**LESSON PLAN: POWER SYSTEM ANALYSIS & PROTECTION**

**Name of the Faculty:** Ankita Rani

**Discipline:** Electrical and Electronics Engineering

**Semester:** 6th Semester

**Subject: EEE-302-L POWER SYSTEM ANALYSIS & PROTECTION**

**Lesson Plan Duration:** 15 weeks (from January, 2019 to April, 2019)

**Work Load (Lecture) per week (in hours):** Lectures-03

|  |  |  |
| --- | --- | --- |
| WEEK  | LECTURE DAY | SYLLABUS |
| 1ST | 1ST | INTRODUCTION OF SUBJECT |
| 2ND | CHARACTERISTICS & REPRESENTATION OF COMPONENTS OF A POWER SYSTEM |
| 3RD | CHARACTERISTICS & REPRESENTATION OF COMPONENTS OF A POWER SYSTEM |
| 2ND | 4TH | SYNCHRONOUS MACHINES, TRANSFORMERS, |
| 5TH | LINES CABLES & LOADS. SINGLE LINE DIAGRAM |
| 6TH | SCHEME OF PROTECTION OF GENERATORS |
| 3RD | 7TH | SCHEME OF PROTECTION OF TRANSFORMERS ,TRANSMISSION LINE |
| 8TH | SCHEME OF PROTECTION OF LINES & BUS-BARS, CARRIER CURRENT PROTECTION**.**  |
| 9TH | BASIC OF RELAYS, ELECTROMAGNETIC, OVER CURRENT RELAY |
| 4TH | 10TH | DIRECTIONAL OVERCURRENT,DIFFERENTIAL,OVERCURRENT RELAY |
| 11TH | NEED FOR NEUTRAL GROUNDING, VARIOUS TYPES OF GROUNDING |
| 12TH | CIRCUIT INTERRUPTION, THEORY OF ARC FORMATION |
| 5TH | 13TH | RESTRIKING & RECOVERY VOLTAGE, INTERRUPTION OF CAPACITIVE & INDUCTIVE CURRENTS |
| 14TH | RUPTURING CAPACITY & RATING OF CIRCUIT BREAKERS.  |
| 15TH | CLASSIFICATION OF CIRCUIT-BREAKERS, CIRCUIT-BREAKERS OF LOW MEDIUM, HIGH & EXTRA HIGH VOLTAGES. |
| 6TH | 16TH | MULTIBREAK RESISTANCE SWITCHING |
| 17TH |  AUTORESTORING OF HIGH CAPACITY  |
| 18TH | AUTORESTORING OF HIGH CAPACITY |
| 7TH | 19TH |  H.V. CIRCUIT BREAKERS. |
| 20TH | NUMERICALS ON C.B. |
| 21ST | SYMMETRICAL FAULTS: CALCULATION OF FAULT CURRENTS |
| 8TH | 22ND | USE OF CURRENT LIMITING REACTORS.  |
| 23RD | USE OF CURRENT LIMITING REACTORS.  |
| 24TH | UNSYMMETRICAL FAULTS: TYPES OF TRANSFORMATION IN POWER SYSTEM ANALYSIS, |
| 9TH | 25TH | UNSYMMETRICAL FAULTS: TYPES OF TRANSFORMATION IN POWER SYSTEM ANALYSIS, |
| 26TH | SYMMETRICAL COMPONENTS TRANSFORMATION, |
| 27TH | SEQUENCE IMPEDANCE OF POWER SYSTEM ELEMENTS |
| 10TH | 28TH | SEQUENCE NETWORK OF POWER SYSTEM ANALYSIS OF UNSYMMETRICAL SHORT FAULTS SEQUENCE COMPONENTS FILTERS |
| 29TH | SEQUENCE NETWORK OF POWER SYSTEM ANALYSIS OF UNSYMMETRICAL SHORT FAULTS SEQUENCE COMPONENTS FILTERS |
| 30TH | NETWORK ANALYSIS & IT’S APPLICATION TO INTERCONNECTED SYSTEM.  |
| 11TH | 31ST | NETWORK ANALYSIS & IT’S APPLICATION TO INTERCONNECTED SYSTEM.  |
| 32ND | TRANSIENTS INTRODUCTION |
| 33RD | ELECTRIC PHENOMENON, LIGHTING & SWITCHING SURGES |
| 12TH | 34TH | ELECTRIC PHENOMENON, LIGHTING & SWITCHING SURGES |
| 35TH | TRAVELLING WAVES, |
| 36TH | TRAVELLING WAVES, |
| 13TH | 37TH | REFLECTION & REFRACTION OF WAVES WITH DIFFERENT LINE TERMINATION |
| 38TH | REFLECTION & REFRACTION OF WAVES WITH DIFFERENT LINE TERMINATION |
| 39TH | PROTECTION AGAINST DANGEROUS PRESSURE RISES.  |
| 14TH | 40TH | CONCEPTS OF STABILITY |
| 41ST |  POWER ANGLE CHARACTERISTICS OF SYNCHRONOUS |
| 42ND | STEADY STATE & TRANSIENT STABILITY SWING WAVES.  |
| 15TH | 43RD | REVISION  |
|  44TH | REVISION |

**LESSON PLAN: LINEAR & IC APPLICATION**

**Name of the Faculty:** Jaspreet Kaur

**Discipline:** Electrical and Electronics Engineering

**Semester:** 6th Semester

**Subject: EEE-304-L, LINEAR & IC APPLICATION**

**Lesson Plan Duration:** 15 weeks (from January, 2019 to April, 2019)

**Work Load (Lecture) per week (in hours):** Lectures-03

|  |  |  |
| --- | --- | --- |
| WEEK | LECTURE DAY | SYLLABUS |
| 1ST | 1ST | BALANCED AND UNBALANCED OUTPUT DIFFERENTIAL AMPLIFIER |
| 2ND | FET DIFFERENTIAL AMPLIFIER |
| 3RD |  CURRENT MIRRORS |
| 2ND | 4TH | LEVEL TRANSLATORS |
| 5TH | CASCADE OR CB-CE CONFIGURATION OF AMPLIFIER |
| 6TH | OPERATIONAL AMPLIFIER |
| 3RD | 7TH | BLOCK DIAGRAM REPRESENTATION OF OP-AMP |
| 8TH | INTRODUCTION TO IDEA OP-AMP, CHARACTERISTICS |
| 9TH | PARAMETERS, INTERPRETATION OF DATA SHEETS, DATA SPECIFICATION OF OP-AMP |
| 4TH | 10TH | MAIN PARAMETER LIKE CMMR, THERMAL DRIFT |
| 11TH | DATA SPECIFICATION OF OP-AMP & , OFFSET VOLTAGE |
| 12TH | CURRENT PRACTICAL OP-AMP AND ITS EQUIVALENT CIRCUIT |
| 5TH | 13TH | OP-AMP CIRCUIT CONFIGURATIONS |
| 14TH | FREQUENCY RESPONSE COMPENSATING NETWORK **ASSIGNMENT 1- AMPLIFIERS** |
| 15TH | FREQUENCY RESPONSE OF INTERNALLY COMPENSATED AND NON-COMPENSATED OP-AMP |
| 6TH | 16TH |  HIGH FREQUENCY OP-AMP EQUIVALENT CIRCUIT |
| 17TH | OPEN LOOP AND CLOSED LOOP FREQUENCY RESPONSE |
| 18TH | CIRCUIT STABILITY |
| 7TH | 19TH | SLEW RATE |
| 20TH | BLOCK DIAGRAM REPRESENTATION OF FEEDBACK AMPLIFIER |
| 21ST | VOLTAGE SERIES FEEDBACK |
| 8TH | 22ND | VOLTAGES SHUNT FEEDBACK |
| 23RD | DIFFERENTIAL AMPLIFIER **ASSIGNMENT 2- FEEDBACK** |
| 24TH | DC AND AC AMPLIFIER, PEAKING AMPLIFIER |
| 9TH | 25TH | PEAKING AMPLIFIER, SUMMING |
| 26TH | SCALING, AVERAGING AND INSTRUMENTATION AMPLIFIER |
| 27TH | DIFFERENTIAL INPUT AND OUTPUT AMPLIFIER VOLTAGE TO CURRENT CONVERTER |
| 10TH | 28TH | CURRENT TO VOLTAGE CONVERTER, VERY HIGH INPUT IMPEDANCE CIRCUIT, |
| 29TH | INTEGRATOR, DIFFENTITOR, VOLTAGE LIMITERS, |
| 30TH | VOLTAGE REGULATOR, VOLTAGE TO FREQUENCY CONVERTER  |
| 11TH | 31ST | FREQUENCY TO VOLTAGE CONVERTER INTRODUCTION TO ACTIVE FILTERS |
| 32ND | BUTTER WORTH AND CHEBYSHEV APPROXIMATION TO LOW PASS FILTER |
| 33RD | HIGH PASS, BAND PASS FILTERS **ASSIGNMENT 3- FILTERS** |
| 12TH | 34TH | OSCILLATORS, CRITERION FOR OSCILLATION |
| 35TH |  PHASE SHIFT, WEIN BRIDGE |
| 36TH | QUADRATURE, SQUARE WAVE, SAW TOOTH |
| 13TH | 37TH |  VOLTAGE CONTROLLED OSCILLATOR |
| 38TH | INTRODUCTION TO BASIC COMPARATOR, ZERO CROSSING DETECTOR |
| 39TH | SCHMITT TRIGGER COMPARATOR CHARACTERISTICS |
| 14TH | 40TH | ANALOG TO DIGITAL & DIGITAL TO ANALOG CONVERTERS |
| 41ST | ANALOG TO DIGITAL & DIGITAL TO ANALOG CONVERTERS |
| 42ND | SAMPLE & HOLD CIRCUIT, PEAK DETECTOR **ASSIGNMENT 4- CONVERTERS** |
| 15TH | 43RD | UNIVERSAL ACTIVE FILTERS, SWITCHED CAPACITOR FILTER |
| 44TH | THE 555 & 556 TIMERS AND THEIR APPLICATIONS |
| 45TH | PHASE LOCKED LOOP AND VOLTAGE REGULATORS |

**LESSON PLAN: POWER ELECTRONICS-II**

**Name of the Faculty:** Ankita Rani

**Discipline:** Electrical and Electronics Engineering

**Semester:** 6th Semester

**Subject: EEE-306-L, POWER ELECTRONICS-II**

**Lesson Plan Duration:** 15 weeks (from January, 2019 to April, 2019)

**Work Load (Lecture) per week (in hours):** Lectures-03

|  |  |  |
| --- | --- | --- |
| WEEK | LECTURE DAY | SYLLABUS |
| 1ST | 1ST | CLASSIFICATION OF CHOPPERS |
| 2ND | PRINCIPLE OF OPERATION |
| 3RD | STEADY STATE ANALYSIS OF CLASSA CHOPPERS |
| 2ND | 4TH | STEP UP CHOPPER |
| 5TH | STEADY STATE, SWITCHING MODE REGULATOR |
| 6TH | BUCK, BOOST, BUCK-BOOST, CUK-REGULATORS |
| 3RD | 7TH | CURRENT COMMUTATED AND VOLTAGE COMMUTATED CHOPPER |
| 8TH | BASIC SCHEME OUTPUT VOLTAGE CONTROL TECHNIQUES |
| 9TH | ONE, TWO AND FOUR QUADRANT CHOPPERS |
| 4TH | 10TH | STEP UP CHOPPER |
| 11TH | VOLTAGE COMMUTATED CHOPPER |
| 12TH | CURRENT COMMUTATED CHOPPER |
| 5TH | 13TH | MOSFET AND TRANSISTOR BASED CHOPPERS. |
| 14TH | CLASSIFICATION, BASIC SERIES AND IMPROVED SERIES INVERTER |
| 15TH | PARALLEL INVERTER |
| 6TH | 16TH | SINGLE PHASE VOLTAGE SOURCE INVERTER |
| 17TH | STEADY STATE ANALYSIS |
| 18TH | HALF BRIDGE AND FULL BRIDGE INVERTER |
| 7TH | 19TH | MODIFIED MCMURRAY AND MODIFIED MCMURRAY BEDFORD INVERTER |
| 20TH | VOLTAGE CONTROL IN SINGLE PHASE INVERTERS |
| 21ST | PWM INVERTERS |
| 8TH | 22ND |  REDUCTION OF HARMONICS |
| 23RD | CURRENT SOURCE, THREE PHASE BRIDGE INVERTER |
| 24TH | BASIC CIRCUIT OF INVERTER |
| 9TH | 25TH | 120 DEGREE MODE AND180 DEGREE MODE CONDUCTION SCHEMES |
| 26TH | MODIFIED MCMURRAY-BEDFORD HALF BRIDGE AND BRIDGE INVERTERS |
| 27TH | BRIEF DESCRIPTION OF PARALLEL AND SERIES INVERTER(CSI) |
| 10TH | 28TH | TRANSISTOR AND MOSFET BASED INVERTERS |
| 29TH | TRANSISTOR AND MOSFET BASED INVERTERS |
| 30TH | WITCHED MODE D.C. APPLITLLTIONS |
| 11TH | 31ST | AC. APPLITLLTIONS |
| 32ND | POWER SUPPLIES |
| 33RD | DIELECTRIC AND INDUCTION HEATING |
| 12TH | 34TH | INTRODUCTION TO D.C. MOTOR |
| 35TH | BLOCK DIAGRAM O F D.C. MOTOR SPEED CONTROL |
| 36TH | TEST |
| 13TH | 37TH | DRIVES: INTRODUCTION TO ELECTRIC DRIVES |
| 38TH | DC DRIVES-CONVERTER AND CHOPPER FED |
| 39TH | AC DRIVES-STATOR VOLTAGE CONTROL |
| 14TH | 40TH | V/F CONTROL |
| 41ST | ROTOR RESISTANCE CONTROL |
| 42ND | STATIC SCHERBIUS SYSTEM |
| 15TH | 43RD | STATIC KRAMER SYSTEMS |
| 44TH | REVISION  |
| 45TH | REVISION |

**LESSON PLAN: ELECTRIC DRIVES AND TRACTION**

**Name of the Faculty:** Raman Kamboj

**Discipline:** Electrical and Electronics Engineering

**Semester:** 6th Semester

**Subject: EEE-308-L ELECTRIC DRIVES AND TRACTION**

**Lesson Plan Duration:** 15 weeks (from January, 2019 to April, 2019)

**Work Load (Lecture) per week (in hours):** Lectures-03

|  |  |  |
| --- | --- | --- |
| WEEK | LECTURE DAY | SYLLABUS |
| 1ST | 1ST | DEFINITION & CLASSIFICATION OF DIFFERENT TYPE OF DRIVES |
| 2ND | REVIEW OF CHARACTERISTICS AND COMPONENTS OF ELECTRIC DRIVES |
| 3RD | SPEED CONTROL METHODS OF VARIOUS A.C. AND D.C. DRIVES, |
| 2ND | 4TH | ADVANTAGES AND APPLICATIONS OF ELECTRIC DRIVES |
| 5TH | ACCELERATION AND RETARDATION TIME, ENERGY CONSIDERATION |
| 6TH | VARIOUS METHODS OF BRAKING OF A.C. AND D.C DRIVES |
| 3RD | 7TH | AUTOMATIC CONTROL ARRANGEMENT, CHARACTERISTICS AND APPLICATION |
| 8TH | BASIC PRINCIPLE OF INDUCTION MOTOR DRIVES |
| 9TH |  3 ∅ A.C VOLTAGE CONTROLLER FED I.M DRIVE |
| 4TH | 10TH | VARIABLE FREQUENCY CONTROL, VOLTAGE SOURCE INVERTER (VSI) AND CURRENT SOURCE INVERTER (CSI) |
| 11TH | CYCLOCONVERTER FED IM DRIVE, SLIP POWER CONTROL |
| 12TH |  STATIC ROTOR RESISTANCE CONTROL, CHOPPER CONTROL OF 3 -∅ SLIP RING INDUCTION MOTOR |
| 5TH | 13TH | REVISION |
| 14TH | RECTIFIER CONTROLLED CIRCUITS |
| 15TH | SINGLE PHASE FULLY CONTROLLED RECTIFIER FED SEPARATELY EXCITED D.C MOTOR |
| 6TH | 16TH | SINGLE PHASE HALF CONTROLLED RECTIFIER FED SEPARATELY EXCITED D.C MOTOR |
| 17TH | 3∅ FULLY CONTROLLED FED SEPARATELY EXCITED D.C. MOTOR |
| 18TH | 3∅ HALF CONTROLLED FED SEPARATELY EXCITED D.C. MOTOR |
| 7TH | 19TH | PERFORMANCE OF SINGLE PHASE RECTIFIER CONTROLLED D.C DRIVES |
| 20TH | PERFORMANCE 3∅ RECTIFIER CONTROLLED D.C DRIVES |
| 21ST | CHARACTERISTICS OF SINGLE PHASE AND 3∅ RECTIFIER CONTROLLED D.C DRIVES |
| 8TH | 22ND | CONTROL TECHNIQUES OF D.C. DRIVES USING CHOPPER |
| 23RD | MULTI QUADRANT CONTROL OF CHOPPER FED MOTORS |
| 24TH | REVISION |
| 9TH | 25TH | FUNDAMENTAL LOAD TORQUE EQUATION |
| 26TH | PERMISSIBLE FREQUENCY OF STARTING AND STOPPING |
| 27TH | DEFINITE TIME, SPEED AND CURRENT LIMIT CONTROL |
| 10TH | 28TH | AUTOMATIC STARTING AND PULLING OPERATION OF SYNCHRONOUS MOTORS.  |
| 29TH | REVISION |
| 30TH | MICROPROCESSOR CONTROL OF ELECTRIC DRIVES |
| 11TH | 31ST | APPLICATION AREAS AND FUNCTIONS OF HP IN DRIVE TECHNOLOGY |
| 32ND | BLOCK DIAGRAM OF MICROPROCESSOR CONTROL OF ELECTRIC DRIVES AND COMPARISON WITH OTHER METHOD |
| 33RD | COMPONENTS FOR DIGITAL CONTROL ELECTRIC DRIVES |
| 12TH | 34TH | VECTOR CONTROL OF IM DRIVE USING HP.  |
| 35TH | NATURE OF TRACTION LOAD |
| 36TH | CONVENTIONAL D.C & A.C TRACTION DRIVES |
| 13TH | 37TH | CHARACTERTICS OF D.C & A.C TRACTION DRIVES |
| 38TH | D.C TRACTION USING CHOPPER CONTROLLED D.C MOTORS |
| 39TH |  POLYPHASE A.C MOTORS FOR TRACTION DRIVES, |
| 14TH | 40TH | SPEED TIME RELATIONSHIP |
| 41ST | DETERMINATION OF MOTOR RATING |
| 42ND | CLASSES OF MOTOR DUTY NATURE OF LOADS |
| 15TH | 43RD | FREQUENCY OF OPERATION OF MOTOR SUBJECTED TO INTERMITTENT LOADS |
| 44TH | FREQUENCY OF OPERATION OF MOTOR SUBJECTED TO PULSE LOADS |
| 45TH | THERMAL MODEL OF MOTOR FOR HEATING AND COOLING |

**LESSON PLAN: MiCROCONTOLLER & APPLICATIONS**

 **Name of the Faculty:** Veena Rani

**Discipline:** Electrical and Electronics Engineering

**Semester:** 6th Semester

**Subject: EEE-312-L MICROCONTOLLER & APPLICATIONS**

**Lesson Plan Duration:** 15 weeks (from January, 2019 to April, 2019)

**Work Load (Lecture) per week (in hours):** Lectures-03

|  |  |  |
| --- | --- | --- |
| WEEK | LECTURE DAY | SYLLABUS |
| 1ST | 1ST | INTRODUCTION |
| 2ND | COMPARE MICROPROCESSORS AND MICROCONTROLLERS |
| 3RD | TECHNOLOGICAL TRENDS IN MICROCONTROLLERS |
| 2ND | 4TH | 4 BIT, 8 BIT, 16 BIT, 32 BIT MICROCONTROLLERS |
| 5TH | 4 BIT, 8 BIT, 16 BIT, 32 BIT MICROCONTROLLERS |
| 6TH | APPLICATIONS OF MICROCONTROLLERS. **ASSIGNMENT 1- MICROCONTROLLER DEVELOPMENT & TYPES** |
| 3RD | 7TH | BLOCK DIAGRAM OF 8051 |
| 8TH | PIN. DIAGRAM OF 8051 |
| 9TH | FUNCTIONAL DESCRIPTIONS OF INTERNAL UNITS |
| 4TH | 10TH | REGISTERS, PSW, INTERNAL RAM, ROM |
| 11TH | STACK, OSCILLATOR AND CLOCK |
| 12TH | I/O PINS, PORTS AND CIRCUITS |
| 5TH | 13TH | COUNTERS AND TIMERS |
| 14TH | SDI & SDT/R & TRANSMISSION MODE |
| 15TH | TIMER FLAG INTERRUPT. EXTERNAL INTERRUPT |
| 6TH | 16TH | EXTERNAL MEMORY AND MEMORY SPACE DECODING |
| 17TH | EXPANDING I/OS |
| 18TH | MEMORY MAPPED I/O RESET & CLK CIRCUITS  **ASSIGNMENT 2- MICROCONTROLLER ARCHITECTURE** |
| 7TH | 19TH | 8051 INSTRUCTION SYNTAX |
| 20TH | ADDRESSING MODES |
| 21ST | DATA TRANSFER INSTRUCTIONS |
| 8TH | 22ND | DATA TRANSFER INSTRUCTIONS |
| 23RD |  LOGICAL INSTRUCTIONS |
| 24TH |  LOGICAL INSTRUCTIONS |
| 9TH | 25TH | ARITHMETIC INSTRUCTIONS |
| 26TH | ARITHMETIC INSTRUCTIONS |
| 27TH | JUMP AND CALL INSTRUCTIONS |
| 10TH | 28TH | JUMP AND CALL INSTRUCTIONS |
| 29TH | INTERRUPTS AND INTERRUPT HANDLER SUBROUTINES |
| 30TH | TIME DELAYS. PURE S/W TIME DELAYS |
| 11TH | 31ST | S/W POLLED TIMER. PURE H/W DELAY. LOOKUP TABLES |
| 32ND | SERIAL DATA TRANSMISSION USING TIME DELAYS AND POLLING |
| 33RD | INTERRUPT DRIVEN SERIAL TRANSMISSION AND RECEPTION |
| 12TH | 34TH | INTERRUPT DRIVEN SERIAL TRANSMISSION AND RECEPTION **ASSIGNMENT 3- MICROCONTROLLER PROGRAMMING** |
| 35TH | INTERFACING KEYBOARDS PROGRAMS  |
| 36TH | INTERFACING MULTIPLEXED, NUMERIC AND LCD DISPLAYS |
| 13TH | 37TH | MEASURING FREQUENCY AND PULSE WIDTH |
| 38TH | INTERFACING ADCS & DACS |
| 39TH | HARDWARE CIRCUITS FOR HANDLING MULTIPLE INTERRUPTS |
| 14TH | 40TH | 8051 SERIAL DATA COMMUNICATION MODES |
| 41ST | 8051 SERIAL DATA COMMUNICATION MODES |
| 42ND | 8051 SERIAL DATA COMMUNICATION MODES **ASSIGNMENT 4- MICROCONTROLLER APPLICATIONS** |
| 15TH | 43RD | ADVAVCED MICROCONTROLLERS |
| 44TH | FUTURE OF MICROCONTROLLERS  |
| 45TH | LATEST TECHNOLOGY IN MICROCONTROLLERS FIELD |

**LESSON PLAN: LICA LAB**

**Name of the Faculty:** Jaspreet Kaur

**Discipline:** Electrical and Electronics Engineering

**Semester: 6th SEM**

**Subject: EEE-304 P LICA LAB**

**Lesson Plan Duration:** 15 weeks (from January, 2019 to April, 2019)

**Work Load (Lab) per week (in hours):** Lab-02 Hours

|  |  |  |
| --- | --- | --- |
| WEEK  | PRACTICAL DAY | SYLLABUS |
| 1ST | 1ST | TO STUDY THE OPAMP AS INVERTING AMPLIFIER |
| 2ND | 2ND | TO STUDY THE OPAMP AS NON-INVERTING AMPLIFIER |
| 3RD  | 3RD  | TO STUDY CE CONFIGURATION OF AMPLIFIER WITH NEGATIVE FEEDBACK |
| 4TH | 4TH | TO STUDY FET AMPLIFIER |
| 5TH | 5TH | TO STUDY THE OPAMP AS DIFFERENTIATOR |
| 6TH | 6TH | TO STUDY THE OPAMP AS INTEGRATOR |
| 7TH | 7TH | TO STUDY THE OPAMP AS SUMMER |
| 8TH | 8TH | TO DEMONSTRATE THE OPERATION OF LOW PASS FILTER |
| 9TH | 9TH | DESIGN THE SECOND ORDER LOW PASS FILTER |
| 10TH | 10TH | TO DEMONSTRATE THE OPERATION OF HIGH PASS ACTIVE FILTER |
| 11TH  | 11TH  | TO STUDY THE FREQUENCY RESPONSE OF BAND PASS FILTER |
| 12TH | 12TH | TO STUDY THE NOTCH FILTER |
| 13TH | 13TH | TO STUDY THE OPERATION OF THE SCHMITT TRIGGER USING THE IC 741 |
| 14TH | 1TH | TO CONSTRUCT THE ASTABLE MULTIVIBRATOR USING IC 555 |
| 15TH | 15TH | TO STUDY THE PHASE SHIFT WEIN BRIDGE OSCILLATOR |

**LESSON PLAN: POWER ELECTRONICS II LAB**

**Name of the Faculty:** Ankita Rani

**Discipline:** Electrical and Electronics Engineering

**Semester: 6th SEM**

**Subject: EEE-306-P, POWER ELECTRONICS II LAB**

**Lesson Plan Duration:** 15 weeks (from January, 2019 to April, 2019)

**Work Load (Lab) per week (in hours):** Lab-02 Hours

|  |  |  |
| --- | --- | --- |
| WEEK  | PRACTICAL DAY | SYLLABUS |
| 1ST | 1ST | TO MEASURE SPEED USING PHOTO INTERRUPTER METHOD. TO PLOT THE GRAPH BETWEEN AVERAGE OUTPUT VOLTAGE VO V/S SPEED OF DC MOTOR, DC GENERATOR 1/2HP USING CHOPPER CKT. (VARIABLE PULSE WIDTH CONTROL STRATEGIES). |
| 2ND | 2ND | TO STUDY THE SPEED CONTROL OF THREE PHASE INDUCTION MOTOR USING CYCLO-CONVERTER. |
| 3RD  | 3RD  | TO FIND THE OUTPUT VOLTAGE OF SWITCHED MODE REGULATORS. BUCK-BOOST, CUK REGULATORS BY VARYING THE DUTY CYCLE. |
| 4TH | 4TH | DRAW THE VOLTAGE WAVEFORM ACROSS THYRISTORS, CAPACITORS AND AVERAGE OUTPUT VOLTAGE OF JONES & MORG CHOPPER CKT. GIVE THE COMPARISON BETWEEN TWO. |
| 5TH | 5TH | TO FIND THE OUTPUT FREQUENCY OF A SINGLE PHASE SERIES INVERTER BY VARYING (R,L,C COMPONENT). |
| 6TH | 6TH | TO DRAW THE WAVE FORMS OF A PARALLEL INVERTER USING TWO SCR'S |
| 7TH | 7TH | TO DRAW THE AVERAGE OUTPUT VOLTAGE OF THREE PHASE TO SINGLE PHASE CYCLO CONVERTER (BRIDGE TYPE) FOR ALPHA = 30,45, 60,90 |
| 8TH | 8TH | TO FIND THE R.M.S. VALUE OF OUTPUT VOLTAGE BY VARYING DELTA ANGLE OF SINGLE PHASE IGBT BASEDINVERTER USING: MULTIPLE P.W.M. TECHNIQUE.SINUSOIDAL 'P.W.M. TECHNIQUE. |
| 9TH | 9TH | TO REDUCE THE HARMONICS OF INVERTER BY USING PHASE DISPLACEMENT CONTROL TECHNIQUE |
| 10TH | 10TH | TO FIND THE AVERAGE OUTPUT VOLTAGE OF STEP UP MOSFET BASED CHOPPER CKT. |

**LESSON PLAN: ELECTRIC DRIVE AND TRACTION LAB**

**Name of the Faculty:** Raman Kamboj

**Discipline:** Electrical and Electronics Engineering

**Semester: 6th SEM**

**Subject: EEE-308 P ELECTRIC DRIVE AND TRACTION LAB**

**Lesson Plan Duration:** 15 weeks (from January, 2019 to April, 2019)

**Work Load (Lab) per week (in hours):** Lab-02 Hours

|  |  |  |
| --- | --- | --- |
| WEEK  | PRACTICAL DAY | SYLLABUS |
| 1ST | 1ST | STUDY OF INDUSTRIAL APPLICATIONS OF VARIOUS MILLS |
| 2ND | 2ND | VARIABLE TORQUE CONTROL OF INDUCTION MOTOR |
| 3RD  | 3RD  | BREAKING OF DC MOTOR BY USING MECHANICAL & ELECTRICAL METHODS |
| 4TH | 4TH | ROTOR RESISTANCE CONTROL OF 3 PHASE SLIP RING INDUCTION MOTOR |
| 5TH | 5TH | CHOPPER CONTROL OF DC MOTOR |
| 6TH | 6TH | CHOPPER CONTROL OF SEPARATELY EXCITED DC MOTOR |
| 7TH | 7TH | STUDY OF DIFFERENT TYPES OF A LOADING ON A PARTICULAR LOAD.---INTERMEDIATE LOADING---CONTINUOUS LOADING |
| 8TH | 8TH | METHODS OF STARTING INDUCTION MOTOR |
| 9TH | 9TH | VARIABLE VOLTAGE CONTROL OF INDUCTION MOTOR. |
| 10TH | 10TH | MICROPROCESSOR BASED CONTROL OF ANY MOTOR |

**LESSON PLAN: BASICS OF MEASURING INSTRUMENTS**

**Name of the Faculty:** Jaspreet Kaur

**Discipline:** Computer Science Engineering

**Semester:** 6th Semester

**Subject: OE-ECE-392L**  **BASICS OF MEASURING INSTRUMFNTS**

**Lesson Plan Duration:** 15 weeks (from January, 2019 to April, 2019)

**Work Load (Lecture) per week (in hours):** Lectures-03

|  |  |  |
| --- | --- | --- |
| WEEK | LECTURE DAY | SYLLABUS |
| 1ST | 1ST | BASICS OF MEASUREMENTS: METHODS OF MEASUREMENTS. |
| 2ND | DIRECT METHODS, INDIRECT METHODS |
| 3RD | PRECISION, RELIABILITY |
| 2ND | 4TH | ACCURACY, RESOLUTION ,REPEATABILITY |
| 5TH | VALIDITY, ERRORS AND THEIR ANALYSIS |
| 6TH | ELECTRONIC INSTRUMENTS FOR MEASURING BASIC PARAMETERS |
| 3RD | 7TH | STANDARDS OF MEASUREMENT DC AND AC VOLTMETER |
| 8TH |  TRUE RMS READING VOLTMETER |
| 9TH | DIGITAL VOLTMETER AMMETER, WATTMETER |
| 4TH | 10TH | ELECTRONIC MULTI-METER, TACHO-GENERATORS |
| 11TH | CATHODE RAY TUBE |
| 12TH | VERTICAL AND HORIZONTAL DEFLECTION SYSTEMS |
| 5TH | 13TH |  DELAY LINES  |
| 14TH |  PROBES AND TRANSDUCERS |
| 15TH |  SPECIFICATION OF AN OSCILLOSCOPE |
| 6TH | 16TH | OSCILLOSCOPE MEASUREMENT TECHNIQUES |
| 17TH |  DUAL TRACE OSCILLOSCOPE |
| 18TH | MULTIPLE TRACE OSCILLOSCOPE |
| 7TH | 19TH |  STORAGE OSCILLOSCOPE, |
| 20TH | SAMPLING OSCILLOSCOPE |
| 21ST | DIGITAL STORAGE OSCILLOSCOPE. |
| 8TH | 22ND | SINE WAVE GENERATOR |
| 23RD |  FREQUENCY-SYNTHESIZED SIGNAL GENERATOR, |
| 24TH | PULSE AND SQUARE WAVE GENERATORS |
| 9TH | 25TH | FUNCTION GENERATORS |
| 26TH | SWEEP FREQUENCY GENERATOR |
| 27TH | WAVE ANALYZER |
| 10TH | 28TH | HARMONIC DISTORTION ANALYZER |
| 29TH | FIELD STRENGTH METER |
| 30TH | LOGIC ANALYZER |
| 11TH | 31ST | SIMPLE FREQUENCY COUNTER |
| 32ND | MEASUREMENT ERROR |
| 33RD | EXTENDING FREQUENCY RANGE OF COUNTER |
| 12TH | 34TH | TRANSDUCER AND ITS TYPE |
| 35TH | STRAIN GAUGE |
| 36TH | DISPLACEMENT TRANSDUCER |
| 13TH | 37TH | LVDT CAPACITIVE TRANSDUCER |
| 38TH | INDUCTIVE TRANSDUCER |
| 39TH | RESISTIVE AND CAPACITIVE TOUCH SCREEN TRANSDUCER USED IN MOBILE |
| 14TH | 40TH | PIEZOELECTRIC TRANSDUCER |
| 41ST | VELOCITY TRANSDUCER |
| 42ND | RPM MEASUREMENT TECHNIQUE |
| 15TH | 43RD | THERMOCOUPLES |
| 44TH | THERMISTORS |
| 45TH | REVISION |