

Haryana Engineering College, Jagadhri

Lesson Plan of Electrical Engineering Deptt. 6th Semester

Subject : Power System - II (EE-302A)

Objective of Course :

To enable students to analyses power system networks, faults in power system, transient and bus impedance algorithm.

Day	Topic / Chapter Covered	Academic Activity	Test/Assignment
Day 1	Introduction: Characteristics & representation of components of a power system	Lecture	
Day 2	Synchronous machines	Lecture	
Day 3	Transformers	Lecture	
Day 4	Lines cables & loads	Lecture	Assignment 1
Day 5	Single line diagram of a power system	Lecture	
Day 6	Flow of zero sequence current	Lecture	
Day 7	Zero sequence impedance diagrams of power system with different types of connections of three phase transformers.	Lecture	
Day 8	Per unit system: Per unit method of representing quantities	Lecture	Assignment 2
Day 9	Advantages and disadvantages of per unit system	Lecture	
Day10	Determination of base impedance	Lecture	
Day11	Per unit impedance of two winding transformer.	Lecture	
Day12	Symmetrical faults	Lecture	
Day13	Calculation of fault currents	Lecture	Assignment 3
Day14	Use of current limiting reactors	Lecture	
Day15	Unsymmetrical faults	Lecture	
Day16	Types of transformation in power system analysis	Lecture	
Day17	Symmetrical components transformation	Lecture	
Day18	Sequence impedance of power system elements	Lecture	Assignment 4
Day19	Sequence network of power system	Lecture	
Day20	Analysis of unsymmetrical short faults	Lecture	
Day21	Network analysis & its application to interconnected system	Lecture	
Day22	Transients in Power Systems: Transient electric phenomenon	Lecture	
Day23	Lighting & switching surges	Lecture	Assignment 5
Day24	Traveling waves	Lecture	
Day25	Surge impedance and velocity of propagation	Lecture	
Day26	Reflection & refraction of waves	Lecture	

Day27	Reflection & refraction of waves with different line termination	Lecture	Assignment 6
Day28	Equivalent circuit for travelling wave studies	Lecture	
Day29	Bifurcated line	Lecture	Assignment 7
Day30	Travelling wave on a line terminated by inductance, capacitance	Lecture	
Day31	Bus Impedance and admittance matrices	Lecture	
Day32	Building algorithms for bus impedance matrix	Lecture	
Day33	Modification of bus impedance matrix for change of reference bus and for network changes	Lecture	
Day34	Formation of bus admittance matrix	Lecture	
Day35	Modification of three-phase network elements	Lecture	Assignment 8
Day36	Treatment under balanced and unbalanced excitation	Lecture	
Day37	Transformation matrices	Lecture	
Day38	Unbalanced elements	Lecture	

(Sign. of HOD)

(Sign. of Teacher Concerned with date)

Haryana Engineering College, Jagadhri

Lesson Plan of Electrical Engineering Deptt. 6th Semester

Subject : Electrical Energy Conservation and Auditing (EEP-306A)

Objective of Course :

The main objective of the course is to impart the students with the knowledge of energy conservation act, tariff and energy auditing.

Day	Topic / Chapter Covered	Academic Activity	Test/Assignment
Day 1	Commercial and Non-commercial energy	Lecture	
Day 2	Primary energy resources	Lecture	
Day 3	Commercial energy production	Lecture	
Day 4	Final energy consumption	Lecture	Assignment 1
Day 5	Energy needs of growing economy	Lecture	
Day 6	Energy and environment	Lecture	
Day 7	Energy security	Lecture	
Day 8	Energy conservation and its importance	Lecture	Assignment 2
Day 9	Restructuring of the energy supply sector	Lecture	
Day10	Energy strategy for the future Air pollution, climate change	Lecture	
Day11	Energy Conservation Act-2001 and its features	Lecture	
Day12	Electricity tariff	Lecture	
Day13	Load management	Lecture	Assignment 3
Day14	Maximum demand control	Lecture	
Day15	Power factor improvement	Lecture	
Day16	Selection & location of capacitors	Lecture	
Day17	Thermal Basics-fuels	Lecture	
Day18	Thermal energy contents of fuel	Lecture	Assignment 4
Day19	Temperature & pressure, heat capacity.	Lecture	
Day20	Definition, energy audit	Lecture	
Day21	Need, types of energy audit	Lecture	
Day22	Energy management (audit) approach	Lecture	
Day23	Understanding energy costs	Lecture	Assignment 5
Day24	Bench marking	Lecture	
Day25	Energy performance	Lecture	
Day26	Matching energy use to requirement	Lecture	
Day27	Electrical system	Lecture	Assignment 6
Day28	Electricity billing	Lecture	
Day29	Electrical load management and maximum demand control	Lecture	Assignment 7
Day30	Power factor improvement and its benefit	Lecture	
Day31	Electric motors: Types	Lecture	

Day32	Losses in induction motors	Lecture	
Day33	Motor efficiency	Lecture	
Day34	Factors affecting motor performance	Lecture	
Day35	Cooling Tower: Types and performance evaluation	Lecture	Assignment 8
Day36	Efficient system operation	Lecture	
Day37	Flow control strategies	Lecture	
Day38	Energy saving opportunities	Lecture	
Day39	Assessment of cooling towers	Lecture	

(Sign. of HOD)

(Sign. of Teacher Concerned with date)

Haryana Engineering College, Jagadhri

Lesson Plan of Electrical Engineering Deptt. 6th Semester

Subject : Biomedical Signal & Image Processing (EEP-308A)

Objective of Course :

To make students aware about the fundamentals and various techniques of biomedical image processing and to develop the algorithms for image analysis and diagnosis in medical imaging.

Day	Topic / Chapter Covered	Academic Activity	Test/Assignment
Day 1	Fundamentals of Digital Image	Lecture	
Day 2	Image formation, visual perception	Lecture	
Day 3	CCD & CMOS Image sensor	Lecture	
Day 4	Image sampling: Two dimensional Sampling theory	Lecture	Assignment 1
Day 5	Nonrectangular grid and Hexagonal sampling	Lecture	
Day 6	Optimal sampling	Lecture	
Day 7	Image quantization	Lecture	
Day 8	Non uniform Quantization	Lecture	Assignment 2
Day 9	Image formats	Lecture	
Day10	Types of pixel Operations	Lecture	
Day11	Types of neighborhoods, adjacency, connectivity, boundaries, regions	Lecture	
Day12	2D- convolution	Lecture	
Day13	Color models	Lecture	Assignment 3
Day14	Image Enhancement in Spatial and Frequency domain	Lecture	
Day15	Basic gray level transformations	Lecture	
Day16	Histogram processing	Lecture	
Day17	Smoothing operations	Lecture	
Day18	Edge Detection-derivative based operation	Lecture	Assignment 4
Day19	Filtering in frequency domain	Lecture	
Day20	2D-DFT	Lecture	
Day21	Smoothing frequency domain filters	Lecture	
Day22	Sharpening frequency domain filters	Lecture	
Day23	Homomorphic filtering	Lecture	Assignment 5
Day24	Morphological Image Processing	Lecture	
Day25	Dilation and Erosion, Opening and Closing	Lecture	
Day26	Hit-or-Miss transformation	Lecture	
Day27	Boundary Extraction, Region filling	Lecture	Assignment 6
Day28	Extraction of Connected Components	Lecture	
Day29	Convex Hull, Thinning	Lecture	Assignment 7
Day30	Thickening, Skeletons	Lecture	
Day31	Pruning	Lecture	
Day32	Image Segmentation	Lecture	

Day33	Detection of discontinuities	Lecture	
Day34	Point-line- edge detection	Lecture	
Day35	Linear and Circular Hough Transform	Lecture	Assignment 8
Day36	Basic Global and Adaptive Thresholding	Lecture	
Day37	Region Based segmentation	Lecture	
Day38	K-Means Clustering	Lecture	
Day39	Image Compression	Lecture	
Day40	Fundamentals of Image compression models	Lecture	
Day41	Lossless compression, Variable length coding	Lecture	
Day42	LZW coding, Arithmetic coding	Lecture	
Day43	Lossy compression, Wavelet and DCT coding	Lecture	Assignment 9
Day44	Predictive coding	Lecture	
Day45	Representation and Description	Lecture	
Day46	Image features	Lecture	
Day47	Feature extraction	Lecture	
Day48	Chain code, Moments	Lecture	

(Sign. of HOD)

(Sign. of Teacher Concerned with date)

Haryana Engineering College, Jagadhri

Lesson Plan of Electrical Engineering Deptt. 6th Semester

Subject : Electrical Materials (EEO-320A)

Objective of Course :

The main objective of the course is to impart the students with the knowledge of various types of electrical engineering materials.

Day	Topic / Chapter Covered	Academic Activity	Test/Assignment
Day 1	Conductors	Lecture	
Day 2	Properties of conductors	Lecture	
Day 3	ACSR	Lecture	
Day 4	High resistivity materials and their properties	Lecture	Assignment 1
Day 5	Alloys	Lecture	
Day 6	Soldering and brazing materials	Lecture	
Day 7	Superconductivity	Lecture	
Day 8	Super conductor materials and their applications.	Lecture	Assignment 2
Day 9	Insulators	Lecture	
Day10	Classifications of insulators	Lecture	
Day11	Dialectical materials	Lecture	
Day12	Glass and ceramics	Lecture	
Day13	Refractory materials and their uses	Lecture	Assignment 3
Day14	Optical fibers	Lecture	
Day15	Laser and opto-electronics materials	Lecture	
Day16	Semiconductor materials	Lecture	
Day17	Properties of semiconductor materials	Lecture	
Day18	Thermosetting and thermoplast materials	Lecture	Assignment 4
Day19	Classification of material	Lecture	
Day20	Dia, Para, and Ferro magnetic materials	Lecture	
Day21	Curie law and curie Weiss law (qualitative study)	Lecture	
Day22	Ferromagnetism	Lecture	
Day23	Qualitative study of domain theory – Hysteresis phenomena	Lecture	Assignment 5
Day24	Hard and soft magnetic material and their applications	Lecture	
Day25	Ferrites, Structure and property	Lecture	
Day26	Processes used in Plano technology	Lecture	
Day27	Lapping, polishing	Lecture	Assignment 6
Day28	Cleaning, masking	Lecture	
Day29	Photolithography	Lecture	Assignment 7
Day30	Diffusion, oxidation and metallization	Lecture	
Day31	Welding, wire bonding	Lecture	

Day32	Packaging and encapsulation	Lecture	
Day33	Heating- induction and dielectric	Lecture	
Day34	Electron beam welding and cutting	Lecture	
Day35	Annealing	Lecture	Assignment 8
Day36	Cold & Hot rolling	Lecture	

(Sign. of HOD)

(Sign. of Teacher Concerned with date)

Haryana Engineering College, Jagadhri

Lesson Plan of Electrical Engineering Deptt. 6th Semester

Subject : Electrical Measurements & Measuring Instrumentation (EE-310A)

Objective of Course :

The main objective of the course is to impart the students with the knowledge of various types of electrical measurements and measuring instruments.

Day	Topic / Chapter Covered	Academic Activity	Test/Assignment
Day 1	Measuring System Fundamentals	Lecture	
Day 2	Classification of instruments (Absolute & Secondary Instruments: indicating, recording & integrating instruments: based upon Principle of operation)	Lecture	
Day 3	Generalized instrument (Block diagram, description of blocks)	Lecture	
Day 4	Three forces in electromechanical indicating instrument (Deflecting, controlling & damping forces)	Lecture	Assignment 1
Day 5	Comparison between gravity & spring controls	Lecture	
Day 6	Comparison of damping methods & their suitability bearing supports	Lecture	
Day 7	Pivot-less supports (simple & taut-band)	Lecture	
Day 8	Scale information	Lecture	Assignment 2
Day 9	Instrument cases (covers)	Lecture	
Day10	Measuring Instruments	Lecture	
Day11	Construction, operating principle	Lecture	
Day12	Torque equation	Lecture	
Day13	Shape of scale	Lecture	Assignment 3
Day14	Use as Ammeter or as Voltmeter (Extension of Ranges)	Lecture	
Day15	Advantages & disadvantages	Lecture	
Day16	Errors (both on AC/ DC) of PMMC types	Lecture	
Day17	Electrodynamic type	Lecture	
Day18	Moving iron type (attraction, repulsion & combined types)	Lecture	Assignment 4
Day19	Hot wire type	Lecture	
Day20	Induction type	Lecture	
Day21	Electrostatic type instruments	Lecture	
Day22	Introduction of Q meter	Lecture	
Day23	Wattmeters & Energy Meters	Lecture	Assignment 5
Day24	Construction, operating principle, torque equation, shape of scale, errors	Lecture	
Day25	Advantages & disadvantages of Electrostatics	Lecture	
Day26	Induction type watt meters	Lecture	

Day27	Single phase induction type Energy meter	Lecture	Assignment 6
Day28	Compensation & creep in energy meter	Lecture	
Day29	Power Factor Meters	Lecture	Assignment 7
Day30	Construction, operating principle, torque equation	Lecture	
Day31	Advantages & disadvantages of Single phase power factor meters (Electrodynamics & moving iron types)	Lecture	
Day32	Low & High Resistance Measurements	Lecture	
Day33	Kelvin's double bridge method	Lecture	
Day34	Difficulties in high resistance measurements	Lecture	
Day35	Measurement of high resistance by direct deflection	Lecture	Assignment 8
Day36	Loss of charge method	Lecture	
Day37	Megaohm Bridge & meggar	Lecture	
Day38	AC Bridges	Lecture	
Day39	General balance	Lecture	
Day40	Circuit & Phasor diagram	Lecture	
Day41	Applications, advantages/disadvantages of: Maxwell's inductance	Lecture	
Day42	Inductance-capacitance	Lecture	
Day43	Hays, Anderson	Lecture	Assignment 9
Day44	Owens, De-Sauty's	Lecture	
Day45	Schering & Weins Bridges	Lecture	

(Sign. of HOD)

(Sign. of Teacher Concerned with date)

Haryana Engineering College, Jagadhri

Lesson Plan of Electrical Engineering Deptt. 6th Semester

Subject : Organizational Behaviour (HM-901A)

Objective of Course :

1. An overview about organizational behavior as a discipline and understanding the concept of individual behavior.
2. Understand the concept and importance of personality, emotions and its importance in decision making and effective leadership.
3. Enabling the students to know about the importance of effective motivation and its contribution in group dynamics and resolving conflicts.
4. Understand how to overcome organizational stress by maintaining proper organizational culture and effective communication

Day	Topic / Chapter Covered	Academic Activity	Test/Assignment
Day 1	Introduction to organizational behavior: Concept and importance of organizational behavior	Lecture	
Day 2	Role of Managers in OB	Lecture	
Day 3	Foundations or approaches to organizational behaviour	Lecture	
Day 4	Challenges and opportunities for OB.	Lecture	
Day 5	Foundation of individual behavior: Biographical characteristics	Lecture	
Day 6	Concept of abilities and learning	Lecture	
Day 7	Learning and learning cycle	Lecture	
Day 8	Components of learning	Lecture	Assignment 1
Day 9	Concept of values and attitude, types of attitude	Lecture	
Day10	Attitude and workforce diversity.	Lecture	
Day11	Introduction to personality and emotions: Definition and Meaning of Personality	Lecture	
Day12	Determinants of Personality	Lecture	
Day13	Personality Traits Influencing OB	Lecture	
Day14	Nature and Meaning of Emotions	Lecture	
Day15	Emotions dimensions	Lecture	
Day16	Concept of Emotional intelligence.	Lecture	
Day17	Perception and individual decision making: meaning of perception	Lecture	
Day18	Factors influencing perception	Lecture	Assignment 2
Day19	Rational decision making process	Lecture	
Day20	Concept of bounded rationality	Lecture	
Day21	Leadership-trait approaches	Lecture	
Day22	Behavioural approaches, situational approaches	Lecture	
Day23	Emerging approaches to leadership.	Lecture	
Day24	Motivation: Concept and theories of motivation	Lecture	

Day25	Theories of motivation-Maslow, two factor theory	Lecture	
Day26	Theory X and Y, ERG Theory	Lecture	
Day27	McClelland's theory of needs, Goal setting theory	Lecture	Assignment 3
Day28	Application of theories in organizational scenario	Lecture	
Day29	Linkage between MBO and goal setting theory	Lecture	
Day30	Employee recognition and involvement program	Lecture	
Day31	Foundations of group behavior and conflict management: Defining and classifying of groups	Lecture	
Day32	Stages of group development, Informal and formal groups- group dynamics	Lecture	
Day33	Managing conflict and negotiation, a contemporary perspective of intergroup conflict	Lecture	
Day34	Causes of group conflicts, managing intergroup conflict through resolution	Lecture	
Day35	Introduction to Organizational Communication: Meaning and importance of communication process	Lecture	Assignment 4
Day36	Importance of organizational communication, effective communication	Lecture	
Day37	Organizational stress: definition and meaning sources and types of stress	Lecture	
Day38	Impact of stress on organizations, stress management techniques.	Lecture	
Day39	Introduction to Organization Culture: Meaning and nature of organization culture	Lecture	
Day40	Types of culture, managing cultural diversity	Lecture	
Day41	Managing change and innovation-change at work, resistance to change	Lecture	
Day42	A model for managing organizational change	Lecture	

(Sign. of HOD)

(Sign. of Teacher Concerned with date)