**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) V and VI Semesters With effect from 2021-22 (For the batch admitted in 2019-20) (R-19)

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-19)::B.E. - EEE : FIFTH SEMESTER(2021 - 22)

| B.E (EEE) V Semester | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| Course Code | Name of the Course | Scheme of Instruction | | | Duration in Hrs | Scheme of Examination | | |
| | | Hours per Week | | | | Maximum Marks | | Credits |
| | | L | T | P/D | | SEE | CIE | |
| **THEORY** | | | | | | | | |
| U19HS510EH | Skill Development-III : Soft Skills | 1 | - | - | 2 | 40 | 30 | 1 |
| U19PC510EE | Power Systems - I | 3 | - | - | 3 | 60 | 40 | 3 |
| U19PC520EE | Microprocessors & Microcontrollers Applications | 3 | - | - | 3 | 60 | 40 | 3 |
| U19PC530EE | Linear Integrated Circuits and Applications | 3 | - | - | 3 | 60 | 40 | 3 |
| U19PC540EE | AC Machines | 3 | 1 | - | 3 | 60 | 40 | 4 |
| U19PE510EE | Skill Development-III : Technical Skills | 1 | - | - | 2 | 40 | 30 | 1 |
| U19OE5XXXX | Open Elective -III | 3 | - | - | 3 | 60 | 40 | 3 |
| U19MC010CE | Environmental Science | 2 | - | - | 3 | 60 | 40 | - |
| **PRACTICALS** | | | | | | | | |
| U19PC521EE | Microprocessors & Microcontrollers Applications Lab | - | - | 2 | 3 | 50 | 30 | 1 |
| U19PC531EE | Linear Integrated Circuits and Digital Electronics Lab | - | - | 2 | 3 | 50 | 30 | 1 |
| U19PC541EE | AC Machines Lab | - | - | 2 | 3 | 50 | 30 | 1 |
| U19PW519EE | Mini Project | | | 2 | 3 | - | 30 | 1 |
| **ECA-II** | | - | - | - | - | - | - | - |
| **CCA-III ( Paper Presentation)** | | - | - | - | - | - | - | - |
| **Library/Sports/Proctorial Interaction** | | - | - | - | - | - | - | - |
| **Total** | | **19** | **1** | **8** | | **590** | **420** | **22** |
| **Grand Total** | | **28** | | | **-** | **1010** | | **22** |

**Student should acquire one online course certification equivalent to two credits during III Sem to VII sem.**

**Note: 1. One hour is allocated for Library/Sports/Proctorial Interaction 2. Two hours are allocated for CCA-III 3. Two hours are allocated for ECA-II**

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

**DEPARTMENT OF HUMANITIES & SOCIAL SCIENCES**
Skill Development-III : Soft Skills

SYLLABUS FOR B.E. V-SEMESTER

| | | |
|---|---|---|
| L:T:P (Hrs/Week): 1:0:0 | SEE Marks: 40 | Course Code: **U19HS510EH** |
| Credits: 1 | CIE Marks: 30 | Duration of SEE: 2 Hours |

| **COURSE OBJECTIVES** | **COURSE OUTCOMES** On completion of the course, students will be able to |
|---|---|
| 1 This is a foundation course and aims at enhancing employability skills in students.<br>2 Students will be introduced to higher order thinking skills and problem solving on the following areas - Arithmetic ability, Numerical ability and General reasoning.<br>3 Students will be trained to work systematically with speed and accuracy while problem solving. | 1 Solve questions on the above mentioned areas using short cuts and smart methods.<br>2 Understand the fundamentals concept of Aptitude skills.<br>3 Perform calculations with speed and accuracy. |

**UNIT 1 QUANTITATIVE APTITUDE - NUMERICAL ABILITY**

- Introduction to higher order thinking skills
- Speed Maths
- Number systems
- LCM & HCF

**UNIT 2 QUANTITATIVE APTITUDE- ARITHMETIC ABILITY FOUNDATION**

- Percentage
- Profit loss and discounts
- Ratio proportions Allegations and mixtures
- Averages

**UNIT 3 REASONING ABILITY – GENERAL REASONING PART 1**

- Cding decoding
- Directions
- Series completions - Letter, Number & Element Series

**UNIT 4 REASONING ABILITY- GENERAL REASONING PART 2**

- Analogies
- Classification
- Alphabet test
- Blood Relations

**UNIT 5 REASONING ABILITY- ARITHMETIC REASONING**

- Mathematical operations
- Ranking
- Ages
- Clocks & Calendars

**Learning Resources:**

1. scoremore.talentsprint.com

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

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

Duration of Internal Test: 1 Hour 30 Minutes

With effect from the Academic Year 2021-22

**VASAVI COLLEGE OF ENGINEERING (AUTONOMOUS)**

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

**DEPARTMENT OF ELECTRICAL AND ELECTRONICS ENGINEERING**

Power Systems – I

SYLLABUS FOR B.E. V SEMESTER

| | | |
|---|---|---|
| L:T: P (Hrs/Week):3:0:0 | SEE Marks: 60 | Course Code: **U19PC510EE** |
| Credits: 3 | CIE Marks: 40 | Duration of SEE : 3 Hours |

| **COURSE OBJECTIVES**<br>The course will enable the students to: | **COURSE OUTCOMES**<br>On completion of the course, students will be able to |
|---|---|
| 1. Have a fair knowledge about the fundamentals of various conventional power plants like Thermal, Hydel, Nuclear and Gas.<br>2. Acquire the knowledge of different types of Non conventional energy generation methods like Solar, Wind, Ocean Thermal Energy Conversion (OTEC), Tidal and Geo thermal.<br>3. Understand the Economics of Power Generation, Types of costs, Depreciation, methods of P.f. improvement, Tariffs<br>4. Have the knowledge of construction of Over head lines, materials, Supports, insulators and Underground cables.<br>5. General aspects of AC & DC distribution systems. | 1. Identify and select the proper type of Power Plant for the Power Generation.<br>2. Estimate the Energy generated by Different Non conventional Generating stations.<br>3. Assess the P.F. improvement methods, Tariffs<br>4. Test and categorize the insulators and calculate the Sag & Tension in Over head lines.<br>5. Differentiate AC & DC distribution systems. |

**UNIT – I**

Thermal, Hydel, Nuclear Power Generation Principles, Choice of site, layout and various parts of generating stations. Estimation of power in Hydel, flow duration curve, hydrograph, mass curve etc. Types of Hydel

stations. Nuclear Stations, PWR, BWR, FBR. GAS Turbines, GAS power stations, Combined cycle power

stations. MAJOR DISASTERS around the world in power plants-lessons learnt.

**UNIT – II**

Non-Conventional energy generation methods: Solar, Wind, Ocean Thermal Energy Conversion (OTEC), Tidal, Geo Thermal. Solar cells, Efficiency, Solar collectors, Concentrators. Wind generators, Wind turbine types, rotors construction, Hybrid power generation.

**UNIT – III**

Economics of Power Generation : Load Curve, load demand and diversity factors, base load and peak load operation, types of costs and depreciation fund calculations. Methods of power factor improvement, economics of p.f. improvements, tariffs.

**UNIT- IV**

Construction of Overhead lines - Overhead line materials – Supports – types, Vibration Dampers, Arcing Horns, Sag / Tension calculations, Equal / Unequalsupports,EffectsofWind,ICE/ErectionConditionsStringingCharts
Insulators-Types –Material for construction – potential distribution over string of insulators, Equalizing of potential-Methods, Insulators testing.
Underground cables –Insulating Materials, Mechanical Protection, EHV / HV / LV cables, grading of cables, capacitance of 3 core cables.

**UNIT – V**

General aspects of AC and DC distribution systems –DC Systems, ringmain, Radial, Voltage drop calculations, Distributor fed at one end, Distributor fed at both ends.

**Learning Resources**

1. C.L. Wadhwa, Electrical Power Systems, Wiley Eastern Ltd. 5th Edition, 2005
2. C.L.Wadhwa,Generation,Distributionand UtilizationofElectricalEnergy, Wiley Eastern Ltd., 5th Edition,2005
3. S.N.Singh- Electrical Power Generation, Transmission and Distribution- Prentice Hall pvt.ltd.New-2003.

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, Hyderbad-500031, Telangana State

**DEPARTMENT OF ELECTRICAL AND ELECTRONICS ENGINEERING**

Microprocessors & Microcontrollers Applications

SYLLABUS FOR B.E. V SEMESTER

| | | |
|---|---|---|
| L:T: P (Hrs/Week):3:0:0 | SEE Marks: 60 | Course Code: **U19PC520EE** |
| Credits: 3 | CIE Marks: 40 | Duration of SEE : 3 Hours |

| **COURSE OBJECTIVES**<br>The course will enable the students to: | **COURSE OUTCOMES**<br>On completion of the course, students will be able to |
|---|---|
| The objective of this course is become familiar with the architecture and instruction sets of 8086 and 8051 processors and as well as interfacing an external device to these processors | students will be able to<br>1. Applying the basic concepts of digital fundamentals to Intel 8086 architecture.<br>2. Apply the knowledge of 8086 instruction set and identify a detail software and hardware structure of the microprocessor.<br>3. Illustrate the different peripherals (8255, 8257, 8259 etc) interfacing with the microprocessor.<br>4. Design, Develop and interface microcontroller base systems to peripheral devices and systems at the chip level. |

**UNIT I**

Over view of microcomputer structure and operation- Microprocessor Architecture of 8086- segmented memory, addressing modes, Introduction set, Minimum and Maximum mode operations.

**UNIT II**

Construction of machine codes for MOVE 8086 instruction- Assembly language programming , Assembler directives, simple programs using Assembler, strings, procedures, macros, timing.

**UNIT III**

Memory and I/O interfacing, A/D and D/A interfacing, 8255 (PPI), Keyboard and display interface, interrupts of 8086, seven segment display, 8237 DMA controller, 8251 USART

**UNIT IV**

Microcontrollers- 8051 microcontroller, architecture, I/O ports, connecting external memory, Instruction set, Assembly language programming.

**UNIT V**

Interrupts programming concepts with examples, serial communication programming concepts with examples, timers, counters, applications of micro controllers interfacing LEDs, seven segment display, keyboard interfacing, LCD interfacing, stepper motor interfacing.

**Learning Resources**

1. Douglas.V.Hall-Microprocessors and Interfacing-RaraMcgraw Hill-Revised 2nd edition, 2006.
2. Krishna Kant – Microprocessors and Microcontrollers – Architecture, Programming and System Design 8085, 8086 8051, 80996, Prentice-Hall India-2007.
3. Kenneth.J.Ayala _ "the 8051 , Microprocessors Architecture , Programming and Application, Thomson publishers, 2nd edition.
4. Walter A. TRiebel& Avatar Singh- The 8088 and 8086 Microprocessor – Fourth Edition, pearson

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, Hyderbad-500031, Telangana State

**DEPARTMENT OF ELECTRICAL AND ELECTRONICS ENGINEERING**

Linear Integrated Circuits & Applications

SYLLABUS FOR B.E. V SEMESTER

| | | |
|---|---|---|
| L:T: P (Hrs/Week):3:0:0 | SEE Marks: 60 | Course Code: **U19PC530EE** |
| Credits: 3 | CIE Marks: 40 | Duration of SEE : 3 Hours |

| **COURSE OBJECTIVES**<br>The course will enable the students to: | **COURSE OUTCOMES**<br>On completion of the course, students will be able to |
|---|---|
| To impart fundamental concepts of linear and non linear devices and circuits namely Operational Amplifier, Multivibrator, 555 timer, voltage regulators and provide an overview on design of active filters for linear ICapplications. | 1. Demonstrate and understand fundamentals of linear integrated circuits.<br>2. Analyze the non-linear circuit applications based on particular linear integrated circuit.<br>3. Select and use an appropriate linear integrated circuit to build a given application.<br>4. Analyze the voltage regulators for a given linear circuit applications.<br>5. Select and design a second order active filter for IC applications. |

**UNIT- I:**

**Operation amplifiers:** Internal structure of an operational amplifier, ideal op-amp Characteristics, non-idealities in an op-amp -Output offset voltage, input bias current, input offset current, effect of CMRR, slew rate, gain bandwidth product, Frequency response - Stability, frequency compensation of op-amp.

**Linear applications of op-amp:** Inverted summer, subtractor, add-subtractor, analog integrator, differentiator, multiplier, analog divider, V - I and I-V converter, voltage follower, AC amplifiers.

**UNIT- II:**

Instrumentation amplifier circuits using op-amps.

**Nonlinear applications of op-amp:** Voltage limiter, precision rectifiers, peak detector, clipper and clamper, comparator, zero crossing detector, hysteretic comparator, monostable, astable multi vibrator circuits using op-amps, logarithmic amplifiers.

**UNIT- III:**

**Waveform generation using op-amps:** sine, Square, Triangular, phase shift, Wein bridge and quadrature oscillators, voltage controlled oscillator, voltage to frequency converter, 555 timer functional diagram, operation as monostable and astable. phase locked loop- lock in range and captured range frequency.

**UNIT- IV:**

**Voltage regulatorsusing op-amps:** Series voltage regulator, shunt regulators, and switching regulators using OP-amp, dual voltage regulator, fixed voltage regulators, dual tracking regulators, current sensing and current feed back protection.

**UNIT-V:**

**RC Active filtersusing op-amps:** Low pass, high pass and band pass, band reject, notch, first order, second order transformation, state variable filter , switched capacitor filter. P, PI and PID controllers and lead/lag compensator using an op-amp.

**Learning Resources:**

1. D.RoyChoudhury, Linear Integrated Circuits, ShailB.Jain, 4th Edition, New Age International(P) Ltd.,2010.
2. R.A. Gayakwad, Op-Amps and Linear Integrated Circuits, 4th Edition, Prentice Hall of India,2009.
3. Coughlin and Driscoll, Operational Amplifiers and Linear Integrated Circuits, 6th Edition, Prentice hall of India,2003.

4. Malvino Albert Paul, Electronic Principles, 7th Edition, Tata McGraw Hill, 2006.
5. S. Franco, "Design with Operational Amplifiers and Analog Integrated Circuits", McGraw Hill Inc.,2002

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, Hyderbad-500031, Telangana State

**DEPARTMENT OF ELECTRICAL AND ELECTRONICS ENGINEERING**

AC Machines

SYLLABUS FOR B.E. V SEMESTER

| | | |
|---|---|---|
| L:T: P (Hrs/Week):3:1:0 | SEE Marks: 60 | Course Code: **U19PC540EE** |
| Credits: 4 | CIE Marks: 40 | Duration of SEE : 3 Hours |

| COURSE OBJECTIVES<br>The course will enable the students to: | COURSE OUTCOMES<br>On completion of the course, students will be able to |
|---|---|
| To study the performances and applications of AC machines like Induction machines and Synchronous machines. | 1. Demonstrate basic concepts of AC machines windings, Analyze the concepts of constant magnetic field and rotating magnetic fields.<br>2. Analyze speed torque characteristics and control the speed of induction motors<br>3. Identify and analyze the operation of Single –phase machines.<br>4. Analyze the operation and characteristics of synchronous generator.<br>5. Analyze the operation and characteristics of synchronous motor. |

**UNIT-I:**

**Fundamentals of AC machine windings and generation of magnetic field:**

Physical arrangement of windings in stator and cylindrical rotor; slots for windings; single-turn coil - active portion and overhang; full-pitch coils,

concentrated winding, distributed winding, Air-gap MMF distribution with fixed current through winding - concentrated and distributed, winding distribution factor. Constant magnetic field, Conditions for the generation of RMF, Generation of RMF by spatially displaced two windings and three phase windings.

**UNIT-II:**

**Three Phase Induction Motors:**

Construction, Types (squirrel cage and slip-ring), Torque Slip Characteristics, Starting and Maximum Torque, Equivalent circuit.Phasor Diagram, Power Flow diagram, Losses and Efficiency.No load and Blocked rotor test, Starting methods of squirrel cage and wound rotor induction motor, Modes of operation, Speed control methods – Resistance control, Voltage control, Variable frequency control,

**UNIT-III:**

**Single-phase induction motors:**

Constructional features, working principle, double revolving field theory, equivalent circuit, determination of equivalent circuit parameters. Split-phase starting methods and applications

**UNIT-IV:**

**Synchronous machines**:

Constructional features, Salient and non-salient pole synchronous machines

Synchronous Generator (Alternator)generated EMF, equivalent circuit and phasor diagram, armature reaction, synchronous impedance, voltage regulation- Synchronous impedance method, Ampere-turns and Z.P.F Method. Power angle characteristics, Slip test, V-curves power angle characteristics. Parallel operation of alternators - synchronization.

**UNIT-V:**

**Synchronous Motors:**

Operating Principle, Two reaction theory, Power flow equations of cylindrical and salient pole machines, Operating characteristics. Synchronous Motor-Starting methods, Effect of varying field current at different loads, V- curves, Hunting& damping, Synchronous condenser.

**Learning Resources:**

1. Nagarath I.J., Kothari D.P., Electrical Machines. 4th Edition 2010, Tata McGraw Hill.
2. Gupta J.B., Theory and Performance of Electrical Machines, 2003, S.K. Kataria.& Sons.
3. A. E. Fitzgerald and C. Kingsley, "Electric Machinery", McGraw Hill Education, 2013.
4. A. S. Langsdorf, "Alternating current machines", McGraw Hill Education, 1984.
5. P. C. Sen, "Principles of Electric Machines and Power Electronics", John Wiley & Sons, 2007
6.Bhimbra P.S., Generalized Theory of Electrical Machines, Khanna Publications
7. Dr.P.SBimbhra, Electrical Machinery,7th Edition, Khanna Publishers
8. M.G. Say, The Performance and Design of A.C. Machines – Pitman Publications.
Online resources: http://nptel.ac.in/courses/; http://ocw.tufts.edu; http://ocw.upm.es; www.open.edu/openlearn/

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

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

Duration of Internal Tests :90 Minutes

With effect from the Academic Year 2021-22

**VASAVI COLLEGE OF ENGINEERING (AUTONOMOUS)**

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

**DEPARTMENT OF ELECTRICAL AND ELECTRONICS ENGINEERING**

Skill Development – III : Technical Skills

( Data Structures and Algorithm Lab)

SYLLABUS FOR B.E. V SEMESTER

**Programming Exercise:**

1. Implementation of Formula based representation.
2. Implementation of Singly Linked List, Doubly Linked List and Circular Linked List.
3. Implementation of Polynomial Arithmetic using Linked List.
4. Implementation of String Matching algorithms.
5. Implementation of Stacks, Queues.(Using both Arrays and Linked Lists)
6. Implementation of Infix to Postfix Conversion, Postfix Expression Evaluation.
7. Implementation of Recursive and Iterative Traversals on Binary Tree.
8. Implementation of Binary Search Tree.
9. Implementation of Operations on Binary Tree (Delete Entire Tree, Copy Entire Tree, Mirror Image, Level Order, Search for a Node etc.)
10. Implementation of Traversal on Graphs.
11. Implementation of Selection, Merge, Quick, Heap, and Insertion Sort.
12. Implementation of Binary Search and Hashing
13. Develop application using appropriate data structures.

With effect from the Academic Year 2021-22

**VASAVI COLLEGE OF ENGINEERING (AUTONOMOUS)**

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

**DEPARTMENT OF CIVIL ENGINEERING**

Environmental Science

SYLLABUS FOR B.E. V SEMESTER

| | | |
|---|---|---|
| L:T: P (Hrs/Week):2:0:0 | SEE Marks: 60 | Course Code: **U19MC010CE** |
| Credits: - | CIE Marks: 40 | Duration of SEE : 3 Hours |

| **COURSE OBJECTIVES**<br>The course will enable the students to: | **COURSE OUTCOMES**<br>On completion of the course, students will be able to |
|---|---|
| 1. Describe various types of natural resources available on the earth surface.<br>2. Explain the concepts of an ecosystem and the biotic and abiotic components of various aquatic ecosystems.<br>3. Identify the values, threats of biodiversity, endangered and endemic species of India along with the conservation of biodiversity.<br>4. Explain the causes, effects and control measures of various types of environmental pollutions.<br>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.<br>2. Differentiate between various biotic and abiotic components of ecosystem.<br>3. Examine the values, threats of biodiversity, the methods of conservation, endangered and endemic species of India.<br>4. Illustrate causes, effects, control measures of various types of environmental pollutions.<br>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, water logging salinity. Energy resources: Renewable and non-renewable energy resources. Land Resources, soil erosion and desertification.

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

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

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

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

**Learning Resources:**

1. Deswal S. and Deswal A., A Basic Course on Environmental studies, Dhanpat Rai & Co Pvt. Ltd. 2013.
2. Benny Joseph, Environmental Studies, Tata McGraw-Hill, 2006.
3. Suresh K. Dhameja, Environmental Studies, S.K. Kataria& Sons, 2010.
4. De A.K., Environmental Chemistry, New Age International, 2003.
5. Odum E.P., Fundamentals of Ecology, W.B. Sunders Co., USA, 2004.
6. Sharma V.K., Disaster Management, National Centre for Disaster Management, IIPE, Delhi, 2013.
7. Rajagopalan R., Environmental Studies, Second Edition, Oxford University Press, 2013.

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

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

Duration of Internal Test: 90 minutes

With effect from the Academic Year 2021-22

**VASAVI COLLEGE OF ENGINEERING (AUTONOMOUS)**

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

**DEPARTMENT OF ELECTRICAL AND ELECTRONICS ENGINEERING**

Microprocessors & Microcontrollers Applications Lab

SYLLABUS FOR B.E. V SEMESTER

| | | |
|---|---|---|
| L:T: P (Hrs/Week):0:0:2 | SEE Marks: 50 | Course Code: **U19PC521EE** |
| Credits: 1 | CIE Marks: 30 | Duration of SEE : 3 Hours |

| **COURSE OBJECTIVES**<br>The course will enable the students to: | **COURSE OUTCOMES**<br>On completion of the course, students will be able to |
|---|---|
| To introduce to students the basics of microprocessor and microcontroller programming and their applications. | 1. Apply the fundamentals of assembly level programming of microprocessors and microcontrollers.<br>2. Design circuits for various applications using microprocessor and microcontrollers.<br>3. An in-depth knowledge of applying the concepts on real- time applications.<br>4. Use Real time programming software to interface hardware. |

**List of Experiments:**

**I. Microprocessor 8086 : using MASM/TASM**

1. Programs for signed/unsigned multiplication and division
2. Program for finding average of N 16 bit
3. Program for finding largest number in an array
4. Program for code conversion like BCD to 7-segment
5. Program for compute factorial of a positive integer number.
6. String Manipulation instructions
7. Use of JUMP and CALL instructions 8. Macro and Procedure instructions

**II. Interfacing :using 8086 Kit**

1. 8255– PPI : Write an ALP to generate triangular wave, square wave, sawtoothe waveform using DAC.
2. LCD interfacing

3. ADC interfacing

4. Stepper motor interfacing
5. Traffic signal controller

**III. Microcontroller 8051 :**

1. Data transfer- Block of move, exchange, sorting,finding largest element in an array.
2. Arithmetic instructions: Multi byte operations
3. Boolean & logical instructions(Bit manipulations)
4. Programs to generate delay, programs using serial port and on chip timer/counter.
5. Use of JUMP and CALL instructions

**IV .Proteus Software**

1. Introduction to Proteus software
2. LED Interfacing
3. LCD Interfacing
4. Keyboard Interfacing
5. Stepper Motor Interfacing
6. DC motor Interfacing

**Learning Resources:**

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

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

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

**DEPARTMENT OF ELECTRICAL AND ELECTRONICS ENGINEERING**
Linear Integrated Circuits and Digital Electronics Lab

SYLLABUS FOR B.E. V SEMESTER

| | | |
|---|---|---|
| L:T: P (Hrs/Week):0:0:2 | SEE Marks: 50 | Course Code: **U19PC531EE** |
| Credits: 1 | CIE Marks: 30 | Duration of SEE : 3 Hours |

| **COURSE OBJECTIVES**<br>The course will enable the students to: | **COURSE OUTCOMES**<br>On completion of the course, students will be able to |
|---|---|
| To acquire skills of designing and testing of digital and analog integrated circuits. | 1. Analyze and design various applications of Op-Amp.<br>2. Construct and troubleshoot circuits containing linear integrated circuits.<br>3. Design combinational and sequential logic circuits using IC's.<br>4. Identify the suitable IC's in the applications of adders, counters, converters and multiplexers.<br>5. Compute the Triangle and square wave using op-amp and IC's. |

**List of Experiments:**

1. Generation of Triangle and square wave using op-amp.
2. PLL (Phase locked loop).
3. Design of astable multi vibrator using 555 timer.
4. Active filters.
5. Design of integrator and differentiator using op-amp.
6. Multiplexer applications for logic Realization of combinational circuits.
7. Synchronous counter.
8. Asynchronous counter.
9. Study of clipping and clamping circuits using op-amps.
10. Design of mono stable multi vibrator using IC's.

11. Instrumentation amplifier using op-amp.
12. Study of half adder, full adder and subtractor using IC's.
13. D/A converters.
14. A/D converters.

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, Hyderbad-500031, Telangana State

**DEPARTMENT OF ELECTRICAL AND ELECTRONICS ENGINEERING**

AC Machines Lab

SYLLABUS FOR B.E. V SEMESTER

| | | |
|---|---|---|
| L:T: P (Hrs/Week):0:0:2 | SEE Marks: 50 | Course Code: **U19PC541EE** |
| Credits: 1 | CIE Marks: 30 | Duration of SEE : 3 Hours |

| **COURSE OBJECTIVES**<br>The course will enable the students to: | **COURSE OUTCOMES**<br>On completion of the course, students will be able to |
|---|---|
| To expose the students to practical experiments of AC machines. | 1. Test the performance of 3-phase induction motor<br>2. Predetermine the voltage regulation of Non- salient and Salient Alternators by conducting suitable tests.<br>3. Test the performance of performance of 3-phase synchronous motor<br>4. Test the performance of Induction generator<br>5. Test the performance of 1-phase induction motor |

**List of Experiments:**

1. No-load test, blocked rotor test and load test on 3-phase Induction motor
2. Voltage regulation of Alternator by Synchronous impedance method
3. Voltage regulation of Alternator by Ampere – turn method
4. Voltage regulation of Alternator by Z.P.F. method.
5. Regulation of Alternator by slip test.
6. Determination of V curves and inverted V curves of Synchronous motor.
7. Power angle characteristics of a Synchronous motor.
8. Load characteristics of Induction Generator.

9. P.F. improvement of Induction motor using capacitors.
10. Synchronization of Alternator using three dark lamp method.
11. Torque –speed characteristics of single phase Induction Motor.
12. Parallel operation of Alternators

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)**

IBRAHIMBAGH, HYDERABAD – 500 031

**DEPARTMENT OF ELECTRICAL AND ELECTRONICS ENGINEERING**

Mini Project

SYLLABUS FOR B.E. V SEMESTER

| | | |
|---|---|---|
| L:T:P(Hrs./week):0:0:2 | SEE Marks:- | Course Code: **U19PW519EE** |
| Credits : 1 | CIE Marks:30 | Duration of SEE: 3 Hours |

| **COURSE OBJECTIVES** | **COURSE OUTCOMES** On completion of the course, students will be able to |
|---|---|
| 1. Learn contemporary technologies.<br>2. Design/Develop/Implement/Solve an engineering problem in the relevant areas of Electrical and Electronics Engineering. | 1. Apply the knowledge acquired in the electrical engineering.<br>2. Demonstrate the ability to locate and use technical information from multiple sources.<br>3. Demonstrate the ability to communicate effectively through a technical report.<br>4. Demonstrate independent learning and professional ethics.<br>5. Demonstrate the project management capabilities. |

The students are required to carry out mini projects irrelevant areas of Power Systems, Power Electronics, Electrical Machines, Measurements, Control Systems, Circuits, Micro Processors Controller and digital signal processing.

Students are required to submit a report on the mini project.

- Batch size shall be 2 (or) 3 students per batch.
- Allocation by department.
- Two reviews – One during 5$^{th}$ week and another during 10$^{th}$ week and final evaluation shall be conducted during 15$^{th}$ to 16$^{th}$ week.

- Students are required to give Presentations / Demonstration of the work during the reviews.
- Students are required to submit mini project report along with working model if applicable.

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 assessment of each experiment | | | 18 |
| Duration of Internal Test: **3 Hours** | | | |

**OPEN ELECTIVES OFFERED BY VARIOUS DEPARTMENTS IN B.E. V SEMESTER (2020-21)**

| Dept | Title | Code | credits |
|---|---|---|---|
| Civil | Spatial Information Technology | U19OE510CE | 3 |
| CSE | Data Structures and Algorithm | U19OE320CS | 3 |
| ECE | Sensors For Engineering Applications | U19OE510EC | 3 |
| ECE | Mathematical Programming for Engineers | U19OE010EC | 3 |
| Mech. | Introduction To Robotics | U19OE510ME | 3 |
| Mech. | Introduction To Automobile Engineering | U19OE520ME | 3 |
| Maths. | Numerical Methods | U19OE520MA | 3 |
| Phy. | Thin Film Technology and Applications | U190E52OPH | 3 |
| H&SS | Technical Writing and Professional Presentations | U19OE010EH | 3 |

With effect from the Academic Year 2021-22

**VASAVI COLLEGE OF ENGINEERING (AUTONOMOUS)**

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

**DEPARTMENT OFCIVIL ENGINEERING**

SPATIAL INFORMATION TECHNOLOGY (Open Elective-III)

SYLLABUS FOR B.E.V-SEMESTER

| | | |
|---|---|---|
| L:T: P (Hrs/Week):3:0:0 | SEE Marks: 60 | Course Code:**U19OE510CE** |
| Credits: 3 | CIE Marks: 40 | Duration of SEE : 3 Hours |

| **COURSE OBJECTIVES**<br>The objectives of this course are to: | **COURSE OUTCOMES**<br>Upon the completion of the course, students are expected to |
|---|---|
| 1. To provide fundamental knowledge on geo spatial technology such as Remote sensing GPS and GIS. | 1. Select the type of remote sensing technique/data, identify and analyze the earth surface features from the satellite images.<br>2. Identify GPS components, interpret the navigational message and signals received by the GPS satellites, Identify the error sources and apply corrections for accurate positioning.<br>3. Analyse the basic components of GIS, process spatial and attribute data, identify and rectify mapping inaccuracies and prepare thematic maps. |

**Unit I:**

**Introduction and Basic Concepts of Remote Sensing**

Introduction, Basic concepts of remote sensing, Airborne and space born sensors, Passive and active remote sensing, EMR Spectrum, Energy sources and radiation principles, Energy interactions in the atmosphere, Energy interactions with earth surface features, Atmospheric windows, Spectral reflectance curves

**Unit II:**

**Remote Sensing Systems**

Satellites and orbits, Polar orbiting satellites, Image characteristics and different resolutions in Remote Sensing, Multispectral, thermal and hyper

spectral remote sensing. Some remote sensing satellites and their features, Map and Image, color composites, introduction to digital data, elements of visual interpretation techniques. Applications of Remote sensing in various fields.

**Unit III:**

**Global positioning Systems (GPS)**

Overview of GNSS and Introduction to GPS, GLONASS, GALILEO, COMPASS, IRNSS systems , Applications of GPS.

GPS: Basic concepts, Functional system of GPS – Space segment, control segment and user segment, Working principle of GPS, Signal structure and code modulation, Pseudo-range measurements and navigation message

**Unit IV**

**Errors and Positioning methods of GPS**

Errors and biases in GPS measurements, Accuracy of navigation position: UERE and DOP, Intentional degradation of GPS signals: Selective availability (SA) and Anti-spoofing (AS) Differential GPS: Space based augmentation systems (e.g., SBAS, GAGAN) and Ground based augmentation systems (e.g., WASS, EGNOS)

GPS Carrier Phase measurements: Single Differencing, Double Differencing and Triple Differencing in GPS measurements.

**Unit V**

**Basic Concepts:** Introduction to GIS, History of GIS, Early development in GIS, Areas of GIS application, Components of GIS, Overview of GIS Software packages, Current issues and Trends in GIS.

Variables-Point, line, polygon, Geographic coordinate system, Map projections, Map Analysis.

**GIS Data:** Data types – spatial, non-spatial (attribute data) – data structure, data format – point line vector – Raster – Polygon

**Data Input** : Keyboard entry, Manual Digitizing, Scanner, Remotely sensed data, Existing Digital data Cartographic database, Digital elevation data

**Data Editing**: Detection and correction of errors, data reduction, edge matching

**Learning Resources:**


1. James B. Campbell & Randolph H. Wynne., Introduction to Remote Sensing, The Guilford Press, 2011
2. Lillesand, Kiefer, Chipman., Remote Sensing and Image Interpretation, Seventh Edition, 2015
3. Leick, A., GPS Satellite Survey, John Wiley: NJ, 2015
4. Hofmann, B., Lichtenegger H. and Collins J., Global Positioning System: Theory and Practice, Springer: Berlin, 2011.
5. Basudeb Bhatta, Remote Sensing and GIS, Oxford University Press, 2011.
6. Hofmann-Wellenh of, Bernhard, Lichtenegger, Herbert, Wasle, Elmar, GNSS – GPS, GLONASS, Galileo and more, 2013
7. Thanappan Subash., Geographical Information System, Lambert Academic Publishing, 2011.
8. Paul Longley., Geographic Information systems and Science, John Wiley & Sons, 2005
9. John E. Harmon & Steven J. Anderson., The design and implementation of Geographic Information Systems, John Wiley & Sons, 2003
10. ArcGIS 10.1 Manuals, 2013.
11. Kang Tsung Chang., Introduction to Geographic Information Systems, Tata Mc Graw Hill Publishing Company Ltd, New Delhi, 2008.
12. Burrough, P.A., Principles of GIS for Land Resource Assessment, Oxford Publications, 2005.
13. C.P.Lo& Albert K. W.Yeung, Concepts and Techniques of Geographic Information Systems, Prentice Hall India Pvt.Ltd, 2002.


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, Hyderbad-500031, Telangana State

**Department of Computer Science & Engineering**

Data Structures and Algorithm (Open Elective-III)

SYLLABUS FOR B.E.V-SEMESTER

| | | |
|---|---|---|
| L:T: P (Hrs/Week):3:0:0 | SEE Marks: 60 | Course Code:**U19OE320CS** |
| Credits: 3 | CIE Marks: 40 | Duration of SEE : 3 Hours |

| **COURSE OBJECTIVES** | **COURSE OUTCOMES** On completion of the course, students will be able to |
|---|---|
| 1. Identify and use appropriate data structure for a given problem with effective utilization of the space and the time.<br><br>2. Describe the linear and nonlinear data structures.<br><br>3. Analyze the complexities of different sorting techniques.<br><br>4. Use stacks and queues for solving problems | 1. Compute the time and space complexities of Algorithms. Design a solution to a given problem using arrays.<br><br>2. Develop applications using stacks, queues and linked lists.<br><br>3. Choose the appropriate nonlinear data structure and perform operations on them.<br><br>4. Choose suitable sorting technique to maximize the performance of the solution. Select the hashing technique to perform dictionary operations.<br><br>5. Write code for the operations on Binary Trees and Binary Search Trees |

**Unit I**

Algorithm Specification- Introduction, Recursive algorithms, Data Abstraction, Performance analysis- time complexity and space complexity, Asymptotic Notation-Big O, Omega and Theta notations. Arrays: Arrays - ADT, Polynomials, Sparse matrices

**Unit II**

Strings-ADT, Pattern Matching, Stacks and Queues: Stacks, Stacks using dynamic arrays, Queues, Circular Queues using dynamic arrays, A Mazing Problem, Evaluation of Expressions – Evaluating Postfix Expression, Infix to Postfix.

**Unit III**

Linked Lists: Singly Linked Lists and Chains, Linked Stacks and Queues, Polynomials, Operations for Circularly linked lists, Equivalence Classes, Sparse matrices, Doubly Linked Lists.

**Unit IV**

Sorting: Insertion Sort, Quick sort, Merge sort, Heap sort, Sorting on Several Keys, List and Table Sorts. Hashing :Introduction, Static Hashing: Hash tables, Hash functions, Overflow handling.

**Unit-V**

Trees: Introduction, Binary Trees, Binary Tree Traversals, Heaps, Binary Search trees (BST): Definition, Searching a BST, Insertion into a BST, Deletion from a BST.

**Learning Resources:**

1. Horowitz E, Sahni S and Susan Anderson-Freed, Fundamentals of Data structures in C, 2nd Edition(2008), Universities Press.
2. Mark A Weiss, Data Structures and Algorithm Analysis In C, 2nd Edition (2002), Pearson.
3. Kushwaha D. S and Misra A.K, Data Structures A Programming Approach with C, Second Edition(2014), PHl.,
4. Gilberg R. F and Forouzan B. A, Data Structures: A Pseudocode Approach with C, Second Edition(2007), Cengage Leaming
5. Tanenbaum A. M ,Langsam Y. Augenstein M. J, Data Structures using C, Second Edition (2008), Pearson.

6. Thomas H. Cormen, Charles E. Leiserson, Ronald L Rivest, Clifford Stein, Introduction to Algorithms, Third Edition(2009), MIT Press
7. YedidyahLangsam , Moshe J. Augenstein ,Aaron M. Tenenbaum, Data Structures Using C and C++ , Second Edition(2009), PHI
8. https://ocw.mit.edu/courses/electrical-engineering-and-computer-science/6-006- introduction-to-algorithms-fall-2011/lecture-videos
9. http://nptel.ac.in/courses/106106127/
10. http://www.nptel.ac.in/courses/106102064

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

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

**DEPARTMENT OF ELECTRONICS AND COMMUNICATION ENGINEERING**
SENSORS FOR ENGINEERING APPLICATIONS (OPEN ELECTIVE)

SYLLABUS FOR B.E.V-SEMESTER (for other branches)

| | | |
|---|---|---|
| L:T: P (Hrs/Week):3:0:0 | SEE Marks: 60 | Course Code:**U19OE510EC** |
| Credits: 3 | CIE Marks: 40 | Duration of SEE : 3 Hours |

| **COURSE OBJECTIVES** | **COURSE OUTCOMES**<br>On completion of the course, students will be able to |
|---|---|
| 1. The student will come to know the various stimuli that are to be measured in real life instrumentation.<br>2. He will be able to select the right process or phenomena on which the sensor should depend on<br>3. He will be aware of the various sensors available for measurement and control applications. | 1. Appreciate the operation of various measuring and control instruments which they encounter in their respective fields.<br>2. Visualize the sensors and the measuring systems when they have to work in areas of interdisciplinary nature and also think of sensors and sensors systems when for a new situation they encounter in their career<br>3. Identify and select the right process or phenomena on which the sensor should depend on.<br>4. Know various stimuli that are to be measured in real life instrumentation. |

**UNIT - I**

Introduction to sensors and transducers .Need for sensors in the modern world. Different fields of sensors based on the stimuli - various schematics for active and passive sensors. Static and dynamic characteristics of sensors - zero, I and II order sensors – Response to

impulse, step, ramp and sinusoidal inputs. Environmental factors and reliability of sensors.

**UNIT – II**

Sensors for mechanical systems or mechanical sensors - Displacement - acceleration and force - flow of fluids - level indicators - pressure in fluids - stress in solids. Typical sensors - wire and film strain gauges, anemometers, piezo electric and magnetostrictive accelerometers, potentio metric sensors, LVDT.

**UNIT – III**

Thermal sensors – temperature – temperature difference – heat quantity. Thermometers for different situation – thermocouples thermistors – color pyrometry. Optical sensors: light intensity – wavelength and color – light dependent resistors, photodiode, photo transistor, CCD, CMOS sensors. Radiation detectors: radiation intensity, particle counter – Gieger Muller courter (gas based), Hallide radiation detectors.

**UNIT – IV**

Magnetic sensors: magnetic field, magnetic flux density – magneto resistors, Hall sensors, super conduction squids. Acoustic or sonic sensors: Intensity of sound, frequency of sound in various media, various forms of microphones, piezo electric sensors.

**UNIT – V**

Electrical sensors: conventional volt and ammeters, high current sensors, (current transformers), high voltage sensors, High power sensors. High frequency sensors like microwave frequency sensors, wavelength measuring sensors. MEMs and MEM based sensors.

Learning Resources :

1. Doebelin, "Measurement Systems: Application and Design", McGraw Hill Kogakusha Ltd.
2. Julian W. Gardner, Vijay K. Varadan, Osama O. Awadelkarim "Microsensors, MEMS and Smart Devices", New York: Wiley, 2001.
3. Henry Bolte, "Sensors – A Comprehensive Sensors", John Wiley.
4. Jocob Fraden," Handbook of Modern Sensors, Physics, Designs, and Applications", Springer.

5. Manabendra Bhuyan," Intelligent Instrumentation Principles and Applications", CRC Press.
6. Randy Frank," Understanding Smart Sensors", Second edition, Artech House.

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, Hyderbad-500031, Telangana State

**DEPARTMENT OF MECHANICAL ENGINEERING**

INTRODUCTION TO ROBOTICS (Open Elective-III)

SYLLABUS FOR B.E.V-SEMESTER

| | | |
|---|---|---|
| L:T: P (Hrs/Week):3:0:0 | SEE Marks: 60 | Course Code:**U19OE510ME** |
| Credits: 3 | CIE Marks: 40 | Duration of SEE : 3 Hours |

| **COURSE OBJECTIVES**<br>The objectives of this course are to: | **COURSE OUTCOMES**<br>On completion of the course, students will be able to |
|---|---|
| The objectives of this course are to:<br>Identify robots and its peripherals for satisfactory operation and control of robots for industrial and non-industrial applications. | 1. understand the anatomy of the robot and various robot configurations for it's selection depending on the task.<br>2. classify the end effectors , understand different types of joints,various types of mechanical actuation and robot drive systems for carrying out the assigned job effectively.<br>3. analyze a planar manipulator through forward kinematics and understand the control of robot manipulator for better reliability and efficiency.<br>4. Classify the various sensors used in robots for proper selection to an application.<br>5. summarize various industrial and non-industrial applications of robots for their selection to a particular task. |

**UNIT-I**

**ROBOT BASICS**

Robot-Basic concepts, Definition, Need, Law, History, Anatomy, specifications.

Robot configurations-cartesian, cylindrical, polar ,articulated and SCARA, Serial manipulator &Parallel Manipulator

Robot wrist mechanism, Precision and accuracy of robot.

**UNIT-II**

**ROBOT ELEMENTS**

End effectors-Classification, Robot drive system types: Electrical, pneumatic and hydraulic. Robot joints and links-Types, Motion interpolation, Robot trajectories2D and 3D Transformation- Scaling, Rotation and Translation, Homogeneous transformation

**UNIT-III**

**ROBOT KINEMATICS AND CONTROL**

Robot kinematics – Basics of direct and inverse kinematics. D-H matrix. Forward kinematics for a 2-link RR planar manipulator.

Control of robot manipulators – Point to point and Continuous Path Control. Robot programming methods. Introduction to Solve any robotic kinematic problem using python programming.

**UNIT-IV**

**ROBOT SENSORS**

Sensors in robots – Touch sensors-Tactile sensors – Proximity and range sensors. Force sensors, Light sensors, Pressure sensors, position and velocity feedback devices.

Introduction to Machine Vision and Artificial Intelligence.

**UNIT-V**

**ROBOT APPLICATIONS**

Applications of robots in Industries, Medical, Household, Entertainment, Space, Underwater, Defense, and Disaster management.

Applications of Micro and Nanorobots, Future Applications of robots.

**Learning Resources:**

1. Mikell P. Groover, Mitchell Weiss, Roger N Nagel and Nicholas G Odrey, "Industrial Robotics Technology, Programming and Applications", TataMcGraw-Hill Publishing Company Limited , 2008.
2. Deb.S.R and Sankha Deb, "Robotics Technology and Flexible Automation", Tata McGraw HillPublishing Company Limited, 2010.
3. KlafterR.D, Chmielewski T.A, and Negin. M, "Robotic Engineering: An Integrated Approach", Prentice Hall of India Pvt. Ltd.,1994.
4. K.S. Fu,R.C. Gonzalez and C.S.G.Lee , "Robotics control, sensing, vision and intelligence",TataMcGraw-Hill Publishing Company Limited, 2008
5. R.K. Mittal and I.J.Nagrath "Robotics and Control", Tata McGraw-Hill Publishing Company Limited, 2003.

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, Hyderbad-500031, Telangana State

**DEPARTMENT OF MECHANICAL ENGINEERING**

INTRODUCTION TO AUTOMOBILE ENGINEERING (OE-III)

SYLLABUS FOR B.E.V-SEMESTER

| | | |
|---|---|---|
| L:T: P (Hrs/Week):3:0:0 | SEE Marks: 60 | Course Code:**U19OE520ME** |
| Credits: 3 | CIE Marks: 40 | Duration of SEE : 3 Hours |

| **COURSE OBJECTIVES**<br>The objectives of this course are to: | **COURSE OUTCOMES**<br>On completion of the course, students will be able to |
|---|---|
| 1. familiarize the student with the different types of automobiles and engine components.<br>2. impart adequate knowledge in fuel supply, cooling, lubrication systems of IC engines.<br>3. understand the steering geometry, steering mechanism and types of suspension systems.<br>4. gain the knowledge about working of clutch, gear mechanism, brakes<br>5. make the student conversant with types of wheels, tyres and pollution control techniques. | 1. identify types of Automobiles and engine components.<br>2. describe the engine fuel system in petrol and Diesel engines, cooling, lubrication systems.<br>3. describe the steering mechanism, suspension systems<br>4. analyse the working principle and operation of clutch, gear mechanism and brakes.<br>5. know the pollutants from automobile and pollution control techniques and identify the types of wheels, tyres. |

**UNIT-I**

**Introduction:** Types of automobiles: Hybrid Vehicles, Electrical, gas and Fuel cell vehicles. Chassis and body, Lay out of transmission system, Engine components: cylinder block, cylinder head, crankcase, crank shaft and cam shaft. Types of IC Engines: SI and CI engines, two stroke and four stroke engines.

**UNIT- II**

**Fuel system**: Fuel supply system for SI engines and CI engines. Simple carburettor, Introduction to Multipoint fuel injection system (**MPFI**) of petrol engines and Introduction to **CRDI** system for diesel engines.

**Cooling system**: air cooling, water cooling: Thermo syphon, pump circulation system.

**Lubrication system**: Petroil System, splash system, pressure lubrication: Wet sump and Dry Sump.

**Ignition system**: Battery Ignition System, Magneto Ignition System and Electronic Ignition System.

**UNIT- III**

**Suspension system**: Rigid axle, Independent suspension system:Double wish bone type, Macpherson strut system, Air suspension system.

**Steering system**: front axle, wheel alignment, steering geometry: camber, caster, toe-in, toe-out, steering linkage for vehicle with rigid axle front suspension, steering linkage for vehicle with independent front suspension, Ackermann steering mechanism.

**UNIT –IV**

**Power Train**: Single plate clutch, Multi plate clutch. Manual Gear Box: sliding mesh gear box, constant mesh gear box, synchromesh gear box and Automatic Gear Box. Working principle of Differential.

**Brakes**: Types: Drum and Disc brakes, Mechanical and Hydraulic Brakes, **ABS** system.

**UNIT –V**

**Wheels and Tyres**: Types of Wheels: wire wheels, disc wheels, alloy wheels. Types of tyres: Tube type, tubeless type. **SRS** Airbag system.

**Automobile Emissions and control**: Automobile pollutants and sources of pollution. Pollution Control Techniques: Catalytic Converters, EGR and PCV. Bharath emission Norms.

**Learning Resources:**

1. Crouse & Anglin, "Automobile Engineering", 10th Edition, Tata McGraw Hill Publishing Co. Ltd., New Delhi,. 2007.
2. Kirpal Singh, "Automobile Engineering", Vol.I& II, 13th Edition, Standard Publishers, New Delhi 2013.
3. R.B Gupta, "Automobile Engineering" 7th Edition, Satya Prakashan, New Delhi, 2015.
4. Joseph Heitner, "Automotive Mechanics", 2nd Edition, Affiliated East West Pvt. Ltd., 2013.
5. C.P. Nakra, "Basic Automobile Engineering", 7th Edition, Dhanpat Rai Publishing C (P) Ltd., 2016.

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, Hyderbad-500031, Telangana State

**DEPARTMENT OF MATHEMATICS**

Numerical Methods (Open Elective)

(for CSE & IT only)

SYLLABUS FOR B.E.V-SEMESTER

| | | |
|---|---|---|
| L:T: P (Hrs/Week):3:0:0 | SEE Marks: 60 | Course Code:**U19OE510MA** |
| 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 |
| **1. Study** various numerical methods to solve Algebraic and Transcendental equations.<br>**2. Understand** the methods to solve linear system of equations.<br>**3. Understand** the numerical methods in interpolation and extrapolation.<br>**4. Understand** the numerical methods in interpolation using central differences.<br>**5. Understand** numerical methods in solving ordinary differential equations. | ***1.*** **Apply** numerical methods to solve Algebraic and Transcendental equations which cannot be solved by traditional algebraic methods<br>***2.*** **Solve** linear system of equations using direct and iteration methods.<br>***3.*** **Use** various numerical methods in interpolation and extrapolation.<br>***4.*** **Use** various numerical methods in interpolation using central differences.<br>***5.*** **Find** numerical solutions of ordinary differential equations. |

**Unit – I:**

**Solution of Algebraic and Transcendental equations:**

Intermediate value property of equations-Solution of Algebraic and Transcendental equations: Bisection method, Newton-Raphson method Regula-Falsi method.

**Unit – II:**

**Solution of linear system of equations:**

Direct methods- Gauss elimination method- Factorization method- Iterative methods: Jacobi's Iteration method- Gauss - Seidel Iteration method-Ill-conditioned system of equations.

**Unit – III:**

**Numerical differences-I**

Introduction to finite differences - Interpolation- Newton's Forward and Backward Interpolation Formulae – Interpolation with unequal intervals – Lagrange's Interpolation Formula – Divided differences- Newton's divided difference formula.

**Unit – IV:**

**Numerical differences-II**

Central differences interpolation-Gauss's forwards and backward difference formulae-Stiriling's formula- Bessel's formula.

**Unit – V:**

**Numerical Solutions of Ordinary Differential Equations**

Numerical Solutions of Ordinary Differential Equations: Taylor's Series Method - Euler's Method - Modified Euler's Method – Runge-Kutta Method of $4^{th}$ order (without proofs).

**Text Books:**

1. Numerical methods in engineering and science by B.S.Grewal, Khanna publishers
2. Advanced Engineering Mathematics by R.K.Jain & S.R.K.Iyengar, Narosa publishing house.

**Reference Books:**

1. Numerical Analysis by S.S.Sastry, PHI Ltd.

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, Hyderbad-500031, Telangana State

**DEPARTMENT OF PHYSICS**

**THIN FILM TECHNOLOGY AND APPLICATIONS** (OE)

SYLLABUS FOR B.E.V-SEMESTER

| | | |
|---|---|---|
| L:T: P (Hrs/Week):3:0:0 | SEE Marks: 60 | Course Code:**U19OE520PH** |
| Credits: 3 | CIE Marks: 40 | Duration of SEE : 3 Hours |

| **COURSE OBJECTIVES** | **COURSE OUTCOMES** On completion of the course, students will be able to |
|---|---|
| 1. Learn the fundamental atomistic mechanisms.<br>2. Narrate thin film deposition techniques<br>3. Acquire knowledge on thin film devices<br>4. Appreciate applications of thin films | 1. State fundamental definitions of thin film technology<br>2. Describe thin film deposition techniques<br>3. Illustrate thin film devices and their use<br>4. Apply thin films coatings for a variety industrial applications |

**UNIT-I: THIN FILM GROWTH**

Classification of films- formation of thin films- Condensation and nucleation, growth and coalescence of islands, -nucleation theories: capillarity and atomistic models, sticking coefficient, adhesion, substrate effect, film thickness effect.

**UNIT-II: DEPOSITION TECHNIQUES**

Thin film deposition techniques- simple thermal evaporation- Chemical vapor deposition technique-Advantages and disadvantages of Chemical Vapor deposition (CVD), physical vapour deposition electron beam evaporation- RF sputtering, flash evaporation, Laser ablation- spin coating- molecular beam epitaxy (MBE), Spin coating, Film thickness

measurement-ellipsometry, quartz crystal oscillator techniques, structure and microstructure of thin films.

**UNIT-III: THIN FILM MATERIAL CHARACTERIZATION TECHNIQUES**

Characterization techniques: X-Ray Diffraction (XRD), working principles of Scanning Electron Microscopy (SEM), working of Transmission Electron Microscopy (TEM), Atomic Force Microscopy (AFM), Scanning Tunneling Microscope (STM), Field Ion Microscope (FEM).

**UNIT-IV: PROPERTIES OF THIN FILMS**

Electrical conduction in continuous and discontinuous metallic thin films. Transport and optical properties of metallic, semiconducting and dielectric films.

**UNIT-V: THIN FILM DEVICES AND APPLICATIONS**

Anti-reflection coatings, fabrication of thin film resistor, capacitor, diode, gas sensors and temperature sensors. Thin film solar cells, Quantum well and Quantum dot solar cells. Application of thin films in different areas such as electronics, medical, defense, sports, automobiles, applications of thin films in various fields etc.

**Learning resources:**

1. Kasturi Chopra Thin Film Device Applications, Mac Graw Hill, New York, 2012
2. A. Goswami, thin film fundamentals, New age international, 2006

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

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

**DEPARTMENT OF HUMANITIES AND SOCIAL SCIENCES**
Technical Writing and Professional Presentations (OE)

SYLLABUS FOR B.E.V-SEMESTER

| | | |
|---|---|---|
| L:T: P (Hrs/Week):3:0:0 | SEE Marks: 60 | Course Code:**U19OE010EH** |
| Credits: 3 | CIE Marks: 40 | Duration of SEE : 3 Hours |

| **COURSE OBJECTIVES** | **COURSE OUTCOMES**<br>On completion of the course, students will be able to |
|---|---|
| This course introduces the principles and mechanics of technical writing for students of engineering.<br>Students will learn:<br>1. Specific communications skills associated with reporting technical information and will write a series of papers ranging from process description and feasibility reports to research projects, project proposals, and statement of purpose, which are pre-requisites for start-up companies and getting into foreign universities as well.<br>2. How to make effective presentations as part of today's workplace demands. | **At the end of the course the student will be able to**<br>1. write effective reports<br>2. research and write project proposals and SoPs<br>3. make persuasive presentations |

**UNIT I**
**A. TECHNICAL REPORTS- INFORMAL**
Informal report formats, project and research reports

**B. TECHNICAL REPORTS-FORMAL**
Formal report components, feasibility reports, evaluation reports, Analytical and informational reports, executive summaries.

**UNIT II**
**TECHNICAL WRITING IN BUSINESS CORRESPONDENCE**

Components of a letter, types of electronic communication, effective emails, instant and text messaging guidelines.

**UNIT III**

Technical Resume, Curriculum Vitae, Biodata, Cover letter, resume format.

**UNIT IV**

**A. PROFESSIONAL PRESENTATIONS**

Paper presentations, Poster presentations, PowerPoint presentations, video demos and tutorials

**B. VIDEO DEMOS AND TUTORIALS**

Storyboard writing, e-learning methods; video demos, training videos, webinars, conducting surveys, questionnaire, assessments, quiz, introduction to e-learning tools; Adobe Captivate, TechSmith Camtasia.

**UNIT-V**

HOW TO WRITE PROPOSALS AND STATEMENT OF PURPOSE

Types of proposals, persuasive elements, requests for proposals, stating your objective

**METHODOLOGY: -**

Case Studies
Demonstration
Presentations
Expert lectures

Writing and Audio-visual lessons

**ASSESSMENT: -**

Online assignments
Individual and Group

**Learning Resources: -**

1. Effective Technical Communication, M Ashraf Rizvi, Tata McGraw-Hill Education, 2005
2. Raman, Meenakshi & Sangeeta Sharma. Technical Communication: Principles and
Practice. Second Edition. New Delhi: Oxford University. Press, 2011.
3. Hacking Your Statement of Purpose: A Concise Guide to Writing Your SOP, Milena

Young, 2014.
4. How to prepare a feasibility study: a step-by-step guide including 3 model studies. Front Cover. Robert E. Stevens, Philip K. Sherwood. Prentice-Hall, 1982.
5. Successful Presentations (with DVD): John Hughes & Andrew Mallett. Oxford university Press.

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

VASAVI COLLEGE OF ENGINEERING (AUTONOMOUS) :: IBRAHIMBAGH, HYDERABAD – 500 031.
DEPARTMENT OF ELECTRICAL AND ELECTRONICS ENGINEERING
SCHEME OF INSTRUCTION AND EXAMINATION (R-19) :: B.E. - EEE : SIXTH SEMESTER (2021 - 22)

| B.E (EEE) VI Semester | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| Course Code | Name of the Course | Scheme of Instruction Hours per Week | | | Duration in Hrs | Scheme of Examination Maximum Marks | | Credits |
| | | L | T | P/D | | SEE | CIE | |
| THEORY | | | | | | | | |
| U19HS610EH | Skill Development-IV: Soft Skills | 1 | - | - | 2 | 40 | 30 | 1 |
| U19HS040EH | Economics and Finance for Engineers | 2 | - | - | 3 | 60 | 40 | 2 |
| U19HS020EH | Human Values and Professional Ethics II | 1 | - | - | 2 | 40 | 30 | 1 |
| U19PC610EE | Power Systems - II | 3 | - | - | 3 | 60 | 40 | 3 |
| U19PC620EE | Power Electronics | 3 | - | - | 3 | 60 | 40 | 3 |
| U19PC630EE | Control Systems | 3 | - | - | 3 | 60 | 40 | 3 |
| U19PC640EE | Signals & Systems | 3 | - | - | 3 | 60 | 40 | 3 |
| U19PE610EE | Skill Development-IV: Technical Skills | 1 | - | - | 2 | 40 | 30 | 1 |
| U19OE6XXXX | Open Elective -IV | 3 | - | - | 3 | 60 | 40 | 3 |
| PRACTICALS | | | | | | | | |
| U19PC621EE | Power Electronics and Simulation Lab | - | - | 2 | 3 | 50 | 30 | 1 |
| U19PC631EE | Control Systems and Simulation Lab | - | - | 2 | 3 | 50 | 30 | 1 |
| U19PW619EE | Theme Based Project | - | - | 2 | - | - | 30 | 1 |
| **CCA-IV (Technical Skills Training)** | | - | - | - | - | - | - | - |
| **Library/Sports/Proctorial Interaction** | | - | - | - | | | | |
| | **Total** | **20** | **0** | **6** | | **580** | **420** | **23** |
| | **Grand Total** | **26** | | | | **1000** | | **23** |
| **Student should acquire one online course certification equivalent to two credits during III Sem to VII sem.** | | | | | | | | |

**Note: 1. One hour is allocated for Library/Sports/Proctorial Interaction 2. Four hours are allocated for CCA-IV**

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

**DEPARTMENT OF HUMANITIES AND SOCIAL SCIENCES**
Skill Development-IV: Soft Skills

SYLLABUS FOR B.E. VI SEMESTER

| | | |
|---|---|---|
| L:T: P (Hrs/Week):1:0:0 | SEE Marks: 40 | Course Code:**U19HS610EH** |
| Credits: 1 | CIE Marks: 30 | Duration of SEE :2 Hours |

| **COURSE OBJECTIVES**<br>This course aims at enhancing employability skillI: | **COURSE OUTCOMES**<br>At the end of the course students will be able to: |
|---|---|
| 1. Students will be introduced to higher order thinking and problem solving in the following areas - Vocabulary, Fill in the Blanks, Passage Based Questions, Jumbles & Spotting the Errors<br>2. Students will be trained to work systematically with speed and accuracy while problem solving<br>3. Students will enhance their vocabulary and use it effectively to solve problems | 1. Solve questions in Verbal Ability in the mentioned areas using shortcuts and smart methods<br>2. Solve questions with speed and accuracy.<br>3. Clear the Verbal Ability Section in Employment Eligibility Tests |

**Unit 1: Vocabulary- Reading for Content and Context**
**Overview:**
This course is designed for students to not just understand the importance of vocabulary but also to build on it by using the appropriate tools and methods. After which they will be able to solve vocabulary based questions and also use vocabulary as a tool to solve problems.

**Learning Outcomes**
Upon completion of the course, students should be able to:
1. Use context to find the meanings of words

2. Possess better vocabulary
3. Use vocabulary as a tool to solve questions in verbal ability

**Competencies**

1. Understand Collocations
2. Build on words by using Root Words
3. Understand how prefixes and suffixes work
4. Identify incorrect usage of words

**Sessions**

1.1 Concepts & Context Rules: Collocations & Phrasal Verbs
1.2 Prefixes/ Suffixes & Root Words
1.3 Phrases & Idioms; Questions based on it
1.4 One Word Substitution; Questions based on it
1.5 Antonyms, Synonyms & Incorrect Word Usage

**Unit 2: Fill in the Blanks- Applying Content and Context**

**Overview:**

This course is designed for students to identify the clue/ theme words in sentences, then understand the context in which the words are used and finally apply concepts like collocation, antonyms, and synonyms to solve questions.

**Learning Outcomes**

Upon completion of the course, students should be able to:

1. Identify the theme/ clue words in sentences
2. Solve Single & Double Fill in the blank questions
3. Solve Cloze tests by applying collocations and contextual vocabulary

**Competencies**

1. Use contextual vocabulary to solve problems
2. Apply vocabulary based tools
3. Apply tricks to solve questions

**Sessions**

2.1 Concepts & Rules: Single Fill in the Blanks
2.2 Double/ Triple Fill in the Blanks
2.3 Cloze Test

**Unit 3: Jumbles**

**Overview:**

This course is designed to develop and improve reading and study skills needed for college work. Topics include identifying main idea and supporting details, determining author's purpose and tone, distinguishing between fact and opinion, identifying patterns of organization in a sentence or passage and the transition words associated with each pattern, recognizing the relationships between words and sentences, identifying and using context clues to determine the meanings of words, identifying logical inferences and conclusions.

**Learning Outcomes**

Upon completion of the course, students should be able to:

1. Identify the structure of sentences & paragraphs
2. Apply tools of vocabulary and context to organize content
3. Solve questions on jumbled sentences & parajumbles

**Competencies**

1. Identify the author's purpose, point of view, tone, and method of development.
2. Use tools of language and logic to solve problems
3. Synthesize information given into logically correct sentences or passages

**Sessions**

3.1 Concepts- Purpose, Tone, Point of view
3.2 Parajumbles
3.3 Jumbled Sentences

**Unit 4: Critical Reading Skills**

**Overview:**

Research shows that good reading skills can lead to well written assignments. In this unit, students will learn, develop and improve reading and study skills needed for college work. Building on these basic strategies, students will develop skills to critically analyze texts and then the ability to identify its theme.

**Learning Outcomes**

Upon completion of the course, students should be able to:

1. Read a given text critically and propaganda techniques
2. Use contextual Vocabulary to find out meanings of new words
3. Use comprehension and vocabulary strategies to raise reading rate.

**Competencies**

1. Analyze text, e.g., simple outlining and note taking, summarize, draw conclusions, and apply information to personal experiences.
2. Increase speed of reading
3. Solve Reading Comprehensions using elimination strategies
4. Identify the theme of the passage

**Sessions**

4.1 Concepts- Basic Introduction & Short Passages
4.2 Article & Article Based Passages
4.3 Theme Detection

**Unit 5: Spotting the Errors**

**Overview:**

In this unit students will focus on identifying errors in sentences, rectifying them and improving the quality of sentences. Building on these skills will also have an impact on the written and spoken skills of students since they will be aware of the common and often made errors and therefore be able to avoid them while using language.

**Learning Outcomes**

Upon completion of the course, students should be able to:

1. Read, identify and rectify errors in sentences
2. Improve the quality of sentences by fixing errors
3. Use comprehension and vocabulary strategies to raise reading rate.

**Competencies**

1. Analyze language and improve its quality
2. Apply tips and tricks to solve questions faster
3. Improve the quality of their writing by being aware of the common errors

**Sessions**

5.1 Concepts- Basic Introduction & Sentence Fillers

5.2 Spot the Errors
5.3 Sentence Improvement

| **METHODOLOGY** | **ASSESSMENTS** |
|---|---|
| - Demonstration | - Online assignments |
| - Presentations | - Individual and Group |
| - Expert lectures | |
| - Writing and Audio-visual lessons | |

**Learning Resources:**
learn.talentsprint.com

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

| | | | | | |
|---|---|---|---|---|---|
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| 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

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

**DEPARTMENT OF HUMANITIES AND SOCIAL SCIENCES**
Economics and Finance for Engineers

SYLLABUS FOR B.E. VI SEMESTER

| | | |
|---|---|---|
| L:T: P (Hrs/Week):2:0:0 | SEE Marks: 60 | Course Code:**U19HS040EH** |
| Credits: 2 | CIE Marks: 40 | Duration of SEE : 3 Hours |

| COURSE OBJECTIVES | COURSE OUTCOMES |
|---|---|
| The objective of the Course is to equip the prospective engineers with the concepts and tools of economics, finance, cost and taxes for business decisions. | 1. Enable students to identify the essential components such as production quantity limits, elasticity, demand and supply in business decision making.<br>2. Facilitate students in calculation of cost components to enable control of costs.<br>3. Make better investment decisions both in short and long run by understanding the financial viability of given investment proposals.<br>4. Analyze the given financial statements of a firm to understand the past performance and to make decisions for future.<br>5. Identify the impact of the new tax policies on the company's financial structure/ individual's incomes. |

**Unit I**: Basics of Economics:
Scarcity Definition of Economics - Macro and Micro Economics - Managerial Economics - Meaning of a Firm - Objectives of a Firm - Profit Maximization - Demand Concept -Price Elasticity of Demand -Meaning of Supply -Equilibrium Price and Quantity -Production -Cobb Doughlas

Production Function - Economies of Scale. (Simple problems on computation of elasticity)

**Unit II**:Cost and Price:

Cost - Meaning -Classification of Costs -Short run and Long run costs - Cost Sheet - Break even Analysis - Methods of Pricing (Problems on Cost Sheet, Breakeven Analysis and Methods of Pricing can be asked).

**Unit III**:Banking & Finance:

RBI and its role –Commercial Banks - Functions -Capital Budgeting - Discounting and Non discounting Techniques- Working Capital Management - Concepts and Components of Working Capital - Operating Cycle.

**UNIT IV**:Understanding Financial Statements:

Financial Statements- Meaning - Types -Purpose – Ratios(Liquidity,Solvency & Profitability Ratios)(Problems can be asked on Ratios)

**Unit V**:Direct & Indirect Taxes:

Heads of Income - Income from Salaries - Income from House Property - Income from Business - Income from Capital Gains -Income from Other Sources - Latest Tax Rates - GST -CGST - SGST - IGST - GST network.

**Learning Resources** :

1. S.P.Jain and K.LNarang., "Cost Accounting", Kalyani Publishers, Twentieth Edition Revised– 2008.
2. S.P.Jain and K.L Narang., "Financial Accounting", Kalyani Publishers – 2002.
3. Mehta P.L.,"Managerial Economics: Analysis,Problems and Cases", Thirteenth Edition, Sultan Chand and Sons, Nineteenth Edition - 2013.
4. M.Y.Khan and P.K. Jain., "Financial Management – Text, Problems and Cases", Mc Graw Hill Education Private Limited, New Delhi.
5. Vinod KSinghania and Kapil Singhania., "Direct Taxes Law and Practice", Taxmann Publications, Sixtieth Edition - 2018.
6. Dr,Vinod K Singhania., "Students' Guide to GST and Customs Law", Taxmann Publications, Edition - 2018.
7. Muralidharan., "Modern Banking", Prentice Hall of India.

**Learning Resources:**

*1.* M. L. Seth., "Micro Economics", *Lakshmi Narain Agarwal.*
2. Dr. R.P. Rustagi., "Fundamentals of Financial Management"Taxmann Publications.
3. Dr. D.M. Mithani, "Money Banking International Trade & Public Finance", Himalaya Publishing House - 2014.
4. Rajesh., "Banking Theory and Practice", Tata Mc Graw Hill Publishing

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

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

Duration of Internal Test: 90 minutes

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

**DEPARTMENT OF HUMANITIES AND SOCIAL SCIENCES**
Human Values and Professional Ethics II

SYLLABUS FOR B.E. VI SEMESTER

| | | |
|---|---|---|
| L:T: P (Hrs/Week):1:0:0 | SEE Marks: 40 | Course Code:**U19HS020EH** |
| Credits: 1 | CIE Marks: 30 | Duration of SEE :2 Hours |

| **COURSE OBJECTIVES**<br>The course will enable the students to: | **COURSE OUTCOMES**<br>On completion of the course, students will be able to |
|---|---|
| 1. Create an awareness on the interrelation between Society, Ethics and Human Values<br>2. Understand how ethical dilemmas apply to real life scenarios<br>3. Develop ethical human conduct and professional competence.<br>4. Understand the role of good ethical practices and apply it in a project | 1. Identify ethical risks in everyday life and in societies that can lead to unethical choices, such as structures that diffuse responsibility or a group that has collectively de-stigmatized unethical behaviour<br>2. Identify ethical concerns in research and intellectual contexts, including academic integrity, use and citation of sources, and the objective presentation of data.<br>3. Assess their own ethical values and the social context of problems and articulate what makes a particular course of action ethically defensible<br>4. Demonstrate knowledge of ethical values in non-classroom activities, such as service learning, internships, and field work integrate, synthesize, and apply knowledge of ethical dilemmas and resolutions in academic settings, including focused and interdisciplinary research. |

**UNIT-1 NORMATIVE ETHICS & SOCIETAL ETHICS**

This unit deals with normative ethics, the branch of moral philosophy, or ethics, concerned with criteria of what is morally right and wrong. It includes the formulation of moral rules that have direct implications for what human actions, institutions, and ways of life should be like. This unit also covers societal ethics which is the systematic reflection on the moral dimensions of social structures, systems, issues, and communities.

**UNIT 2 - PROFESSIONAL ETHICS - NEED FOR ETHICAL CODES**

This unit covers the code of Professional Ethics- it is designed to ensure that students learn the necessary skills that groom them to behave like employees should, one that is socially acceptable and respectful of one another. It establishes the rules for behavior and sends a message to every employee that universal compliance is expected.

**UNIT- 3 - PRIVACY**

This unit covers "Cyber ethics" - the code of responsible behavior on the Internet. Just as we are taught to act responsibly in everyday life with lessons such as "Don't take what doesn't belong to you" and "Do not harm others," we must act responsibly in the cyber world as well.

The basic rule is "Do not do something in cyberspace that you would consider wrong or illegal in everyday life."

**UNIT-4- MEDIA AND MEDICAL ETHICS**

This unit covers Media and Medical ethics is the best division of applied ethics dealing with the specific ethical principles and standards of media (including broadcast media, film, theatre, the arts, print media and the internet) and medicine (practice of clinical medicine and related scientific research)

**MODE Of DELIVERY**

| | |
|---|---|
| • Questionnaires<br>• Quizzes<br>• Case-studies<br>• Observations and practice<br>• Home and classroom assignments | • Discussions<br>• Skits<br>• Short Movies/documentaries<br>• Team tasks and individual tasks<br>• Research based tasks<br>• Project |

**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 | : 1 | Max. Marks for each Internal Test | : | 20 |
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| 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)**

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

**DEPARTMENT OF ELECTRICAL AND ELECTRONICS ENGINEERING**

Power Systems – II

SYLLABUS FOR B.E. VI SEMESTER

| | | |
|---|---|---|
| L:T: P (Hrs/Week):3:0:0 | SEE Marks: 60 | Course Code:**U19PC610EE** |
| Credits: 3 | CIE Marks: 40 | Duration of SEE : 3 Hours |

| **COURSE OBJECTIVES**<br>The course will enable the students to: | **COURSE OUTCOMES**<br>On completion of the course, students will be able to |
|---|---|
| 1.Acquire knowledge of Transmission Lines Performance, Power circle diagrams & Corona.<br><br>2.Understand the Per Unit system of Representation, load flow studies and different load flow methods.<br><br>3. Learn about the Symmetrical Fault analysis and S.C capacity of a Bus.<br><br>4. Acquire the knowledge of the fundamentals of Sequence components, Sequence networks of Generator, T/F, T.M.L & Load and Unsymmetrical Fault analysis of power system<br><br>5. Understand the concept of Travelling Wave theory and Bewley Lattice diagram. | 1.Calculate and compare the performance (Constants A, B, C & D, voltage regulation & efficiency) of different types of Transmission lines.<br><br>2. Apply proper load flow method for the solution of load flow problems of any power system network.<br><br>3.Calculate the P.U quantities in power system and analyze symmetrical fault (LLL Fault) and calculate S.C capacity of a Bus.<br><br>4. Draw the diagram of Sequence networks of different components and compute the Unsymmetrical Fault (LG, LL, LLG& LLLG) current value & MVA values.<br><br>5. Evaluate the value of coefficient of reflection and refraction of voltage or current wave and construct Bewley Lattice diagram. |

**UNIT I**

**Transmission Line Theory:** Short, medium, long lines – Line calculations, Tuned lines – Power circular diagrams and their applications. Corona: Causes – Disruptive and Visual Critical Voltages, Power loss – minimization of Corona Effects.

**UNIT II**

**Per Unit of Representation:** Use of per Unit Quantities in power systems, Advantages of per unit system. Y bus formation, Modeling tap changing and phase shifting of transformers, formation of load flow problem, Gauss and Gauss seidel , Newton Raphson and fast decoupled methods

**UNIT III**

**Symmetrical faults:**

Z bus, Symmetrical Three phase Transients in R-L series circuits – short circuit currents – Reactance's of Synchronous Machines – Symmetrical Fault calculations. short circuit capacity of bus.

**UNIT IV**

**Unsymmetrical faults:** Symmetrical components of unsymmetrical phasors – Power in terms of symmetrical components - sequence impedance and sequence networks. Sequence networks of unloaded generators – Sequence impedances of circuit elements – Single line to ground, line-to-line and double line to ground faults on unloaded generator – Unsymmetrical faults of power systems.

**UNIT V**

**Transients in power systems :** Causes of over voltages : Traveling Wave Theory – Wave equation – Open Circuited Line – The short circuited line – Junction of lines of different natural impedances – Reflection and refraction – Coefficients – Junction of Cable and overhead lines – Junction of three lines of different natural impedances – Bewley Lattice diagram.

**Learning Resources:**

1. C.L. Wadhwa , Electrical Power Systems, Wiley Eastern Ltd., 4th Ed. 2006.
2. John J.Grainger William D. Stevenson Jr. Power System Analysis, Tata MCGraw Hill Edn.2003
3. I.J.Nagrath&D.P.Kothari "Modern Power Systems Analysis" TMH Edition, 2003.
4. A. Chakrabarti, M.L.Soni, P.V.Gupta, U.S.Bhatnagar, A Text book on Power System, DhanpatRai&Co(P) Ltd.

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, Hyderbad-500031, Telangana State

**DEPARTMENT OF ELECTRICAL AND ELECTRONICS ENGINEERING**

Power Electronics

SYLLABUS FOR B.E. VI SEMESTER

| | | |
|---|---|---|
| L:T: P (Hrs/Week):3:0:0 | SEE Marks: 60 | Course Code: **U19PC620EE** |
| Credits: 3 | CIE Marks: 40 | Duration of SEE : 3 Hours |

| **COURSE OBJECTIVES**<br>The course will enable the students: | **COURSE OUTCOMES**<br>On completion of the course, students will be able to |
|---|---|
| To provide the fundamentals of power semi – conductor devices and inculcate the knowledge on controlled rectifiers, DC-DC converters, Inverters, AC Voltage controllers and Cyclo converters | 1. Understand the differences between signal level devices and power level devices.<br>2. Analyze controlled rectifier circuits.<br>3. Analyze the operation of DC-DC Converters.<br>4. Analyze the operation of single phase inverters.<br>5. Analyze the operation of three phase voltage source inverters, Single phase AC Voltage controllers and Single phase Cyclo converters. |

**UNIT- I:**

**Power switching devices**

Diode, Thyristor, GTO, TRIAC, MOSFET, IGBT: I-V Characteristics; Firing circuit for thyristor; Voltage and current commutation of a thyristor; Gate drive circuits for MOSFET and IGBT.

**UNIT- II:**

**Phase Controlled Rectifiers**

Single-phase half-wave and full-wave rectifiers, Single-phase full-bridge thyristor rectifier with R-load and highly inductive load; Three-phase full-bridge thyristor rectifier with R-load and highly inductive load; Input current wave shape and power factor.

**UNIT-III: DC-DC converters**

**DC-DC buck converter:**

Elementary chopper with an active switch and diode, concepts of duty ratio and average voltage, power circuit of a buck converter, analysis and waveforms at steady state, duty ratio control of output voltage.

**DC-DC boost converter:**

Power circuit of a boost converter, analysis and waveforms at steady state, relation between duty ratio and average output voltage.

**DC-DC buck-boost converter:**

Power circuit of a buck-boost converter, analysis and waveforms at steady state, relation between duty ratio and average output voltage.

**UNIT-IV:**

**Single-phase inverters:**

Power circuit of single-phase voltage source inverter, switch states and instantaneous output voltage, square wave operation of the inverter, concept of average voltage over a switching cycle, bipolar sinusoidal modulation and unipolar sinusoidal modulation, modulation index and output voltage. Operation of single phase current source inverter.

**UNIT-V:**

**Three-phase voltage source inverter:**

Power circuit of a three-phase voltage source inverter, switch states, instantaneous output voltages, average output voltages over a sub-cycle, three-phase sinusoidal modulation

**AC voltage controller and cyclo converter**

Operation of single phase ac voltage controller, operation of single phase cyclo converter.

**Learning Resources:**

1. M. H. Rashid, "*Powerelectronics: circuits, devices, and applications*", Pearson Education India, 2009.
2. N. Mohan and T. M. Undeland, "Power Electronics: Converters, Applications and Design", John Wiley & Sons, 2007.
3. L.Umanand,"Power Electronics: Essentials and Applications", Wiley

India, 2009.
4. Dr. P. S. Bimbhra, "Power Electronics", Khanna Publishers,2009
5. M.D Singh and K.B Khanchandani, " Power Electronics", Tata McGraw Hill, 2017.
6. R. W. Erickson and D. Maksimovic, "Fundamentals of Power Electronics" , Springer Science & Business Media,2007.

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

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

**DEPARTMENT OF ELECTRICAL AND ELECTRONICS ENGINEERING**
Control Systems

SYLLABUS FOR B.E. VI SEMESTER

| | | |
|---|---|---|
| L:T: P (Hrs/Week):3:0:0 | SEE Marks: 60 | Course Code:**U19PC630EE** |
| Credits: 3 | CIE Marks: 40 | Duration of SEE : 3 Hours |

| **COURSE OBJECTIVES** | **COURSE OUTCOMES**<br>On completion of the course, students will be able to |
|---|---|
| 1.Control system modeling: modeling of electric, mechanical and electro mechanical systems, using differential equations, transfer functions, block diagrams, and state variables;<br>2. Control system analysis: analysis of properties of control systems, such as sensitivity, stability, controllability, tracking, in time and frequency domains; and<br>3. Control system design: design of feedback controllers, such as PID, lead and lag compen-sat or stomeet desired system performance specifications. | 1. Model different electrical, mechanical and electromechanical systems using differential equations, transfer functions and block diagrams and also simplify the complex systems using signal Flow graphs<br>2. obtain the time response of systems and analyze the stability in time domain using Routh Hurwitz criterion and Root locus techniques and also design the feedback controller such as PID controller to meet the desired performance specifications.<br>3. Obtain the frequency response of systems and analyze the stability in frequency domain and also design the feedback controllers, such as lead and lag compensators to meet the desired performance specifications using bode plots and polar plots<br>4. Analyze the stability in frequency domain using Nyquist stability criterion<br>5. Obtain state space Models and response for various electrical and electromechanical systems and also analyze the systems controllability and observability of the systems. |

**UNIT – I:**

Open and closed loop systems: Continuous time and discrete time control systems, control system components –, AC – DC servo motors – Block diagram representation, Block diagram Reduction Techniques-Transfer function and impulse response – signal flow graphs.

**UNIT – II:**

Time Response: Types of input, Transient response of second order systems for step input. Time domain specifications – Types of system – static error coefficients– Routh-Hurwitz criterion of stability. Root locus technique – Typical systems analyzed by root locus technique – Effect of location of roots on system response, PID controller

**UNIT – III:**

Frequency Response – I: Introduction, Frequency domain specifications. $M_P, w_P$ for a second order system,Frequency response analysis using Bode plots Relative stability analysis, gain margin and phase margin. Compensation: Lead, Lag, Lead – Lag Compensation using bode plot.

**UNIT – IV:**

Frequency Response – II: Polar plots, Nyquist plot, Nyquist stability criterion, Principle of argument, Analysis of Typical systems using Nyquist stability criterion.

**UNIT – V :**

State Space Representation: Concept of state, State Variable, State Models of linear time invariant systems. Derivation of state models from transfer functions and differential equations. State transition matrix – solution of state equations by time domain method.Observability and Controllability.

**Learning Resources:**

1. I.J. Nagrath, M. Gopal, Control System Engineering, New Age International (P) Limited publishers, 6th Edition 2018.
2. M. Gopal, Control System Principles and Design – Tata McGraw Hill, 4th edition, 2012.

3. A.NagoorKani, Control systems Engineering-CBS pub &DistPvt Limited, June-2020
4. K. Ogata, Modern Control Engineering,5th Edition, Pearson publishers, 2015.
5. Farid Golnaraghi, Benjamin C.Kuo, Automatic Control Systems, tenth Edition, McGraw-Hill Education, Feb 2017

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, Hyderbad-500031, Telangana State

**DEPARTMENT OF ELECTRICAL AND ELECTRONICS ENGINEERING**

Signals & Systems

SYLLABUS FOR B.E. VI SEMESTER

| | | |
|---|---|---|
| L:T: P (Hrs/Week):3:0:0 | SEE Marks: 60 | Course Code:**U19PC640EE** |
| Credits: 3 | CIE Marks: 40 | Duration of SEE : 3 Hours |

| **COURSE OBJECTIVES**<br>The course will enable the students to: | **COURSE OUTCOMES**<br>On completion of the course, students will be able to |
|---|---|
| 1. To define and classify continuous and discrete time signals & systems<br>2. To determine the frequency domain characteristics of continuous and discrete time signals using transform techniques.<br>3. To verify the causality and stability of LTI system and find its response using convolution. | 1. Analyze continuous time signals and systems and transform them to frequency domain.<br>2. Convert continuous time signals to discrete time signals using sampling.<br>3. Analyze discrete time signals and systems and transform them to frequency domain using ZT.<br>4. Determine the response of an LTI system using convolution. |

**UNIT - I**

**Continuous Time Signals & Systems**: Introduction, elementary signals, classification of signals and basic operations on signals. Introduction to systems and its classification.

**Fourier Series:** Review of Fourier series, existence and convergence, trigonometric and exponential Fourier series representations and their relations, symmetry conditions, properties, complex Fourier spectrum.

**UNIT - II**

**Signal Representation by Continuous Exponentials:** Introduction to Fourier Transform, existence, Fourier transform of singularity functions and signals, properties, Fourier transform of a periodic function.

Introduction to Linear Time Invariant (LTI) system, Unit impulse and step response, Transfer function of an LTI system.

**UNIT - III**

**Sampling:** Introduction to sampling, sampling theorem, aliasing, sampling Techniques, reconstruction, quantizing and encoding.

**Signal Representation by Generalized Exponentials**: Introduction to Laplace transforms, Existence, Region of convergence (ROC) and it properties. Properties of Laplace transform. Inverse Laplace transform, analysis and characterization of continuous LTI systems using Laplace Transform.

**UNIT - IV**

**Discrete Time Signals & Systems:** Introduction, elementary signals, classification of signals and basic operations on signals. Introduction to systems and its classification. Linear shift invariant systems, Stability and Causality, Linear constant coefficient systems. Discrete Fourier Series (DFS), Discrete Time Fourier Transform (DTFT).

**Z-Transforms:** Introduction to Z-Transform, existence, Region of Convergence (ROC) and its properties. S-plane and Z-plane correspondence, properties of Z-Transform, Inverse Z-Transform, analysis and characterization of discrete LTI systems using Z-Transform.

**UNIT - V**

**Convolution & Correlation:** Continuous convolution - graphical interpretation and convolution properties. discrete convolution- graphical interpretation and convolution properties. Continuous correlation-cross correlation and auto correlation, their graphical interpretation and properties. Discrete correlation- cross correlation and auto correlation, their graphical interpretation and properties, Power Spectral Density (PSD), Energy Spectral Density (ESD).

**Learning Resources:**

1. Signals and Systems - A.V. Oppenheim, A.S. Willsky and S.H. Nawab, 2 Ed., PHI, 2013.
2. Signals, Systems & Communications - B.P. Lathi, 2013, BSP.
3. Signals and Systems – A.Anand Kumar, PHI, 2012.

4. Signals & Systems - Simon Haykin and Van Veen,Wiley, 2 Ed. 2003.
5. "Fundamentals of signals and systems", M.J. Robert , McGraw Hill, 2008.

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, Hyderbad-500031, Telangana State

**DEPARTMENT OF ELECTRICAL AND ELECTRONICS ENGINEERING**

Skill Development – IV: Technical Skills

SYLLABUS FOR B.E. VI SEMESTER

| | | |
|---|---|---|
| L:T: P (Hrs/Week):1:0:0 | SEE Marks: 40 | Course Code:**U19PE610EE** |
| Credits: 1 | CIE Marks: 30 | Duration of SEE : 2 Hours |

| **COURSE OBJECTIVES**<br>The course will enable the students to: | **COURSE OUTCOMES**<br>On completion of the course, students will be able to |
|---|---|
| | |

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

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

**DEPARTMENT OF ELECTRICAL AND ELECTRONICS ENGINEERING**
Power Electronics and Simulation Lab

SYLLABUS FOR B.E. VI SEMESTER

| | | |
|---|---|---|
| L:T: P (Hrs/Week):0:0:2 | SEE Marks: 50 | Course Code:**U19PC621EE** |
| Credits: 1 | CIE Marks: 30 | Duration of SEE : 3 Hours |

| **COURSE OBJECTIVES** | **COURSE OUTCOMES**<br>On completion of the course, students will be able to |
|---|---|
| The objective of the power electronics and simulation lab is to provide an experience in working with power converters and enhance the analyzing capability by introducing simulation tools for power converters. | 1. Examine the characteristics of power electronicdevices.<br>2. Analyze thyristor controlled rectifiers.<br>3. Design of DC-DC converters.<br>4. Design of voltage source inverters.<br>5. Design of AC-AC converters. |

**List of experiments:**

1. I-V Characteristics of SCR, MOSFET andIGBT
2. Gate trigging circuits of thyristor: R, R – C and UJT triggering circuits.
3. Study of Voltage and current commutation techniques of thyristor.
4. Operation of 1 – Ø bridge rectifiers: Full converter and Semi-converter with R & R – Lloads
5. Design and operation of Buck converter.
6. Design and operation of Boost converter.
7. SPICE models of diode, thyristor, BJT, MOSFET and IGBT
8. PSPICE Simulation of single phase full-bridge thyristor rectifier with R-load and highly inductive load.

9. PSPICE Simulation of three phase full-bridge thyristor rectifier with R-load and highly inductive load.
10. PSPICE Simulation of single phase voltage source inverter with a PWM control.
11. PSPICE Simulation of three phase voltage source inverter.
12. MATLAB Simulation of Buck and Boost Converters.
13. Simulation of single phase cyclo converter.
14. Simulation of single phase AC voltage converter.

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

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

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

**DEPARTMENT OF ELECTRICAL AND ELECTRONICS ENGINEERING**
Control Systems and Simulation Lab

SYLLABUS FOR B.E. VI SEMESTER

| | | |
|---|---|---|
| L:T: P (Hrs/Week):0:0:2 | SEE Marks: 50 | Course Code:**U19PC631EE** |
| Credits: 1 | CIE Marks: 30 | Duration of SEE : 3 Hours |

| **COURSE OBJECTIVES** | **COURSE OUTCOMES**<br>On completion of the course, students will be able to |
|---|---|
| The objective of the lab is to provide an experience in working with various control system components and control systems for understanding analyzing them and also enhance the analyzing capability by introducing simulation tools for control systems. | 1. Demonstrate the characteristics of AC, DC servo motors, second order system and synchro pair.<br>2. Infer the effect of P,PI,PD and PID controllers on closed loop control system<br>3. Analyze AC and DC position control systems.<br>4. Design lead and lag compensators and obtain the frequency response characteristics. |

**LIST OF EXPERIMENTS:**

1. Characteristics of DC and AC Servo motors.
2. Characteristics of SynchroPair .
3. Frequency response of compensating networks.
4. Step response of second order system.
5. DC position control system.
6. AC position control system.
7. Closed loop PPI and PDI controller.
8. Step response and frequency response of a given plant.
9. Design of lag and lead compensation for the given plant.
10. ON/ OFF Temperature control system.
11. Temperature control system.

12. Level Control System.
13. Simulation of Root locus,Nyquist plot, Bode plot using Matlab/Simulink
14. Design of lead and lag compensators using MATLAB
15. Conversion of state to transfer function and transfer function state space using MATLAB
16. Time response of Second order system using MATLAB(Simulink)
17. Design of PID controller
18. Frequency response characteristics and relative stability analysis using MATLAB

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** | | | |

**OPEN ELECTIVES OFFERED BY VARIOUS DEPARTMENTS IN B.E. VI SEMESTER (2020-21)**

| Dept | Title | Code | credits |
|---|---|---|---|
| Civil | Project Management | U19OE610CE | 3 |
| CSE | Introduction To Databases | U19OE610CS | 3 |
| CSE | Introduction To Operating Systems | U19OE620CS | 3 |
| ECE | Internet Of Things And Applications | U19OE610EC | 3 |
| ECE | Introduction To Mobile Communications | U19OE620EC | 3 |
| IT | Introduction To Web Application Development | U19OE610IT | 3 |
| IT | Introduction To Machine Learning | U19OE620IT | 3 |
| Mech. | Additive Manufacturing And Its Applications | U19OE610ME | 3 |
| Mech. | Industrial Administration And Financial Management | U19OE620ME | 3 |
| H&SS | English For Competitive Examinations | U19OE610EH | 3 |

With effect from the Academic Year 2021-22

**VASAVI COLLEGE OF ENGINEERING (AUTONOMOUS)**

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

**DEPARTMENT OF CIVIL ENGINEERING**

PROJECT MANAGEMENT (Open Elective-IV)

SYLLABUS FOR B.E.VI-SEMESTER

| | | |
|---|---|---|
| L:T: P (Hrs/Week):3:0:0 | SEE Marks: 60 | Course Code:**U19OE610CE** |
| Credits: 3 | CIE Marks: 40 | Duration of SEE : 3 Hours |

| **COURSE OBJECTIVES**<br>The objectives of this course are to: | **COURSE OUTCOMES**<br>On completion of the course, students will be able to |
|---|---|
| 1. Learn the concept of project management along with functions and objectives.<br>2. Understand the various techniques used for project planning such as bar charts, CPM, PERT and crashing of networks.<br>3. Acquire knowledge on various types of contracts, tenders. | 1. Understand the objectives, functions and principles of management in projects.<br>2. Practice the network techniques like CPM and PERT for better planning and scheduling of engineering works.<br>3. Analyse the importance of cost and time in network analysis and planning the work accordingly.<br>4. Knowledge on Contracts, Tenders, and Work orders related to the projects.<br>5. Interpret the concept of Linear Programming and solve problems by Graphical and Simplex methods. |

**UNIT-I**

**Significance of Project Management**: Objectives and functions of project management, management team, principles of organization and types of organisation.

**UNIT-II**

**Project Planning:** Project Planning, bar charts, network techniques in project management - CPM Expected likely, pessimistic and optimistic time, normal distribution curve and network problems of PERT

**UNIT-III**

**Time Cost Analysis:** Cost time analysis in network planning, updating

**UNIT-IV**

**Contracts:** Introduction, types of contracts and their advantages and disadvantages, conditions of contracts, Introduction to Indian contract act.

**Tender:** Tender form, Tender Documents, Tender Notice, Work Order

**UNIT-V**

**Linear programming and optimization Techniques:** Introduction to optimization – Linear programming, Importance of optimization, Simple problems on formulation of LP, Graphical method, Simplex method.

**LearningResources:**

1. Srinath L.S., PERT and CPM: Principles and Application, East-West Press, 2001.
2. Peret, F, Construction Project Management an Integrated approach, Taylor and Francis, Taylor and Francis Group, London & New York, 2009
3. Punmia B.C., and Khandelwal, PERT and CPM, Laxmi Publications, 2006.
4. http://nptel.ac.in/courses/

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, Hyderbad-500031, Telangana State

**DEPARTMENT OF COMPUTER SCIENCE & ENGINEERING**

INTRODUCTION TO DATABASES (OPEN ELECTIVE-IV)

SYLLABUS FOR B.E. VI-SEMESTER
(COMMON FOR CIVIL, ECE, EEE & MECH)

| | | |
|---|---|---|
| L:T: P (Hrs/Week):3:0:0 | SEE Marks: 60 | Course Code:**U19OE610CS** |
| Credits: 3 | CIE Marks: 40 | Duration of SEE : 3 Hours |

| **COURSE OBJECTIVES** | **COURSE OUTCOMES**<br>On completion of the course, students will be able to |
|---|---|
| 1. Identify different issues involved in the design and implementation of a database system.<br><br>2. Understand transaction processing. | 1. Identify the functional components of database management system. Create conceptual data model using Entity Relationship Diagram<br><br>2. Transform a conceptual data model into a relational model<br><br>3.Design database using normalization techniques<br><br>4.Apply indexing and hashing techniques for effective data retrieval<br><br>5. Explain transaction processing. |

**UNIT-I**

**Introduction:** Database System Application, Purpose of Database Systems, View of Data, Database Languages, Relational Database, Database Architecture, Database Users and Administrators.

**Database Design and E-R Model:** Overview of the Design Process, the E-R Model, Constraints, E-R Diagrams.

**UNIT-II**

**Relational Model:** Structure of Relation Database, Relational Algebra Operations, Modification of the Database.

**Structured Query Language:** Introduction, Basic Structure of SQL Queries, Set Operations, Aggregate Functions, Null Values, Nested Sub queries, Views, Join Expressions.

**UNIT- III**

**Relational Database Design:** Features of Good Relational Designs, Atomic Domains and first Normal form, Decomposition Using Functional Dependencies, functional Dependency Theory.

**UNIT- IV**

**Indexing and Hashing: Basic** Concepts, Ordered Indices, B+ Tree Index Files, B-Tree Files, Multiple – Key Access, Static Hashing, Dynamic Hashing, Comparison of Ordered Indexing and Hashing.

**UNIT-V**

**Transaction Management:** Transaction concept, Storage Structure, Transaction Atomicity and Durability, Transaction Isolation and Atomicity, Serializability, Recoverability.

**Learning Resources:**

1. Abraham Silberschatz, Henry F Korth, Sudharshan S, Database System Concepts, 6th Edition(2011), McGraw-Hill International Edition.
2. Date CJ, Kannan A, Swamynathan S, An Introduction to Database System , 8th Edition(2006) Pearson Education.
3. Raghu Ramakrishna, and Johannes Gehrke, Database Management Systems, 3rd Edition(2003), McGraw Hill.
4. RamezElmasri, Durvasul VLN Somyazulu, Shamkant B Navathe, Shyam K Gupta, Fundamentals of Database Systems, 4th Edition(2006), Pearson Education.
5. Peter rob, Carlos coronel, Database Systems, (2007), Thomoson.
6. http://nptel.ac.in/courses/106106093/

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

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

**DEPARTMENT OF COMPUTER SCIENCE & ENGINEERING**
INTRODUCTION TO OPERATING SYSTEMS (OPEN ELECTIVE-IV)

SYLLABUS FOR B.E. VI-SEMESTER
(COMMON FOR CIVIL, ECE, EEE & MECH)

| | | |
|---|---|---|
| L:T: P (Hrs/Week):3:0:0 | SEE Marks: 60 | Course Code: **U19OE620CS** |
| Credits: 3 | CIE Marks: 40 | Duration of SEE : 3 Hours |

| **COURSE OBJECTIVES** | **COURSE OUTCOMES**<br>On completion of the course, students will be able to |
|---|---|
| 1. Understand different Operating system Structures and Services | 1. Compare CPU scheduling algorithms and Operating system structures<br>2. Apply different techniques for Main memory management.<br>3.Describe file management techniques.<br>4. Describe deadlock handling methods<br>5. Analyze Disk scheduling algorithms and I/O operation implementation techniques |

**UNIT- I:**
**Introduction to operating systems:** Definition, User view and System view of the Operating system, Operating system structure, Operating system services.
**Process**: Process concept, Process Control block, Context switching.
**CPU Scheduling:** Scheduling Criteria, Scheduling Algorithms: FCFS, SJF, Round Robin

**UNIT- II:**
**Memory Management**: Swapping, Contiguous memory allocation: Fixed Partitioning, Variable Partitioning. Non-Contiguous memory allocation: Paging.

**Virtual memory**: Demand paging, Page replacement Algorithms: FIFO, Optimal, LRU.

**UNIT –III:**

**File System Interface**: File Concept, Access Methods: Sequential, Indexed, and Direct

**File System Implementation**: File-System Structure, Allocation Methods: Contiguous, Linked and Indexed.

**UNIT –IV:**

**Deadlocks**: System model, deadlock characterization: Mutual Exclusion, Hold and Wait,
Non pre-emption, Circular wait. Deadlock Prevention, Deadlock Avoidance: Banker's algorithm.

**UNIT-V:**

**Device Management**: Disk Scheduling algorithms: FCFS, SSTF, SCAN.

**I/O System**: I/O hardware, Application I/O Interface.

**Learning Resources:**

1. Abraham Silberschatz, Peter B. Galvin, Greg Gagne, *Operating System Concepts*, 9th Edition (2016), Wiley India.
2. Andrew S. Tanenbaum, *Modern Operating Systems*, 2nd Edition (2001), Pearson Education, Asia.
3. Dhananjay, Dhamdhere.M, *Operating System-concept based approach*, 3rd edition (2009), Tata McGraw Hill, Asia
4. Robet Love: *Linux Kernel Development*, (2004 )Pearson Education
5. Richard Stevens, Stephen Rago, *Advanced Programming in the UNIX Environment*, 3rd Edition(2013), Pearson Education
6. http://web.stanford.edu/~ouster/cgi-bin/cs140-spring19/index.php

https://nptel.ac.in/courses/106106144/

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, Hyderbad-500031, Telangana State

**DEPARTMENT OF ELECTRONICS AND COMMUNICATION ENGINEERING**

Internet of Things and Applications (OPEN ELECTIVE – IV)

SYLLABUS FOR B.E.VI-SEMESTER (for other branches)

| | | |
|---|---|---|
| L:T: P (Hrs/Week):3:0:0 | SEE Marks: 60 | Course Code:**U19OE610EC** |
| Credits: 3 | CIE Marks: 40 | Duration of SEE : 3 Hours |

| **COURSE OBJECTIVES** | **COURSE OUTCOMES**<br>On completion of the course, students will be able to |
|---|---|
| 1. The purpose of this course is to impart knowledge on IoT Architecture, practical constrains.<br>2. To study various protocols And to study their implementations | 1. Understand the Architectural Overview of IoT<br>2. Enumerate the need and the challenges in Real World Design Constraints<br>3. Compare various IoT Protocols.<br>4. Build basic IoT applications using Raspberry Pi.<br>5. Understand IoT usage in various applications. |

**UNIT - I : OVERVIEW**

Introduction to IoT – Improving Quality of life.

IoT-An Architectural Overview, M2M and IoT Technology Fundamentals-Devices and gateways, Local and wide area networking, Data management, Business processes in IoT.

**UNIT - II :Real-World Design Constraints**

Real-World Design Constraints- Introduction, Technical Design constraints-hardware is popular again, Data representation and visualization, Interaction and remote control. Power Management in IoT device, Power conditioning using energy harvesting.

**UNIT - III : IOT PROTOCOLS**

Introduction to MQTT, Quality of services in MQTT,standards and security in MQTT.

Introduction and implementation of AMQP, Implementation of CoAP and MDNS.

**UNIT - IV : Device for IoT**

Choice of Microcontroller, Introduction to Raspberry Pi ,Features of Pi, Programming platform, Phython programming for Pi. Building basic IoT Applications using Raspberry Pi.

**UNIT - V : IoT case studies**

Smart Cities and Smart Homes, Connected Vehicles, Agriculture, Healthcare, Activity Monitoring.

**Learning Resources:**

1. Jan Holler, VlasiosTsiatsis, Catherine Mulligan, Stefan Avesand, StamatisKarnouskos, David Boyle, "From Machine-to-Machine to the Internet of Things: Introduction to a New Age of Intelligence", 1 st Edition, Academic Press, 2014.
2. Peter Waher, "Learning Internet of Things", PACKT publishing, BIRMINGHAM – MUMBAI
3. Bernd Scholz-Reiter, Florian Michahelles, "Architecting the Internet of Things", ISBN 978-3-642-19156-5 e-ISBN 978-3-642-19157-2, Springer
4. Daniel Minoli, "Building the Internet of Things with IPv6 and MIPv6: The Evolving World of M2M Communications", ISBN: 978-1-118- 47347-4, Willy Publications
5. https://nptel.ac.in/courses/106105166/5
6. https://nptel.ac.in/courses/108108098/4

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

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

**DEPARTMENT OF ELECTRONICS AND COMMUNICATION ENGINEERING**
Introduction to Mobile Communications (OPEN ELECTIVE - IV)

SYLLABUS FOR B.E. VI - SEMESTER (for other branches)

| | | |
|---|---|---|
| L:T: P (Hrs/Week):3:0:0 | SEE Marks: 60 | Course Code:**U19OE620EC** |
| Credits: 3 | CIE Marks: 40 | Duration of SEE : 3 Hours |

| **COURSE OBJECTIVES** | **COURSE OUTCOMES**<br>On completion of the course, students will be able to |
|---|---|
| 1. To understand the technology trends changing from generation to generation.<br>2. To have an insight into the various propagation models and the effects of fading.<br>3. To understand the multiple access techniques and Mobile communication system specifications. | 1. Analyze various methodologies to improve the cellular capacity.<br>2. Identify various Propagation effects.<br>3. Identify the effects of fading and multi path propagation.<br>4. Categorize various multiple access techniques for Mobile Communications.<br>5. Analyze the specifications of GSM based Mobile Communication Systems. |

**UNIT - I:**

**Introduction to Wireless Communication Systems**: Evolution of Mobile Radio Communications, Examples of Wireless Communications Systems, Trends in Cellular Radio and Personal Communication Systems.

**The Cellular Concept – System Design Fundamentals:** Introduction, Frequency Reuse, Channel Assignment Strategies, Handoff Strategies, Interference and System Capacity, Improving Coverage and Capacity in Cellular Systems.

**UNIT - II:**

**Mobile Radio Propagation - Large Scale Path Loss:** Introduction to Radio wave Propagation, Free Space Propagation Model, Reflection, Ground Reflection (Two-Ray) Model, Diffraction, Scattering.

**UNIT - III:**

**Mobile Radio Propagation - Small Scale Fading and Multipath:** Small Scale Multipath Propagation, Small – Scale Multipath Measurements, Parameters of Mobile Multipath Channels, Types of Small-Scale Fading, Rayleigh and Ricean Distributions.

**UNIT -IV:**

**Multiple Access Techniques for Wireless Communications:** Introduction, Frequency Division Multiple Access (FDMA), Time Division Multiple Access (TDMA), Code Division Multiple Access (CDMA), Space Division Multiple Access (SDMA).

**UNIT -V:**

**Wireless Systems and Standards:** Global System for Mobile (GSM) – Services and features, System architecture, GSM Radio subsystem, channel types, Frame structure for GSM.

**Learning Resources:**

1. Theodore S. Rappaport, Wireless Communications Principles and Practices, 2nd edition, Pearson Education.
2. David Tse, Pramodh Viswanath, Fundamentals of Wireless Communication, 2005, Cambridge University Press.
3. Name of the course: Introduction to Wireless and Cellular Communications
4. Course url: https://swayam.gov.in/nd1_noc19_ee48/preview

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, Hyderbad-500031, Telangana State

**DEPARTMENT OF INFORMATION TECHNOLOGY**

INTRODUCTION TO WEB APPLICATION DEVELOPMENT (OPEN ELECTIVE-V)

SYLLABUS FOR B.E.VI-SEMESTER (Common for CIVIL, ECE, EEE & MECH)

| | | |
|---|---|---|
| L:T: P (Hrs/Week):3:0:0 | SEE Marks: 60 | Course Code:**U19OE610IT** |
| Credits: 3 | CIE Marks: 40 | Duration of SEE : 3 Hours |

| **COURSE OBJECTIVES**<br>The objectives of this course are to: | **COURSE OUTCOMES**<br>On completion of the course, students will be able to |
|---|---|
| Acquire basic skills for designing static and dynamic Web Applications using HTML, CSS , Java script and PHP. | 1. Design a static web pages using HTML, CSS.<br>2. Use JavaScript for creating dynamic web pages and client side validation.<br>3. Use built-in functions of PHP to perform server side validations and sending emails.<br>4. Use built-in functions of PHP to connect , query and fetch results from a database.<br>5. Build a PHP application using an MVC Framework. |

**UNIT-I: Introduction**

Introduction: World Wide Web, Web Browsers, Web Servers, URL, HTTP, TCP Port. HTML: Standard HTML document structure, Basic Tags, Images, Hypertext Links, Lists, Tables, Frames. CSS: In-line style sheets, Internal Style sheets and External Style sheets.

**UNIT-II: Basics of JavaScript**

JavaScript: Introduction, Basics of JavaScript-variables, data types and operators, Control Structures, Arrays, Functions, HTML Forms, Events and event handling.

**UNIT-III: Basics of PHP**

Basics of PHP: Data Types, Variables and Operators, Control Structures: If else, Switch Case. Loop: For, ForEach, While, Do While. Functions in PHP, PHP Forms, Cookies & Sessions, File Processing.

**UNIT-IV: Advanced PHP**

**Advanced PHP: PHP E-Mail,** Filters, Database Access, OOPS in PHP. Application using PHP.

**UNIT-V: Introduction to MVC**

Introduction to Model View Controller Architecture, Building Application using a PHP Framework, Testing and Deploying a PHP application.

**Learning Resources:**

1. "Web Technologies", 7th Edition, UttamK.Roy,2012.
2. "Internet & World Wide Web How to Program", 5/e, Paul J. Deitel, Harvey M. Deitel, Abbey Deitel,2012.

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

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

**DEPARTMENT OF INFORMATION TECHNOLOGY**

INTRODUCTION TO MACHINE LEARNING (OPEN ELECTIVE-V)
SYLLABUS FOR B.E VI- SEMESTER (Common for CIVIL, ECE, EEE & MECH)

| | | |
|---|---|---|
| L:T: P (Hrs/Week):3:0:0 | SEE Marks: 60 | Course Code:**U19OE620IT** |
| Credits: 3 | CIE Marks: 40 | Duration of SEE : 3 Hours |

| **COURSE OBJECTIVES**<br>The objectives of this course are to: | **COURSE OUTCOMES**<br>On completion of the course, students will be able to |
|---|---|
| Introduce the fundamental concepts and approaches in Artificial intelligence and Machine Learning field to effectively apply techniques to the real-world problems. | 1. Demonstrate knowledge of the Artificial intelligence and machine learning literature.<br>2. Apply an appropriate algorithm for a given problem.<br>3. Apply machine learning techniques in the design of computer systems.<br>4. Prove basic results in the theory of learning<br>5. Explain the relative strengths and weaknesses of different machine learning methods and approaches. |

**UNIT- I:**
**Introduction to AIML:** Foundations of AI, Sub areas of AI, Applications. Introduction to learning, Types of Learning: Supervised Learning, Unsupervised Learning, Reinforcement Learning.
**Supervised learning:** Linear Regression, Logistic Regression.

**UNIT- II:**
**Supervised Non-parametric learning:** Introduction to Decision Trees, K-Nearest Neighbor, Feature Selection.
**Supervised Parametric learning:** Support Vector Machine, Kernel function and Kernel SVM.

**UNIT- III:**

**Supervised Parametric learning (Neural networks):** Perceptron, Multilayer Neural Network, Backpropagation.

**UNIT- IV:**

**Supervised Parametric Bayesian learning:** Introduction, Naive Bayes Classification, Bayesian Network.

**UNIT-V:**

**Unsupervised leaning:** Clustering, K-means Clustering, DBSCAN

**Learning Resources:**

1. Tom Mitchell, Machine Learning, First Edition, McGraw-Hill, 1997
2. Christopher Bishop. Pattern Recognition and Machine Learning. Second Edition.
3. EthemAlpaydin , Introduction to Machine Learning, Second Edition
4. T. Hastie, R. Tibshirani, J. Friedman. The Elements of Statistical Learning, 2e, 2008.
5. http://nptel.ac.in/courses/106106139/

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, Hyderbad-500031, Telangana State

**DEPARTMENT OF MECHANICAL ENGINEERING**

Additive Manufacturing and its Applications (Open Elective-IV)

SYLLABUS FOR B.E.VI-SEMESTER

| | | |
|---|---|---|
| L:T: P (Hrs/Week):3:0:0 | SEE Marks: 60 | Course Code:**U19OE610ME** |
| Credits: 3 | CIE Marks: 40 | Duration of SEE : 3 Hours |

| **COURSE OBJECTIVES**<br>The objectives of this course are to: | **COURSE OUTCOMES**<br>On completion of the course, students will be able to |
|---|---|
| understand the fundamentals of various additive manufacturing technologies and their applications in Engineering Industry. | 1. understand the fundamentals of prototyping.<br>2. study the principle, process, advantages and limitations of liquid based AM systems.<br>3. study the principle, process, advantages and limitations of solid based AM systems.<br>4. study the principle, process, advantages and limitations of powder based AM systems.<br>5. study the applications of AMT in various engineering industries. |

**UNIT-I**

Introduction, Prototyping fundamentals, Historical development, Fundamentals of rapid prototyping, Advantages of Rapid prototyping, Commonly used terms, Rapid prototyping process chain, 3D modelling, Data Conversion, and transmission, Checking and preparing, Building, Post processing, AM data formats, Classification of AM process

**UNIT-II**

Liquid based AM systems: Stereo lithography Apparatus(SLA): Models and specifications, Process, Working principle, photopolymers, Photo polymerisation, Layering technology, laser and laser scanning, Applications, Advantages and disadvantages, Case studies

Solid ground curing(SGC): Models and specifications, Process, Working principle, Applications, Advantages and disadvantages, Case studies

**UNIT- III**

Solid based AM systems: Laminated object manufacturing(LOM): Models and specifications, Process, Working principle, Applications, Advantages and disadvantages, Case studies.

Fused Deposition Modeling (FDM): Models and specifications, Process, Working principle, Applications, Advantages and disadvantages, Case studies.

**UNIT- IV**

Powder based AM systems: Selective laser sintering(SLS): Models and specifications, Process, Working principle, Applications, Advantages and disadvantages, Case studies.

Three dimensional printing (3DP): Models and specifications, Process, Working principle, Applications, Advantages and disadvantages, Case studies.

**UNIT-V**

Applications of AM systems: Applications in aerospace industry, automotive industry, jewellery industry, coin industry, GIS Application, arts and architecture.

RP medical and bio engineering Application: planning and simulation of complex surgery, customized implant and prosthesis , design and production of medical devices, forensic science and anthropology, visualization of bio-molecules.

**Learning Resources:**

1. Chua C.K., Leong K.F. abd LIM C.S., "World Rapid prototyping : Principles and Applications", 2nd Editon, Scientific Publications, 2004
2. D.T.Pham and S.S.Dimov, "Rapid Manufacturing", Springer, 2001.
3. AmithabaGhose, "Rapid prototyping", Eastern Law House, 1997.
4. Paul F.Jacobs, "Stereolithography and other RP & M Technologies", ASME Press, 1996.
5. Paul F.Jacobs, "Rapid Prototyping & Manufacturing", ASME Press, 1996.

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, Hyderbad-500031, Telangana State

**DEPARTMENT OF MECHANICAL ENGINEERING**

Industrial Administration and Financial Management (Open Elective-IV)

SYLLABUS FOR B.E.VI-SEMESTER

| | | |
|---|---|---|
| L:T: P (Hrs/Week):3:0:0 | SEE Marks: 60 | Course Code:**U19OE620ME** |
| Credits: 3 | CIE Marks: 40 | Duration of SEE : 3 Hours |

| **COURSE OBJECTIVES**<br>The objectives of this course are to: | **COURSE OUTCOMES**<br>On completion of the course, students will be able to |
|---|---|
| 1. aware about types of business forms, organization structures, plant layouts, merits, demerits and applications.<br>2. understand method study procedure, PME, time study techniques and wage incentives.<br>3. importance of PPC and improving quality by control charts and sampling plants.<br>4. optimization of inventory to minimize total cost and other optimization techniques like LPP, project management techniques.<br>5. estimate selling price of a product, TVM and budgeting techniques, depreciation methods. | 1. understand business forms, organization structures and plant layouts.<br>2. implementation of method study and estimation of standard time.<br>3. understand types of production, functions of PPC, quality control by charts and sampling.<br>4. implement optimization techniques like LPP, assignment and project management techniques.<br>5. understand BEA, estimation of depreciation, selling price of a product and capital budgeting techniques. |

**UNIT – I**

Industrial Organization : Types of various business organisations. Organisation structures and their relative merits and demerits. Functions of management.

Plant location and layouts: Factors affecting the location of plant and layout. Types of layouts and their merits and demerits.

**UNIT – II**

Work study: Definitions, Objectives of method study and time study. Steps in conducting method study. Symbols and charts used in method study. Principles of motion economy. Calculation of standard time– by– time study and work sampling. Performance rating factor. Types of ratings. Jobs evaluation and performance appraisal. Wages, incentives, bonus, wage payment plans.

**UNIT – III**

Inspection and quality control: Types and objectives of inspection S.Q.C., its principles quality control by chart and sampling plans. Quality circles, introduction to ISO.

Production planning and control: Types of manufacture. Types of production. Principles of PPC and its function. Production control charts.

**UNIT – IV**

Optimisation: Introduction to linear programming and graphical solutions. Assignment problems.

Project Management: Introduction to CPM and PERT. Determination of critical path.

Material Management: Classification of materials. Materials planning. Duties of purchase manager. Determination of economic order quantities. Types of materials purchase.

**UNIT – V**

Cost accounting: elements of cost. Various costs. Types of overheads. Break even analysis and its applications. Depreciation. Methods of calculating depreciation fund. Nature of financial management. Time value of money. Techniques of capital budgeting and methods. Cost of capital. financial leverage.

**Learning Resources:**

1. Pandey I.M., "Elements of Financial Management", Vikas Publ. House, New Delhi, 1994
2. Khanna O.P., "Industrial Engineering and Management", Dhanapat Rai & Sons.
3. Everrete E Admaa& Ronald J Ebert , "production and Operations Management", 5th Ed. , PHI , 2005

4. S N Chary, "Production and Operations Management", 3rdEd. , Tata McGraw Hill, , 2006
5. Pannerselvam, "production and Operations Management", Pearson Education, 2007

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)**

IBRAHIMBAGH, HYDERABAD – 500 031

**DEPARTMENT OF HUMANITIES AND SOCIAL SCIENCES**

(OPEN ELECTIVE) - B.E 3/4 -VI SEMESTER

**ENGLISH FOR COMPETITIVE EXAMINATIONS**

(Common to all branches)

| | | |
|---|---|---|
| L: T: P (Hrs/Week): 3:0:0 | SEE Marks: 60 | Course Code: U19OE610EH |
| Credits: 3 | CIE Marks: 40 | Duration of SEE: Hours: 3 |

| COURSE OBJECTIVES | COURSE OUTCOMES |
|---|---|
| **The course will enable the students to:** | **On completion of the course, students will be able to:** |
| ➢ To familiarise the students to various types of competitive examinations. | ➢ The student will be able to solve various types of questions in competitive English examinations effectively. |
| ➢ To practice questions and prepare for GATE, GRE, CAT, TOEFL. | ➢ Provide logical conclusions for the questions on aptitude and reasoning within the stipulated time. |

**GATE :**

- Concentrating on English grammar
- Recognizing suitable option in sentence completion
- Solving verbal analogies
- Categorizing word groups
- Ignoring distractions in critical reasoning questions
- Providing reasoning in verbal deduction

**GRE :**

**VERBAL REASONING:**

- Analysing and drawing add value to incomplete data; identify the perception of the author
- Identifying vital points and differentiating between relevant and irrelevant points
- Understanding and summarising the structure of a text
- Understanding the given words, sentences and entire texts; ability to focus on the meaning of the entire sentence
- Understanding relationships among words and concepts

**ANALYTICAL WRITING:**

- Articulating complex ideas effectively and with clarity
- Supporting ideas with relevant reasons and examples
- Examining claims and accompanying evidence
- Sustaining a well-focused, coherent discussion

**CAT :**

**VERBAL ABILITY AND READING COMPREHENSION:**

- Reading comprehension (antonyms/synonyms)
- Sentence correction
- Fill in the blanks & cloze passage
- Jumbled sentences
- Jumbled paragraph (word meaning based questions)
- Analogies
- Para odd one out
- Summary (facts, assumptions, judgements
- Verbal reasoning (paragraph formation)

**TOEFL:**

- Basic understanding, speed and accuracy, learning from reading, pronoun reference, author's point of view.
- Good delivery including clarity of speech, fluidity, natural pacing and correct intonation patterns.

- Correct use of language showing a good grasp of grammar, vocabulary and speech structures.
- Topic development in which you are able to show a well-structured. organized response that effectively connects ideas with enough support for each point you are making.
- Writing strategy and format execution skills.

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), 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<br>V SEMESTER CCA ACTIVITY (PAPER PRESENTATIONS) |
| 9 | 07-09-2021 | TUE | -- |
| 10 | 08-09-2021 | WED | -- |
| 11 | 09-09-2021 | THU | -- |
| 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<br>V – SEMESTER ECA ACTIVITY |
| 21 | 19-09-2021 | SUN | **PUBLIC HOLIDAY** |
| 22 | 20-09-2021 | MON | Commencement of Class work --> BE III SEMESTER<br>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<br>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)<br>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<br>V SEMESTER CCA ACTIVITY (PAPER PRESENTATIONS) |
| 37 | 05-10-2021 | TUE | -- |
| 38 | 06-10-2021 | WED | **BATHUKAMMA STARTING DAY** |
| 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 |

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| | | | 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 |
| 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 |

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| 60 | 28-10-2021 | THU | I-Internal Test: BE V & VII SEMESTER<br>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<br>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<br>V – SEMESTER ECA ACTIVITY |
| 70 | 07-11-2021 | SUN | **PUBLIC HOLIDAY** |
| 71 | 08-11-2021 | MON | I-Internal Test: BE III SEMESTER<br>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 |

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| 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<br>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<br>V – SEMESTER ECA ACTIVITY<br>III – SEMESTER ECA ACTIVITY |
| 84 | 21-11-2021 | SUN | **PUBLIC HOLIDAY** |
| 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) |

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| 89 | 26-11-2021 | FRI | -- |
| 90 | 27-11-2021 | SAT | I-Internal Test: ME III SEMESTER<br>V – SEMESTER ECA ACTIVITY<br>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<br>III – SEMESTER ECA ACTIVITY |
| 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) |

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| 103 | 10-12-2021 | FRI | -- |
| 104 | 11-12-2021 | SAT | V – SEMESTER ECA ACTIVITY<br>III – SEMESTER ECA ACTIVITY |
| 105 | 12-12-2021 | SUN | **PUBLIC HOLIDAY** |
| 106 | 13-12-2021 | MON | V SEMESTER CCA ACTIVITY (PAPER PRESENTATIONS)<br>**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)<br>**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 |

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| 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<br>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) |
| 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 |

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| | | | 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<br>(PREPARATION HOLIDAYS & PRACTICAL EXAMS(BE V & VII SEMESTER) |
| 129 | 05-01-2022 | WED | II-Internal Test : BE III SEMESTER<br>(PREPARATION HOLIDAYS & PRACTICAL EXAMS(BE V & VII SEMESTER) |
| 130 | 06-01-2022 | THU | II-Internal Test : BE III SEMESTER<br>(PREPARATION HOLIDAYS & PRACTICAL EXAMS(BE V & VII SEMESTER) |
| 131 | 07-01-2022 | FRI | II-Internal Test : BE III SEMESTER<br>(PREPARATION HOLIDAYS & PRACTICAL EXAMS(BE V & VII SEMESTER) |
| 132 | 08-01-2022 | SAT | II-Internal Test : BE III SEMESTER--**> Last date of instruction**<br>(PREPARATION HOLIDAYS & PRACTICAL EXAMS(BE V & VII SEMESTER) |
| 133 | 09-01-2022 | SUN | **PUBLIC HOLIDAY** |

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| 134 | 10-01-2022 | MON | PREPARATION HOLIDAYS & PRACTICAL EXAMS (BE III SEMESTER)<br>Conduct of SEE Theory (BE V & VII SEMESTERS) |
| 135 | 11-01-2022 | TUE | PREPARATION HOLIDAYS & PRACTICAL EXAMS (BE III SEMESTER)<br>Conduct of SEE Theory (BE V & VII SEMESTERS) |
| 136 | 12-01-2022 | WED | PREPARATION HOLIDAYS & PRACTICAL EXAMS (BE III SEMESTER)<br>Conduct of SEE Theory (BE V & VII SEMESTERS) |
| 137 | 13-01-2022 | THU | PREPARATION HOLIDAYS & PRACTICAL EXAMS (BE III SEMESTER)<br>Conduct of SEE Theory (BE V & VII SEMESTERS) |
| 138 | 14-01-2022 | FRI | PREPARATION HOLIDAYS & PRACTICAL EXAMS (BE III SEMESTER)<br>Conduct of SEE Theory (BE V & VII SEMESTERS) |
| 139 | 15-01-2022 | SAT | PREPARATION HOLIDAYS & PRACTICAL EXAMS (BE III SEMESTER)<br>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)<br>Project Seminar (Presentation & Evaluation) ME III-SEMESTER<br>Conduct of SEE Theory (BE V & VII SEMESTERS) |
| 142 | 18-01-2022 | TUE | PREPARATION HOLIDAYS & PRACTICAL EXAMS (BE III SEMESTER)<br>Project Seminar (Presentation & Evaluation) ME III-SEMESTER<br>Conduct of SEE Theory (BE V & VII SEMESTERS) |
| 143 | 19-01-2022 | WED | PREPARATION HOLIDAYS & PRACTICAL EXAMS (BE III SEMESTER) |

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| | | | Project Seminar (Presentation & Evaluation) ME III-SEMESTER |
| 144 | 20-01-2022 | THU | PREPARATION HOLIDAYS & PRACTICAL EXAMS (BE III SEMESTER)<br>Project Seminar (Presentation & Evaluation) ME III-SEMESTER<br>Conduct of SEE Theory (BE V & VII SEMESTERS) |
| 145 | 21-01-2022 | FRI | PREPARATION HOLIDAYS & PRACTICAL EXAMS (BE III SEMESTER)<br>Conduct of SEE Theory (BE V & VII SEMESTERS) |
| 146 | 22-01-2022 | SAT | PREPARATION HOLIDAYS & PRACTICAL EXAMS (BE III SEMESTER)<br>II-Internal Test: ME III SEMESTER--→ last date of instruction<br>ME III Semester Last date of Instructions<br>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)<br>Conduct of SEE Theory (BE V & VII SEMESTERS) |
| 149 | 25-01-2022 | TUE | Conduct of SEE Theory (BE III SEMESTER)<br>Conduct of SEE Theory (BE V & VII SEMESTERS) |
| 150 | 26-01-2022 | WED | Conduct of SEE Theory (BE III SEMESTER)<br>Conduct of SEE Theory (BE V & VII SEMESTERS) |
| 151 | 27-01-2022 | THU | Conduct of SEE Theory (BE III SEMESTER)<br>Conduct of SEE Theory (BE V & VII SEMESTERS) |
| 152 | 28-01-2022 | FRI | Conduct of SEE Theory (BE III SEMESTER) |

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| | | | Conduct of SEE Theory (BE V & VII SEMESTERS) |
| 153 | 29-01-2022 | SAT | Conduct of SEE Theory (BE III SEMESTER)<br>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)<br>ME III Semester Theory exams<br>Conduct of SEE Theory (BE V & VII SEMESTERS) |
| **February, 2022** | | | |
| 156 | 01-02-2022 | TUE | Conduct of SEE Theory (BE III SEMESTER)<br>ME III Semester Theory exams<br>Conduct of SEE Theory (BE V & VII SEMESTERS) |
| 157 | 02-02-2022 | WED | Conduct of SEE Theory (BE III SEMESTER)<br>ME III Semester Theory exams<br>Conduct of SEE Theory (BE V & VII SEMESTERS) |
| 158 | 03-02-2022 | THU | Conduct of SEE Theory (BE III SEMESTER)<br>Conduct of SEE Theory (BE V & VII SEMESTERS) |
| 159 | 04-02-2022 | FRI | Conduct of SEE Theory (BE III SEMESTER)<br>Conduct of SEE Theory (BE V & VII SEMESTERS) |
| 160 | 05-02-2022 | SAT | Conduct of SEE Theory (BE III SEMESTER)<br>ME III Semester Declaration of Results |

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| | | | 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)<br>(Course Registration by Students--> BE IV, VI & VIII SEMESTERS)<br>Course Registration by Students--> ME IV SEMESTER<br>Conduct of SEE Theory (BE V & VII SEMESTERS) |
| 163 | 08-02-2022 | TUE | Conduct of SEE Theory (BE III SEMESTER)<br>(Course Registration by Students--> BE IV, VI & VIII SEMESTERS)<br>Conduct of SEE Theory (BE V & VII SEMESTERS) |
| 164 | 09-02-2022 | WED | Conduct of SEE Theory (BE III SEMESTER)<br>(Course Registration by Students--> BE IV, VI & VIII SEMESTERS)<br>Conduct of SEE Theory (BE V & VII SEMESTERS) |
| 165 | 10-02-2022 | THU | Conduct of SEE Theory (BE III SEMESTER)<br>(Course Registration by Students--> BE IV, VI & VIII SEMESTERS)<br>Conduct of SEE Theory (BE V & VII SEMESTERS) |
| 166 | 11-02-2022 | FRI | Conduct of SEE Theory (BE III SEMESTER)<br>(Course Registration by Students--> BE IV, VI & VIII SEMESTERS)<br>Conduct of SEE Theory (BE V & VII SEMESTERS) |
| 167 | 12-02-2022 | SAT | Conduct of SEE Theory (BE III SEMESTER)<br>Conduct of SEE Theory (BE V & VII SEMESTERS) |

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| 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 | -- |
| 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 | -- |

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| 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 | -- |
| 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 | -- |

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| 207 | 24-03-2022 | THU | -- |
| 208 | 25-03-2022 | FRI | -- |
| 209 | 26-03-2022 | SAT | -- |
| 210 | 27-03-2022 | SUN | **PUBLIC HOLIDAY** |
| 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 | -- |

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| 226 | 12-04-2022 | TUE | -- |
| 227 | 13-04-2022 | WED | -- |
| 228 | 14-04-2022 | THU | -- |
| 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** | | | |

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| 245 | 01-05-2022 | SUN | **PUBLIC HOLIDAY** |
| 246 | 02-05-2022 | MON | -- |
| 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 | -- |

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| 265 | 21-05-2022 | SAT | -- |
| 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)<br>ME IV Semester Pre-submission Viva Voce Examination |
| 283 | 08-06-2022 | WED | PREPARATION HOLIDAYS & CONDUCT OF LAB SEE (BE IV, VI & VIII SEMESTER)<br>ME IV Semester Pre-submission Viva Voce Examination |
| 284 | 09-06-2022 | THU | PREPARATION HOLIDAYS & CONDUCT OF LAB SEE (BE IV, VI & VIII SEMESTER)<br>ME IV Semester Pre-submission Viva Voce Examination |
| 285 | 10-06-2022 | FRI | PREPARATION HOLIDAYS & CONDUCT OF LAB SEE (BE IV, VI & VIII SEMESTER)<br>ME IV Semester Pre-submission Viva Voce Examination |
| 286 | 11-06-2022 | SAT | PREPARATION HOLIDAYS & CONDUCT OF LAB SEE (BE IV, VI & VIII SEMESTER)<br>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) |
| 289 | 14-06-2022 | TUE | PREPARATION HOLIDAYS & CONDUCT OF LAB SEE (BE IV, VI & VIII |

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|---|---|---|---|
| | | | 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) |
| 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) |

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| 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)<br>**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)<br>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 | -- |
| 318 | 13-07-2022 | WED | -- |
| 319 | 14-07-2022 | THU | -- |
| 320 | 15-07-2022 | FRI | -- |

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| 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<br>**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 |