NATIONAL INSTITUTE OF TECHNOLOGY, SRINAGAR

NAME OF THE DEPARTMENT: **Electrical Engineering**

1 Subject Code ELE-301 Course Title **Principles of Elect Engg. [Elect]**

2 Contact Hours | L | 2 | T | 1 | P | 0 |

3 Examination Duration (Hrs): | Theory | 0 | 3 | Practical | 0 | 0 |

4 Relative Weight age | M-I | 2 | 0 | M-II | 2 | 0 | ASM | 1 | 0 | ME | 5 | 0 | PRE | 0 | 0 |

5 Credits: | 0 | 3 | 3rd Semester | √ (Autumn) | | (Spring) |

6 **Objective:**

To acquire knowledge and become familiar with the different techniques to solve the different complex Electrical & Electronics Circuits.

7. **Details of the Course:**

S.No	Particulars	Contact Hours
1.	REVIEW OF ELECTRIC CIRCUIT LAWS: Review of electric circuit concepts, terminology, basic laws, and electric circuit parameters	03
2.	ENERGY SOURCES: Ideal and practical voltage and current sources and their transformation, Dependant Sources	02
3.	D.C. CIRCUIT ANALYSIS: Power and energy relations, Analysis of series parallel D.C. Circuits, Loop and nodal methods of analysis, Delta- star (Δ-Y) transformation, Super-position theorem, Thevenin's and Norton's theorems, Maximum power transfer theorem.	14
4.	A.C. CIRCUIT ANALYSIS: Basic terminology and definitions, Phasor and complex number representation, solutions of sinusoidally excited RLC circuits, Power and energy relations in A.C. circuits, Applications of network theorems to A.C. circuits, Resonance in series and parallel circuits, Concepts of active & reactive powers.	16
5.	STEADY STATE A.C. THREE- PHASE CIRCUITS: Characteristics of 3 phase systems, Current and voltage relationships in Y-Δ & Δ-Y configurations, Balanced / un-balanced systems.	05
6.	MAGNETIC CIRCUITS (INTRODUCTION) Mutual inductance, theory of magnetic circuits, electro- magnetism	02
	Total Contact Hours	42

8. **Suggested Books:**

S.No	Name of Book	Author	Publisher	Year of Publication
1	Fundamentals of Electric Circuits	Alexander Sadeker	McGraw- Hill,	3rd Ed. 2011
2	Basic Engineering Circuit Analysis	Irwin	John Wiley	9th Ed 2008
3	Electric Circuits Fundamentals	Franco	Harcourt Brace College (O.U.P)	1994
4	Electric Circuit Analysis	Johnson, Johnson and Hilburn	John Wiley	Latest Ed.

NATIONAL INSTITUTE OF TECHNOLOGY, SRINAGAR

NAME OF THE DEPARTMENT: Electrical Engineering

1	Subject Code	ELE-301P		Course Title	**Principles of Elect Engg. LAB [Elect]]**					
2	Contact Hours			L	0	T	0	P	1	
3	Examination Duration (Hrs):			Theory	0	0	Practical	0	2	
4	Relative Weight age			MSLE	2	5	ESLE	2	5	
5	Credits:	0	1	3rd Semester	√ Autumn		Spring			

6 **Objective:**

To acquire knowledge and become familiar with the different techniques to solve the different complex Electrical, Electronics Circuits,

7. Lab. Experiments:

S.No	Experiments
1	To study the colour coding of resistors
2	Connection of Ammeters, Voltmeters, Wattmeters and multi-meters in DC and AC circuits and selection of their ranges.
3	Use of LCRQ meter.
4	To study the series / parallel operation of resistors and verifying their effective values by LCRQ meter.
5	To verify the KVL and KCL in DC circuits.
6	To verify the star delta transformation of networks.
7	To verify the superposition theorem.
8	To verify the maximum power transfer theorem
9	Basic R, L, C circuits excited from A.C
10	To measure electric power in single-phase AC circuits with resistive load, RL load and RLC load.
11	To measure the power and power factor in three phase AC circuits.
12	To study the series resonance.
13	To study the parallel resonance.
14	To study the handling of CRO and use it for the study of different voltage waveforms.
15	Computer Aided Circuit Analysis (3 experiments)

NATIONAL INSTITUTE OF TECHNOLOGY, SRINAGAR

NAME OF THE DEPARTMENT: **Electrical Engineering**

1 Subject Code ECE-301 Course Title Network Analysis & Synthesis

2 Contact Hours | L | 3 | | T | 1 | | P | 0 |

3 Examination Duration (Hrs): | Theory | 0 | 3 | | Practical | 0 | 0 |

4 Relative Weight age | M-I | 2 | 0 | | M-II | 2 | 0 | | ASM | 1 | 0 | | ME | 5 | 0 | | PRE | 0 | 0 |

5 Credits: | 0 | 4 | 3rd Semester | √ Autumn | | Spring |

6 Objective: To introduce students with the basic concepts of Electric Circuit theory and familiarize them how to analyze the circuits to get transits as well as steady state response using various techniques.

7. **Details of the Course:**

S.No	Particulars	Contact Hours
1.	Development of the circuit Concept: Charge and energy, capacitance, inductance and resistance parameters in the light of field and circuit concepts, approximate realization of a physical system as a circuit	3
2.	Conventions for describing networks: Reference directions for currents and voltages, conventions for magnetically coupled circuits, Circuit topology	3
3.	First order differential equation: Differential equations as applied in solving networks, Application of initial conditions, evaluating initial conditions in networks	6
4	Laplace Transformations: Solution of Network problems with Laplace transformation, Heavisides expansion theorem	4
5	Wave form analysis and synthesis: The unit step, ramp and impulse functions and their Laplace transforms, Initial and final value theorems, convolution integral, convolution as summation	4
6	Network theorems and impedance functions: Complex frequency, transform impedance and transform circuits, series and parallel combinations of elements, Fosters reactance theorem and reciprocity theorem	5
7	Network Functions- poles and zeros: Ports or terminal pairs, Network functions for one port and two port networks (ladder and general networks), Poles and Zeros of network functions, Restriction on pole and zero locations for driving point and transfer functions. Time domain behaviour from pole zero plot	5
8	Two port parameters: Relationship of two port parameters, Admittance, impedance, transmission and hybrid parameters, Relationship between parameter sets, Parallel connection of two port Networks, Characteristics impedance of two port networks.	6
9	Filters : Filter fundamentals – pass and stop band, filter classification, constant K & m derived filters, Behaviour of characteristic impedance over pass & stop bands, design of filters.	6
Total Contact Hours		42

8. **Suggested Books:**

S.No	Name of Book	Author	Publisher	Year of Publication
1	Network Analysis	Van Valkenberg	Prentice Hall of India	2007 impression
2	Network Analysis and Synthesis	F. F. Kuo	John Wiley & Sons	2nd Edition 2002 reprint

NATIONAL INSTITUTE OF TECHNOLOGY, SRINAGAR

NAME OF THE DEPARTMENT: **Electrical Engineering**

1 Subject Code ECE-302 Course Title **Electronics-I**

2 Contact Hours L 2 T 1 P 0

3 Examination Duration (Hrs): Theory 0 3 Practical 0 0

4 Relative Weight age M-I 2 0 M-II 2 0 ASM 1 0 ME 5 0 PRE 0 0

5 Credits: 0 3 3rd Semester √ Autumn Spring

6 Objective: To introduce students with the basic concept s of Electric Circuitry and familiarize them with basic electric machines.

7. **Details of the Course:**

S.No	Particulars	Contact Hours
1.	Introduction to Semiconductors: p and n types, transport mechanism of charge carriers, electric properties, Hall effect etc. Electronic Devices, their characteristics and applications	8
2.	pn junction- diode: Current components in P- n junction, characteristics- piece –wise linear approximation, temperature dependence, Diode capacitance and switching times, diode circuits – half wave, full- wave rectifiers, clipping circuits etc; basic operation of zener and schottky diodes and photodiodes, tunnel diode.	8
3.	UJT's & BJT's: Types, operation and characteristics, Ebers- Moll model, CE, CB and CC configurations- input, output characteristics and graphical analysis of basic amplifier circuits, biasing and Bias stability, Low frequency, h- parameter model, Analysis and Design of transistor amplifier circuits using h parameters. High frequency hybrid – pi model, analysis and design of transistor amplifier circuits at high frequencies, Multistage amplifiers, Phototransistors. Transistor as a switch. SCR's and Thyristors	15
4	JFET's: Operation and characteristics, models, application as low and high frequency amplifiers, switching circuits, MOSFETS -–types, operation and characteristics	8
5	Cathode- ray Oscilloscope- basic operation and measurement, applications	3
	Total Contact Hours	42

8. **Suggested Books:**

S.No	Name of Book	Author	Publisher	Year of Publication
1	Integrated Electronics	Millman and Halkias		
2	Electronic Devices & Circuits	Bolysted	Pearson Education	2009 7th Edition
3	Electronic Devices & Circuits	Bogarat	Pearson Printice Hall	2010 6th Edition
4.	Electronic Devices & Circuits	Godsi & Bakhshi		3rd Edition

NATIONAL INSTITUTE OF TECHNOLOGY, SRINAGAR

NAME OF THE DEPARTMENT: Electrical Engineering

1	Subject Code	ECE-302P		Course Title	**Electronics-I LAB**					
2	Contact Hours			L	0	T	0	P	2	
3	Examination Duration (Hrs):			Theory	0	0	Practical	0	2	
4	Relative Weight age			MSLE	2	5	ESLE	2	5	
5	Credits:	0	1	3rd Semester	√ Autumn		Spring			

6 **Objective:**

To acquire knowledge and become familiar with the different techniques to solve the different complex Electrical, Electronics Circuits & Electrical Machines.

7. Lab. Experiments:

S.No	Experiments
1	To obtain diode characteristics.
2	(a) To assemble a half wave and a full wave rectifier ad to study their performance. (b) To suppress the nipple using RC filter.
3	To obtain Zener diode characteristics and to use Zener diode as a voltage regulator.
4	To assemble and observe the performance of clipping and clamping ckts.
5	To obtain transistor characteristics in the following configurations. i) Common base ii) Common emitter
6	To assemble a CE amplifier and observe its performance.
7	To obtain frequency response of a RC coupled CE amplifier.
8	To assemble an emitter follower circuits and observe its performance.
9	To obtain JFET characteristics and to observe performance of a source follower.
10	To illustrate use of FET as a voltage variable resistor.

NATIONAL INSTITUTE OF TECHNOLOGY, SRINAGAR

NAME OF THE DEPARTMENT: **Electrical Engineering**

1 Subject Code PHY-303 Course Title Electro Magnetic Fields & Waves

2 Contact Hours L 2 T 1 P 0

3 Examination Duration (Hrs): Theory 0 3 Practical 0 0

4 Relative Weight age M-I 2 0 M-II 2 0 ASM 1 0 ME 5 0 PRE 0 0

5 Credits: 0 3 3rd Semester √ Autumn Spring

6 Objective: To impart indepth understanding of classical electromagnetic fields theory.

7. **Details of the Course:**

S.No	Particulars	Contact Hours
1	**Electrostatics** Curvilinear Coordinates, The Dirac-Delta Function, Helmholtz Theorem, Scalar and Vector Potentials, The Electrostatics field, Divergence and Curl of electrostatics fields, Applications of Gauss law, Introduction to potential, Poisson equation and Laplace equation, The potential of a localized charge distribution, Electrostatic boundary conditions, Work and Energy in electrostatics, Basic properties of conductor, The surface charge on a conductor.	06
2	**Special Techniques for Calculating Potentials** Laplace equation in one, two & three Dimensions, Boundary conditions and uniqueness theorem, Conductors and the 2nd uniqueness theorem, The classic image problem, The induced surface charge, Force and energy other image problems, Separation of variables, Approximate Potentials at large distance, the monopole and dipole terms, The Electric field of a dipole.	08
3	**Magnetostatic Fields** The Lorentz force law, The Biot-Savarts law, Divergence and curl of B, Magnetic Vector potential, Magnetostatic Boundary conditions, Multipole expansion of the Vector Potential, Magnetization, Torque and force on magnetic dipoles, Effect of magnetic field on atomic orbits, Amperes law in magnetized material, Magnetic Susceptibility and permeability.	08
4	**Electromagnetic Waves** Electromagnetic wave in one Dimension, Sinusoidal waves, Polorization, Boundary condition, Reflection and transmission, Energy and momentum of electromagnetic waves, Propagation through linear media, Reflection and refraction at oblique incidence, electromagnetic waves in conductors, Rectangular Wave guides, TE and TM modes.	10
5	**Electrodynamics** Electrodynamics before Maxwell, Maxwell's equations and magnetic charge, Maxwell's equation inside matter, Boundary conditions, Scaler and vector potentials, Gauge Transformations, Coloub Gauge and Lorentz Gauge, Lorentz Gauge, Lorentz force law in potencial form, Newton's third law in electrodynamics, Poynting theorem, Maxwell's Stress tensor, Conservation of momentum, Electromagnetic waves in non-conducting media, Monochromatic plane waves in conducting media.	10
Total Contact Hours		42

8. **Suggested Books:**

S.No	Name of Book	Author	Publisher	Year of Publication
1	Introduction to electro-dynamics	David J. Griffiths	[PHI-Pvt Ltd, New Delhi –India	2009 3rd Edition
2	Electrodynamics	J.D. Jacson	Pearson	2010 Reprint
3	Mathematical method for Physicists	Arfken Weber	Harcourt (INDIA)	2010 Reprint
4	Classical Theory & Fields	L.D. Landau, E.M. Lypshitz	Pergman	2008 Reprint

NATIONAL INSTITUTE OF TECHNOLOGY, SRINAGAR

NAME OF THE DEPARTMENT: **Electrical Engineering**

1 Subject Code MET-302 Course Title Electrical Engg. Materials

2 Contact Hours | L | 2 | | T | 1 | | P | 0 |

3 Examination Duration (Hrs): | Theory | 0 | 3 | | Practical | 0 | 0 |

4 Relative Weight age | M-I | 2 | 0 | | M-II | 2 | 0 | | ASM | 1 | 0 | | ME | 5 | 0 | | PRE | 0 | 0 |

5 Credits: | 0 | 3 | 3rd Semester | √ | Autumn | | | Spring |

6 Objective: To familiarize with the basic Principles related to the Physics of Materials relevant to Electrical Magnetic and optical properties.

7. **Details of the Course:**

S.No	Particulars	Contact Hours
1.	Crystalline nature of solids, Transformation in alloys. Electrical conduction in metals and alloys. Applications of conductors. Some important resistor alloys. Dielectrical materials and their electrical properties. Semiconductors, their properties and applications.	14
2.	Magnetic properties of solids - types of magnetism, magnetic domain, soft magnetic materials - their characteristics, applications of iron-silicon, iron-nickel and iron-cobalt alloys. Hard magnetic materials, their properties and applications. Some important carbon steels and precipitation hardening type magnet alloys and their applications.	20
3.	Optical properties of materials. Super- conducting theory and materials.	08
Total Contact Hours		42

8. **Suggested Books:**

S.No	Name of Book	Author	Publisher	Year of Publication
1	Introduction to solid state Physics	C. Kittel	Wiley	1986
2	Solid State Physics	Dekker	Prentice Hall	1965
3	Physical Metallurgy Principles	Reedhill	Affiliated East West Press Pvt. Ltd.	2008
4	Theoretical Structural Metallurgy	Cottrell	Arnold	1962
5	Electricity and Magnetism	H.E. Duckworth	Holt, Renihart Winston	1960
6	The Structure and Properties of Materials Vol.4	Rose, Shepperd, Wulf.	John Wiley (New York)	1966

NATIONAL INSTITUTE OF TECHNOLOGY, SRINAGAR

NAME OF THE DEPARTMENT: **Electrical Engineering**

1 Subject Code MTH-305 Course Title Mathematics-III

2 Contact Hours L 2 T 1 P 0

3 Examination Duration (Hrs): Theory 0 3 Practical 0 0

4 Relative Weight age M-I 2 0 M-II 2 0 ASM 1 0 ME 5 0 PRE 0 0

5 Credits: 0 3 3rd Semester √ Autumn Spring

6 **Objective:** The Laplace Transform method solves differential equations and corresponding initial and boundary value problems. It is particularly useful in problems where the mechanical or electrical driving force has discontinuities, is impulsive or is a complicated periodic function, not merely a sine or cosine.

7. **Details of the Course:**

S.No	Particulars	Contact Hours
1.	**Laplace Transforms:** Laplace transform, shifting theorem, Laplace Transforms of different functions, Heaviside's unit function. Dirac Delta function its Laplace Transforms. Heaviside's Expansion theorem. Inverse Laplace Transforms. Initial and Final value theorems, Convolution theorem and applications, use of Laplace Transforms in the solution of linear Differential equations.	22
2.	**Fourier Transform**: Fourier series, Harmonic analysis, Definition of Fourier transform. Fourier sine and cosine transform. Fourier integral formula, Applications to solutions of boundary value problems.	06
3.	**Z- Transform :** Definition, Linearity property, Z- transform of elementary functions, shifting theorems. Initial and Final value theorem. Convolution theorem. Inversion of Z-transforms.	10
	Total Contact Hours	38

8. **Suggested Books:**

S.No	Name of Book	Author	Publisher	Year of Publication
1	Laplace Transforms (Schaum Series)	Spiegel.	McGraw Hill	2005
2	The use of Integral Transform	Ian.N.Snedden	Tata McGraw Hill.	2005
3	Integral Transform	Loknath Debnath	New York, Press	2002
	Advanced Engineering Mathematics	R.K. Jain & S.R.K. Lyengar	Narosa	Narosa-2001

NATIONAL INSTITUTE OF TECHNOLOGY, SRINAGAR

NAME OF THE DEPARTMENT: **Electrical Engineering**

1 Subject Code MECH-ELE Course Title Mechanical Engineering

2 Contact Hours L 3 T 1 P 0

3 Examination Duration (Hrs): Theory 0 3 Practical 0 0

4 Relative Weight age M-I 2 0 M-II 2 0 ASM 1 0 ME 5 0 PRE 0 0

5 Credits: 0 4 3rd Semester √ Autumn Spring

6 Objective: To introduce students with the basic concept s of Thermodynamics and conversion of Heat Energy into Mechanical Energy / Electrical Energy.

7. **Details of the Course:**

S.No	Particulars	Contact Hours
1.	THERMODYNAMICS: System and Surroundings, Zeroth Law, Temperature Scales, Equation of the state, First law, Steady flow, Isochoric, Isobaric, isothermal, adiabatic and polytropic processes. Properties of steam, Second law, Entropy change, Reversible Irreversible processes, Carnots Cycle, Ranking Cycle, Modified Rankine Cycle, Flow through nozzle.	16
2.	STEAM TURBINE:Impulse turbine, velocity and pressure compounding , work output, Losses and efficiency, Reaction turbine, work output, losses and efficiency, degree of reaction, Modern steam power cycles, Regenerative and Reheat cycles, Governing of steam Turbines, Fields of Application.	10
3.	I.C. ENGINES: Otto, Diesel and Duel cycles, Magneto and batteryignition, etonation and pre-ignition, Octane Number, Dropes, Diesel knock, Cetane Number, various I.Cengines fuels, Carburation and Injection , Lubrication, Cooling, Governing of I.C.Engines, Fields of Application.	08
4	GAS TURBINES: Present status and future trends, Basic types and Cycles, Thermal refinements, jet propulsion, fields of Application.	08
	Total Contact Hours	42

8. **Suggested Books:**

S.No	Name of Book	Author	Publisher	Year of Publication
1	Steam Turbine Performance and Economics	Bartlett	McGraw Hill	1958
2	Steam Turbine Theory and Practice	Kearton Pitman	CBS Publishers	1985
3	Theory and Design of steam and Gas turbine	Loe	McGraw Hill	1954
	Gas Turbines Theory and Practice	Cohn and Rogers	Pearson	1988
	Turbo machines	Yahya	McGraw Hill	1983

NATIONAL INSTITUTE OF TECHNOLOGY, SRINAGAR

NAME OF THE DEPARTMENT: **Electrical Engineering**

1 Subject Code ELE-301 Course Title **Principles of Elect Engg. [ECE]**

2 Contact Hours L 2 T 1 P 0

3 Examination Duration (Hrs): Theory 0 3 Practical 0 0

4 Relative Weight age M-I 2 0 M-II 2 0 ASM 1 0 ME 5 0 PRE 0 0

5 Credits: 0 3 3rd Semester √ Autumn Spring

6 **Objective:**
To acquire knowledge and become familiar with the different techniques to solve the different complex Electrical & Electronics Circuits.

7. **Details of the Course:**

S.No	Particulars	Contact Hours
1.	REVIEW OF ELECTRIC CIRCUIT LAWS: Review of electric circuit concepts, terminology, basic laws, and electric circuit parameters	03
2.	ENERGY SOURCES: Ideal and practical voltage and current sources and their transformation, Dependant Sources	02
3.	D.C. CIRCUIT ANALYSIS: Power and energy relations, Analysis of series parallel D.C. Circuits, Loop and nodal methods of analysis, Delta- star (Δ-Y) transformation, Super-position theorem, Thevenin's and Norton's theorems, Maximum power transfer theorem.	14
4.	A.C. CIRCUIT ANALYSIS: Basic terminology and definitions, Phasor and complex number representation, solutions of sinusoidally excited RLC circuits, Power and energy relations in A.C. circuits, Applications of network theorems to A.C. circuits, Resonance in series and parallel circuits, Concepts of active & reactive powers.	16
5.	STEADY STATE A.C. THREE- PHASE CIRCUITS: Characteristics of 3 phase systems, Current and voltage relationships in Y-Δ & Δ-Y configurations, Balanced / un-balanced systems.	05
6.	MAGNETIC CIRCUITS (INTRODUCTION) Mutual inductance, theory of magnetic circuits, electro- magnetism	02
Total Contact Hours		42

8. Suggested Books:

S.No	Name of Book	Author	Publisher	Year of Publication
1	Fundamentals of Electric Circuits	Alexander Sadeker	McGraw- Hill,	3rd Ed. 2011
2	Basic Engineering Circuit Analysis	Irwin	John Wiley	9th Ed 2008
3	Electric Circuits Fundamentals	Franco	Harcourt Brace College (O.U.P)	1994
4	Electric Circuit Analysis	Johnson, Johnson and Hilburn	John Wiley	Latest Ed.

NATIONAL INSTITUTE OF TECHNOLOGY, SRINAGAR

NAME OF THE DEPARTMENT: Electrical Engineering

1	Subject Code	ELE-301P		Course Title	**Principles of Electrical Engg. [ECE]**					
2	Contact Hours			L	0	T	0	P	1	
3	Examination Duration (Hrs):			Theory	0	0	Practical	0	2	
4	Relative Weight age			MSLE	2	5	ESLE	2	5	
5	Credits:	0	1	3^{rd} Semester	√ Autumn		Spring			

6 **Objective:**
To acquire knowledge and become familiar with the different techniques to solve the different complex Electrical, Electronics Circuits,

7. Lab. Experiments:

S.No	Experiments
1	To study the colour coding of resistors
2	Connection of Ammeters, Voltmeters, Wattmeters and multi-meters in DC and AC circuits and selection of their ranges.
3	Use of LCRQ meter.
4	To study the series / parallel operation of resistors and verifying their effective values by LCRQ meter.
5	To verify the KVL and KCL in DC circuits.
6	To verify the star delta transformation of networks.
7	To verify the superposition theorem.
8	To verify the maximum power transfer theorem
9	Basic R, L, C circuits excited from A.C
10	To measure electric power in single-phase AC circuits with resistive load, RL load and RLC load.
11	To measure the power and power factor in three phase AC circuits.
12	To study the series resonance.
13	To study the parallel resonance.
14	To study the handling of CRO and use it for the study of different voltage waveforms.
15	Computer Aided Circuit Analysis (3 experiments)

NATIONAL INSTITUTE OF TECHNOLOGY, SRINAGAR

NAME OF THE DEPARTMENT: **Electrical Engineering**

1 Subject Code ELE-302 Course Title **Electrical Engg. Tech. [Civil]**

2 Contact Hours | L | 2 | | T | 1 | | P | 0 |

3 Examination Duration (Hrs): | Theory | 0 | 3 | | Practical | 0 | 0 |

4 Relative Weight age | M-I | 2 | 0 | | M-II | 2 | 0 | | ASM | 1 | 0 | | ME | 5 | 0 | | PRE | 0 | 0 |

5 Credits: | 0 | 3 | 3^{rd} Semester | √ Autumn | | Spring |

6 **Objective:**
To acquire knowledge and become familiar with the different techniques to solve the different complex Electrical, Electronics Circuits, Electrical Machine & their applications.

7. **Details of the Course:**

S.No	Particulars	Contact Hours
1.	**Electrical Circuit Laws** Basic Electric Circuit terminology, Ohm's Law, Kirchoffs Laws, circuit parameters series and parallel combinations of circuit elements, voltage and current sources	06
2.	**D.C and A.C circuit Analysis.** Power and energy relations, analysis of series parallel D.C circuits, loop and nodal methods, Delta Star (Δ-Ϋ) transformation, superposition theorem, Thevenin's and Nortan's theorems, maximum power transfer theorem. Basic terminology and definitions, phasor and complex number representation, solutions of sinusoidal excited RLC circuits, power and energy relation in A.C circuits, resonance in series and parallel circuits, concept of active and reactive power	10
3.	**Steady State A.C Three Phase Circuits.** Characteristics of 3-phase systems, concept of 3-phase voltage, Y-circuits, Δ-circuits, Ϋ- Δ and Δ-Ϋ current and voltage relations in 3 phase circuits, balanced / unbalanced systems.	10
4.	**Electrical Installation Practice:** Symbols of various electrical apparatus viz switches / MCB's transformers / generators etc. Specification of overhead conductor and underground cables layout of electrification schemes of buildings etc.	10
5.	**Electric Machines & Transformers.** Gen-principle of operation, construction and working of i) dc machines ii) A.C machines iii) Single phase transformers.	06
	Total Contact Hours	42

8. **Suggested Books:**

S.No	Name of Book	Author	Publisher	Year of Publication
1	Fundamentals of Electric Circuits	Alexander Sadeker	McGraw- Hill,	3^{rd} Ed. 2011
2	Basic Engineering Circuit Analysis	Irwin	John Wiley	9^{th} Ed 2008
3	Electric Circuits Fundamentals	Franco	Harcourt Brace College (O.U.P)	1994
4	Electric Circuit Analysis	Johnson, Johnson and Hilburn	John Wiley	Latest Ed.
	Electric Machines	Nagarath, I.J. & Kothari,	Tata McGraw-Hill Company,	2001

NATIONAL INSTITUTE OF TECHNOLOGY, SRINAGAR

NAME OF THE DEPARTMENT: Electrical Engineering

1	Subject Code	ELE-302P		Course Title	**Electrical Engg Technology Lab. [Civil]**					
2	Contact Hours			L	0	T	0	P	2	
3	Examination Duration (Hrs):			Theory	0	0	Practical	0	2	
4	Relative Weight age			MSLE	2	5	ESLE	2	5	
5	Credits:	0	1	3rd Semester	√ Autumn		Spring			

6 **Objective:**
To acquire knowledge and become familiar with the different techniques to solve the different complex Electrical, Electronics Circuits & Electrical Machines.

7. Lab. Experiments:

S.No	Experiments
1	To study the colour coding of resistors
2	Connection of Ammeters, Voltmeters, Wattmeters and multi-meters in DC and AC circuits and selection of their ranges.
3	Use of LCRQ meter.
4	To study the series / parallel operation of resistors and verifying their effective values by LCRQ meter.
5	To verify the KVL and KCL in DC circuits.
6	To verify the star delta transformation of networks.
7	To verify the superposition theorem.
8	To verify the maximum power transfer theorem
9	Basic R, L, C circuits excited from A.C
10	To measure electric power in single-phase AC circuits with resistive load, RL load and RLC load.
11	To measure the power and power factor in three phase AC circuits.
12	To study the series resonance.
13	To study the parallel resonance.
14	To study the handling of CRO and use it for the study of different voltage waveforms.
15	Computer Aided Circuit Analysis (3 experiments)

NATIONAL INSTITUTE OF TECHNOLOGY, SRINAGAR

NAME OF THE DEPARTMENT: **Electrical Engineering**

1 Subject Code ELE-303 Course Title **Electrical Engg. Tech. [Chemical]**

2 Contact Hours L 2 T 1 P 0

3 Examination Duration (Hrs): Theory 0 3 Practical 0 0

4 Relative Weight age M-I 2 0 M-II 2 0 ASM 1 0 ME 5 0 PRE 0 0

5 Credits: 0 3 3rd Semester √ Autumn Spring

6 **Objective:**
To acquire knowledge and become familiar with the different techniques to solve the different complex Electrical, Electronics Circuits, Electrical Machine & their applications.

7. **Details of the Course:**

S.No	Particulars	Contact Hours
1.	Network Analysis and Theorems: Basic circuit theory, resistance, inductance and capacitance, Ohm's law, KCL, KVL, power and energy relations, superposition theorem, Thevenin's theorem, Nortan's theorem, maximum power transfer theorem.	12
2.	Sinusoidally Excited Circuits: Basic definition of A.C. circuits, Phasor algebra and complex number representation, solution of sinusoidally excited R, L, C circuits.	06
3.	Three-Phase Circuits: The concept of 3-phase voltage, current and voltage relations in Y and D circuits, and basic characteristics of three phase circuits.	06
4.	D.C. Generators and Motors: Construction, principles of operation, types of D.C. generators and motors, and their applications.	05
5.	Three-Phase Alternators: Construction, principles of operation, phase diagrammes, voltage regulation, types and application.	05
6	Synchronous Motors: Principle of operation, synchronous capacitors, application.	04
7	Induction Motors: Types, construction, principle of operation, characteristic and application. Electric Arc Furnace and its Accessories.	04
	Total Contact Hours	42

8. **Suggested Books:**

S.No	Name of Book	Author	Publisher	Year of Publication
1	Fundamentals of Electric Circuits	Alexander Sadeker	McGraw- Hill,	3rd Ed. 2011
2	Basic Engineering Circuit Analysis	Irwin	John Wiley	9th Ed 2008
3	Electric Circuits Fundamentals	Franco	Harcourt Brace College (O.U.P)	1994
4	Electric Circuit Analysis	Johnson, Johnson and Hilburn	John Wiley	Latest Ed.

NATIONAL INSTITUTE OF TECHNOLOGY, SRINAGAR

NAME OF THE DEPARTMENT: Electrical Engineering

1	Subject Code	ELE-303P		Course Title	**Electrical Engg. Tech. LAB [Chemical]**					
2	Contact Hours			L	0	T	0	P	2	
3	Examination Duration (Hrs):			Theory	0	0	Practical	0	2	
4	Relative Weight age			MSLE	2	5	ESLE	2	5	
5	Credits:	0	1	3^{rd} Semester	√ Autumn		Spring			

6 **Objective:**

To acquire knowledge and become familiar with the different techniques to solve the different complex Electrical, Electronics Circuits & Electrical Machines.

7. Lab. Experiments:

S.No	Experiments
1	Verification of KCL & KVL and hence determination of a equivalent resistance of parallel circuit.
2	Verification of superposition theorem.
3	Verification of Thevenin's theorem.
4	Obtaining resonance in RLC circuits.
5	Measurement of power and power factor of a three-phase load.
6	To study the constructional details of single-phase transformer
7	To study the constructional details of D.C. machines.

NATIONAL INSTITUTE OF TECHNOLOGY, SRINAGAR

NAME OF THE DEPARTMENT: **Electrical Engineering**

1 Subject Code ELE-304 Course Title **Electrical Engineering Tech.** [M&ME.Deptt.]

2 Contact Hours L 2 T 1 P 0

3 Examination Duration (Hrs): Theory 0 3 Practical 0 0

4 Relative Weight age M-I 2 0 M-II 2 0 ASM 1 0 ME 5 0 PRE 0 0

5 Credits: 0 3 3rd Semester √ Autumn Spring

6 Objective: To introduce students with the basic concept s of Electric Circuitry and familiarize them with basic electric machines.

7. **Details of the Course:**

S.No	Particulars	Contact Hours
1.	Electric circuits laws and D.C. circuits – super position principle. Thevenin's theorem. Maximum power transfer theorem.	18
2.	A.C circuits, basic definitions. Solution of R-L0G circuit,	12
	three phase balanced star and delta connection circuits,	04
3.	D.C generators and motors and their characteristics three phase alternators, synchronous and induction motors.	08
Total Contact Hours		42

8. **Suggested Books:**

S.No	Name of Book	Author	Publisher	Year of Publication
1	Fundamentals of Electric Circuits	Alexander Sadeker	McGraw- Hill,	3rd Ed. 2011
2	Basic Engineering Circuit Analysis	Irwin	John Wiley	9th Ed 2008
3	Electric Circuits Fundamentals	Franco	Harcourt Brace College (O.U.P)	1994
4	Electric Circuit Analysis	Johnson, Johnson and Hilburn	John Wiley	Latest Ed.
5.	Electric Machines	Fitzgerald, A. E., Kingsley, C. J. and Umans, S.D.,	McGraw- Hill,	2003

NATIONAL INSTITUTE OF TECHNOLOGY, SRINAGAR

NAME OF THE DEPARTMENT: Electrical Engineering

1	Subject Code	ELE-304P		Course Title	**Basic Electrical Engg Lab.** [M&MED]					
2	Contact Hours			L	0	T	0	P	2	
3	Examination Duration (Hrs):			Theory	0	0	Practical	0	2	
4	Relative Weight age			MSLE	2	5	ESLE	2	5	
5	Credits:	0	1	3rd Semester	√ Autumn		Spring			

6 **Objective:**

To acquire knowledge and become familiar with the different techniques to solve the different complex Electrical, Electronics Circuits & Electrical Machines.

7. Lab. Experiments:

S.No	Experiments
1	Verification of KCL & KVL
2	Verification of superposition theorem.
3	Verification of Thevenin's theorem.
4	Obtaining resonance in RLC circuits.
5	Measurement of Max Power Transfer Theorm
6	To study the constructional details of single-phase transformer.
7	Measurement of Power and Power factor 3 load
8	Constructional details of a single phase transformer.

NATIONAL INSTITUTE OF TECHNOLOGY, SRINAGAR

NAME OF THE DEPARTMENT: **Electrical Engineering**

1 Subject Code ELE-305 Course Title **Circuit Analysis [CSE]**

2 Contact Hours | L | 2 | T | 1 | P | 0 |

3 Examination Duration (Hrs): | Theory | 0 | 3 | Practical | 0 | 0 |

4 Relative Weight age | M-I | 2 | 0 | M-II | 2 | 0 | ASM | 1 | 0 | ME | 5 | 0 | PRE | 0 | 0 |

5 Credits: | 0 | 3 | 3rd Semester | √ Autumn | | Spring |

6 **Objective:**
To acquire knowledge and become familiar with the different techniques to solve the different complex Electrical & Electronics Circuits.

7. **Details of the Course:**

S.No	Particulars	Contact Hours
1.	REVIEW OF ELECTRIC CIRCUIT LAWS: Review of electric circuit concepts, terminology, basic laws, and electric circuit parameters	06
2.	ENERGY SOURCES: Ideal and practical voltage and current sources and their transformation, Dependant Sources	04
3.	D.C. CIRCUIT ANALYSIS: Power and energy relations, Analysis of series parallel D.C. Circuits, Loop and nodal methods of analysis, Delta- star (Δ-Y) transformation, Super-position theorem, Thevenin's and Norton's theorems, Maximum power transfer theorem.	12
4.	A.C. CIRCUIT ANALYSIS: Basic terminology and definitions, Phasor and complex number representation, solutions of sinusoidally excited RLC circuits, Power and energy relations in A.C. circuits, Applications of network theorems to A.C. circuits, Resonance in series and parallel circuits, Concepts of active & reactive powers.	12
5.	STEADY STATE A.C. THREE- PHASE CIRCUITS: Characteristics of 3 phase systems, Current and voltage relationships in Y-Δ & Δ-Y configurations, Balanced / un-balanced systems.	08
	Total Contact Hours	42

8. **Suggested Books:**

S.No	Name of Book	Author	Publisher	Year of Publication
1	Fundamentals of Electric Circuits	Alexander Sadeker	McGraw- Hill,	3rd Ed. 2011
2	Basic Engineering Circuit Analysis	Irwin	John Wiley	9th Ed 2008
3	Electric Circuits Fundamentals	Franco	Harcourt Brace College (O.U.P)	1994
4	Electric Circuit Analysis	Johnson, Johnson and Hilburn	John Wiley	Latest Ed.

NATIONAL INSTITUTE OF TECHNOLOGY, SRINAGAR

NAME OF THE DEPARTMENT: Electrical Engineering

1	Subject Code	ELE-305P		Course Title	**Electrical Engg. Tech. LAB [CSE]**					
2	Contact Hours			L	0	T	0	P	1	
3	Examination Duration (Hrs):			Theory	0	0	Practical	0	2	
4	Relative Weight age			MSLE	2	5	ESLE	2	5	
5	Credits:	0	1	3rd Semester	√ Autumn		Spring			

6 **Objective:**
To acquire knowledge and become familiar with the different techniques to solve the different complex Electrical, Electronics Circuits,

7. Lab. Experiments:

S.No	Experiments
1	Connection of Ammeters, Voltmeters, Wattmeters and multi-meters in DC and AC circuits and selection of their ranges.
2	To verify the KVL and KCL in DC circuits.
3	To verify the star delta transformation of networks.
4	To verify the superposition theorem.
5	To verify the maximum power transfer theorem
6	Basic R, L, C circuits excited from A.C
7	To measure electric power in single-phase AC circuits with resistive load, RL load and RLC load.
8	To measure the power and power factor in three phase AC circuits.
9	To study the series resonance.
10	To study the parallel resonance.

NATIONAL INSTITUTE OF TECHNOLOGY, SRINAGAR

NAME OF THE DEPARTMENT: **Electrical Engineering**

1 Subject Code ELE-306 Course Title **Circuit Analysis [IT]**

2 Contact Hours | L | 2 | | T | 1 | | P | 0 |

3 Examination Duration (Hrs): | Theory | 0 | 3 | | Practical | 0 | 0 |

4 Relative Weight age | M-I | 2 | 0 | M-II | 2 | 0 | ASM | 1 | 0 | ME | 5 | 0 | PRE | 0 | 0 |

5 Credits: | 0 | 3 | 3rd Semester | √ Autumn | | Spring |

6 **Objective:**
To acquire knowledge and become familiar with the different techniques to solve the different complex Electrical & Electronics Circuits.

7. **Details of the Course:**

S.No	Particulars	Contact Hours
1.	REVIEW OF ELECTRIC CIRCUIT LAWS: Review of electric circuit concepts, terminology, basic laws, and electric circuit parameters	06
2.	ENERGY SOURCES: Ideal and practical voltage and current sources and their transformation, Dependant Sources	04
3.	D.C. CIRCUIT ANALYSIS: Power and energy relations, Analysis of series parallel D.C. Circuits, Loop and nodal methods of analysis, Delta- star (Δ-Y) transformation, Super-position theorem, Thevenin's and Norton's theorems, Maximum power transfer theorem.	12
4.	A.C. CIRCUIT ANALYSIS: Basic terminology and definitions, Phasor and complex number representation, solutions of sinusoidally excited RLC circuits, Power and energy relations in A.C. circuits, Applications of network theorems to A.C. circuits, Resonance in series and parallel circuits, Concepts of active & reactive powers.	12
5.	STEADY STATE A.C. THREE- PHASE CIRCUITS: Characteristics of 3 phase systems, Current and voltage relationships in Y-Δ & Δ-Y configurations, Balanced / un-balanced systems.	08
	Total Contact Hours	42

8. **Suggested Books:**

S.No	Name of Book	Author	Publisher	Year of Publication
1	Fundamentals of Electric Circuits	Alexander Sadeker	McGraw- Hill,	3rd Ed. 2011
2	Basic Engineering Circuit Analysis	Irwin	John Wiley	9th Ed 2008
3	Electric Circuits Fundamentals	Franco	Harcourt Brace College (O.U.P)	1994
4	Electric Circuit Analysis	Johnson, Johnson and Hilburn	John Wiley	Latest Ed.

NATIONAL INSTITUTE OF TECHNOLOGY, SRINAGAR

NAME OF THE DEPARTMENT: Electrical Engineering

1	Subject Code	ELE-306P		Course Title	**Electrical Engg. Tech. LAB [IT]**					
2	Contact Hours			L	0	T	0	P	1	
3	Examination Duration (Hrs):			Theory	0	0	Practical	0	2	
4	Relative Weight age			MSLE	2	5	ESLE	2	5	
5	Credits:	0	1	3rd Semester	√ Autumn		Spring			

6 **Objective:**
To acquire knowledge and become familiar with the different techniques to solve the different complex Electrical, Electronics Circuits,

7. Lab. Experiments:

S.No	Experiments
1	Connection of Ammeters, Voltmeters, Wattmeters and multi-meters in DC and AC circuits and selection of their ranges.
2	To verify the KVL and KCL in DC circuits.
3	To verify the star delta transformation of networks.
4	To verify the superposition theorem.
5	To verify the maximum power transfer theorem
6	Basic R, L, C circuits excited from A.C
7	To measure electric power in single-phase AC circuits with resistive load, RL load and RLC load.
8	To measure the power and power factor in three phase AC circuits.
9	To study the series resonance.
10	To study the parallel resonance.

ABBREVATIONS

L	=	LECTURES
T	=	TUTORIALS
P	=	PRACTICALS
TH	=	THEORY
M-I	=	1ST MINOR EXAMINATION
M-II	=	2ND MINOR EXAMINATION
ASM	=	ASSIGNMENTS
ME	=	MAJOR EXAMINATION
PRE	=	PRESENTATION
MSLE	=	MID SEMESTER LABORATORY EXAMINATION
ELSE	=	END SEMESTER LABORATORY EXAMINATION
GD	=	GROUP DISCUSSION
WUP	=	WRITE UP
SYNP	=	SYNOPSIS
PR	=	PROJECT REPORT
EE	=	EXTERNAL EXAMINER
VV	=	VIVA VOCE
IASMT	=	INTERNAL ASSESSMENT
REPT	=	TRAINING REPORT

Department of Electrical Engineering,
National Institute of Technology, Srinagar.

Head,
Civil Engineering Department,

As resolved in its 8th meeting of Senate held on 27-11-2010, the 3rd semester Syllabi of Electrical Engineering has been prepared in the format of IIT Roorkee as followed by the Metallurgical Engineering Department.

It is requested, that the enclosed syllabi of Electrical Engineering Technology / Electrical Engineering Technology Lab. taught by Electrical Engg. Department at 3rd Semester level to Civil Engineering Students (applicable for 2010 batch onwards) may kindly be circulated amongst the students.

(Dr. M. D. Mufti)
Prof. & Head

Department of Electrical Engineering,
National Institute of Technology, Srinagar.

No: NIT/Elect/11/239
Dated: 17-08-2011

Head,
Electronics & Commu. Engineering Department,

As resolved in its 8th meeting of Senate held on 27-11-2010, the 3rd semester Syllabi of Electrical Engineering has been prepared in the format of IIT Roorkee as followed by the Metallurgical Engineering Department.

It is requested, that the enclosed syllabi of **Principles of Electrical Engineering / Principles of Electrical Engineering LAB.** taught by Electrical Engg. Department at 3rd Semester level to ECE Students (applicable for 2010 batch onwards) may kindly be circulated amongst the students.

(Dr. M. D. Mufti)
Prof. & Head

Department of Electrical Engineering,
National Institute of Technology, Srinagar.

No: NIT/Elect/11/240
Dated: 17-08-2011

Head,
CSE / Information Technology,

As resolved in its 8th meeting of Senate held on 27-11-2010, the 3rd semester Syllabi of Electrical Engineering has been prepared in the format of IIT Roorkee as followed by the Metallurgical Engineering Department.

It is requested, that the enclosed syllabi of **Circuit Analyis / Circuit Analyis LAB.** taught by Electrical Engg. Department at 3rd Semester level to **CSE / IT** Students (applicable for 2010 batch onwards) may kindly be circulated amongst the students.

(Dr. M. D. Mufti)
Prof. & Head

Department of Electrical Engineering,
National Institute of Technology, Srinagar.

No: NIT/Elect/11/242
Dated: 18-08-2011

Head,
Metallurgical & Materials Engg. Department,

As resolved in its 8th meeting of Senate held on 27-11-2010, the 3rd semester Syllabi of Electrical Engineering has been prepared in the format of IIT Roorkee as followed by the Metallurgical Engineering Department.

It is requested, that the enclosed syllabi of **Electrical Engineering Technology / Electrical Engineering Technology LAB.** taught by Electrical Engg. Department at 3rd Semester level to **Metallurgical & Materials Engg.** Students (applicable for 2010 batch onwards) may kindly be circulated amongst the students.

(Dr. M. D. Mufti)
Prof. & Head

Department of Electrical Engineering,
National Institute of Technology, Srinagar.

No: NIT/Elect/11/243
Dated: 18-08-2011

Head,
Chemical Engineering Department,

As resolved in its 8th meeting of Senate held on 27-11-2010, the 3rd semester Syllabi of Electrical Engineering has been prepared in the format of IIT Roorkee as followed by the Metallurgical Engineering Department.

It is requested, that the enclosed syllabi of **Electrical Engineering Technology / Electrical Engineering Technology LAB.** taught by Electrical Engg. Department at 3rd Semester level to **Chemical Engg.** Students (applicable for 2010 batch onwards) may kindly be circulated amongst the students.

(Dr. M. D. Mufti)
Prof. & Head

Department of Electrical Engineering,
National Institute of Technology, Srinagar.

No: NIT/Elect/11/256
Dated: 27-08-2011

Controller of Examinations,

Kindly find enclosed herewith the Semester Wise Course Structure and Subject Wise Course Content for Bachelor of Engineering Programme for **3rd Semester applicable for Batch 2010 and onwards.** The same stands approved by the **Board of Studies on 26th of October, 2010** and consequently approved by the **SENATE ON NOVEMBER 27, 2010 VIDE RESOLUTION /DO/20/2010**. As per the resolution of Senate, the Semester-Wise Course Structure and Subject-Wise Course Contents have been prepared as per the format of IIT Roorkee as followed by the Metallurgical Engineering Department.

The 4th to 8th Semester Wise Course Structure & Subject Wise Course Content will follow in due course of time.

This has reference to your letter No: NIT/DAA/11/67-72 dated: 20-07-2011.

(Dr. M. D. Mufti)
Prof. & Head

ABBREVATIONS

L	=	LECTURES
T	=	TUTORIALS
P	=	PRACTICALS
TH	=	THEORY
M-I	=	1^{ST} MINOR EXAMINATION
M-II	=	2^{ND} MINOR EXAMINATION
ASM	=	ASSIGNMENTS
ME	=	MAJOR EXAMINATION
PRE	=	PRESENTATION
MSLE	=	MID SEMESTER LABORATORY EXAMINATION
ELSE	=	END SEMESTER LABORATORY EXAMINATION
GD	=	GROUP DISCUSSION
WUP	=	WRITE UP
SYNP	=	SYNOPSIS
PR	=	PROJECT REPORT
EE	=	EXTERNAL EXAMINER
VV	=	VIVA VOCE
IASMT	=	INTERNAL ASSESSMENT
REPT	=	TRAINING REPORT

NATIONAL INSTITUTE OF TECHNOLOGY, SRINAGAR

NAME OF THE DEPARTMENT: **Electrical Engineering**

1 Subject Code ELE- Course Title

2 Contact Hours | L | | T | | P | |

3 Examination Duration (Hrs): | Theory | | | Practical | | |

4 Relative Weight age | M-I | 2 | 0 | M-II | 2 | 0 | ASM | 1 | 0 | ME | 5 | 0 | PRE | 0 | 0 |

5 Credits: | | | 3rd Semester | √ Autumn | | Spring |

6 **Objective:**

7. **Details of the Course:**

S.No	Particulars	Contact Hours
1.		
2.		
3.		
4.		
5.		
6.		
Total Contact Hours		

8. **Suggested Books:**

S.No	Name of Book	Author	Publisher	Year of Publication
1				
2				
3				
4				

NATIONAL INSTITUTE OF TECHNOLOGY, SRINAGAR

NAME OF THE DEPARTMENT: Electrical Engineering

1	Subject Code	ELE-		Course Title						
2	Contact Hours			L	0	T	0	P	1	
3	Examination Duration (Hrs):			Theory	0	0	Practical	0	2	
4	Relative Weight age			MSLE	2	5	ESLE	2	5	
5	Credits:	0	1	3rd Semester	√ Autumn		Spring			

6 **Objective:**

9. Lab. Experiments:

S.No	Experiments
1	
2	
3	
4	
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7	
8	
9	
10	
11	
12	
13	
14	
15	

ELECTRICAL ENGINEERING DEPARTMENT

SEMESTER WISE COURSE STRUCTURE

B. Tech. 3rd

S. No.	Course No.	TITLE / Subjects	ENGAGEMENT			C R E D I T S		
			L	T	P	TH	P	Total
1	ELE-301	Principles of Electrical Engineering	2	1		3		3
	ELE-301P	Principles of Electrical Engineering LAB	-	-	2		1	1
2	ECE-301	Network Analysis and Synthesis	3	1	0	4		4
3	ECE-302	Electronics-I	2	1		3		3
	ECE-302P	Electronics-I LAB	-	-	2		1	1
4	PHY-303	Electro Magnetic Fields & Waves	2	1	0	3		3
5	MET-302	Electrical Engineering Materials	2	1	0	3		3
6	MTH-305	Mathematics-III	2	1	0	3		3
7	MECH-ELE	Mechanical Engineering	3	1	0	4		4

SUBJECTS OFFERED BY THE DEPARTMENT OF ELECTRICAL ENGINEERING TO THE THIRD (3RD) SEMESTER STDENTS OF SISTER DISCIPLINES.

S. No.	Course No.	TITLE / Subjects	ENGAGEMENT			C R E D I T S		
			L	T	P	TH	P	Total
	ELE-301	Principles of Electrical Engineering (For ECE Department)	2	1		3		3
	ELE-301P	Principles of Electrical Engineering LAB (For ECE Department)			2		1	1
	ELE-302	Electrical Engineering Technology (For Civil Engineering Department)	2	1		3		3
	ELE-302P	Electrical Engineering Technology LAB (For Civil Engineering Department)			2		1	1
	ELE-303	Electrical Engineering Technology (For Chemical Engineering Department)	2	1		3		3
	ELE-303P	Electrical Engineering Technology LAB (For Chemical Engineering Department)			2		1	1
	ELE-304	Electrical Engineering Technology (For Metallurgical Engg. Department)	2	1		3		3
	ELE-304P	Electrical Engineering Technology LAB (For Metallurgical Engg. Department)			2		1	1
	ELE-305	Circuit Analysis (For Computer Sciences and Engineering)	2	1		3		3
	ELE-305P	Circuit Analysis LAB (For Computer Sciences and Engineering)			2		1	1
	ELE-305	Circuit Analysis (For Information Technology)	2	1		3		3
	ELE-305P	Circuit Analysis LAB (For Information Technology)			2		1	1

L- Lecture T- Tutorial P- Practical TH- Theory