABUS FOR B.E. I SEMESTER

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

COURSE OBJECTIVES Objectives of this course are to:	COURSE OUTCOMES At the end of the course, students will be able to:
<ol style="list-style-type: none">1. Explain the resolution of a system of forces (coplanar, spatial, concurrent, non-concurrent) and compute their resultant.2. Solve particle equilibrium problem using equation of equilibrium3. Determine forces in the members of a truss4. Perform analysis of bodies lying on rough surfaces.5. Locate the centroid of a body and also compute the area moment of inertia of standard and composite sections.	<ol style="list-style-type: none">1. Determine resultant of forces acting on a body.2. Analyse equilibrium of a body subjected to a system of forces.3. Perform analysis of trusses using method of joints and method of sections.4. Solve problem of bodies subjected to friction.5. Find the location of centroid and calculate moment of inertia and polar moment of inertia of a given section.

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

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

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

With effect from the Academic Year 2021-22

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

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

Learning Resources:

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

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Duration of Internal Test: 90 minutes

With effect from the Academic Year 2021-22
VASAVI COLLEGE OF ENGINEERING (AUTONOMOUS)
 9-5-81, Ibrahimbagh, Hyderabad-500031, Telangana State

DEPARTMENT OF CIVIL ENGINEERING
 ENVIRONMENTAL SCIENCE

SYLLABUS FOR B.E. I SEMESTER

L:T: P (Hrs/Week):2:0:0	SEE Marks: 60	Course Code: U21MC010CE
Credits: -	CIE Marks: 40	Duration of SEE : 3 Hours

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

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,

With effect from the Academic Year 2021-22
water logging salinity. Energy resources: Renewable and non-renewable
energy resources. Land Resources, soil erosion and desertification.

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

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

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

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

Learning Resources:

1. Deswal S. and Deswal A., A Basic Course on Environmental studies, DhanpatRai& Co Pvt. Ltd. 2016
2. Benny Joseph, Environmental Studies, Tata McGraw-Hill, 2017
3. Suresh K. Dhameja, Environmental Studies, S.K. Kataria& Sons, 2010.
4. De A.K., Environmental Chemistry, New Age International, 2003.
5. Odum E.P., Fundamentals of Ecology, W.B. Sanders Co., USA, 2004.
6. Rajagopalan R., Environmental Studies, Second Edition, Oxford University Press, 2015

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

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

With effect from the Academic Year 2021-22
VASAVI COLLEGE OF ENGINEERING (Autonomous)
 IBRAHIMBAGH, HYDERABAD – 500 031

Department of Mechanical Engineering

INTRODUCTION TO ENTREPRENEURS HIP

SYLLABUS FOR B.E.I-SEMESTER

L:T:P(Hrs/week):1:0:0	SEE Marks:40	Course Code: U21MC010ME
Credits :0	CIE Marks:30	Duration of SEE: 2

COURSE OBJECTIVE	COURSE OUTCOMES
The objective of the course is to	On completion of the course, students will be able to
inspire students develop an entrepreneurial mind-set, educate about the resources and schemes available to start enterprises in India.	<ol style="list-style-type: none"> 1 get awareness about entrepreneurship and potentially become an entrepreneur. 2 discern the characteristics required to be a successful entrepreneur 3 know the importance of effective communication. 4 demonstrate effective sales skills

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

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

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

Learning Resources:

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

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	:	1	Max. Marks for each Assignment	:	5
3. No. of Quizzes	:	1	Max. Marks for each Quiz Test	:	5

Duration of Internal Test: 90 minutes

With effect from the Academic Year 2021-22
VASAVI COLLEGE OF ENGINEERING (AUTONOMOUS)
 9-5-81, Ibrahimbagh, Hyderabad-500031, Telangana State

DEPARTMENT OF HUMANITIES & SOCIAL SCIENCES
 ENGLISH LANGUAGE AND COMMUNICATION SKILLS LAB

SYLLABUS FOR B.E. I SEMESTER

L:T: P (Hrs/Week):0:0:2	SEE Marks: 50	Course Code: U21HS111EH
Credits: 1	CIE Marks: 30	Duration of SEE : 3 Hours

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

1.0 PHONETICS LAB- TOPICS

1.1 Introduction to English Phonetics:

Introductory to auditory, acoustic and articulatory phonetics. Organs of speech: the respiratory, articulatory and phonatory systems.

1.2 Aspects of language learning and ear training activities-

Homophones, homonyms. Words often confused. Parts of speech- Identification and pronunciation of nouns, adjectives, verbs and adverbs. Longman Dictionary of Contemporary English- 6th Edition, 2020.

2.0 INTERACTIVE COMMUNICATION SKILLS LAB-TOPICS

2.1 Group discussion:

Objectives of GD, Types of GDs; Initiating, Continuing, and concluding a GD.

2.2 Debate:

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Understanding the difference between a debate and a group discussion, essentials of debates.

2.3 Public speaking:

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

2.4 Interview Skills - Basic HR questions.

Viva questions will be asked in internal and external exams.

3.0 READING SKILLS LAB - TOPICS

3.1 Teaching different types of texts for comprehension

3.2 Poster Reading- Analysing data, specific vocabulary items & pictorial forms and convert the same to a reading text and vice versa.

Viva questions will be asked in internal and external exams.

Longman Dictionary of Contemporary English - 6th Edition, 2020.

Prescribed textbook for laboratory:

Speak Well: Jayshree Mohanraj, Kandula Nirupa Rani and Indira Babbellapati - Orient Black Swan

Longman Dictionary of Contemporary English - 6th Edition, 2020. (The students will be given the PDF format)

Learning Resources:

1. Balasubramanian: A textbook of English phonetics for Indian students, Macmillan, 2008.
2. Priyadarshini Patnaik : Group discussion and interviews, Cambridge University Press India private limited 2011.
3. Daniel Jones: Cambridge English Pronouncing Dictionary - A Definitive guide to contemporary English Pronunciation.
4. Reading Cards (Eng400): Orient Black Swan. Reading Squabble - Hadfield.
5. Rudolph F. Verderber, Kathleen S. Verderber, Deanna D. Sellnow: The challenge of Effective Speaking 2012

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

With effect from the Academic Year 2021-22
VASAVI COLLEGE OF ENGINEERING (AUTONOMOUS)

9-5-81, Ibrahimbagh, Hyderabad-500031, Telangana State

DEPARTMENT OF CHEMISTRY
CHEMISTRY LAB

SYLLABUS FOR B.E. I SEMESTER

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

COURSE OBJECTIVES	COURSE OUTCOMES
The course will enable the students to:	At the end of the course, students should be able to:
<ol style="list-style-type: none">1. Describe the quantitative analytical techniques2. Learn the skills to handle the instruments3. Apply the theoretical principles in experiments4. Examine the accuracy	<ol style="list-style-type: none">1. Determine the amount of metals in the given solutions.2. Analyse the hardness, alkalinity and chloride content of a given sample.3. Estimate the amount of a substance in a given solution by conductometry, potentiometry and pH metry.4. Use the principle of colorimetry in the estimation of Permanganate / Copper (II) in a given solution.

1. Preparation of standard FAS or oxalic acid solution and standardization of KMnO_4 or NaOH solution.
2. Estimation of ferrous iron in the given solution by permanganometry.
3. Estimation of chromium in the given solution by standardized FAS.
4. Estimation of copper in brass or 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).

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9. Conductometric acid-base titrations- Determination of strength of acids in a given mixture of acids

(HCl and CH₃COOH Vs NaOH)

10. Determination of strength of a given acid by Potentiometry.

11. Determination of concentration of a given FeSO₄ 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. Determination of concentration of a salt by ion exchange method.

15. Synthesis of Aspirin or Phenol formaldehyde resin.

Learning Resources:

1. Dr.Sunita Rattan, Experiments in Applied Chemistry, S K Kataria & Sons 2011
2. M S Kaurav, Engineering chemistry with laboratory experiments, PHI learning (P) ltd, New Delhi.
3. G H Jeffery, J Bassett, J Mendham, R C Denney, Vogel's text book of quantitative chemical analysis, Fifth Edition.
4. A text book on Experiments and Calculations in Engineering Dr. S.S. Dara, S.Chand publications, 2015.

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

With effect from the Academic Year 2021-22

VASAVI COLLEGE OF ENGINEERING (AUTONOMOUS)

9-5-81, Ibrahimbagh, Hyderabad-500031, Telangana State

Department of Computer Science & Engineering

PROGRAMMING FOR PROBLEM SOLVING LAB

(Common to CSE, AI&ML, IT, ECE and EEE)

SYLLABUS FOR B.E. I SEMESTER

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

COURSE OBJECTIVES	COURSE OUTCOMES
The course will enable the students to:	On completion of the course, students will be able to
1. Understand the fundamentals of programming in C Language 2. Write, compile and debug programs in C 3. Formulate solution to problems and implement in C. 4. Effectively choose programming components to solve computing problems.	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 handling. 5. Design and implement programs to store data in structures and files

Programming Exercise:

1. Finding maximum and minimum of given set of numbers, finding roots of quadratic equation.
2. Sin x and Cos x values using series expansion.
3. Conversion of binary to decimal, octal, hexadecimal and vice versa.
4. Generating Pascal triangle, pyramid of numbers.
5. Recursion: factorial, Fibonacci, GCD.

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6. Matrix addition and multiplication using arrays, linear search and binary search using recursive and non-recursive procedures.
7. Bubble sort and selection sort.
8. Programs on pointers: pointer to arrays, pointer to functions.
9. Functions for string manipulations.
10. Programs on structures and unions.
11. Finding the number of characters, words and lines of given text file.
12. File handling programs.

Learning Resources:

1. Frouzan 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 C Programming, 3rd Edition (2006), O'Reilly Press.
4. Balagurusamy E, Programming in ANSI C, 4th Edition (2008), TMG.

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

With effect from the Academic Year 2021-22
VASAVI COLLEGE OF ENGINEERING (AUTONOMOUS)
 9-5-81, Ibrahimbagh, Hyderabad-500031, Telangana State

DEPARTMENT OF MECHANICAL ENGINEERING
ENGINEERING WORKSHOP-I

SYLLABUS FOR B.E. I SEMESTER
 (Common to Mechanical, Civil & EEE branches)

L:T: P (Hrs/Week):0:0:2	SEE Marks: 50	Course Code: U21ES111ME
Credits: 1	CIE Marks: 30	Duration of SEE : 3 Hours

COURSE OBJECTIVES The objective of the course is to	COURSE OUTCOMES On completion of the course, students will be able to
<ol style="list-style-type: none"> 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. 	<ol style="list-style-type: none"> 1. Create models in Carpentry, plumbing, 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.

List of the Experiments:

PLUMBING:

1. Introduction of tools, joints, couplings and valves etc.
2. Pipe thread cutting and making single joint with coupling and tap connection.
3. Water shower connection with reducer coupling
4. Geyser connection(demo)

With effect from the Academic Year 2021-22

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
4. LT Distribution with loads (Demo)

CARPENTRY:

1. Half-lap joint
2. Dove-tail joint
3. Bridle joint
4. Wood turning operation (demo)

SHEET METAL:

1. Rectangular box
2. Rectangular scoop with handle
3. Making a funnel with soldering
4. Making a T-Joint (Demo).

PLASTIC MOULDING:

1. Injection moulding of plastic spoon (demo)

Learning Resources:

1. Hajra Choudhury S.K., Hajra Choudhury A.K., Nirjar Roy S.K. "Elements of Workshop Technology" Vol-I 2008 & Vol-II 2010 Media Promoters & Publishers Pvt. Limited, Mumbai.
2. Kalpakjian S. and Steven R. Schmid, "Manufacturing Engineering and Technology" 4th Edition, Pearson Education India, 2002.
3. Gowri P., Hariharan and Suresh Babu A., "Manufacturing Technology-I", Pearson Education 2008.
4. P. Kanniah & 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

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

With effect from the Academic Year 2021-22
 VASAVI COLLEGE OF ENGINEERING (AUTONOMOUS) :: IBRAHIMBAGH, HYDERABAD – 500 031.
 DEPARTMENT OF ELECTRICAL AND ELECTRONICS ENGINEERING
 SCHEME OF INSTRUCTION AND EXAMINATION (R-20) :: B.E. - EEE : SECOND SEMESTER(2020 - 21)

B.E (EEE) II Semester								
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	
THEORY								
U21BS210MA	Differential Equations and Complex Analysis	3	-	-	3	60	40	3
U21BS210PH	Quantum Mechanics and Material Science	3	-	-	3	60	40	3
U21ES210CS	Object Oriented Programming	3	-	-	3	60	40	3
U21ES030CE	Basic Engineering Drawing	1	-	2	3	60	40	2
U21PC210EE	Circuit Theory	3	-	-	3	60	40	3
U21PC220EE	Electrical Measurements and Instrumentation	3	-	-	3	60	40	3
U21HS020EH	Human values and Professional Ethics -I	1	-	-	2	40	30	1
PRACTICALS								
U21BS011PH	Engineering Physics Lab	-	-	2	3	50	30	1
U21ES211CS	Object Oriented Programming Lab	-	-	2	3	50	30	1
U21PC211EE	Electrical Circuits and Measurements Lab	-	-	2	3	50	30	1
U21ES221ME	Engineering Workshop - II	-	-	2	3	50	30	1
	Library/Sports/Proctorial Interaction	-	-	-	-	-	-	-
	PDC/CC/TC/RC	-	-	-	-	-	-	-
TOTAL		17	-	10	-	600	390	22
GRAND TOTAL		27				990		22

Note: Left over hours are allocated for Library/Sports/Proctorial Interaction/PDC/CC/TC/RC

With effect from the Academic Year 2021-22
VASAVI COLLEGE OF ENGINEERING (AUTONOMOUS)
 9-5-81, Ibrahimbagh, Hyderabad-500031, Telangana State

DEPARTMENT OF HUMANITIES & SOCIAL SCIENCES

Differential Equations & Complex Analysis
 (Common to Civil, EEE, ECE, Mech.)

SYLLABUS FOR B.E. II SEMESTER

L:T: P (Hrs/Week):3:0:0	SEE Marks: 60	Course Code: U21BS210MA
Credits: 3	CIE Marks: 40	Duration of SEE : 3 Hours

COURSE OBJECTIVES	COURSE OUTCOMES
<p>The course will enable the students to:</p> <ol style="list-style-type: none"> 1. Study the concepts of matrices, Eigen values and Eigen vectors, Diagonalization and canonical form of a quadratic form. 2. Solve first order differential equations using elementary techniques and learn its applications. 3. Use the various higher order homogeneous and non-homogeneous linear differential equations with constant coefficients to solve it and apply on electrical circuits 4. Understand the Analytic functions, conditions and harmonic functions. 5. Evaluate a line integral of a function of a complex variable using Cauchy's integral formula, and how to evaluate Taylor's and Laurent Series. 	<p>On completion of the course, students will be able to</p> <ol style="list-style-type: none"> 1. Find the rank of a given matrix, diagonalizable a given matrix and reduce a quadratic form to canonical form and find its nature. 2. Identify the suitable I.F and solve differential equations, model the real time electrical engineering problems viz., RC & LR Circuits into differential equations and solve. 3. Apply various higher order Linear Differential equations, to solve LC and LCR circuits. 4. Apply the condition(s) for a complex variable function to be analytic and/or harmonic and to construct an Analytic function. 5. Evaluate complex integrals by Cauchy's theorem and Cauchy's Integral formula and define singularities of a function and to expand a given function as a Taylor's / Laurent's series.

UNIT – I
MATRICES

Rank of a Matrix- Linearly independence and dependence of Vectors - Characteristic equation- -Eigen values and Eigenvectors - Cayley - Hamilton Theorem (without proof)- Diagonalization using Similarity Transformation.

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

UNIT – III
HIGHER ORDER LINEAR DIFFERENTIAL EQUATIONS
Solutions of Homogeneous and Non Homogeneous linear equations with constant coefficients- Method of Variation of Parameters –Applications of linear differential equations to LCR circuits

UNIT – IV
DIFFERENTIATION OF COMPLEX FUNCTION
Limits and Continuity of function - Differentiability and Analyticity - Necessary & Sufficient Condition for a Function to be Analytic - Milne-Thompson's method -Harmonic Functions.

UNIT – V
INTEGRATION OF COMPLEX FUNCTION
Complex Integration- Cauchy's Theorem - Extension of Cauchy's Theorem for multiply connected regions- Cauchy's Integral Formula - Power series - Taylor's Series - Laurent's Series (without proofs) –Poles and Residues.

Learning Resources :

1. Advanced Engineering Mathematics 3rd Edition,
R.K.Jain&S.R.K.Iyengar, Narosa Publishing House.

With effect from the Academic Year 2021-22

2. Higher Engineering Mathematics 40th Edition Dr. B.S Grewal, Khanna Publishers.
3. A Text book of Engineering Mathematics, N.P.Bali& Manish Goyal, Laxmi Publications.
4. Advanced Engineering Mathematics, by Wylie & Barrett, Tata Mc Graw Hill, New Delhi.
5. Advanced Engineering Mathematics, 8th Edition by Erwin Kreyszig , John Wiley & Sons, Inc.
6. Complex Variables and applications, J.W.Brown and R.V.Churchill, 7th Edition, Tata Mc Graw Hill,2004.
7. <http://mathworld.wolfram.com/topics>
8. <http://www.nptel.ac.in/course.php>
9. <https://www.coursera.org/in>
10. <http://davidbau.com>

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

1. No. of Internal Tests	:	<table border="1"><tr><td>2</td></tr></table>	2	Max. Marks for each Internal Test	:	<table border="1"><tr><td>30</td></tr></table>	30
2							
30							
2. No. of Assignments	:	<table border="1"><tr><td>3</td></tr></table>	3	Max. Marks for each Assignment	:	<table border="1"><tr><td>5</td></tr></table>	5
3							
5							
3. No. of Quizzes	:	<table border="1"><tr><td>3</td></tr></table>	3	Max. Marks for each Quiz Test	:	<table border="1"><tr><td>5</td></tr></table>	5
3							
5							

Duration of Internal Test: 90 minutes

With effect from the Academic Year 2021-22
VASAVI COLLEGE OF ENGINEERING (AUTONOMOUS)
 9-5-81, Ibrahimbagh, Hyderabad-500031, Telangana State

DEPARTMENT OF PHYSICS
 Quantum Mechanics and Material Science
 (Common Syllabus for **ECE** and **EEE** Branches)

SYLLABUS FOR B.E. II SEMESTER

L:T: P (Hrs/Week):3:0:0	SEE Marks: 60	Course Code: U21BS210PH
Credits: 3	CIE Marks: 40	Duration of SEE : 3 Hours

COURSE OBJECTIVES	COURSE OUTCOMES
The student will be able to	At the end of the course, the student should at least be able:
<ol style="list-style-type: none"> 1. Demonstrate the use of crystal structure in device applications 2. Appreciate the advantages of quantum mechanics over classical mechanics 3. Explain classification of solids based on band theory of solids. 4. Distinguish types and uses of lasers and optical fibers 5. Choose appropriate dielectric, magnetic and superconducting materials for required applications 	<ol style="list-style-type: none"> 1. Classify crystals based on their structure and their appropriate uses 2. Apply Schrodinger wave equations to quantum mechanical systems 3. Distinguish materials based on band theory of solids and explain energy band structure of semiconductors 4. Compare different types of lasers and illustrate use of light sources in optical fibres. 5. Select various dielectric, magnetic and superconducting materials for specific applications in engineering

UNIT-I: FUNDAMENTALS OF CRYSTAL STRUCTURE

Introduction-Space lattice, Basis, Unit cell, Bravais lattices and crystal systems, X-ray diffraction, Bragg's law, powder x-ray diffraction-derivation of lattice parameters for cubic crystals, crystalline, polycrystalline and amorphous materials, Miller Indices, interplanar spacing. Defects in crystals: point defects, expression for

With effect from the Academic Year 2021-22
concentration of Schottky and Frankel defects, NaCl, Diamond and ZnS
crystal structure.

UNIT-II: INTRODUCTION TO QUANTUM MECHANICS

Inadequacy of classical mechanics, Wave-particle duality, de Broglie waves, Davisson and Germer's experiment, G.P. Thomson experiment, wave packet, uncertainty principle, wave function and its physical significance, bra and ket notation, basics of quantum mechanical operators, Time-dependent and time-independent Schrodinger equations, Eigen values and eigen functions of a particle in infinite square-well potential, potential barrier: tunneling effect.

UNIT-III: BAND THEORY OF SOLIDS

Classical free electron Drude theory and its limitations, Sommerfeld theory, Fermi-Dirac Statistical distribution, Density of states, Kronig-Penney model- introduction to origin of band gaps in solids, E-k diagram, formation of energy bands, Classification of solids based on energy bands as metals, semiconductors, and insulators, intrinsic and extrinsic semiconductors, expression for carrier concentration in intrinsic and extrinsic semiconductors, conductivity of intrinsic and extrinsic semiconductors, law of mass action, variation of Fermi energy level with temperature and doping concentration

UNIT-IV: LASERS AND OPTICAL FIBRES

Lasers: induced absorption, spontaneous and stimulated emissions, Einstein's A and B coefficients; characteristics of lasers, population inversion, meta-stable states, pumping mechanisms, components of laser, Properties of laser beam, construction and working of Ruby laser, He-Ne (gas Laser) and semiconductor laser, advantages and applications of lasers.

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

With effect from the Academic Year 2021-22

UNIT-V: MATERIALS SCIENCE

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, classification of various magnetic materials, Ferro, antiferro and ferri-magnetic materials, Weiss molecular field theory of ferromagnetism- magnetic domains- hysteresis curve-Soft and hard magnetic Materials, fundamentals of Ferrites and their applications.

Superconductivity: Superconductor, General properties of superconductors – Meissner effect- Type I and Type II superconductors- fundamentals of BCS Theory - Josephson's Junction- d.c and a.c Josephson's effects–SQUIDS- Applications of superconductors

Learning Resources:

1. Charles Kittel, Introduction to Solid State Physics, 7th Edition, John Wiley & Sons, 2008.
2. S O Pillai, Solid State Physics, 8th edition, New Age International Publishers, 2018
3. R. Murugesan and K Sivaprasath, Modern Physics, 18th Edition, S. Chand & Co, 2016
4. M.N. Avadhanulu and P.G. Kshirsagar and TVS Arun Murthy A Text Book Engineering Physics, 11th Edition, S. Chand, 2018.
5. S.O. Kasap, Optoelectronic and Photonics: Principles and Practices, Pearson, 2012
6. Arthur Beiser, Shobhit Mahajan and S Rai Choudhury, Concepts of Modern Physics, 6th Edition Tata McGraw, 2009.
7. Senior, Optical Fiber Communications: Principles and Practice, 3rd edition, Pearson, 2010
8. NPTEL MOOCs, Introduction to Solid State Physics, Satyajit Banerjee

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 Test: 90 minutes

With effect from the Academic Year 2021-22
VASAVI COLLEGE OF ENGINEERING (AUTONOMOUS)
 9-5-81, Ibrahimbagh, Hyderabad-500031, Telangana State

Department of Computer Science & Engineering
 Object Oriented Programming

SYLLABUS FOR B.E. II SEMESTER

L:T: P (Hrs/Week):3:0:0	SEE Marks: 60	Course Code: U21ES210CS
Credits: 3	CIE Marks: 40	Duration of SEE : 3 Hours

COURSE OBJECTIVES	COURSE OUTCOMES
The course will enable the students to:	On completion of the course, students will be able to
<ul style="list-style-type: none"> • Understand basic notions of object oriented programming. • Acquire object-oriented problem solving skills. • Write programs in C++. 	<ul style="list-style-type: none"> • Explain Object Oriented Programming concepts using C++. • Design programs using functions, input/output operations, decision making and looping constructs. • Create classes using object oriented design principles. • Design programs to implement inheritance, polymorphism. • Design programs to implement exception handling.

UNIT-I

Introduction to C++: Programming paradigms, Object Oriented Programming Concepts, Advantages and Applications of OOPs.

Variables and Assignments, Input and Output, Data Types, Expressions, Simple Flow Control and Control Structures.

Defining Classes: Structures, Classes, Abstract Data Types.

UNIT-II

Functions: Call by Value, Call by Reference, Parameters using Procedural Abstraction, Testing and Debugging Functions.

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I/O Streams as an introduction to Classes and Objects

Arrays: Introduction to Arrays, Arrays in Functions, Programming with Arrays and Multidimensional Arrays.

UNIT-III

Strings, Pointers and Dynamic Arrays, Recursion, Constructors, Destructors, Copy Constructors.

Static Polymorphism: Function and Operator Overloading, Friend Functions.

UNIT-IV

Inheritance: The Notion of Inheritance, Derived Classes, Overriding, Virtual Base Class.

Runtime Polymorphism, Virtual Functions.

UNIT-V

Function Templates and Class Templates.

Exception Handling: Exception Handling Basics, Programming Techniques for Exception Handling

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. K.R.VenuGopal, Rajkumar Buyya, T.RaviShankar, "Mastering C++", 2nd Edition, McGraw Hill , 2013.
5. S.B. Lippman. J Lajoie , "C++ Primer" 3rd Edition, AW Publishing Company, 2007.

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6. Paul Dietel, Harvey Dietel, "C++ How to Program", 6th Edition, PHI, 2010.
7. 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	:	<input type="text" value="2"/>	Max. Marks for each Internal Test	:	<input type="text" value="30"/>
2. No. of Assignments	:	<input type="text" value="3"/>	Max. Marks for each Assignment	:	<input type="text" value="5"/>
3. No. of Quizzes	:	<input type="text" value="3"/>	Max. Marks for each Quiz Test	:	<input type="text" value="5"/>

Duration of Internal Test: 90 minutes

With effect from the Academic Year 2021-22
VASAVI COLLEGE OF ENGINEERING (AUTONOMOUS)
 9-5-81, Ibrahimbagh, Hyderabad-500031, Telangana State

DEPARTMENT OF CIVIL ENGINEERING
 Basic Engineering Drawing

SYLLABUS FOR B.E. II SEMESTER

L:T: P (Hrs/Week):1:0:2	SEE Marks: 60	Course Code: U21ES030CE
Credits: 2	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:
<ol style="list-style-type: none"> 1. Impart skills in using drawing instruments to convey exact and complete information of the object. 2. Construct conic sections and regular polygons. 3. Construct the orthographic projections of points, lines, planes and solids. 4. Draw sections and development of regular solids. 5. Visualize and construct isometric projections from orthographic projections of regular solids. 	<ol style="list-style-type: none"> 1. Acquire proficiency in instrumental drawing and will be able to visualize the object , draw conic sections and regular polygons. 2. Draw the orthographic projections of points, lines and planes. 3. Draw orthographic projections of regular and right solids 4. Draw the sections and development of regular solids 5. Visualise and draw the isometric view from the orthographic view s of regular solids and combinations of solids.

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

UNIT-II: Orthographic Projections: Principles of orthographic projections, conventions, projections of points placed in different quadrants.

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Projections of straight lines inclined to one and two reference planes placed in first quadrant only, Traces (By conventional methods only).
Projections of perpendicular planes, oblique planes and their traces.

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

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

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

Learning Resource:

1. Bhatt N.D. "Elementary Engineering Drawing", Charotar Publishers, 2014.
2. Thomas E French, Charles J Vierck, Robert J. Foster, "Engineering Drawing and Graphic Technology", McGraw Hill Education, 1993.
3. Gill P.S. "Engineering Drawing: Geometrical Drawing", SK Kataria & sons, 2012.
4. Venugopal.K "Engineering Drawing and Graphics Plus Autocad", New Age International (P) Ltd., New Delhi, 2010.
5. Siddiquee A.N "Engineering Drawing with a Primer on Autocad", Prentice hall of India Ltd., New Delhi, 2004.
6. Basanth Agrawal, Agrawal C.M "Engineering Graphics" First Edition, Tata McGraw Hill, 2012

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7. BVR Gupta, M Raja Roy, "Engineering Drawing with AutoCAD", IK Int Pvt Ltd, 2009.
8. NPTEL Course (www.nptel.ac.in)
9. Virtual labs (www.vlab.co.in)

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

1. No. of Internal Tests	:	<table border="1"><tr><td>2</td></tr></table>	2	Max. Marks for each Internal Test	:	<table border="1"><tr><td>30</td></tr></table>	30
2							
30							
2. No. of Assignments	:	<table border="1"><tr><td>3</td></tr></table>	3	Max. Marks for each Assignment	:	<table border="1"><tr><td>5</td></tr></table>	5
3							
5							
3. No. of Quizzes	:	<table border="1"><tr><td>3</td></tr></table>	3	Max. Marks for each Quiz Test	:	<table border="1"><tr><td>5</td></tr></table>	5
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Duration of Internal Test: 90 minutes

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VASAVI COLLEGE OF ENGINEERING (AUTONOMOUS)

9-5-81, Ibrahimbagh, Hyderabad-500031, Telangana State

DEPARTMENT OF ELECTRICAL AND ELECTRONICS ENGINEERING

Circuit Theory

SYLLABUS FOR B.E. II SEMESTER

L:T: P (Hrs/Week):3:0:0	SEE Marks: 60	Course Code: U21PC210EE
Credits: 3	CIE Marks: 40	Duration of SEE : 3 Hours

COURSE OBJECTIVES	COURSE OUTCOMES
	On completion of the course, students will be able to
The objective of Circuit theory is to provide a thorough understanding of the fundamentals of electric circuits such that the student would develop an in depth know ledge of circuit elements (active and passive), their characteristics and their functioning to analyze and apply to many engineering problems.	<ol style="list-style-type: none">1. Describe the elements of electrical circuits and apply basic laws and principles to determine desired values.2. Apply basic Electrical concepts to analyze dc electrical circuits.3. Apply basic Electrical concepts to analyze ac electrical circuits.4. Apply network theorems to analyze Electricalcircuits5. Apply concepts of three phase circuits to analyze them.

UNIT-I: Electric Circuit fundamentals:

Charge and Current, Voltage, Power and energy, Passive sign convention, Passive circuit elements R, L and C and their V-I relationships, Description of independent and dependent sources, Ohm's law, KCL, KVL, Series and parallel circuits, Current and voltage division principles, Source transformation, Wye – Delta transformation, Delta-Wye transformation.

UNIT-II: DC Circuits:

Nodal and mesh analyses containing independent and dependent sources.

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AC Circuit Fundamentals: Definition and computation of average value, RMS value of periodic signals, form factor and peak factor, Definition of phasor, Phasor domain conversions.

UNIT- III: AC Circuits:

Network analysis techniques in phasor domain, Steady state response of RLC circuits subjected to sinusoidal excitation. Definition of instantaneous power, complex power and Power factor. Calculations of powers in single phase ac circuits.

Unit IV: Network Theorems:

Linearity, Superposition, Thevenin's, Norton's, Maximum Power Transfer and Tellegen's Theorem with DC and AC excitation.

Unit V: Three phase circuits:

Balanced three phase voltages, three phase power, Wye and Delta Connected systems, Calculations of voltage, current and power in three phase circuits for balanced and unbalanced loads. Three phase power measurement using two wattmeters.

Learning Resources:

1. Charles K. Alexander & Matthew N.O. Sadiku, Fundamentals of Electric Circuits, Tata McGraw-Hill, 5th Edition, 2013.
2. W.H. Hayt, J.E. Kemmerly, Engineering Circuit Analysis, McGraw Hill, 8th Edition, 2013
3. M.E. Van Valkenburg, Network Analysis, Prentice Hall of India, 3rd Edition, 2006
4. David A. Bell, Electric Circuits, Oxford University Press, Seventh Edition, 2015

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

1. No. of Internal Tests	:	<table border="1"><tr><td>2</td></tr></table>	2	Max. Marks for each Internal Test	:	<table border="1"><tr><td>30</td></tr></table>	30
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30							
2. No. of Assignments	:	<table border="1"><tr><td>3</td></tr></table>	3	Max. Marks for each Assignment	:	<table border="1"><tr><td>5</td></tr></table>	5
3							
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3. No. of Quizzes	:	<table border="1"><tr><td>3</td></tr></table>	3	Max. Marks for each Quiz Test	:	<table border="1"><tr><td>5</td></tr></table>	5
3							
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Duration of Internal Test: 90 minutes

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VASAVI COLLEGE OF ENGINEERING (AUTONOMOUS)

9-5-81, Ibrahimbagh, Hyderabad-500031, Telangana State

DEPARTMENT OF ELECTRICAL AND ELECTRONICS ENGINEERING

Electrical Measurements and Instrumentation

SYLLABUS FOR B.E. II SEMESTER

L:T: P (Hrs/Week):3:0:0	SEE Marks: 60	Course Code: U21PC220EE
Credits: 3	CIE Marks: 40	Duration of SEE : 3 Hours

COURSE OBJECTIVES	COURSE OUTCOMES On completion of the course, students will be able to
Enable the student to have a fair knowledge about the fundamentals of construction & working principles of Analogue Ammeters, Voltmeters, Watt meters, Energy meters, power factor meters and frequency meters. Learn the measurements of circuit elements R, L & C using bridges, construction & working principle and applications of DC & AC potentiometers, CTs & PTs. Learn the fundamentals of Transducers & Strain Gauges.	<ol style="list-style-type: none">1. Identify and choose the proper type and range of meter to measure current / voltage / Power.2. Use the suitable digital instrument for measurement.3. Calculate the R, L & C values using the appropriate bridges.4. Calibrate ammeter/ voltmeter/ wattmeter using the Potentiometer.5. Identify and choose the proper type of Transducer or strain gauge for measurement of Non electrical quantities.

UNIT -I: Principles of Measurement and Instruments:

Basic characteristics of measuring instruments - accuracy, precision, resolution, and Sensitivity. types of measurement error – Gross errors, systematic errors and Random errors.

Instruments: Classification of instruments – Indicating, Recording, and Integrating. Secondary instruments principles of Operation. Indicating instruments operating forces – Deflecting force, Controlling force and Damping force.

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Ammeters and Voltmeters: Permanent Magnet Moving Coil(PMMC) instrument, torque equation, advantages & dis-advantages, errors in PMMC, Extension of range – Ammeter shunts and voltmeter multipliers, Moving-Iron instrument (MI) – Attraction type, Repulsion type, torque equation, advantages & dis-advantages, errors in MI. Dynamometer type instrument - torque equation, advantages & dis-advantages.

UNIT -II: Digital Instruments:

Advantages of digital instruments, Digital Voltmeters (DVM), types of DVM – Ramp type, Integrating type, and Potentiometric type. Use of Oscilloscope in frequency, phase and amplitude measurements (Lissajous Patterns), Smart/Static Energy meter- basic components and operation.

Analog Instruments: Dynamometer type Wattmeter, torque equation, Active & Reactive power measurement, Power factor meter and Frequency meter.

UNIT –III: Measurement of Resistance, Inductance and Capacitance using Bridges:

Wheatstone's bridge, Kelvin's Double Bridge, Loss of charge method, Megger, Maxwell's Inductance bridge, Hay's bridge, Anderson's bridge, Desauty's bridge, Schering bridge, Wagner's Earthing device and Heaviside mutual Inductance bridge.

UNIT –IV: Potentiometers and Instrument Transformers:

Standard cell and standard resistance, Crompton's DC, AC polar and coordinate type Potentiometers. Applications – Measurement of resistance, Calibration of ammeter, voltmeter and wattmeter. Instrument transformers – C.T. & P.T.'s Ratio and phase angle errors.

UNIT -V: Measurement of Non – Electrical quantities:

Measurement of Linear displacement – Linear Potentiometer, Linear-motion variable inductor

Transducers: Proximity Inductive Transducers, LVDT.

Measurement of angular velocity – Inductive Tachometer, DC & AC Tacho generators.

Strain Gauge: Basic construction of Bonded strain Gauge and Unbonded Strain Gauge.

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Learning Resources:

1. A.K. Sawhney, A course in Electrical and Electronics Measurements and Instruments- DhanpatRAi and Sons, Delhi,2005
2. UmeshSinha, Electrical and Electronics Measurements and Instruments, SatyaPrakashan
3. F.W.Golding and Widdis, Electrical and Electronics Measurements and Instruments 5thEdition-2010

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

1. No. of Internal Tests	:	<input type="text" value="2"/>	Max. Marks for each Internal Test	:	<input type="text" value="30"/>
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3. No. of Quizzes	:	<input type="text" value="3"/>	Max. Marks for each Quiz Test	:	<input type="text" value="5"/>

Duration of Internal Test: 90 minutes

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VASAVI COLLEGE OF ENGINEERING (AUTONOMOUS)
 9-5-81, Ibrahimbagh, Hyderabad-500031, Telangana State

DEPARTMENT OF H&SS
 Human Values and Professional Ethics - I

SYLLABUS FOR B.E. II SEMESTER

L:T: P (Hrs/Week):1:0:0	SEE Marks: 40	Course Code: U21HS020EH
Credits: 1	CIE Marks: 30	Duration of SEE : 2 Hours

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

UNIT-1 HARMONY WITH SELF AND FAMILY

This unit covers

- a) Understanding and living in harmony at various levels-with self, family, society and nature and the Ethical and moral values: which include self-sufficiency, self-determination, self-advocacy, self-competence, self-direction, self-efficacy, self-regulation, self-reliance, and self-responsibility.
- b) This also includes Family values involving all the ideas of how you want

With effect from the Academic Year 2021-22 to live your family life, and they are often passed down from previous generations.

UNIT-2 PROFESSIONAL VALUES AND BEHAVIOUR

This unit covers the following components

- a) At the level of individual: as socially and ecologically responsible engineers and technologists.
- b) Team Work: Developing Credibility and building trust by having open and truthful communication. This includes recognizing the value of time and respecting time of self and others.

UNIT 3 - SOCIAL VALUES

This unit covers inputs on

- a) values of service, social justice, dignity and worth of the person,
- b) importance of human relationships, integrity, and competence.

UNIT 4 - SPIRITUAL VALUES

This unit covers on

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

MODE of DELIVERY

<ul style="list-style-type: none">● Questionnaires● Quizzes● Case-studies● Observations and practice● Home and classroom assignments	<ul style="list-style-type: none">● Discussions● Skits● Short Movies/documentaries● Team tasks and individual tasks● Research based tasks● Viva
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Relevant Websites, CD's and Documentaries

- <https://plato.stanford.edu/>

Learning Resources:

learn.talentsprint.com

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

1. No. of Internal Tests	:	<table border="1"><tr><td>1</td></tr></table>	1	Max. Marks for each Internal Test	:	<table border="1"><tr><td>20</td></tr></table>	20
1							
20							
2. No. of Assignments	:	<table border="1"><tr><td>2</td></tr></table>	2	Max. Marks for each Assignment	:	<table border="1"><tr><td>5</td></tr></table>	5
2							
5							
3. No. of Quizzes	:	<table border="1"><tr><td>2</td></tr></table>	2	Max. Marks for each Quiz Test	:	<table border="1"><tr><td>5</td></tr></table>	5
2							
5							

Duration of Internal Test: 90 minutes

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VASAVI COLLEGE OF ENGINEERING (AUTONOMOUS)

9-5-81, Ibrahimbagh, Hyderabad-500031, Telangana State

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: U21BS011PH
Credits: 1	CIE Marks: 30	Duration of SEE : 3 Hours

COURSE OBJECTIVES students able to:	COURSE OUTCOMES The students acquire the ability to
<ol style="list-style-type: none">1. Demonstrate the use of crystal structure in device applications2. Appreciate the advantages of quantum mechanics over classic mechanics3. Explain classification of solids based on band theory of solids4. Distinguish types and uses of lasers and optical fibers5. Choose appropriate dielectric, magnetic and superconducting materials for required applications.	<ol style="list-style-type: none">1. Conduct experiment independently and record the measurements.2. Outline the precautions required to be taken for each experiments3. Compare the experimental results with standard values and estimate errors.4. Draw graphs and interpret the results with respect to graphical and theoretical values5. Write the summary of the experiment and draw appropriate conclusions

1. Determination of wavelength of He-Ne lasers.
2. Determination of radius of curvature of a given Plano-convex lens by forming Newton's Rings.
3. Calculation of numerical aperture, acceptance angle and power loss due to bending of an optical fiber.
4. Study of I-V characteristics of P-N Junction diode
5. Study of I-V characteristics of LED

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6. Determination of energy gap of a given semiconductor by four probe method
7. Study of I-V characteristics of solar cell and to calculate fill factor and efficiency
8. Determination of Hall's coefficient using Hall's effect
9. Determination of e/m of an electron by Thomson's method
10. Study of resonance in LCR series circuit and to find resonant frequency & Q- factor
11. Study of resonance in LCR Parallel circuit and to find resonant frequency & Q- factor
12. Estimation of Thermistor constants
13. determination of Seebeck coefficient
14. Helmholtz coil –calculation of magnetic field along the axis of a solenoid
15. B-H curve-estimation of Hysteresis loss of a ferromagnetic sample

From the above experiments, each student should perform at least 12 (Twelve) experiments.

No. of Internal Tests:	01	Max. Marks for Internal Test:	12
Marks for day-to-day laboratory class work			18
Duration of Internal Test: 3 Hours			

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VASAVI COLLEGE OF ENGINEERING (AUTONOMOUS)

9-5-81, Ibrahimbagh, Hyderabad-500031, Telangana State

DEPARTMENT OF COMPUTER SCIENCE & ENGINEERING

Object Oriented Programming Lab

SYLLABUS FOR B.E. II SEMESTER

L:T: P (Hrs/Week):0:0:2	SEE Marks: 50	Course Code: U21ES211CS
Credits: 1	CIE Marks: 30	Duration of SEE : 3 Hours

COURSE OBJECTIVES	COURSE OUTCOMES
<ul style="list-style-type: none">• Write, compile and debug programs in C++.• Formulate problems and implement in C++.• Acquire skills to solve computing problems.	<p>On completion of the course, students will be able to</p> <ul style="list-style-type: none">• Write and debug programs in C++ language• Choose appropriate data types, functions, decision and looping constructs to develop C++ programs.• Implement OOP functionalities such as class, overloading, dynamic memory allocation.• Develop programs using Inheritance, polymorphism.• Develop programs using Templates and Exception Handling

LIST OF EXPERIEMNTS

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.
5. Programs on string manipulations.
6. Programs to demonstrate friend class.
7. Programs to demonstrate function overloading.
8. Programs to demonstrate operator overloading.

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9. Programs to demonstrate inheritance.
10. Programs on virtual functions, dynamic polymorphism.
11. Programs on function templates, class templates.
12. Programs on exception handling.

SUGESTED BOOKS:

1. Walter Savitch, "Problem solving with C++ ", 6th Edition, Pearson Education Publishing, 2009.
2. Behrouz A. Forouzan, Richard F. Gilberg, "Computer Science, A Structured Approach using C++", 2nd Edition, Cengage Learning, 2010.
3. Balaguruswamy, "Object-Oriented Programming with C++", 6th Edition, Tata Mc-GrawHill, 2013.

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

With effect from the Academic Year 2021-22
VASAVI COLLEGE OF ENGINEERING (AUTONOMOUS)
 9-5-81, Ibrahimbagh, Hyderabad-500031, Telangana State

DEPARTMENT OF ELECTRICAL & ELECTRONICS ENGINEERING
 Electrical Circuits and Measurements Lab

SYLLABUS FOR B.E. II SEMESTER

L:T: P (Hrs/Week):0:0:2	SEE Marks: 50	Course Code: U21PC211EE
Credits: 1	CIE Marks: 30	Duration of SEE : 3 Hours

COURSE OBJECTIVES The course will enable the students	COURSE OUTCOMES On completion of the course, students will be able to
<ol style="list-style-type: none"> 1. To provide a thorough understanding on the fundamentals of electric circuits with hands-on experience, so that the student will acquire in depth know ledge on circuit elements, their characteristics and their functioning to analyze and apply to many engineering problems. 2. To learn the calibration and applications of different types of Analog instruments – Ammeter, Voltmeters and have the fair know ledge of measurement of circuit elements R, L & C using bridges. 	<ol style="list-style-type: none"> 1. Analyze the Sinusoidal steady state response of RLC circuits. 2. Verify network theorems and identify the applications of them. 3. Understand the power measurement of three phase circuits for both balanced and unbalanced loads. 4. Calculate the R, L & C values using the appropriate bridges. 5. Calibrate ammeter, voltmeter using the Potentiometer.

List of experiments:

1. Verification of Kirchhoff's Voltage Law & Kirchhoff's Current Law.
2. Sinusoidal steady state response of RL, RC and RLC circuits.
3. Verification of Superposition theorem.
4. Verification of Thevenin's and Norton's theorems.
5. Verification of maximum power transfer theorem.
6. Verification of Tellegen's theorem.

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7. Measurement of cumulative three-phase power in three-phase circuits.
8. Measurement of low resistance by Kelvin's Double Bridge
9. Measurement of Inductance by Anderson's Bridge
10. Measurement of capacitance by DeSauty's bridge
11. Use of D.C Potentiometer for measurement of unknown voltage and impedance
12. Measurements of 3 phase reactive power using single phase wattmeter.
13. Calibration of Single-phase Energy meter by Phantom Loading
14. Characteristics of LVDT.
15. Experiment with the strain-gauge.

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

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

With effect from the Academic Year 2021-22
VASAVI COLLEGE OF ENGINEERING (AUTONOMOUS)
9-5-81, Ibrahimbagh, Hyderabad-500031, Telangana State

Department of Mechanical Engineering
Engineering Workshop – II

SYLLABUS FOR B.E. II SEMESTER
(Common to Mechanical, Civil & EEE Branches)

L:T: P (Hrs/Week):0:0:2	SEE Marks: 50	Course Code: U21ES221ME
Credits: 1	CIE Marks: 30	Duration of SEE : 3 Hours

COURSE OBJECTIVES	COURSE OUTCOMES
The course will enable the students to:	On completion of the course, students will be able to
<ol style="list-style-type: none">1. Know basic workshop processes, adopt safety practices while working with various tools2. Identify, select and use various marking, measuring, holding, striking and cutting tools & equipments.	<ol style="list-style-type: none">1. Create models in Smithy, Welding, fitting and Machining trades by using the relevant tools.2. Measure and inspect the finished components using suitable measuring instruments.

List of the Experiments:

BLACK SMITHY

1. Flattening (round to square cross section)
2. Bending operation (U-shape)
3. S-shape hook
4. Fullering operation (demo)

WELDING

1. Bead formation using arc welding
2. Butt joint & T joint using arc welding
3. Lap joint using gas welding`
4. Spot welding (demo)

FITTING

1. Template fitting (square fit)
2. V-groove fit
3. Drilling and Tapping
4. Assembly of pulley on a shaft with key (demo)

MACHINING

1. Plain turning and step turning
2. Taper turning
3. Thread cutting
4. Additive manufacturing (demo)

Learning Resources:

1. Hajra Choudhury S.K., Hajra Choudhury A.K., Nirjar Roy S.K. "Elements of Workshop Technology" Vol-I 2008 & Vol-II 2010 Media Promoters & Publishers Pvt. Limited, Mumbai.
2. Kalpakjian S. and Steven R. Schmid, "Manufacturing Engineering and Technology" 4th Edition, Pearson Education India, 2002.
3. Gowri P., Hariharan and Suresh 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
7. www.mewelding.com

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

With effect from the Academic Year 2021-22

VASAVI COLLEGE OF ENGINEERING (AUTONOMOUS), HYDERABAD-500031
EEE DEPARTMENT ACTIVITY CALENDAR FOR THE ACADEMIC YEAR 2021-2022

S.No	DATE	DAY	Details of Activity / Public Holiday
August, 2021			
1	30-08-2021	MON	Course Registration by Students--> BE V & VII SEMESTER
2	31-08-2021	TUE	SRI KRISHNASHTAMI HOLIDAY
September, 2021			
3	01-09-2021	WED	Course Registration by Students--> BE V & VII SEMESTER
4	02-09-2021	THU	Course Registration by Students--> BE V & VII SEMESTER
5	03-09-2021	FRI	Course Registration by Students--> BE V & VII SEMESTER
6	04-09-2021	SAT	Course Registration by Students--> BE V & VII SEMESTER
7	05-09-2021	SUN	PUBLIC HOLIDAY
8	06-09-2021	MON	Commencement of Class work --> BE V & VII SEMESTER V SEMESTER CCA ACTIVITY (PAPER PRESENTATIONS)
9	07-09-2021	TUE	--
10	08-09-2021	WED	--
11	09-09-2021	THU	--

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12	10-09-2021	FRI	VINAYAKA CHAVITHI
13	11-09-2021	SAT	V – SEMESTER ECA ACTIVITY
14	12-09-2021	SUN	PUBLIC HOLIDAY
15	13-09-2021	MON	V SEMESTER CCA ACTIVITY (PAPER PRESENTATIONS)
16	14-09-2021	TUE	--
17	15-09-2021	WED	Course Registration by Students--> BE III SEMESTER
18	16-09-2021	THU	Course Registration by Students--> BE III SEMESTER
19	17-09-2021	FRI	Course Registration by Students--> BE III SEMESTER
20	18-09-2021	SAT	Course Registration by Students--> BE III SEMESTER V – SEMESTER ECA ACTIVITY
21	19-09-2021	SUN	PUBLIC HOLIDAY
22	20-09-2021	MON	Commencement of Class work --> BE III SEMESTER V SEMESTER CCA ACTIVITY (PAPER PRESENTATIONS)
23	21-09-2021	TUE	--
24	22-09-2021	WED	--
25	23-09-2021	THU	III – SEMESTER CCA ACTIVITY (Workshop on SPICE Modelling)
26	24-09-2021	FRI	--
27	25-09-2021	SAT	V – SEMESTER ECA ACTIVITY

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			III – SEMESTER ECA ACTIVITY
28	26-09-2021	SUN	PUBLIC HOLIDAY
29	27-09-2021	MON	V SEMESTER CCA ACTIVITY (PAPER PRESENTATIONS)
30	28-09-2021	TUE	Orientation and Briefing session for registration of Subjects (ME III Semester)
31	29-09-2021	WED	Orientation and Briefing session for registration of Subjects (ME III Semester)
32	30-09-2021	THU	Orientation and Briefing session for registration of Subjects (ME III Semester) III – SEMESTER CCA ACTIVITY (Workshop on SPICE Modelling)
October, 2021			
33	01-10-2021	FRI	Orientation and Briefing session for registration of Subjects (ME III Semester)
34	02-10-2021	SAT	GANDHI JAYANTHI
35	03-10-2021	SUN	PUBLIC HOLIDAY
36	04-10-2021	MON	Commencement of Class work --> ME III SEMESTER V SEMESTER CCA ACTIVITY (PAPER PRESENTATIONS)
37	05-10-2021	TUE	--
38	06-10-2021	WED	BATHUKAMMA STARTING DAY

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39	07-10-2021	THU	III – SEMESTER CCA ACTIVITY (Workshop on SPICE Modelling)
40	08-10-2021	FRI	--
41	09-10-2021	SAT	V – SEMESTER ECA ACTIVITY III – SEMESTER ECA ACTIVITY
42	10-10-2021	SUN	PUBLIC HOLIDAY
43	11-10-2021	MON	V SEMESTER CCA ACTIVITY (PAPER PRESENTATIONS)
44	12-10-2021	TUE	--
45	13-10-2021	WED	--
46	14-10-2021	THU	--
47	15-10-2021	FRI	VIJAYA DASHAMI
48	16-10-2021	SAT	FOLLOWING OF VIJAYA DASHAMI
49	17-10-2021	SUN	PUBLIC HOLIDAY
50	18-10-2021	MON	
51	19-10-2021	TUE	EID MILAD UN NABI
52	20-10-2021	WED	--
53	21-10-2021	THU	--
54	22-10-2021	FRI	--
55	23-10-2021	SAT	III – SEMESTER ECA ACTIVITY

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56	24-10-2021	SUN	PUBLIC HOLIDAY
57	25-10-2021	MON	I-Internal Test: BE V & VII SEMESTER
58	26-10-2021	TUE	I-Internal Test: BE V & VII SEMESTER
59	27-10-2021	WED	I-Internal Test: BE V & VII SEMESTER
60	28-10-2021	THU	I-Internal Test: BE V & VII SEMESTER III – SEMESTER CCA ACTIVITY (Workshop on SPICE Modelling)
61	29-10-2021	FRI	I-Internal Test: BE V & VII SEMESTER
62	30-10-2021	SAT	V – SEMESTER ECA ACTIVITY III – SEMESTER ECA ACTIVITY
63	31-10-2021	SUN	PUBLIC HOLIDAY
November, 2021			
64	01-11-2021	MON	V SEMESTER CCA ACTIVITY (PAPER PRESENTATIONS)
65	02-11-2021	TUE	--
66	03-11-2021	WED	--
67	04-11-2021	THU	DEEPAVALI
68	05-11-2021	FRI	--
69	06-11-2021	SAT	Parent-Teacher Meeting- BE V & VII SEMESTER V – SEMESTER ECA ACTIVITY

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70	07-11-2021	SUN	PUBLIC HOLIDAY
71	08-11-2021	MON	I-Internal Test: BE III SEMESTER V SEMESTER CCA ACTIVITY (PAPER PRESENTATIONS)
72	09-11-2021	TUE	I-Internal Test: BE III SEMESTER
73	10-11-2021	WED	I-Internal Test: BE III SEMESTER
74	11-11-2021	THU	I-Internal Test: BE III SEMESTER
75	12-11-2021	FRI	--
76	13-11-2021	SAT	V – SEMESTER ECA ACTIVITY III – SEMESTER ECA ACTIVITY
77	14-11-2021	SUN	PUBLIC HOLIDAY
78	15-11-2021	MON	V SEMESTER CCA ACTIVITY (PAPER PRESENTATIONS)
79	16-11-2021	TUE	--
80	17-11-2021	WED	--
81	18-11-2021	THU	III – SEMESTER CCA ACTIVITY (Workshop on SPICE Modelling)
82	19-11-2021	FRI	KARTHIKA POURNAMI
83	20-11-2021	SAT	Parent-Teacher Meeting- BE III SEMESTER V – SEMESTER ECA ACTIVITY III – SEMESTER ECA ACTIVITY
84	21-11-2021	SUN	PUBLIC HOLIDAY

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85	22-11-2021	MON	V SEMESTER CCA ACTIVITY (PAPER PRESENTATIONS)
86	23-11-2021	TUE	--
87	24-11-2021	WED	--
88	25-11-2021	THU	III – SEMESTER CCA ACTIVITY (Workshop on Simulation of Electro Magnetic Fields using MATLAB)
89	26-11-2021	FRI	--
90	27-11-2021	SAT	I-Internal Test: ME III SEMESTER V – SEMESTER ECA ACTIVITY III – SEMESTER ECA ACTIVITY
91	28-11-2021	SUN	PUBLIC HOLIDAY
92	29-11-2021	MON	V SEMESTER CCA ACTIVITY (PAPER PRESENTATIONS)
93	30-11-2021	TUE	--
December, 2021			
94	01-12-2021	WED	--
95	02-12-2021	THU	III – SEMESTER CCA ACTIVITY (Workshop on Simulation of Electro Magnetic Fields using MATLAB)
96	03-12-2021	FRI	--
97	04-12-2021	SAT	V – SEMESTER ECA ACTIVITY III – SEMESTER ECA ACTIVITY

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98	05-12-2021	SUN	PUBLIC HOLIDAY
99	06-12-2021	MON	V SEMESTER CCA ACTIVITY (PAPER PRESENTATIONS)
100	07-12-2021	TUE	--
101	08-12-2021	WED	--
102	09-12-2021	THU	III – SEMESTER CCA ACTIVITY (Workshop on Simulation of Electro Magnetic Fields using MATLAB)
103	10-12-2021	FRI	--
104	11-12-2021	SAT	V – SEMESTER ECA ACTIVITY III – SEMESTER ECA ACTIVITY
105	12-12-2021	SUN	PUBLIC HOLIDAY
106	13-12-2021	MON	V SEMESTER CCA ACTIVITY (PAPER PRESENTATIONS) Artificial Intelligent Techniques Applied to Power Systems (FDP Program under AICTE ATAL)
107	14-12-2021	TUE	Artificial Intelligent Techniques Applied to Power Systems (FDP Program under AICTE ATAL)
108	15-12-2021	WED	Artificial Intelligent Techniques Applied to Power Systems (FDP Program under AICTE ATAL)
109	16-12-2021	THU	III – SEMESTER CCA ACTIVITY (Workshop on Simulation of Electro Magnetic Fields using MATLAB)

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			Artificial Intelligent Techniques Applied to Power Systems (FDP Program under AICTE ATAL)
110	17-12-2021	FRI	Artificial Intelligent Techniques Applied to Power Systems (FDP Program under AICTE ATAL)
111	18-12-2021	SAT	III – SEMESTER ECA ACTIVITY
112	19-12-2021	SUN	PUBLIC HOLIDAY
113	20-12-2021	MON	II-Internal Test : BE V & VII SEMESTER
114	21-12-2021	TUE	II-Internal Test : BE V & VII SEMESTER
115	22-12-2021	WED	II-Internal Test : BE V & VII SEMESTER
116	23-12-2021	THU	II-Internal Test : BE V & VII SEMESTER III – SEMESTER CCA ACTIVITY (Workshop on Simulation of Electro Magnetic Fields using MATLAB)
117	24-12-2021	FRI	II-Internal Test : BE V & VII SEMESTER--> Last date of instruction
118	25-12-2021	SAT	--
119	26-12-2021	SUN	PUBLIC HOLIDAY
120	27-12-2021	MON	PREPARATION HOLIDAYS & PRACTICAL EXAMS(BE V & VII SEMESTER)
121	28-12-2021	TUE	PREPARATION HOLIDAYS & PRACTICAL EXAMS(BE V & VII SEMESTER)

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122	29-12-2021	WED	PREPARATION HOLIDAYS & PRACTICAL EXAMS(BE V & VII SEMESTER)
123	30-12-2021	THU	PREPARATION HOLIDAYS & PRACTICAL EXAMS(BE V & VII SEMESTER)
124	31-12-2021	FRI	PREPARATION HOLIDAYS & PRACTICAL EXAMS(BE V & VII SEMESTER)
January, 2022			
125	01-01-2022	SAT	PREPARATION HOLIDAYS & PRACTICAL EXAMS(BE V & VII SEMESTER)
126	02-01-2022	SUN	PUBLIC HOLIDAY
127	03-01-2022	MON	PREPARATION HOLIDAYS & PRACTICAL EXAMS(BE V & VII SEMESTER)
128	04-01-2022	TUE	II-Internal Test : BE III SEMESTER (PREPARATION HOLIDAYS & PRACTICAL EXAMS(BE V & VII SEMESTER)
129	05-01-2022	WED	II-Internal Test : BE III SEMESTER (PREPARATION HOLIDAYS & PRACTICAL EXAMS(BE V & VII SEMESTER)
130	06-01-2022	THU	II-Internal Test : BE III SEMESTER

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			(PREPARATION HOLIDAYS & PRACTICAL EXAMS(BE V & VII SEMESTER)
131	07-01-2022	FRI	II-Internal Test : BE III SEMESTER (PREPARATION HOLIDAYS & PRACTICAL EXAMS(BE V & VII SEMESTER)
132	08-01-2022	SAT	II-Internal Test : BE III SEMESTER--> Last date of instruction (PREPARATION HOLIDAYS & PRACTICAL EXAMS(BE V & VII SEMESTER)
133	09-01-2022	SUN	PUBLIC HOLIDAY
134	10-01-2022	MON	PREPARATION HOLIDAYS & PRACTICAL EXAMS (BE III SEMESTER) Conduct of SEE Theory (BE V & VII SEMESTERS)
135	11-01-2022	TUE	PREPARATION HOLIDAYS & PRACTICAL EXAMS (BE III SEMESTER) Conduct of SEE Theory (BE V & VII SEMESTERS)
136	12-01-2022	WED	PREPARATION HOLIDAYS & PRACTICAL EXAMS (BE III SEMESTER) Conduct of SEE Theory (BE V & VII SEMESTERS)
137	13-01-2022	THU	PREPARATION HOLIDAYS & PRACTICAL EXAMS (BE III SEMESTER) Conduct of SEE Theory (BE V & VII SEMESTERS)
138	14-01-2022	FRI	PREPARATION HOLIDAYS & PRACTICAL EXAMS (BE III SEMESTER) Conduct of SEE Theory (BE V & VII SEMESTERS)

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139	15-01-2022	SAT	PREPARATION HOLIDAYS & PRACTICAL EXAMS (BE III SEMESTER) Conduct of SEE Theory (BE V & VII SEMESTERS)
140	16-01-2022	SUN	PUBLIC HOLIDAY
141	17-01-2022	MON	PREPARATION HOLIDAYS & PRACTICAL EXAMS (BE III SEMESTER) Project Seminar (Presentation & Evaluation) ME III-SEMESTER Conduct of SEE Theory (BE V & VII SEMESTERS)
142	18-01-2022	TUE	PREPARATION HOLIDAYS & PRACTICAL EXAMS (BE III SEMESTER) Project Seminar (Presentation & Evaluation) ME III-SEMESTER Conduct of SEE Theory (BE V & VII SEMESTERS)
143	19-01-2022	WED	PREPARATION HOLIDAYS & PRACTICAL EXAMS (BE III SEMESTER) Project Seminar (Presentation & Evaluation) ME III-SEMESTER
144	20-01-2022	THU	PREPARATION HOLIDAYS & PRACTICAL EXAMS (BE III SEMESTER) Project Seminar (Presentation & Evaluation) ME III-SEMESTER Conduct of SEE Theory (BE V & VII SEMESTERS)
145	21-01-2022	FRI	PREPARATION HOLIDAYS & PRACTICAL EXAMS (BE III SEMESTER) Conduct of SEE Theory (BE V & VII SEMESTERS)
146	22-01-2022	SAT	PREPARATION HOLIDAYS & PRACTICAL EXAMS (BE III SEMESTER) II-Internal Test: ME III SEMESTER--→ last date of instruction ME III Semester Last date of Instructions

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			Conduct of SEE Theory (BE V & VII SEMESTERS)
147	23-01-2022	SUN	PUBLIC HOLIDAY
148	24-01-2022	MON	Conduct of SEE Theory (BE III SEMESTER) Conduct of SEE Theory (BE V & VII SEMESTERS)
149	25-01-2022	TUE	Conduct of SEE Theory (BE III SEMESTER) Conduct of SEE Theory (BE V & VII SEMESTERS)
150	26-01-2022	WED	Conduct of SEE Theory (BE III SEMESTER) Conduct of SEE Theory (BE V & VII SEMESTERS)
151	27-01-2022	THU	Conduct of SEE Theory (BE III SEMESTER) Conduct of SEE Theory (BE V & VII SEMESTERS)
152	28-01-2022	FRI	Conduct of SEE Theory (BE III SEMESTER) Conduct of SEE Theory (BE V & VII SEMESTERS)
153	29-01-2022	SAT	Conduct of SEE Theory (BE III SEMESTER) Conduct of SEE Theory (BE V & VII SEMESTERS)
154	30-01-2022	SUN	PUBLIC HOLIDAY
155	31-01-2022	MON	Conduct of SEE Theory (BE III SEMESTER) ME III Semester Theory exams Conduct of SEE Theory (BE V & VII SEMESTERS)
February, 2022			

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156	01-02-2022	TUE	Conduct of SEE Theory (BE III SEMESTER) ME III Semester Theory exams Conduct of SEE Theory (BE V & VII SEMESTERS)
157	02-02-2022	WED	Conduct of SEE Theory (BE III SEMESTER) ME III Semester Theory exams Conduct of SEE Theory (BE V & VII SEMESTERS)
158	03-02-2022	THU	Conduct of SEE Theory (BE III SEMESTER) Conduct of SEE Theory (BE V & VII SEMESTERS)
159	04-02-2022	FRI	Conduct of SEE Theory (BE III SEMESTER) Conduct of SEE Theory (BE V & VII SEMESTERS)
160	05-02-2022	SAT	Conduct of SEE Theory (BE III SEMESTER) ME III Semester Declaration of Results Conduct of SEE Theory (BE V & VII SEMESTERS)
161	06-02-2022	SUN	PUBLIC HOLIDAY
162	07-02-2022	MON	Conduct of SEE Theory (BE III SEMESTER) (Course Registration by Students--> BE IV, VI & VIII SEMESTERS) Course Registration by Students--> ME IV SEMESTER Conduct of SEE Theory (BE V & VII SEMESTERS)
163	08-02-2022	TUE	Conduct of SEE Theory (BE III SEMESTER)

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			(Course Registration by Students--> BE IV, VI & VIII SEMESTERS) Conduct of SEE Theory (BE V & VII SEMESTERS)
164	09-02-2022	WED	Conduct of SEE Theory (BE III SEMESTER) (Course Registration by Students--> BE IV, VI & VIII SEMESTERS) Conduct of SEE Theory (BE V & VII SEMESTERS)
165	10-02-2022	THU	Conduct of SEE Theory (BE III SEMESTER) (Course Registration by Students--> BE IV, VI & VIII SEMESTERS) Conduct of SEE Theory (BE V & VII SEMESTERS)
166	11-02-2022	FRI	Conduct of SEE Theory (BE III SEMESTER) (Course Registration by Students--> BE IV, VI & VIII SEMESTERS) Conduct of SEE Theory (BE V & VII SEMESTERS)
167	12-02-2022	SAT	Conduct of SEE Theory (BE III SEMESTER) Conduct of SEE Theory (BE V & VII SEMESTERS)
168	13-02-2022	SUN	PUBLIC HOLIDAY
169	14-02-2022	MON	Commencement of Class work --> BE IV, VI & VIII SEMESTER
170	15-02-2022	TUE	--
171	16-02-2022	WED	--
172	17-02-2022	THU	--
173	18-02-2022	FRI	--

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174	19-02-2022	SAT	--
175	20-02-2022	SUN	PUBLIC HOLIDAY
176	21-02-2022	MON	ME III SEM Make up exams
177	22-02-2022	TUE	ME III SEM Make up exams
178	23-02-2022	WED	ME III SEM Make up exams
179	24-02-2022	THU	--
180	25-02-2022	FRI	--
181	26-02-2022	SAT	Declaration of Results for BE III, V & VII SEMESTER)
182	27-02-2022	SUN	PUBLIC HOLIDAY
183	28-02-2022	MON	--
March, 2022			
184	01-03-2022	TUE	--
185	02-03-2022	WED	--
186	03-03-2022	THU	--
187	04-03-2022	FRI	--
188	05-03-2022	SAT	--
189	06-03-2022	SUN	PUBLIC HOLIDAY
190	07-03-2022	MON	--
191	08-03-2022	TUE	--

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192	09-03-2022	WED	--
193	10-03-2022	THU	--
194	11-03-2022	FRI	--
195	12-03-2022	SAT	--
196	13-03-2022	SUN	PUBLIC HOLIDAY
197	14-03-2022	MON	--
198	15-03-2022	TUE	--
199	16-03-2022	WED	--
200	17-03-2022	THU	--
201	18-03-2022	FRI	--
202	19-03-2022	SAT	--
203	20-03-2022	SUN	PUBLIC HOLIDAY
204	21-03-2022	MON	--
205	22-03-2022	TUE	--
206	23-03-2022	WED	--
207	24-03-2022	THU	--
208	25-03-2022	FRI	--
209	26-03-2022	SAT	--
210	27-03-2022	SUN	PUBLIC HOLIDAY

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211	28-03-2022	MON	--
212	29-03-2022	TUE	--
213	30-03-2022	WED	--
214	31-03-2022	THU	--
April, 2022			
215	01-04-2022	FRI	--
216	02-04-2022	SAT	--
217	03-04-2022	SUN	PUBLIC HOLIDAY
218	04-04-2022	MON	I-Internal Test: BE IV, VI & VIII SEMESTER
219	05-04-2022	TUE	I-Internal Test: BE IV, VI & VIII SEMESTER
220	06-04-2022	WED	I-Internal Test: BE IV, VI & VIII SEMESTER
221	07-04-2022	THU	I-Internal Test: BE IV, VI & VIII SEMESTER
222	08-04-2022	FRI	I-Internal Test: BE IV, VI & VIII SEMESTER
223	09-04-2022	SAT	--
224	10-04-2022	SUN	PUBLIC HOLIDAY
225	11-04-2022	MON	--
226	12-04-2022	TUE	--
227	13-04-2022	WED	--
228	14-04-2022	THU	--

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229	15-04-2022	FRI	--
230	16-04-2022	SAT	Parent-Teacher Meeting - BE IV, VI & VIII SEMESTER
231	17-04-2022	SUN	PUBLIC HOLIDAY
232	18-04-2022	MON	--
233	19-04-2022	TUE	--
234	20-04-2022	WED	--
235	21-04-2022	THU	--
236	22-04-2022	FRI	--
237	23-04-2022	SAT	--
238	24-04-2022	SUN	PUBLIC HOLIDAY
239	25-04-2022	MON	--
240	26-04-2022	TUE	--
241	27-04-2022	WED	--
242	28-04-2022	THU	--
243	29-04-2022	FRI	--
244	30-04-2022	SAT	--
May, 2022			
245	01-05-2022	SUN	PUBLIC HOLIDAY
246	02-05-2022	MON	--

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247	03-05-2022	TUE	--
248	04-05-2022	WED	--
249	05-05-2022	THU	--
250	06-05-2022	FRI	--
251	07-05-2022	SAT	--
252	08-05-2022	SUN	PUBLIC HOLIDAY
253	09-05-2022	MON	--
254	10-05-2022	TUE	--
255	11-05-2022	WED	--
256	12-05-2022	THU	--
257	13-05-2022	FRI	--
258	14-05-2022	SAT	--
259	15-05-2022	SUN	PUBLIC HOLIDAY
260	16-05-2022	MON	--
261	17-05-2022	TUE	--
262	18-05-2022	WED	--
263	19-05-2022	THU	--
264	20-05-2022	FRI	--
265	21-05-2022	SAT	--

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266	22-05-2022	SUN	PUBLIC HOLIDAY
267	23-05-2022	MON	--
268	24-05-2022	TUE	--
269	25-05-2022	WED	--
270	26-05-2022	THU	--
271	27-05-2022	FRI	--
272	28-05-2022	SAT	Late Date of Submission of Dissertation
273	29-05-2022	SUN	PUBLIC HOLIDAY
274	30-05-2022	MON	--
275	31-05-2022	TUE	II-Internal Test: BE IV, VI & VIII SEMESTER
June, 2022			
276	01-06-2022	WED	II-Internal Test: BE IV, VI & VIII SEMESTER
277	02-06-2022	THU	II-Internal Test: BE IV, VI & VIII SEMESTER
278	03-06-2022	FRI	II-Internal Test: BE IV, VI & VIII SEMESTER
279	04-06-2022	SAT	II-Internal Test: BE IV, VI & VIII SEMESTER--> Last date of instruction
280	05-06-2022	SUN	PUBLIC HOLIDAY
281	06-06-2022	MON	PREPARATION HOLIDAYS & CONDUCT OF LAB SEE (BE IV, VI & VIII SEMESTER)

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			ME IV Semester Pre-submission Viva Voce Examination
282	07-06-2022	TUE	PREPARATION HOLIDAYS & CONDUCT OF LAB SEE (BE IV, VI & VIII SEMESTER) ME IV Semester Pre-submission Viva Voce Examination
283	08-06-2022	WED	PREPARATION HOLIDAYS & CONDUCT OF LAB SEE (BE IV, VI & VIII SEMESTER) ME IV Semester Pre-submission Viva Voce Examination
284	09-06-2022	THU	PREPARATION HOLIDAYS & CONDUCT OF LAB SEE (BE IV, VI & VIII SEMESTER) ME IV Semester Pre-submission Viva Voce Examination
285	10-06-2022	FRI	PREPARATION HOLIDAYS & CONDUCT OF LAB SEE (BE IV, VI & VIII SEMESTER) ME IV Semester Pre-submission Viva Voce Examination
286	11-06-2022	SAT	PREPARATION HOLIDAYS & CONDUCT OF LAB SEE (BE IV, VI & VIII SEMESTER) ME IV Semester Pre-submission Viva Voce Examination
287	12-06-2022	SUN	PUBLIC HOLIDAY
288	13-06-2022	MON	PREPARATION HOLIDAYS & CONDUCT OF LAB SEE (BE IV, VI & VIII SEMESTER)

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289	14-06-2022	TUE	PREPARATION HOLIDAYS & CONDUCT OF LAB SEE (BE IV, VI & VIII SEMESTER)
290	15-06-2022	WED	PREPARATION HOLIDAYS & CONDUCT OF LAB SEE (BE IV, VI & VIII SEMESTER)
291	16-06-2022	THU	PREPARATION HOLIDAYS & CONDUCT OF LAB SEE (BE IV, VI & VIII SEMESTER)
292	17-06-2022	FRI	PREPARATION HOLIDAYS & CONDUCT OF LAB SEE (BE IV, VI & VIII SEMESTER)
293	18-06-2022	SAT	PREPARATION HOLIDAYS & CONDUCT OF LAB SEE (BE IV, VI & VIII SEMESTER)
294	19-06-2022	SUN	PUBLIC HOLIDAY
295	20-06-2022	MON	Conduct of SEE Theory (BE IV, VI & VIII SEMESTERS)
296	21-06-2022	TUE	Conduct of SEE Theory (BE IV, VI & VIII SEMESTERS)
297	22-06-2022	WED	Conduct of SEE Theory (BE IV, VI & VIII SEMESTERS)
298	23-06-2022	THU	Conduct of SEE Theory (BE IV, VI & VIII SEMESTERS)
299	24-06-2022	FRI	Conduct of SEE Theory (BE IV, VI & VIII SEMESTERS)
300	25-06-2022	SAT	Conduct of SEE Theory (BE IV, VI & VIII SEMESTERS)
301	26-06-2022	SUN	PUBLIC HOLIDAY
302	27-06-2022	MON	Conduct of SEE Theory (BE IV, VI & VIII SEMESTERS)

With effect from the Academic Year 2021-22

303	28-06-2022	TUE	Conduct of SEE Theory (BE IV, VI & VIII SEMESTERS)
304	29-06-2022	WED	Conduct of SEE Theory (BE IV, VI & VIII SEMESTERS)
305	30-06-2022	THU	Conduct of SEE Theory (BE IV, VI & VIII SEMESTERS)
July, 2022			
306	01-07-2022	FRI	Conduct of SEE Theory (BE IV, VI & VIII SEMESTERS)
307	02-07-2022	SAT	Conduct of SEE Theory (BE IV, VI & VIII SEMESTERS) Declaration of Results for BE VIII Semester
308	03-07-2022	SUN	PUBLIC HOLIDAY
309	04-07-2022	MON	Conduct of SEE Theory (BE IV, VI & VIII SEMESTERS)
310	05-07-2022	TUE	Conduct of SEE Theory (BE IV, VI & VIII SEMESTERS)
311	06-07-2022	WED	Conduct of SEE Theory (BE IV, VI & VIII SEMESTERS)
312	07-07-2022	THU	Conduct of SEE Theory (BE IV, VI & VIII SEMESTERS)
313	08-07-2022	FRI	Conduct of SEE Theory (BE IV, VI & VIII SEMESTERS)
314	09-07-2022	SAT	Conduct of SEE Theory (BE IV, VI & VIII SEMESTERS) ME IV Semester submission of approved thesis of the students for External Evaluation
315	10-07-2022	SUN	PUBLIC HOLIDAY
316	11-07-2022	MON	--
317	12-07-2022	TUE	--

With effect from the Academic Year 2021-22

318	13-07-2022	WED	--
319	14-07-2022	THU	--
320	15-07-2022	FRI	--
321	16-07-2022	SAT	--
322	17-07-2022	SUN	PUBLIC HOLIDAY
323	18-07-2022	MON	ME IV Semester Conduct External Viva Voce
324	19-07-2022	TUE	ME IV Semester Conduct External Viva Voce
325	20-07-2022	WED	ME IV Semester Conduct External Viva Voce
326	21-07-2022	THU	ME IV Semester Conduct External Viva Voce
327	22-07-2022	FRI	ME IV Semester Conduct External Viva Voce
328	23-07-2022	SAT	ME IV Semester Conduct External Viva Voce Declaration of Results for BE IV & VI Semester
329	24-07-2022	SUN	PUBLIC HOLIDAY
330	25-07-2022	MON	Commencement of ODD Semester for the Academic year 2022-23