

LESSON PLAN

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|----------------------|--|
| Program Name | Computer Engineering |
| Subject Name | Fundamentals of Electrical & electronics Engineering |
| Subject Code | ES-104 |
| Semester | 2 nd |
| Subject Teacher Name | Sarmistha Kumari / Rajinder Singh |

Evaluation Scheme

| Sr. No. | Subject Name | Study scheme (Hrs/Week) | | Marks in Evaluation Scheme | | | | | |
|-----------------|--|--|----|----------------------------|----|-------|---------------------|----|-------|
| | | | | Internal Assessment | | | External Assessment | | |
| | | Th | Pr | Th | Pr | Total | Th | Pr | Total |
| 1. | Fundamentals of Electrical & electronics Engineering | 4 | 4 | 40 | 40 | 80 | 60 | 60 | 120 |
| Reference Books | | (i) A text book of Applied Electronics by RS Sedha, S.Chand (ii) Basic Electrical Engineering by VN Mittle & Arvind Mittal, McGrawEducation | | | | | | | |

Course Outcomes (COs)


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|--------|--|
| CO – 1 | To understand different elements and concepts of electrical engineering field |
| CO – 2 | To understand basic function of various active and passive electronic components, signal, Op-Amp |
| CO – 3 | To understand basic components of Digital Electronics. |

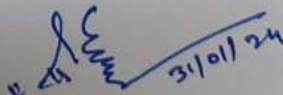
Teaching Plan

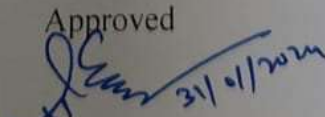
| Unit No. | Name of Topic | Proposed Date | Actual Date | Remarks |
|----------|--|--|-------------|---------|
| 1 | Active and passive components and their applications. | 29/01/2024 | | |
| | Signals and their types | 01/02/2024 03/02/2024 | | |
| | Ideal/ non-ideal voltage current source, dependent/independent current source. | 05/02/2024 07/02/2024 08/02/2024 | | |
| | Doubt clearing session | 12/02/2024 14/02/2024 | | |
| | Operational amplifier-ideal Op-Amp, practical Op-Amp | 15/02/2024 17/02/2024 | | |
| 2 | Open loop and closed loop configuration | 19/02/2024 21/02/2024 | | |
| | Application of Op-Amp as amplifier, adder, Differentiator and Integrator | 22/02/2024 26/02/2024 | | |
| | Doubt clearing session | 28/02/2024 | | |
| | | | | |



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|----|--|----------------|------------|--|--|--|
| 9 | Connect capacitor in series and parallel on bread board and measure its value using multimeter. | 29/03/2024 | 01/04/2024 | | | |
| 10 | Identify various active components given in the circuit. Use multimeter to measure the value of given resistor | 05/04/2024 | 08/04/2024 | | | |
| 11 | Use LCR-Q tester to measure the value of given capacitor Determine the value of given resistor using digital multimeter to confirm with color code. | 12/04/2024 | 22/04/2024 | | | |
| 12 | Test the PN junction diode using digital multimeter. Test the performance of PN-junction diode. | 1 9/04/2024 | 29/04/2024 | | | |
| 13 | Test the performance of Zener diode. Test the performance of LED Identify three terminals of transistors using digital multimeter. | 26/04/2024 | 06/05/2024 | | | |
| 14 | Test the performance of NPN transistors Determine the current gain of CE transistor configuration | 03/05/2024 | 20/05/2024 | | | |
| 15 | Test the performance of transistor switch circuit | 10/05/2024 | - | | | |
| 16 | Test Op-Amp as amplifier and integrator. | 24/05/2024 | - | | | |


(Signature of Teacher)


(Signature of HOD)

Approved

Principal

Govt. Polytechnic for Women Rehan

Assignments

| Assignment No | Contents of Syllabus Covered | Proposed Date | Actual Date | Remarks |
|---------------|------------------------------|---------------|-------------|---------|
| A-1 | Unit-1 and Unit-2 | 28/02/2024 | | |
| A-2 | Unit-3 and Unit-4 | 10/04/2024 | | |
| A-3 | Unit-5, Unit-6 | 20/05/2024 | | |

House Test/Class Test

| Name of test | Syllabus for Tests | Proposed Date | Actual Date | Remarks |
|----------------|---|--------------------------------|-------------|---------|
| Class Test -1 | Unit-1 and Unit-2 | As per HPTSB Academic Schedule | | |
| Class Test -2 | Unit-3 and Unit-4 | | | |
| House Test - 1 | Unit-1, Unit-2, Unit-3, Unit-4 and Unit-5 | | | |

Lab Plan

| Sr. No. | Name of Practical | Proposed Date | | Actual Date | | Remarks |
|---------|--|---------------|------------|-------------|----|---------|
| | | G1 | G2 | G1 | G2 | |
| 1 | Determine the permeability of magnetic material by plotting its BH curve. | 02/02/2024 | 29/01/2024 | | | |
| 2 | Measure voltage current and power in 1 phase circuit with resistive load. | 09/02/2024 | 05/02/2024 | | | |
| 3 | Measure voltage current and power in RL circuit | 16/02/2024 | 12/02/2024 | | | |
| 4 | Determine the transformation ratio (K) of 1 phase transformer | 23/02/2024 | 19/02/2024 | | | |
| 5 | Connect single phase transformer and measure input and output quantity | 01/03/2024 | 26/02/2024 | | | |
| 6 | Make star and delta connection in induction motor starter and measure the line and phase value. | 08/03/2024 | 04/03/2024 | | | |
| 7 | Identify various passive electronic components in the given circuit. | 15/03/2024 | 11/03/2024 | | | |
| 8 | Connect resistor in series and parallel combination on bread board and measure its value using digital multimeter. | 22/03/2024 | 18/03/2024 | | | |

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|---|---|--|--|--|
| 3 | Introduction to Boolean Algebra | 29/02/2024 | | |
| | Electronic implementation of Boolean operations | 02/03/2024 | | |
| | Gates functional block approach | 04/03/2024 | | |
| | Storage elements Flip Flops-A Functional Block approach | 06/03/2024 07/03/2024 | | |
| | Counters: Ripple, Up/Down and decade, | 11/03/2024 13/03/2024 | | |
| 4 | Introduction to digital IC Gates(TTL Type) | 14/03/2024 16/03/2024 | | |
| | EMF current potential difference, Power and energy; MMF,magnetic force,permeability, hysteresis loop,reluctance leakage factor and BH curve | 18/03/2024 20/03/2024 | | |
| | Electromagnetic induction Faraday's Law, Lenz's Law | 21/03/2024 23/03/2024 | | |
| | Dynamically induced emf and statically induced emf | 27/03/2024 28/03/2024 | | |
| | Analogy between electric and magnetic circuits | 30/03/2024 01/04/2024 | | |
| 5 | AC circuits cycle, frequency, periodic time, amplitude angular velocity, RMS value | 03/04/2024 04/04/2024 | | |
| | Mathematical and phase or representation of alternating emf and current | 06/04/2024 08/04/2024 | | |
| | Voltage and current relationship in star and delta connection; | 10/04/2024 | | |
| | AC in resistor, conductor, and capacitor | 18/04/2024 | | |
| | AC in RL series, RC series, RLC series and parallel circuits; | 20/04/2024 22/04/2024 | | |
| | Power in AC circuits, | 24/04/2024 | | |
| | Power Triangle,DCS | 25/04/2024 27/04/2024 | | |
| 6 | Transformer and Machines general construction and principal of core | 29/04/2024 01/05/2024 | | |
| | EMF equation and transformation Ratio | 02/05/2024 04/05/2024 | | |
| | Auto transformers | 06/05/2024 | | |
| | Basic principle of Electromechanical energy conversion | 08/05/2024 09/05/2024 | | |
| | Revision of important topics | 20/05/2024 22/05/2024 25/05/2024 | | |