NGF COLLEGE OF ENGINEERING AND TECHNOLOGY

Teaching Plan

for

BACHLOR OF TECHNOLOGY PROGRAMME

in

ELECTRICAL ENGINEERING

(w.e.f. Session July-Dec 2025)

DEPARTMENT OF ELECTRICAL ENGINEERING

J. C. BOSE UNIVERSITY OF SCIENCE & TECHNOLOGY, YMCA FARIDABAD

B-TECH 2nd YEAR (ELECTRICAL ENGINEERING) SEMESTER-III

Sr. No.	Category	Course Code	Course Title	Hours Per Week			Internal Marks	Final Marks	Total	Credits
				L	T	P				
1	PCC	ELPC301	Electrical Circuit Analysis	3	1	0	25	75	100	4
2	PCC	ELPC302	Analog Electronics Circuits	3	0	0	25	75	100	3
3	PCC	ELPC303	Electrical Machines-1	3	0	0	25	75	100	3
4	PCC	ELPC304	Electromagnetic Fields	3	1	0	25	75	100	4
5	ESC	ELES305	Engineering Mechanics	3	1	0	25	75	100	4
6	BSC	ELBS321	Mathematics-III (Probability and Statistics)	3	1	0	25	75	100	4
7	MC	MC-01 (Common to all)	Indian Constitution	2	0	0	25	75	100	0
8	PCC	ELPC352	Analog Electronics Circuit Lab	0	0	2	15	35	50	1
9	PCC	ELPC353	Electrical Machines Lab -1	0	0	2	15	35	50	1
10	SEC	ELSE361	Electrical Workshop-III	0	0	4	30	70	100	2
11	SEC	ELSE362	Project-1	0	0	4	15	35	50	2
			Total	**20**	**4**	**12**	**250**	**700**	**950**	**28**

NGF COLLEGE OF ENGINEERING & TECHNOLOGY

DEPARTMENT OF ELECTRICAL ENGINEERING

LESSON PLAN (July-Dec. 25)

Name of Teacher: DR. Vinod Kr. **Designation:** HOD **Subject Name:** Electrical Machine Design
Branch: Electrical Engineering **Semester:**5th **Subject Code:** ELPE512
Date of Start: 23 july 2025 **Total Load:** 38 hours **Date of Completion:** 22 Nov.25

Module/Unit-1: Introduction

S.No	Name of Topic	Hours
1	Major considerations in electrical machine design	1
2	Electrical engineering materials and space factor	1
3	Choice of specific electrical and magnetic loadings	2
4	Thermal considerations, heat flow, temperature rise	1
5	Rating of machines	1
Total		**6**

Module/Unit-2: Transformers

S.No	Name of Topic	Hours
1	Sizing of a transformer and main dimensions	1
2	kVA output for single- and three-phase transformers	1
3	Window space factor and overall dimensions	1
4	Operating characteristics, regulation, no-load current	2
5	Temperature rise, design of cooling tank, and methods of cooling	2
Total		**7**

Module/Unit-3: Induction Motor

S.No	Name of Topic	Hours
1	Sizing of an induction motor and main dimensions	1
2	Output equation and length of air gap	1
3	Rotor slots and design of rotor bars & slots	2
4	Design of end rings and wound rotor	1
5	Magnetic leakage calculations, leakage reactance	1
6	Circle diagram and operating characteristics	1
Total		**7**

Module/Unit-4: Synchronous Machines

S.No	Name of Topic	Hours
1	Sizing of a synchronous machine and main dimensions	1
2	Output equation and design of salient pole machines	1
3	Short circuit ratio, pole face shape, armature design	1
4	Estimation of air gap length and rotor design	1
5	Design of damper winding and field winding	2
6	Turbo alternators: Rotor design and cooling	2
Total		**8**

Module/Unit-5: DC Machines

S.No	Name of Topic	Hours
1	Sizing of DC machines, main dimensions, output equation	1
2	Selection of poles, core length, and armature diameter	1
3	Air gap length, armature winding, number of coils and slots	1
4	Slot dimensions, voltage drop, depth of armature core	1
5	Design of field system and commutator	1
Total		**5**

Module/Unit-6: Computer Aided Design (CAD)

S.No	Name of Topic	Hours
1	Limitations of traditional designs and need for CAD	1
2	CAD analysis, synthesis, hybrid methods, and optimization	2
3	Design variables, constraints, and objectives	1
4	Introduction to modern machine structures (PMSMs, BLDCs, SRM, etc.)	2
Total		**6**

TEXT BOOKS:

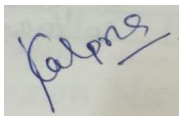
A. K. Sawhney, "A Course in Electrical Machine Design," Dhanpat Rai and Sons, 1970.

B. M.G. Say, "Theory & Performance & Design of A.C. Machines," ELBS London

REFERENCE BOOKS:

S. K. Sen, "Principles of Electrical Machine Design with Computer Programmes," Oxford and IBH Publishing, 2006.

T. K.M.V. Murthy, "Computer Aided Design of Electrical Machines," B.S. Publications, 2008.



Signature of Coordinator **Approved by HOD/Dean** **Approved by IQAC**
Director/Dean

Academics

NGF COLLEGE OF ENGINEERING & TECHNOLOGY

DEPARTMENT OF ELECTRICAL ENGINEERING

LESSON PLAN (Jan-July 2025)

Name of Teacher: Kapna Vats **Designation: Assistant Professor**
Subject Name: ANALOG ELECTRONIC CIRCUITS
Branch: EE **Semester: 3rd** **Subject Code: ELPC 302**
Date of Start: 23/07/2025 **Total Load: 40hrs** **Date of Completion: 22/11/2025**

Module/Unit-1:

S.No	Name of Topic	Hours
1	P-N junction diode	50 MIN
2	I-V characteristics of a diode	50 MIN
3	review of half-wave	50 MIN
4	full-wave rectifiers	50 MIN
5	Zener diodes	50 MIN
6	clamping circuits	50 MIN
7	clipping circuits BJT Structure	50 MIN
	Total	5.8HOURS

Module/Unit 2

S.No	Name of Topic	Hours
1	BJT Structure	50 MIN
2	I-V characteristics of a BJT	50 MIN
3	BJT as a switch	50 MIN
4	BJT as an amplifier: small-signal model Biasing circuits, current mirror	50 MIN
5	Biasing circuits, Current mirror	50 MIN
6	common-emitter, common-base and common collector amplifiers	50 MIN
7	Small signal equivalent circuits	50 MIN
8	high-frequency equivalent circuits	50 MIN
	TOTAL	6.67 HOURS

Module/Unit 3

S.No	Name of Topic	Hours
1	MOSFET structure	50 MIN
2	I-V characteristics	50 MIN
3	MOSFET as a switch	50 MIN
4	MOSFET as an amplifier	50 MIN

5	small-signal model and biasing circuits	50 MIN
6	common-source, common-gate and common-drain amplifiers	50 MIN
7	small signal equivalent circuits - gain, input and output impedances	50 MIN
8	Transconductance	50 MIN
9	high frequency equivalent circuit	50 MIN
	TOTAL	7.5 HOURS

Module/Unit 4

1	Differential amplifier; power amplifier	50 MIN
2	direct coupled multi-stage amplifier	50 MIN
3	internal structure of an operational amplifier	50 MIN
4	ideal op-amp, non-idealities in an op-amp (Output offset voltage, input bias current, input offset current, slew rate, gain bandwidth product)	50 MIN
	TOTAL	3.3 HOURS

Module/Unit 5

1	Idealized analysis of op-amp circuits,	50 MIN
2	Inverting and non-inverting amplifier	50 MIN
3	differential amplifier, instrumentation amplifier	50 MIN
4	integrator, active filter	50 MIN
5	P, PI and PID controllers	50 MIN
6	lead/lag compensator using an op-amp	50 MIN
7	voltage regulator, oscillators (Wein bridge and phase shift	50 MIN
8	Analog to Digital Conversion.	50 MIN
9	**TOTAL**	6.67 HOURS

Module/Unit 6

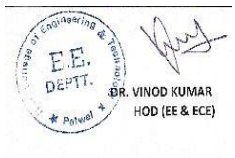
1	Hysteretic Comparator, Zero Crossing Detector	50 MIN
2	Square-wave and triangular-wave generators.	50 MIN
3	Precision rectifier, peak detector. Monoshot	50 MIN
	TOTAL	2.5 HOURS

TEXT BOOKS & REFERENCE BOOKS:

1. Analog Electronics by J B Gupta, Rohit Manglik, et al. | 1 January 2012

2. A Text Book on Analog Electronics: EE/E&T/IN by A. Rajkumar | 1 January 2019.

3. Analog ElectronicsI (Basic Analog Electronics) by J.B. Gupta | 1January 2011.
4. A. S. Sedra and K. C. Smith, "Microelectronic Circuits", New York,Oxford UniversityPress, 1998.
5. 2. J. V. Wait, L. P. Huelsman and G. A. Korn, "Introduction to Operational Amplifier theory and applications", McGraw Hill U. S.,1992.
6. 3. J. Millman and A. Grabel, "Microelectronics", McGraw Hill Education,1988.
7. 4. P. Horowitz and W. Hill, "The Art of Electronics", Cambridge University Press,1989.
8. 5. P.R.Gray,R.G.MeyerandS.Lewis,"AnalysisandDesignofAnalogIntegrated Circuits", John Wiley & Sons,2001



Signature of Teacher **Approved by HOD/Dean** **Approved by IQAC Director/Dean Academics**

NGF COLLEGE OF ENGINEERING & TECHNOLOGY

DEPARTMENT OF ELECTRICAL ENGINEERING

LESSON PLAN (July-Dec. 24)

Name of Teacher: Mr. Gyan Prakash **Designation: Sr. Lecturer**
Subject Name: Elect. Machine-1
Branch: EE **Semester: III**
Subject Code: ELPC-303
Date of Start: 23 July, 25 Total Load:20 hrs
Date of Completion: 22, Nov, 2025

Module/Unit-1: Magnetic Fields and Magnetic Circuits

S.No	Name of Topic	Hours
1	**Review of magnetic circuits**: Study MMF (Magneto-Motive Force), flux, reluctance, and inductance.	2
2	**Ampere's Law and Biot-Savart Law**: Analyze how currents produce magnetic fields.	2
3	**Magnetic fields visualization**: Observe flux patterns in bar magnets and current-carrying coils.	2
4	**Permeable materials and their influence**: Explore how materials like iron affect flux lines.	2
Total		**8**

Module/Unit-2: Electromagnetic Force and Torque

S.No	Name of Topic	Hours
1	**B-H curve and characteristics**: Understand properties of magnetic materials and circuits.	3
2	**Energy in magnetic circuits**: Calculate stored energy in linear and nonlinear circuits.	2
3	**Force and torque derivation**: Analyze applications like relays and motors.	2
4	**Practical examples**: Real-world systems like galvanometers and lifting magnets.	2
Total		**9**

Module/Unit-3: DC Machines

S.No	Name of Topic	Hours
1	**Construction of DC machines**: Learn about stators, rotors, armature cores, and yokes.	3
2	**Induced EMF and commutation**: Explore wave windings and equations like back EMF.	3
3	**Armature reaction**: Understand how armature current affects flux distribution.	2
Total		**8**

Module/Unit-4: DC Machine - Motoring and Generation

S.No	Name of Topic	Hours
1	**Armature circuit equations**: Dive into equations governing motoring and generation.	2
2	**Types of field excitation**: Analyze configurations like separately excited, shunt, and series.	2
3	**V-I characteristics**: Study torque-speed graphs and design implications.	2
4	**Speed control mechanisms**: Learn techniques for regulating armature voltage and field excitation.	2
Total		**8**

Module/Unit-5: Transformers

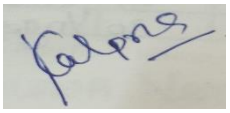
S.No	Name of Topic	Hours
1	**Single-phase transformers**: Study operation, efficiency, and equivalent circuits.	3
2	**Three-phase transformers**: Explore configurations and parallel operations.	3
3	**Autotransformers and their applications**: Compare with regular transformers.	3
4	**Testing methods**: Understand open-circuit, short-circuit, and polarity tests.	3
5	**Tap-changing transformers**: Examine their role in voltage regulation.	4
Total		**16**

TEXT BOOKS**:**

1. A.E. Fitzgerald and C. Kingsley, "Electric Machinery," McGraw Hill Education.
2. A.E. Clayton and N.N. Hancock, "Performance and Design of DC Machines," CBS Publishers.
3. P.S. Bimbhra, "Electrical Machinery," Khanna Publishers.

REFERENCE BOOKS:

1. M.G. Say, "Performance and Design of AC Machines," CBS Publishers.
2. I.J. Nagrath and D.P. Kothari, "Electric Machines," McGraw Hill Education.



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NGF COLLEGE OF ENGINEERING & TECHNOLOGY

DEPARTMENT OF ELECTRICAL ENGINEERING

LESSON PLAN (Jan-July 2025)

Name of Teacher: Ms Vaishali Munjal **Designation: Assistant Professor** **Subject Name: EMF**
Branch: EE **Semester: 3rd** **Subject Code: ELPC304**
Date of Start:23/ 07/25 **Total Load: 38 .hrs** **Date of Completion:24/11/25**

Module/Unit 1: Review of Vector Calculus

S.No	Name of Topic	Hours
1	Vector algebra: addition, subtraction, components of vectors, scalar and vector multiplications	1
2	Triple products, three orthogonal coordinate systems (rectangular, cylindrical, and spherical)	1
3	Vector calculus differentiation, partial differentiation, integration	1
4	Vector operator del, gradient, divergence, and curl; integral theorems of vectors	2
5	Conversion of a vector from one coordinate system to another	1
Total		6

Module/Unit 2: Static Electric Field

S.No	Name of Topic	Hours
1	Coulomb's law; electric field intensity due to point charges	1
2	Line, surface, and volume charge distributions	1
3	Gauss law and its applications	1
4	Absolute electric potential, potential difference	1
5	Electric dipole; electrostatic energy and energy density	2
Total		6

Module/Unit 3: Conductors, Dielectrics, and Capacitance

S.No	Name of Topic	Hours
1	Current and current density; Ohm's Law in point form	1
2	Continuity of current; boundary conditions of dielectric materials	1
3	Permittivity, capacitance, and capacitance of a two-wire line	1
4	Poisson's and Laplace's equations; their solutions	2
5	Applications of Laplace's and Poisson's equations	1
Total		6

Module/Unit 4: Static Magnetic Fields

S.No	Name of Topic	Hours
1	Biot-Savart Law; Ampere Law	2
2	Magnetic flux and magnetic flux density	1
3	Scalar and vector magnetic potentials	1
4	Steady magnetic fields produced by current-carrying conductors	2
Total		6

Module/Unit 5: Magnetic Forces, Materials, and Inductance

S.No	Name of Topic	Hours
1	Force on a moving charge and a differential current element	2
2	Nature of magnetic materials; magnetization and permeability	1
3	Magnetic boundary conditions and magnetic circuits	2

4	Inductances and mutual inductances	1
Total		6

Module/Unit 6: Time-Varying Fields and Maxwell's Equations

S.No	Name of Topic	Hours
1	Faraday's Law for electromagnetic induction; displacement current	2
2	Point form and integral form of Maxwell's equations	2
3	Motional electromotive forces	1
4	Boundary conditions	1
Total		6

Module/Unit 7: Electromagnetic Waves

S.No	Name of Topic	Hours
1	Derivation of wave equation; uniform plane waves	1
2	Maxwell's equations in phasor form; wave equation in phasor form	1
3	Plane waves in free space and in a homogenous material	1
4	Wave equation for a conducting medium; plane waves in lossy dielectrics	1
5	Propagation in good conductors; skin effect; Poynting theorem	2
Total		6

TEXT BOOKS

1. **M. N. O. Sadiku, *Elements of Electromagnetics*, Oxford University Publication, 2014**
2. **A. Pramanik, *Electromagnetism - Theory and applications*, PHI Learning Pvt. Ltd., New Delhi, 2009**
3. **A. Pramanik, *Electromagnetism-Problems with solution*, Prentice Hall India, 2012**

REFERENCE BOOKS

1. **G. W. Carter, *The electromagnetic field in its engineering aspects*, Longmans, 1954**
2. **W. J. Duffin, *Electricity and Magnetism*, McGraw Hill Publication, 1980**
3. **W. J. Duffin, *Advanced Electricity and Magnetism*, McGraw Hill, 196**
4. **G. Cullwick, *The Fundamentals of Electromagnetism*, Cambridge University Press, 1966**

E.E. DEPTT. DR. VINOD KUMAR HOD (EE & ECE)

Signature of Coordinator **Approved by HOD/Dean** **Approved by IQAC Director/Dean Academics**

NGF COLLEGE OF ENGINEERING & TECHNOLOGY

DEPARTMENT OF ELECTRICAL & MECHANICAL ENGINEERING

LESSON PLAN (Jan-July 2025)

Name of Teacher: Radhe Shyam **Designation: Assistant Professor**
Subject Name: Probability & Statistics
Branch: EE/ME **Semester: 3rd** **Subject Code: ELPS321**
Date of Start: 23/07/2025 **Total Load: ...40..hrs** **Date of Completion: 22/11/2025**

Module/Unit-1:

S.No	Name of Topic	Hours
1	Basic Probability	50 MIN
2	Conditional Probability	50 MIN
3	Independence: Discrete random variables	50 MIN
4	Independent random variables	50 MIN
5	Poisson Approximation to the binomial distribution	50 MIN
6	Moments, Variance of Sum	50 MIN
7	Correlation & Chebyshev's Inequality	50 MIN
	Total	5.8HOURS

Module/Unit 2

S.No	Name of Topic	Hours
1	Continuous random variables and their properties	50 MIN
2	Distribution functions and densities	50 MIN
3	Normal Densities	50 MIN
4	Exponential Densities	50 MIN
5	Gamma densities	50 MIN
	TOTAL	4.1 HOURS

Module/Unit 3

S.No	Name of Topic	Hours
1	Bivariate Distribution And their properties	50 MIN
2	Distribution of sum and quotients	50 MIN
3	Conditional Densities	50 MIN
4	Bayes' rule	50 MIN
	TOTAL	3.3 HOURS

Module/Unit 4

1	Measures of central tendency (Moments, Skewness and Kurtosis)	50 MIN
2	Probability Distribution	50 MIN
3	Binomial, Poisson and Normal	50 MIN
4	Correlation and regression	50 MIN
	TOTAL	3.3 HOURS

Module/Unit 5

1	Curve fitting by methods of least squares	50 MIN
2	Fitting of straight lines	50 MIN
3	Second degree Parabolas	50 MIN
4	More general curves	50 MIN
5	Test of significance	50 MIN
6	Large sample test for single proportion	50 MIN
7	Difference of proportions	50 MIN
8	Single mean, difference of mean and diff. Of standard deviation	50 MIN
	TOTAL	6.67 HOURS

Module/Unit 6

1	Test of single mean, diff. of means and correlation coefficients	50 MIN
2	Test for ratio of variance	50 MIN
3	Chi-square test for goodness of fit	50 MIN
	TOTAL	2.5 HOURS

TEXT BOOKS & REFERENCE BOOKS:

- Gupta & Kapoor, Fundamentals of Mathematical Statistics.
- Murray R. Spiegel, Schaum's Outline of Probability and Statistics.
- Sheldon Ross, Introduction to Probability and Statistics for Engineers and Scientists.
- Jay L. Devore, Probability and Statistics for Engineering and the Sciences.

Signature of Teacher **Approved by HOD/Dean** **Approved by IQAC Director/Dean Academics**

NGF COLLEGE OF ENGINEERING & TECHNOLOGY

DEPARTMENT OF ELECTRICAL COMMUNICATION AND ENGINEERING

LESSON PLAN (July-Dec 2025)

Name of Teacher:Ms.Priyanka **Designation: Ass. Professor** **Subject Name: Indian Constitution**
Branch:EE **Semester:3rd** **Subject Code:MC01**
Date of start: 21/07/2025 **Total load: 30 hours** **Date of complete:14/11/25**

Module/Unit-1:Introduction of Constitution

S.No	Name of Topic	Hours
1	Introduction to Constitution of India	50 mins
2	Meaning of Constitution laws and constitutionalism	100mins
3	Historic perspective of the Constitution of India	100 mins
4	Salient features and characteristics of Indian Constitution	100mins
5	Fundamental rights	50mins
	Total	400 mins

Module/Unit 2- federal structure of Indian Constitution

S.No	Name of Topic	Hours
1	fundamental duties	50 mins
2	centre state relations	50mins
3	Emergency provisions	50 mins
4	Directive principles of state policy	50 mins
5	Union executive	50 mins
6	State executive	50 mins
7	Powers of Indian parliament	100mins
8	Constitutional amendments	100mins
9	Historic perspective of Constitutional amendments in india	50 mins
10	powers of president	50 mins
	TOTAL	600 mins

Module/Unit-3: local self government

S.No	Name of Topic	Hours
1	Introduction to panchayati raaj 1993	50mins
2	Municipalities	50mins
3	Structure of lacal government	50mins
	Total	150 mins

Module/Unit-4

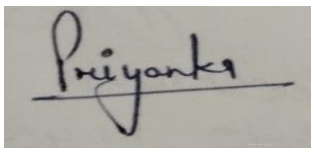
S.No	Name of Topic	Hours
1	Scheme of the fundamental right to equality	50 mins
2	Scheme of the fundamental right to equality under article 19	100mins
3	Scope of the right to life	50 mins
4	Scope of the right to personal liberty	50 mins
5	Article 21	50 mins
	Total	300mins

REFERENCES:

1.TheConstitutionalLawOf India9th Edition,byPandey.J.N.

2.TheConstitution ofIndia by P.M.Bakshi

3. ConstitutionLawofIndiabyNarenderKumar



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NGF COLLEGE OF ENGINEERING & TECHNOLOGY

DEPARTMENT OF ELECTRICAL ENGINEERING

LESSON PLAN (Jan-July 2025)

Name of Teacher: Kapna Vats **Designation: Assistant Professor**
Subject Name: ANALOG ELECTRONIC CIRCUITS lab
Branch: EE **Semester: 3rd** **Subject Code:** ELPC308
Date of Start: 23/07/2025 **Total Load: ...40..hrs** **Date of Completion: 22/11/2025**

Module/Unit-1: Electronic Instruments and Diodes

S.No	Name of Experiment	Hours
1	Study of analog & digital multimeters, function generators, regulated DC supplies	2
2	Study of CRO and measurement using Lissajous figures	2
3	V-I characteristics of P-N junction diode	2
4	V-I characteristics of Zener diode and voltage regulation	2
5	Diode applications: clipper and clamper circuits	2
	Total	**10**

Module/Unit 2: Transistor and Amplifier Characteristics

S.No	Name of Experiment	Hours
1	Input/output characteristics of BJT in CB, CC, CE configurations; h-parameters	2
2	Frequency response of single-stage amplifier; gain-bandwidth product	2
3	Two-stage RC coupled amplifier; bandwidth and theoretical comparison	2
4	Emitter follower; input/output resistance	2
	Total	**8**

Module/Unit 3: FET, MOSFET and Rectifiers

S.No	Name of Experiment	Hours
1	Drain characteristics of FET; Idss and Vp measurement	2
2	Characteristics of MOSFET	2
3	Half-wave rectifier with filter; ripple factor	2
4	Bridge rectifier with filter; DC output and ripple factor	2
	Total	**8**

Module/Unit 4: OP-AMP Applications and Oscillators

S.No	Name of Experiment	Hours
1	OP-AMP parameters: input bias, offset current/voltage, CMRR	2
2	Frequency response of amplifier with and without feedback	2
3	RC phase shift oscillator; frequency determination	2
4	Wein bridge oscillator using OP-AMP 741	2
5	Zero crossing detector using OP-AMP 741	2
	Total	**10**

TEXT BOOKS

- R.S. Sedha, “A Textbook of Electronic Circuits,” S. Chand
- Millman & Halkias, “Integrated Electronics,” McGraw Hill
- Boylestad & Nashelsky, “Electronic Devices and Circuit Theory,” Pearson

REFERENCE BOOKS

- Salivahanan, “Electronic Devices and Circuits,” McGraw Hill
- Gayakwad, “Op-Amps and Linear Integrated Circuits,” Pearson
- Malvino, “Electronic Principles,” McGraw Hill

Signature of Teacher **Approved by HOD/Dean** **Approved by IQAC Director/Dean Academics**

NGF COLLEGE OF ENGINEERING &TECHNOLOGY

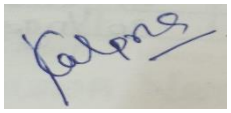
DEPARTMENT OF ELECTRICAL ENGINEERING

LESSON PLAN (July-Nov.2025)

Name of Teacher: Mr. Gyan Prakash Designation: Sr. Lecturer Subject Name: Elect. Machine-1 lab
Branch: EE Sem: III Subject Code:ELPC-353
Date of Start: 23 July, 25 Total Load: 20 hrs Date of Completion:22, Nov, 2025

Exp. No.	Experiment
1.	To study the constructional details of DC machine.
2.	To perform a load test on dc shunt motor.
	To study about the construction and working of three-point DC machine
3.	starter
4.	To obtain the internal characteristics of DC shunt generator.
5.	To obtain the external characteristics of DC shunt generator.
6.	To obtain the Magnetization Characteristics of separately excited D.C Generator.
7.	To obtain the external characteristics of D.C. Series Generator.
8.	Speed control of DC shunt motor by armature voltage control method.
9.	Speed control of DC shunt motor by field control method.
10.	To obtain the efficiency of D.C machine using Swinburne's test.
	By conducting Open circuit and Short Circuit tests on a given 1-Φ
11.	Transformer to predetermine efficiency, voltage regulation and to draw its equivalent circuit.
12.	Sumpners test on two single-phase transformers
13.	To study the parallel operation of single-phase transformers.
14.	To convert three phase system to two phase system with the help of Scott Connection

Connection



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NGF COLLEGE OF ENGINEERING &TECHNOLOGY

DEPARTMENT OF ELECTRICAL ENGINEERING

LESSON PLAN (July-Nov.2025)

Name of Teacher: Mr. Gyan Prakash Designation: Sr. Lecturer Subject Name: Workshop-3 lab
Branch: EE Sem: III Subject Code: ELSE361
Date of Start: 23 July, 25 Total Load: 20 hrs Date of Completion:22, Nov, 2025

Module/Unit 1: Electrical Safety & Basic Practices

S.No	Name of Topic	Hours
1	To study major tips of electrical safety	2 hrs
2	To study the soldering process	2 hrs
	Total	**4 hrs**

Module/Unit 2: Electrical Devices & Components

S.No	Name of Topic	Hours
1	Introduction and performance of different types of electrical devices: MCB, Fuse, Relay, ELCB, Vacuum Circuit Breaker	2 hrs
2	To study and calibration of energy use in an induction type energy meter	2 hrs
	Total	**4 hrs**

Module/Unit 3: Lighting Systems & Earthing

S.No	Name of Topic	Hours
1	To study the performance and operating principle of HPSV/HPMV lamp	2 hrs
2	What is the importance of Earthing	2 hrs
	Total	**4 hrs**

Module/Unit 4: Wiring & Power Backup

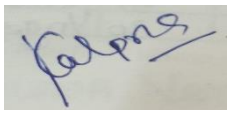
S.No	Name of Topic	Hours
1	To study and operation of staircase wiring	2 hrs
2	To study and testing of Home Inverter	2 hrs
	Total	**4 hrs**

Module/Unit 5: Power Electronics & Maintenance

S.No	Name of Topic	Hours
1	To study and operation of full wave and half wave rectifier	2 hrs
2	Repairing and maintenance of different types of electrical appliances	2 hrs
	Total	**4 hrs**

TEXT BOOKS & REFERENCE BOOKS:

- B.L. Theraja, “Fundamentals of Electrical Engineering”
- S.K. Bhattacharya, “Electrical Technology”
- H. Cotton, “Electrical Technology”
- Lab Manual (Departmental)
-



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NGF COLLEGE OF ENGINEERING &TECHNOLOGY

DEPARTMENT OF ELECTRICAL ENGINEERING

LESSON PLAN (July-Nov.2025)

Name of Teacher: Mr GOPAL Designation: Sr. Lecturer Subject Name: PROJECT lab
Branch: EE Sem: III Subject Code: ELSE362
Date of Start: 23 July, 25 Total Load: 20 hrs Date of Completion:22, Nov, 2025

Module/Unit 1: Project Orientation & Topic Finalization

S.No	Name of Topic	Hours
1	Introduction to project-based learning and its relevance in Electrical Engineering	1 hr
2	Guidelines for topic selection, feasibility, and innovation	1 hr
3	Finalization of project titles and team formation	2 hrs
	Total	**4 hrs**

Module/Unit 2: Literature Review & Planning

S.No	Name of Topic	Hours
1	Conducting literature survey and benchmarking existing solutions	2 hrs
2	Defining objectives, scope, and expected outcomes	1 hr
3	Preparing Gantt chart and resource planning	1 hr
	Total	**4 hrs**

Module/Unit 3: Design & Development

S.No	Name of Topic	Hours
1	Circuit design, simulation, and component selection	2 hrs
2	Hardware assembly or software coding (as applicable)	2 hrs
	Total	**4 hrs**

Module/Unit 4: Testing & Troubleshooting

S.No	Name of Topic	Hours
1	Testing of project modules and performance evaluation	1 hr
2	Troubleshooting and refinement	1 hr
	Total	**2 hrs**

Module/Unit 5: Documentation & Presentation

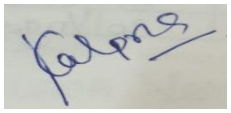
S.No	Name of Topic	Hours
1	Preparation of project report as per departmental format	1 hr
2	Presentation and viva preparation	1 hr
	Total	**2 hrs**

Suggested Project Topics:

- Automatic Street Light using LDR
- Solar-powered Mobile Charger
- Smart Energy Meter with Load Cut-off
- Wireless Power Transfer for Low Voltage Devices
- Home Automation using IoT (basic prototype)
- Transformer Health Monitoring System

TEXT BOOKS & REFERENCE BOOKS:

- R.K. Rajput, “Basic Electrical Engineering”
- M.H. Rashid, “Power Electronics”
- Departmental Project Guidelines & IEEE Papers



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J. C. BOSE UNIVERSITY OF SCIENCE & TECHNOLOGY, YMCA FARIDABAD

NEW SCHEME OF STUDIES AND EXAMINATION

B-TECH 3rd YEAR (ELECTRICAL ENGINEERING) SEMESTER-V

Sr. No.	Category	Course Code	Course Title	Hours Per Week			Internal Marks	End Sem	Total	Cr.
				L	T	P				
1	PCC	ELPC501	Power Systems – I (Apparatus and Modelling)	3	0	0	25	75	100	3
2	PCC	ELPC502	Control Systems	3	0	0	25	75	100	3
3	PCC	ELPC503	Microprocessors	3	0	0	25	75	100	3
4	BSC	BSC-01 (Common to all)	Biology	2	1	0	25	75	100	3
5	PEC	ELPE512	Electrical Machine Design	3	0	0	25	75	100	3
6	OEC	ELOE-101	Electronics Devices	3	0	0	25	75	100	3
7	PCC	ELPC551	Power Systems Lab-1	0	0	2	15	35	50	1
8	PCC	ELPC552	Control Systems Lab	0	0	2	15	35	50	1
9	PCC	ELPC553	Microprocessors Lab	0	0	2	15	35	50	1
10	SEC	ELSE561	Electrical Workshop-V	0	0	4	30	70	100	2
11	SEC	ELSE562	Project-3	0	0	4	15	35	50	2
			Total	**17**	**1**	**14**	**240**	**660**	**900**	**25**

NGF COLLEGE OF ENGINEERING & TECHNOLOGY

DEPARTMENT OF COMPUTER SCIENCE

LESSON PLAN (JULY-DEC 2025)

Name of Teacher: Sudhir **Designation: Lecturer** **Subject Name: PS-1**
Branch: Btech EE **Semester:5th sem** **Subject Code: ELPC-501**
Date of Start: 21July 2025 **Total Load:20 hrs 50mns** **Date of Completion: 21Nov 2025**

Unit-1: BASIC CONCEPTS

S.No	Name of Topic	Hours
1	Evolution of Power Systems and Present-Day Scenario	50
2	Structure of a power system: Bulk Power Grids and Micro-grids	50
3	Generation: Conventional and Renewable Energy Sources	50
4	Distributed Energy Resources, Energy Storage	50
5	Transmission and Distribution Systems: Line diagrams, voltage levels	50
6	Topologies (meshed and radial systems), Synchronous Grids and Asynchronous (DC) interconnection	50
7	Power Transfer in AC circuits and Reactive Power	50
	TOTAL	5 HRS 50 MNS

Unit 2: POWER SYSTEM COMPONENTS

S.No	Name of Topic	Hours
1	Overhead Transmission Lines and Cables: Electrical and Magnetic Fields, Corona	50
2	Parameters of lines and cables, Capacitance and Inductance calculations	50
3	Sinusoidal Steady state representation of Lines: Short, medium and long lines	50
4	Power Transfer, Voltage profile and Reactive Power, Characteristics of transmission lines	50
5	Surge Impedance Loading, Series and Shunt Compensation of transmission lines	50
6	Loads: Types, Voltage and Frequency Dependence of loads	50
7	Per Unit System and Per Unit Calculations	50
TOTAL		5 HRS 50 MNS

Unit-3: OVER-VOLTAGES AND INSULATION REQUIREMENTS

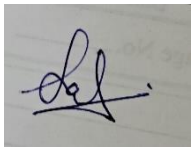
S.No	Name of Topic	Hours
1	Protection against Over-voltages	50
2	Insulation Coordination	50
TOTAL		1 HRS 40 MNS

UNIT-IV: FAULT ANALYSIS AND PROTECTION SYSTEMS

S.No	Name of Topic	Hours
1	Method of Symmetrical Components (positive, negative and zero sequences)	50
2	Balanced and Unbalanced Faults	50
3	Representation of generators, lines and transformers in sequence networks	50
4	Computation of Fault Currents, Neutral Grounding	50
5	Switchgear: Types of Circuit Breakers	50
6	Attributes of Protection schemes, Back-up Protection	50
7	Over-current, directional, distance protection, differential protection and their application	50
	TOTAL	5 HRS 50 MNS

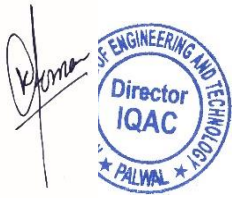
UNIT-V: INTRODUCTION TO DC TRANSMISSION AND RENEWABLE ENERGY SYSTEMS

S.No	Name of Topic	Hours
1	HVDC transmission: types of links	50
2	Introduction to solar PV systems	50
	TOTAL	1 HRS 40 MNS



Signature of Teacher

Approved by HOD/Dean



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NGF COLLEGE OF ENGINEERING & TECHNOLOGY

DEPARTMENT OF COMPUTER SCIENCE

LESSON PLAN (JULY-DEC 2025)

Name of Teacher: Sudhir **Designation: Lecturer** **Subject Name: C S**
Branch: Btech EE **Semester: 5th sem** **Subject Code: ELPC-502**
Date of Start: 21July 2025 **Total Load:25hrs 10mns** **Date of Completion: 21Nov 2025**

Unit-1: INTRODUCTION TO CONTROL PROBLEM

S.No	Name of Topic	Hours
1	Industrial Control examples, Mathematical models of physical systems	50
2	Control hardware and their models	50
3	Transfer function models of linear time-invariant systems	50
4	Feedback Control: Open-Loop and Closed-loop systems, Benefits of Feedback	50
5	Transfer Function of control system, impulse response and its relation with transfer function	50
6	Block diagram reduction technique, Signal flow graph, Mason's gain formula	50
	TOTAL	5 HRS

Unit-2: TIME RESPONSE ANALYSIS

S.No	Name of Topic	Hours
1	Standard test signals	50
2	Time response of first and second order systems for standard test inputs	50
3	Application of initial and final value theorem	50
4	Design specifications for second-order systems based on time-response	50
5	Concept of Stability, Routh-Hurwitz Criteria, Relative Stability analysis	50
6	Root-Locus technique, Construction of Root-loci	50
	TOTAL	5 HRS

Unit-3: FREQUENCY-RESPONSE ANALYSIS

S.No	Name of Topic	Hours
1	Relationship between time and frequency response	50
2	Polar plots, Bode plots	50
3	Nyquist stability criterion	50
4	Relative stability using Nyquist criterion: gain and phase margin	50
5	Closed-loop frequency response	50
	TOTAL	4 HRS 10 MNS

Unit-4: INTRODUCTION TO CONTROLLER DESIGN

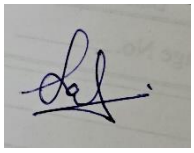
S.No	Name of Topic	Hours
1	Stability, steady-state accuracy, transient accuracy, disturbance rejection	50
2	Insensitivity and robustness of control systems	50
3	Root-loci method of feedback controller design	50
4	Design specifications in frequency-domain, Frequency-domain methods of design	50
5	Application of Proportional, Integral and Derivative Controllers (PID)	50
6	Lead and Lag compensation in designs	50
7	Analog and Digital implementation of controllers	50
	TOTAL	5 HRS 50 MNS

Unit-5: STATE VARIABLE ANALYSIS

S.No	Name of Topic	Hours
1	State variables, State variable representation of system, dynamic equations	50
2	Merits for higher order differential equations and solution	50
3	Concept of controllability and observability and techniques to test them	50
	TOTAL	2 HRS 30 MNS

Unit-6: OPTIMAL AND NONLINEAR CONTROL

S.No	Name of Topic	Hours
1	Introduction to Optimal Control: Performance Indices	50
2	Regulator problem, Tracking Problem	50
3	Introduction to Nonlinear Control	50
	TOTAL	2 HRS 30 MNS



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NGF COLLEGE OF ENGINEERING & TECHNOLOGY

DEPARTMENT OF ELECTRICAL ENGINEERING

LESSON PLAN(July-Dec 2025)

Name of Teacher: Neha Gautam Designation: Assist. Proff. Sub. Name:Microprocessor & app.
Branch: EE Semester:5th Subject Code:EC308C
Total Load: .....hrs DateofCompletion:

Module/Unit-1: Introduction

S.No	Name of Topic	Hours
1	Evolution of Microprocessors	50min
2	Internal Architecture of 8086	50min
3	BIU and EU	50min
4	Registers in of 8086,	50min
5	Memory segmentation	50min
	Total	250min=4.1hrs

Module/Unit 2-.Isntruction set.

S.No	Name of Topic	Hours
1	Instruction sets	50min
2	Addressing modes-register related, , ,	50min
3	Addressing modes-memory related	50min
4	Instruction formats	50min
5	Instruction set of 8086-functional groups, ,	50min
6	Assembler Directives	50min
7	Assembly language programming.	50min
	Total	350min=5.8hrs

Module/Unit-3: .. Pin and timing diagrams of 8086.

S.No	Name of Topic	Hours
1	Pin diagram of 8086 in minimum mode	50min
2	Maximum mode configuration	50min
3	Timing diagram of typical read write instructions.	50min
	Total	150min=2.5hrs

Module/Unit-4: Interrupts....

S.No	Name of Topic	Hours
1	UNIT-IV - Steps in interrupt process	50min
2	Interrupt structure in 8086	50min
3	Internal and external interrupts-interrupt service routines	50min
	Total	150min=2.5hrs

Module/Unit-5: Interfacing the microprocessor

S.No	Name of Topic	Hours
1	Interfacing of I/O devices	50min
2	Interfacing I/Oprogrammable peripheral interface-8255	50min
3	Interfacing of multi digit seven segment display	50min
4	Interfacing timer-Programmable interval timer-8254	50min
	Total	200min=3.3hrs

Module/Unit-6: ..Serial Interface.

S.No	Name of Topic	Hours
1	Serial interface	50min
2	data converters-USART 8251	50min
3	Serial interface standards-RS 232 C and RS -485	50min
4	Interfacing of ADCs and DACs	50min
	Total	200min=3.3hrs

Module/Unit-7: ... Microcontrollers

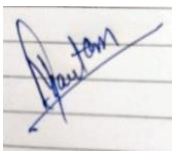
S.No	Name of Topic	Hours
1	Introduction to Microcontroller	50min
2	8051 Microcontroller,.	50min
3	memory and I/ O organization	50min
4	Applications of Microcontroller	50min
	Total	200min=3.3hrs

TEXT BOOKS:

1. Ajay V. Deshmukh: Microcontrollers –Theory and Applications, TMH, 2009.

REFERENCE BOOKS:

1. 1. Douglas V. Hall : Microprocessors and Interfacing, TMH-Revised Second Edition, 2005
2. A.K. Ray & Burchandi: Advanced Microprocessors and Peripherals, TMH, 2003.



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NGF COLLEGE OF ENGINEERING & TECHNOLOGY

DEPARTMENT OF ELECTRICAL ENGINEERING

LESSON PLAN (JULY-NOV 2025)

Name of Teacher: Ms. Anisha **Designation: Asst. Prof.** **Subject Name: BIOLOGY**
Branch: EE **Semester: 5TH** **Subject Code: BSC-01**
Date of Start: 2-7-25 **Total Load: 28.hrs** **Date of Completion: 22-11-2025**

Module/Unit-1: INTRODUCTION.

S.No	Name of Topic	Hours
1	Bring out the fundamental differences between science and engineering by drawing a comparison between eye and camera, Bird flying and aircraft.	50 Min
2	Why we need to study biology?	50 Min
3	Discuss how biological observations of 18th Century that lead to major discoveries.	50 min
4	Brownian motion and the origin of thermodynamics by referring to the original observation of Robert Brown and Julius Mayor. These examples will highlight the fundamental importance of observations in any scientific Inquiry	50 min
	Total	3hrs 20 min

Module/Unit 2-CLASSIFICATION ..

S.No	Name of Topic	Hours
1	Discuss classification based on (a) cellularity- Unicellular or multicellular (b) ultrastructure- prokaryotes or eucaryotes. (c) energy and Carbon utilisation -Autotrophs heterotrophs, lithotropes (d) Ammonia excretion - aminotelic, uricoteliec, ureotelic (e) Habitata acquatic or terrestrial (e) Molecular taxonomy- three major kingdoms of life. A given organism can come under different category based on classification.	50 Min
2	. Model organisms for the study of-biology come from different groups. E.coli, S.cerevisiae, D. Melanogaster, C. elegance, A. Thaliana, M. Musculus.	50 Min
	Total	1hr40min

Module/Unit 3 Genetics..

S.No	Name of Topic	Hours
1	Mendel's laws, Concept of segregation and independent assortment. Concept of allele. Gene mapping. Gene interaction, Epistasis.	50 min
2	Meiosis and Mitosis be taught as a part of genetics. Emphasis to be give not to the mechanics of cell division nor the phases but how genetic material passes from parent to offspring. Concepts of recessiveness and dominance.	50 min
3.	Concept of mapping of phenotype to genes. Discuss about the single gene disorders in humans. Discuss the concept of complementation using human genetics.	50 min
	Total	2hr 30 min

Module/Unit 4 BIO MOLECULES ..

S.No	Name of Topic	Hours
1	Molecules of life. In this context discuss monomeric units and polymeric structures. Discuss about sugars, starch and cellulose.	50 Min
2	Amino acids and proteins. Nucleotides and DNA/RNA. Two carbon units and lipids.	50 Min
	Total	1hr 40 min

Module/Unit 5 ENZYMES ..

S.No	Name of Topic	Hours
1	Enzymology: How to monitor enzyme catalysed reactions. How does an enzyme catalyse reactions? Enzyme classification. Mechanism of enzyme action.	50 Min
2	Discuss at least two examples. Enzyme kinetics and kinetic parameters. Why should we know these parameters to understand biology? RNA catalysis.	50 Min
	Total	1hr 40 min

Module/Unit 6 INFORMATION TRANSFER .

S.No	Name of Topic	Hours
1	Molecular basis of information transfer. DNA as a genetic	50 Min

	material. Hierarchy of DNA structure-from single stranded to double helix to nucleosomes	
2	Concept of genetic code. Universality and degeneracy of genetic code. Define gene in terms of complementation and recombination.	50 Min
	Total	1hr 40 min

Module/Unit 7- MACROMOLECULAR ANALYSIS ..

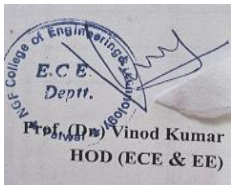
S.No	Name of Topic	Hours
1	Proteins- structure and function. Hierarch in protein structure. Primary secondary, tertiary and quaternary structure.	50 Min
2	Proteins as enzymes, transporters, receptors and structural elements.	50 Min
	Total	1hr 40 min

Module/Unit 8 METABOLISM..

S.No	Name of Topic	Hours
1	Thermodynamics as applied to biological systems. Exothermic and endothermic versus endergonic and exergoinc reactions. Concept of Kegand its relation to standard free energy. Spontaneity. ATP as an energy currency.	50 Min
2	This should include the breakdown of glucose to CO2 + H2O (Glycolysis and Krebs cycle) and synthesis of glucose from CO2 and H2O (Photosynthesis). Energy yielding and energy consuming reactions. Concept of Energy Charge.	50 Min
	Total	1hr 40 min

Module/Unit 9 MICROBIOLOGY..

S.No	Name of Topic	Hours
1	Concept of single celled organisms. Concept of species and strains. Identification and classification of microorganisms.	50 Min
2	Microscopy. Ecological aspects of single celled organisms. Sterilization and media compositions. Growth kinetics.	50 Min
	TOTAL	1hr 40 min



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NGF COLLEGE OF ENGINEERING & TECHNOLOGY

DEPARTMENT OF ELECTRICAL ENGINEERING

LESSON PLAN (July-Dec. 25)

Name of Teacher: **Designation:** **Subject Name:** Electrical Machine Design
Branch: Electrical Engineering **Semester:** 5th **Subject Code:** ELPE512
Date of Start:23rd July,25 **Total Load:** 38 hours **Date of Completion:** 22nd Nov.25

Module/Unit-1: Introduction

S.No	Name of Topic	Hours
1	Major considerations in electrical machine design	1
2	Electrical engineering materials and space factor	1
3	Choice of specific electrical and magnetic loadings	2
4	Thermal considerations, heat flow, temperature rise	1
5	Rating of machines	1
Total		**6**

Module/Unit-2: Transformers

S.No	Name of Topic	Hours
1	Sizing of a transformer and main dimensions	1
2	kVA output for single- and three-phase transformers	1
3	Window space factor and overall dimensions	1
4	Operating characteristics, regulation, no-load current	2
5	Temperature rise, design of cooling tank, and methods of cooling	2
Total		**7**

Module/Unit-3: Induction Motors

S.No	Name of Topic	Hours
1	Sizing of an induction motor and main dimensions	1
2	Output equation and length of air gap	1
3	Rotor slots and design of rotor bars & slots	2
4	Design of end rings and wound rotor	1
5	Magnetic leakage calculations, leakage reactance	1
6	Circle diagram and operating characteristics	1
Total		**7**

Module/Unit-4: Synchronous Machines

S.No	Name of Topic	Hours
1	Sizing of a synchronous machine and main dimensions	1
2	Output equation and design of salient pole machines	1
3	Short circuit ratio, pole face shape, armature design	1
4	Estimation of air gap length and rotor design	1
5	Design of damper winding and field winding	2
6	Turbo alternators: Rotor design and cooling	2
Total		**8**

Module/Unit-5: DC Machines

S.No	Name of Topic	Hours
1	Sizing of DC machines, main dimensions, output equation	1
2	Selection of poles, core length, and armature diameter	1
3	Air gap length, armature winding, number of coils and slots	1
4	Slot dimensions, voltage drop, depth of armature core	1
5	Design of field system and commutator	1
Total		**5**

Module/Unit-6: Computer Aided Design (CAD)

S.No	Name of Topic	Hours
1	Limitations of traditional designs and need for CAD	1
2	CAD analysis, synthesis, hybrid methods, and optimization	2
3	Design variables, constraints, and objectives	1
4	Introduction to modern machine structures (PMSMs, BLDCs, SRM, etc.)	2
Total		**6**

TEXT BOOKS:

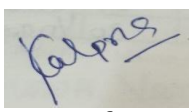
A. K. Sawhney, "A Course in Electrical Machine Design," Dhanpat Rai and Sons, 1970

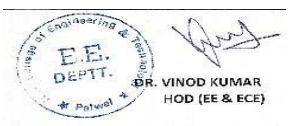
B. M.G. Say, "Theory & Performance & Design of A.C. Machines," ELBS London.

REFERENCE BOOKS:

S.K. Sen, "Principles of Electrical Machine Design with Computer Programmes," Oxford and IBH Publishing, 2006.

K.M.V. Murthy, "Computer Aided Design of Electrical Machines," B.S. Publications, 2008.





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Academics

NGF COLLEGE OF ENGINEERING & TECHNOLOGY

DEPARTMENT OF ELECTRICAL ENGINEERING

LESSON PLAN (July-Dec 2025)

Name of Teacher: Vaishali Munjal Designation: Assistant Professor Subject Name: Electronic Devices
Branch: EE Semester:5th Subject Code:ELOE-101
Date of Start: 23/07/2025 Total Load: 25 hrs Date of Completion: 24/11/2025

Module/Unit-1: .Semicondutor Physics

S.No	Name of Topic	Hours
1	Introduction to Semiconductor Physics	50min
2	Review of Quantum Mechanics	50min
3	Electrons in periodic Laţces	50min
4	E-k diagrams,Energy bands in intrinsic and extrinsic silicon	50min
5	Carrier transport,diffusion current	50min
6	Drift current,mobility and resistivity	50min
7	Sheet resistance, design of resistor Total	50min
	Total	6hr

Module/Unit 2-.Generation and Combination of Carriers

S.No	Name of Topic	Hours
1	Generation and recombination of carriers,Poisson and continuity equation P-N junction characteristic	50min
2	P-N juncϴon I-V characterisϴcs,small signal switching models;	50min
3	Avalanche breakdown,Zener diode	50min
4	Schottky diode	50min
	Total	4 hr

Module/Unit 3- Bipolar Junction Transistor

S.No	Name of Topic	Hours
1	Bipolar JuncϴonTransistor,Bipolar Junction Transistor I-V characteristics,	50min
2	Ebers-Moll Model,MOS capacitor	50min
3	C-V characteristics,MOSFET,I-V characteristics	50min
4	Small signal models of MOS transistor,LED	50min
5	photodiode and solar cell	50min
	Total	5 hr

Module/Unit 4-.Integrated circuit

S.No	Name of Topic	Hours
1	Integrated circuit fabrication process	50min
2	oxidation	50min
3	Diffusion,ion implantaϴon	50min
4	photo-lithography,	50min
5	etching, chemical vapor deposition	50min
6	sputtering, twin-tub CMOS process.	50min
	Total	6 hr

TEXT BOOKS:

1. S.K. Banerjee
2. D Neamen, D.Biswas
3.C.T Sah

REFERENCE BOOKS:

1.Y.Tsividis and M.Colin
2 S.M.Sze and K.N .Kwok

Signature of Teacher **Approved by HOD/Dean** **Approved by IQAC Director/Dean Academics**

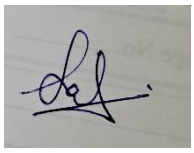
NGF COLLEGE OF ENGINEERING & TECHNOLOGY

DEPARTMENT OF COMPUTER SCIENCE

LESSON PLAN (JULY-DEC 2025)

Name of Teacher: Sudhir **Designation: Lecturer** **Subject Name: PS -1 lab**
Branch: Btech EE **Semester: 5th sem** **Subject Code: ELPC551**
Date of Start: 21July 2025 **Total Load:20hrs 00mns** **Date of Completion: 21Nov 2025**

S.No	Name of Experiment	Hours
1	To draw the operating characteristics of IDMT relay	100 Min
2	To study the performance of Earth fault relay	100 Min
3	To study the performance of an over voltage relay	100 Min
4	To study the performance of under voltage relay	100 Min
5	Testing of breakdown strength of transformer oil	100 Min
6	To study flash point test of transformer oil	100 Min
7	To find ABCD, Hybrid & Image parameters of a model of transmission line	100 Min
8	To study performance of a transmission line under no load condition & under load at different power factors	100 Min
9	To observe the Ferranti effect in a model of transmission line	100 Min
10	To study performance characteristics of typical DC distribution system in radial & ring main configuration	100 Min
11	To study characteristics of MCB & HRC Fuse	100 Min
12	To study radial feeder performance when a) fed at one end b) fed at both ends	100 Min
	TOTAL	20 HRS



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NGF COLLEGE OF ENGINEERING & TECHNOLOGY

DEPARTMENT OF COMPUTER SCIENCE

LESSON PLAN (JULY-DEC 2025)

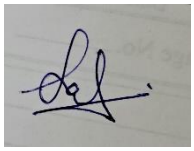
Name of Teacher: Sudhir **Designation: Lecturer** **Subject Name: CS lab**
Branch: Btech EE **Semester: 5th sem** **Subject Code: ELPC552**
Date of Start: 21July 2025 **Total Load:21hrs 40mns** **Date of Completion: 21Nov 2025**

PART A: MATLAB EXPERIMENTS

S.No	Name of Experiment	Hours
1	To plot poles and zeros locations of a first order and second order transfer functions. Also simulate them to different inputs using Matlab	100 Min
2	To find the closed loop transfer function of multi-loop feedback block diagram via block diagram reduction method using Matlab	100 Min
3	To plot Root Locus and identify stability of a system using Matlab	100 Min
4	To plot Nyquist plot and identify stability of a system using Matlab	100 Min
5	To plot Bode plot and identify stability of a system using Matlab	100 Min
6	To design Proportional-Integral-Derivative (PID) Controller using Matlab	100 Min

PART B: HARDWARE EXPERIMENTS

S.No	Name of Experiment	Hours
7	To study DC potentiometer as error detector	100 Min
8	To study synchro transmitter/receiver	100 Min
9	To study PID controller	100 Min
10	To study linear system simulator	100 Min
11	To study DC position control system	100 Min
12	To study temperature control system	100 Min
13	To study speed-torque characteristic of AC servo motor	100 Min
	TOTAL	21 HRS 40 MNS



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NGF COLLEGE OF ENGINEERING & TECHNOLOGY

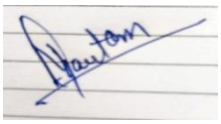
DEPARTMENT OF ELECTRICAL ENGINEERING

LESSON PLAN (July-Dec 2025)

Name of Teacher: Neha Gautam **Designation: Assistant proff.** **Subject Name:MP lab**
Branch: Electrical **Semester: 5th** **Subject Code: EC-358C**
Date of Start: 25/07/2025 **Total Load:16.6hrs** **Date of Completion: 13/12/2025**

EXPERIMENTS

S.No	Name of Topic	Hours
1	Write a program using 8085 for Hexadecimal addition & subtraction of two numbers.	**100 MIN**
2	Write a program using 8085 Microprocessor for addition and subtraction of two BCD numbers	**100 MIN**
3	Write a program to perform multiplication and division of two 8 bit numbers using 8085	**100 MIN**
4	Write a program using 8086 for division of a defined double word (stored in a data segment) by another double Word division and verify.	**100 MIN**
5	Write a program using 8086 for finding the square root of a given number and verify.	**100 MIN**
6	Write a program using 8086 for finding the square root of a given number and verify.	**100 MIN**
7	Write a program using 8086 for finding the square root of a given number and verify.	**100 MIN**
8	Write a program using 8086 for finding the square root of a given number and verify.	**100 MIN**
9	Write a program using 8086 for finding the square root of a given number and verify.	**100 MIN**
10	Write a program to control the traffic light system using 8085/8086 end 8255 PPI.	**100 MIN**
	Total	**16.6 hrs**



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NGF COLLEGE OF ENGINEERING &TECHNOLOGY

DEPARTMENT OF ELECTRICAL ENGINEERING

LESSON PLAN (July-Nov.2025)

Name of Teacher: Mr. Gyan Prakash Designation: Sr. Lecturer Subject Name: Workshop-5 lab
Branch: EE Sem: V Subject Code: ELSE561
Date of Start: 23 July, 25 Total Load: 20 hrs Date of Completion:22, Nov, 2025

Module/Unit 1: Metering & Testing Instruments

S.No	Name of Topic	Hours
1	To study and calibration of single-phase induction type energy meter	2 hrs
2	To study insulation testing using Megger instrument	2 hrs
	Total	**4 hrs**

Module/Unit 2: Electrical Machines & Components

S.No	Name of Topic	Hours
1	To study and working performance of ceiling fan winding	2 hrs
2	To design and fabricate a single-phase transformer	2 hrs
3	To study constructional view of a DC motor	2 hrs
	Total	**6 hrs**

Module/Unit 3: Appliance Maintenance & Safety

S.No	Name of Topic	Hours
1	To repair and maintenance of home appliances: Electric Heater, Electric Iron, Ceiling Fan	2 hrs
2	Explanation of Indian Electrical Rules	2 hrs
	Total	**4 hrs**

Module/Unit 4: Control Systems & Field Demonstration

S.No	Name of Topic	Hours
1	To study and working performance of a traffic light controller	2 hrs
2	Demonstration of laying of underground cables at work site	2 hrs
	Total	**4 hrs**

TEXT BOOKS & REFERENCE BOOKS:

- B.L. Theraja, "Electrical Technology Vol. I & II"
- S.K. Bhattacharya, "Electrical Machines"
- Bureau of Indian Standards (BIS) – Indian Electrical Rules
- Departmental Lab Manual
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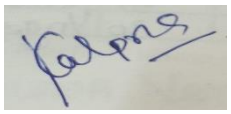

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NGF COLLEGE OF ENGINEERING &TECHNOLOGY

DEPARTMENT OF ELECTRICAL ENGINEERING

LESSON PLAN (July-Nov.2025)

Name of Teacher: Mr GOPAL Designation: Sr. Lecturer Subject Name: PROJECT lab
Branch: EE Sem: V Subject Code: ELSE562
Date of Start: 23 July, 25 Total Load: 20 hrs Date of Completion:22, Nov, 2025

Module/Unit 1: Project Initiation & Planning

S.No	Name of Topic	Hours
1	Introduction to project objectives and evaluation criteria	1 hr
2	Topic selection, feasibility analysis, and team formation	1 hr
3	Finalization of project titles and submission of synopsis	2 hrs
	Total	**4 hrs**

Module/Unit 2: Research & Design

S.No	Name of Topic	Hours
1	Literature review and benchmarking of existing technologies	2 hrs
2	Circuit design, simulation, and component selection	2 hrs
	Total	**4 hrs**

Module/Unit 3: Development & Testing

S.No	Name of Topic	Hours
1	Hardware assembly or software development	2 hrs
2	Testing and performance evaluation	2 hrs
	Total	**4 hrs**

Module/Unit 4: Documentation & Presentation

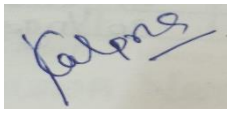
S.No	Name of Topic	Hours
1	Preparation of project report as per departmental format	2 hrs
2	Final presentation and viva voce	2 hrs
	Total	**4 hrs**

Suggested Project Topics:

- IoT-based Smart Energy Monitoring System
- Automatic Power Factor Correction Panel
- Solar-Powered Water Pump Controller
- Arduino-based Fault Detection in Transmission Line
- Wireless Load Control using GSM Module
- Smart Street Lighting with Motion Sensor
- Transformer Protection using Microcontroller
- Energy Theft Detection System

TEXT BOOKS & REFERENCE BOOKS:

- M.H. Rashid, “Power Electronics”
- R.K. Rajput, “Basic Electrical Engineering”
- IEEE Journals and Conference Papers
- Departmental Project Guideline



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J. C. BOSE UNIVERSITY OF SCIENCE & TECHNOLOGY, YMCA FARIDABAD

NEW SCHEME OF STUDIES AND EXAMINATION

B-TECH 4th YEAR (ELECTRICAL ENGINEERING) SEMESTER-VII

Sr. No.	Category	Course Code	Course Title	Hours Per Week			Internal Marks	Final Marks	Total	Credits
				L	T	P				
1	PEC	ELPE711	Power System Protection	3	0	0	25	75	100	3
2	PEC	ELPE 715	Advanced Electric Drives	3	0	0	25	75	100	3
3	OEC	ELOE-109	Manufacturing Process	3	0	0	25	75	100	3
4	OEC	PEC-ME-451	Mechantronics System	3	0	0	25	75	100	3
5	OEC	ECEL-704	Fiber Optic Communication	3	0	0	25	75	100	3
6	PROJ/ SEC	ELSE762	Major Project	0	0	6	30	70	100	3
7	HSMC	HSMC-03 (Common to all)	Organizational Behavior	3	0	0	25	75	100	3
8	SEC	ELSE761	Electrical Workshop-VII	0	0	4	30	70	100	2
			Total	**18**	**0**	**10**	**210**	**590**	**800**	**23**

NGF COLLEGE OF ENGINEERING & TECHNOLOGY

DEPARTMENT OF ELECTRICAL ENGINEERING

LESSON PLAN (July-Dec. 25)

Name of Teacher: DR. Vinod Kr. **Designation:** HOD **Subject Name:** Power System Protection **Branch:** Electrical Eng. **Semester:**7th **Subject Code:** ELPE711 **Date of Start:** 23 July,25 **Total Load:** 38 hours **Date of Completion:** 22nd Nov,25

Module/Unit-1: Introduction and Components of a Protection System

S.No	Name of Topic	Hours
1	Principles of Power System Protection	1
2	Fuse: Introduction, types, and applications	1
3	Relays: Operating principle, types, and applications	2
4	Instrument Transformers: Modeling and applications	1
5	Circuit Breakers: Arcing phenomenon, types, ratings, applications	1
Total		**6**

Module/Unit-2: Faults and Over-Current Protection

S.No	Name of Topic	Hours
1	Review of Fault Analysis	2
2	Sequence Networks	2
3	Over-Current Protection	1
4	Over-Current Relay Coordination	1
Total		**6**

Module/Unit-3: Equipment Protection Schemes

S.No	Name of Topic	Hours
1	Directional Protection	2
2	Distance Protection	2
3	Differential Protection	2
4	Transformer and Generator Protection	1
5	Bus Bar Protection and Arrangement Schemes	1

Total		**8**

Module/Unit-4: Digital Protection

S.No	Name of Topic	Hours
1	Computer-Aided Protection	2
2	Fourier Analysis and Phasor Estimation Using DFT	2
3	Sampling and Aliasing Issues	2
4	Applications and Advantages of Digital Protection	2
Total		**8**

Module/Unit-5: Modeling and Simulation of Protection Schemes

S.No	Name of Topic	Hours
1	Simulation of Transients Using EMT Programs	2
2	Relay Testing	2
Total		**4**

Module/Unit-6: System Protection

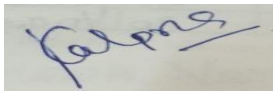
S.No	Name of Topic	Hours
1	Effect of Power Swings on Distance Relaying	2
2	Under-Frequency, Under-Voltage, and df/dt Relays	1
3	Synchro-Phasors and Wide-Area Measurement Systems (WAMS)	2
4	Applications of WAMS for System Protection	1
Total		**6**

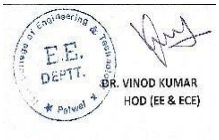
TEXT BOOKS:

1. J.L. Blackburn, “Protective Relaying: Principles and Applications,” Marcel Dekker, New York, 1987.
2. Y.G. Paithankar and S.R. Bhide, “Fundamentals of Power System Protection,” Prentice Hall, India, 2010.

REFERENCE BOOKS:

1. A.G. Phadke and J.S. Thorp, “Computer Relaying for Power Systems,” John Wiley & Sons, 1988.
2. D. Reimert, “Protective Relaying for Power Generation Systems,” Taylor and Francis, 2006.





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Academics

NGF COLLEGE OF ENGINEERING & TECHNOLOGY

DEPARTMENT OF COMPUTER SCIENCE

LESSON PLAN (JULY-DEC 2025)

Name of Teacher: Sudhir | **Designation: Lecturer** | **Subject Name: AED**
Branch: Btech EE | **Semester: 7th sem** | **Subject Code: ELPE -715**
Date of Start: 21July 2025 | **Total Load:22 hrs 30m** | **Date of Completion: 21/11/2025**

Unit-1: POWER CONVERTERS FOR AC DRIVE

S.No	Name of Topic	Hours
1	PWM control of inverter, selected harmonic elimination	50
2	Space vector modulation	50
3	Current control of VSI, three level inverter	50
4	Different topologies, SVM for 3 level inverter	50
5	Diode rectifier with boost chopper	50
6	PWM converter as line side rectifier	50
7	Current fed inverters with self-commutated devices	50
8	Control of CSI, H bridge as a 4-Q drive	50
	TOTAL	6 HRS 40 MNS

Unit 2: INDUCTION MOTOR DRIVES

S.No	Name of Topic	Hours
1	Different transformations and reference frame theory	50
2	Modeling of induction machines	50
3	Voltage fed inverter control - V/f control	50
4	Vector control	50
5	Direct torque and flux control (DTC)	50
	TOTAL	4 HRS 10 MNS

Unit-3: SYNCHRONOUS MOTOR DRIVES

S.No	Name of Topic	Hours
1	Modeling of synchronous machines	50
2	Open loop V/f control	50
3	Vector control	50
4	Direct torque control	50
5	CSI fed synchronous motor drives	50
	TOTAL	4 HRS 10 MNS

UNIT-IV: PERMANENT MAGNET MOTOR DRIVES

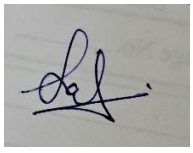
S.No	Name of Topic	Hours
1	Introduction to various PM motors	50
2	BLDC and PMSM drive configuration, comparison	50
3	Block diagrams	50
4	Speed and torque control in BLDC and PMSM	50
	TOTAL	3 HRS 20 MNS

UNIT-V: SWITCHED RELUCTANCE MOTOR DRIVES

S.No	Name of Topic	Hours
1	Evolution of SRM, various topologies for SRM drives	50
2	Comparison	50
3	Closed loop speed and torque control of SRM	50
	TOTAL	2 HRS 30 MNS

UNIT-VI: DSP BASED MOTION CONTROL

S.No	Name of Topic	Hours
1	Use of DSPs in motion control, various DSPs available	50
2	Realization of basic blocks in DSP for implementation of DSP based motion control	50
	TOTAL	1 HRS 40 MNS



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DEPARTMENT OF ELECTRICAL ENGINEERING

LESSON PLAN (JULY-DEC 2025)

Name of Teacher: KARAN PAL SINGH **Designation:** ASSISTANT PROFESSOR
Subject Name: Manufacturing Process
Branch: EE **Semester: 7th** **Subject Code: ELOE-109**
Date of Start: 23/07/2024 **Total Load: 40 hrs** **Date of Completion: 21/11/2025**

Module/Unit-1: Casting and moulding

S.No	Name of Topic	Hours
1	Metal casting processes and equipment	1
2	Heat transfer and solidification, shrinkage, riser design	2
3	casting defects and residual stresses	2
	Total	5

Module/Unit-2: Conventional Manufacturing processes

S.No	Name of Topic	Hours
1	Introduction to bulk and sheet metal forming, plastic deformation and yield criteria;	1
2	Fundamentals of hot and cold working processes	1
3	Load estimation for bulk forming(forging, rolling, extrusion, drawing)	1
4	Sheet forming (shearing, deep drawing, bending) principles of powder metallurgy	1
	Total	4

Module/Unit-3: Metal cutting

S.No	Name of Topic	Hours
1	Single and multi-point cutting; Orthogonal cutting, various force components	2
2	Chip formation, Tool wear and tool life, Surface finish and integrity	2
3	Machinability, Cutting tool materials, Cutting fluids, Coating; Turning, Drilling	2
4	Milling and finishing processes, Introduction to CNC machining.	2
	Total	8

Module/Unit 4: Additive manufacturing

S.No	Name of Topic	Hours
1	Additive manufacturing	1
2	Rapid prototyping and rapid tooling	2
	Total	3

Module/Unit-5: Joining/fastening processes

S.No	Name of Topic	Hours
1	Physics of welding, brazing and soldering.	1
2	Design considerations in welding	1

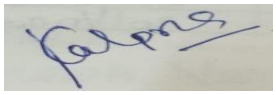
3	Solid and liquid state joining processes; Adhesive bonding	2
	Total	4

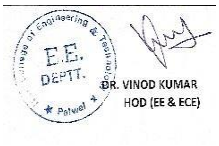
Module/Unit 6: Unconventional Machining Processes

S.No	Name of Topic	Hours
1	Abrasive Jet Machining, Water Jet Machining, Abrasive Water Jet Machining, Ultrasonic Machining, principles and process parameters.	5
2	Electrical Discharge Machining, principle and processes parameters, MRR, surface finish, tool wear, dielectric, power and control circuits, wire EDM; Electro-chemical machining (ECM), etchant &maskant, process parameters, MRR and surface finish.	8
3	Laser Beam Machining (LBM), Plasma Arc Machining (PAM) and Electron Beam Machining.	3
	Total	16

Recommended/ Reference Books:

- Kalpakjian and Schmid, Manufacturing processes for engineering materials (5th Edition)- Pearson India, 2014
- Mikell P. Groover, Fundamentals of Modern Manufacturing: Materials, Processes, and Systems
- Degarmo, Black &Kohser, Materials and Processes in Manufacturing





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DEPARTMENT OF ELECTRICAL ENGINEERING

LESSON PLAN (JULY-DEC 2025)

Name of Teacher: DHEERAJ SHARMA **Designation:** ASSISTANT PROFESSOR

Semester: 7th **Subject Name:** MECHTRONIC SYSTEMS

Branch: EE **Subject Code:** PEC-ME-451

Date of Start: 21/07/2025 **Total Load:** ...21..hrs **Date of Completion:** 29/11/2025

Module/Unit-1: Introduction of mechatronic systems

S.No	Name of Topic	Hours
1	Definition of Mechanical Systems, Philosophy and approach; Systems and Design: Mechatronic approach,	2
2	Integrated Product Design, Modeling, Analysis and Simulation, Man-Machine Interface;	1
3	Sensors and transducers: classification, Development in Transducer technology,	3
4	Optoelectronics-Shaft encoders, CD Sensors, Vision System, etc.;	1
	Total	7

Module/Unit 2- Drives and Actuators

S.No	Name of Topic	Hours
1	Drives and Actuators: Hydraulic and Pneumatic drives, Electrical Actuators such as servo motor and Stepper motor,	1
2	Drive circuits, open and closed loop control; Embedded Systems:	1
3	Hardware Structure, Software Design and Communication,	1
4	Programmable Logic Devices, Automatic Control and Real Time Control Systems;	1
	Total	4

continue

Module/Unit-3: Smart Material

S.No	Name of Topic	Hours
1	Smart materials: Shape Memory Alloy, Piezoelectric and Magnetostrictive Actuators: Materials,	3
2	Static and dynamic characteristics, illustrative examples for positioning, vibration isolation, etc.;	2
	Total	5

Module/Unit 4- Micro mechatronic Systems

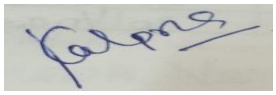
S.No	Name of Topic	Hours
1	Micro mechatronic systems: Micro-sensors, Micro-actuators; Micro-fabrication techniques LIGA Process: Lithography, etching, Micro-joining etc. Application	3
2	Robotics Manufacturing, Machine Diagnostics, Road vehicles and Medical Technology.	2
	Total	5

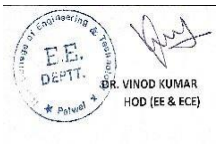
TEXT BOOKS:

1. .MECHATRONICS: A MULTIDISCIPLINARY APPROACH BY W. BOLTON
2. MECHATRONICS : ELECTRICAL CONTROL SYSTEM IN MECHANICAL AND ELECTRICAL ENGINEERING.

REFERENCE BOOKS:

1 A TEXT BOOK OF MECHATRONICS BY R K RAJPUT





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NGF COLLEGE OF ENGINEERING & TECHNOLOGY

DEPARTMENT OF COMPUTER SCIENCE

LESSON PLAN (JULY-DEC 2025)

Name of Teacher: Sudhir **Designation: Lecturer** **Subject Name: FOC**
Branch: Btech EE /ECE **Semester: 7th sem** **Subject Code: ECEL-704**
Date of Start: 21July 2025 **Total Load:21 hrs 50mns** **Date of Completion: 21Nov 2025**

Unit-1: INTRODUCTION TO VECTOR NATURE OF LIGHT

S.No	Name of Topic	Hours
1	Introduction & Propagation of light	50
2	Propagation of light in a cylindrical dielectric rod	50
3	Ray model	50
4	Wave model	50
	TOTAL	3 HRS 20 MNS

Unit 2: OPTICAL FIBERS AND SIGNAL DEGRADATION

S.No	Name of Topic	Hours
1	Different types of optical fibers	50
2	Modal analysis of a step index fiber	50
3	Signal degradation: Dispersion and Attenuation	50
4	Fabrication of fibers	50
5	Measurement techniques like OTDR	50
	TOTAL	4 HRS 10 MNS

Unit-3: OPTICAL SOURCES, DETECTORS AND LINK DESIGN

S.No	Name of Topic	Hours
1	Optical sources: LEDs and Lasers	50
2	Photo-detectors: PIN diodes and APDs	50
3	Detector responsivity, noise	50
4	Optical receiver	50
5	Optical link design	50
6	BER calculation and quantum limit	50
7	Power penalties	50
	TOTAL	5 HRS 50 MNS

UNIT-IV: OPTICAL SWITCHES

S.No	Name of Topic	Hours
1	Optical switches: Introduction	50
2	Coupled mode analysis	50
3	Analysis of directional couplers	50
4	Electro-optic switches	50
	TOTAL	3 HRS 20 MNS

UNIT-V: OPTICAL AMPLIFIERS

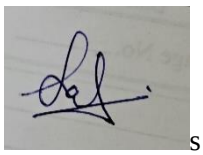
S.No	Name of Topic	Hours
1	Optical amplifiers: Introduction	50
2	Erbium Doped Fiber Amplifier (EDFA)	50
3	Raman amplifier	50
	TOTAL	2 HRS 30 MNS

UNIT-VI: WDM SYSTEMS

S.No	Name of Topic	Hours
1	WDM and DWDM systems: Concepts	50
2	WDM and DWDM systems: Architecture	50
3	Principles of WDM networks	50
	TOTAL	2 HRS 30 MNS

UNIT-VII: NONLINEAR EFFECTS AND SOLITONS

S.No	Name of Topic	Hours
1	Nonlinear effects in fiber optic links	50
2	Concept of self-phase modulation	50
3	Group velocity dispersion	50
4	Soliton based communication	50
	TOTAL	3 HRS 20 MNS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Signature of Teacher

Approved by HOD/Dean

Approved by IQAC Director/Dean Academics

NGF COLLEGE OF ENGINEERING & TECHNOLOGY

DEPARTMENT OF ELECTRICAL ENGINEERING

LESSON PLAN (July-Dec 2025)

Name of Teacher: Ritu Dagar **Designation:** Assistant Professor/COE Coordinator
Subject Name: Organisational Behaviour **Branch:** Department of Electrical Engineering
Semester: 7th **Subject Code:** HSMC-03
Date of Start: 28 July, 2025 **Total Load:** 18 lectures (15 hrs) **Date of Completion**:

Module/Unit-1: Introduction to management

S.No	Name of Topic	Hours
1	Introduction to management: concept, nature	50 minutes
2	evolution of management thoughts	50 minutes
3	traditional, behavioural, system, contingency and quality viewpoints;	50 minutes
4	Managerial levels, skills and roles in an organization;	50 minutes
5	Managerial levels, skills and roles in an organization;	50 minutes
6	Functions of Management: Planning, Organizing, Directing, Controlling	50 minutes
7	Problem solving and Decision making; Management Control	50 minutes
8	Managerial ethics and social responsibility; Management Information System (MIS)	50 minutes
	Total	6 Hours, 40 minutes

Module/Unit- 2: Fundamentals of Organizational Behaviour ...

S.No	Name of Topic	Hours
1	Fundamentals of Organizational Behaviour: Concept, evolution, importance and relationship with other Fields; Contemporary challenges of OB	50 minutes
2	Individual Processes and Behaviour – differences; Personality concept, determinant, theories and applications	50 minutes
3	Values, Attitudes and Emotions; Perception- concept, process and application	50 minutes
4	Learning & Reinforcement; Motivation: concept, theories and applications, and Stress management	50 minutes
	Total	3 Hours, 20 min

Module/Unit- 3: Interpersonal Processes

S.No	Name of Topic	Hours
1	Interpersonal Processes- Work teams and group; Definition of Group, Stages of group development	50 minutes
2	Group cohesiveness; Types of groups, Group processes and Decision Making; Team Building;	50 minutes
3	Conflict- concept, sources, types, management of conflict; Power and Political Behaviour; Leadership: concept, function and styles	50 minutes
	Total	2 Hours, 30 min

Module/Unit-4: Organizational Processes and structure:

S.No	Name of Topic	Hours
1	Organizational Processes and structure; organizational design; Various organisational structure and their effect om human behaviour	50 minutes
2	Organizational climate; Organizational culture; Organizational change: Concept, Nature	50 minutes
3	Resistance to Change, Change Management; Implementing Change and	50 minutes

	Organizational Development	
	Total	2 Hours, 30 minutes

TEXT BOOKS / REFERENCE BOOKS:

1.Robbins, S.P. and Decenzo D.A. Fundamentals of Management, Pearson Education Asia, New Delhi.
2 Stoner, J et. al, Management, New Delhi, PHI, New Delhi
3 Satya Raju, Management – Text & Cases, PHI, New Delhi
4 Kavita Singh, Organisational Behaviour: Text and cases. New Delhi: Pearson Education
5 Pareek, Udai, Understanding Organisational Behaviour, Oxford University Press, New Delhi
6 Robbins, S.P. & Judge, T.A., Organisational Behaviour, Prentice Hall of India, New Delhi

Signature of Teacher **Approved by HOD/Dean** **Approved by IQAC Director/Dean Academics**

Ritu Dagar

NGF COLLEGE OF ENGINEERING &TECHNOLOGY

DEPARTMENT OF ELECTRICAL ENGINEERING

LESSON PLAN (July-Nov.2025)

Name of Teacher: Mr. Gyan Prakash Designation: Sr. Lecturer Subject Name: Workshop-7 lab
Branch: EE Sem: VII Subject Code: ELSE761
Date of Start: 23 July, 25 Total Load: 20 hrs Date of Completion:22, Nov, 2025

Module/Unit 1: Electrical Safety & Protection

S.No	Name of Topic	Hours
1	Importance of protection from electric shock and handling of live, neutral, and earth points	2 hrs
2	Importance and working of electrical protective devices: MCB, Fuses (Rewireable, HRC, Cartridge)	2 hrs
	Total	**4 hrs**

Module/Unit 2: Starters & Motors

S.No	Name of Topic	Hours
1	Practical demonstration of three-phase induction motor using DOL starter	2 hrs
2	Constructional view of DC and AC motors	2 hrs
3	Study of different types of electrical motor wiring	1 hr
	Total	**5 hrs**

Module/Unit 3: Starting Devices & Earthing

S.No	Name of Topic	Hours
1	Study of DC starters: Two-point and Three-point types	2 hrs
2	Study of different types of earthing systems	2 hrs
	Total	**4 hrs**

Module/Unit 4: Protection Devices & Cable Testing

S.No	Name of Topic	Hours
1	Introduction and performance of protective devices: MCB, Fuse, Relay, ELCB, Vacuum Circuit Breaker	2 hrs
2	Study and testing of electrical cables: Continuity and Insulation tests	2 hrs
	Total	**4 hrs**

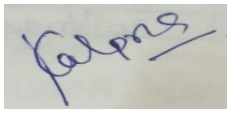
Module/Unit 5: Battery Testing

S.No	Name of Topic	Hours
1	Practical testing of a battery (voltage, specific gravity, load test)	1 hr
	Total	**1 hr**

TEXT BOOKS & REFERENCE BOOKS:

- B.L. Theraja, “Electrical Technology Vol. I & II”
- S.K. Bhattacharya, “Electrical Machines”

- BIS Handbook – Indian Electrical Safety Rules
- Departmental Lab Manual



Signature of Coordinator **Approved by HOD/Dean** **Approved by IQAC Director/Dean**

NGF COLLEGE OF ENGINEERING &TECHNOLOGY
DEPARTMENT OF ELECTRICAL ENGINEERING
LESSON PLAN (July-Nov.2025)

Name of Teacher: Mr GOPAL Designation: Sr. Lecturer Subject Name: MAJOR PROJECT
Branch: EE Sem: VII Subject Code: ELSE762
Date of Start: 23 July, 25 Total Load: 20 hrs Date of Completion:22, Nov, 2025

Module/Unit 1: Project Initiation & Proposal

S.No	Name of Topic	Hours
1	Orientation on major project objectives, evaluation criteria, and industry relevance	2 hrs
2	Topic selection, feasibility analysis, and team formation	2 hrs
3	Submission of synopsis and approval by project committee	2 hrs
	Total	**6 hrs**

Module/Unit 2: Research & Design

S.No	Name of Topic	Hours
1	Literature review and identification of research gap	2 hrs
2	System design: block diagram, circuit simulation, and software architecture	4 hrs
	Total	**6 hrs**

Module/Unit 3: Development & Implementation

S.No	Name of Topic	Hours
1	Hardware development or software coding	6 hrs
2	Integration of modules and functional testing	4 hrs
	Total	**10 hrs**

Module/Unit 4: Evaluation & Optimization

S.No	Name of Topic	Hours
1	Performance analysis and troubleshooting	4 hrs
2	Optimization and final validation	4 hrs
	Total	**8 hrs**

Module/Unit 5: Documentation & Presentation

S.No	Name of Topic	Hours
1	Preparation of detailed project report as per departmental format	4 hrs
2	Final presentation, demonstration, and viva voce	6 hrs
	Total	**10 hrs**

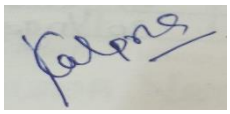
Suggested Project Domains:

- Renewable Energy Systems (Solar, Wind, Hybrid)
- Smart Grid and Energy Management
- IoT-based Electrical Monitoring
- Electric Vehicle Charging Systems
- Power Electronics Converters and Controllers
- Industrial Automation using PLC/SCADA

- Fault Detection in Transmission Lines
- AI/ML Applications in Electrical Systems

TEXT BOOKS & REFERENCE BOOKS:

- IEEE Journals and Conference Papers
- M.H. Rashid, “Power Electronics”
- R.K. Rajput, “Electrical Engineering Materials”
- Departmental Project Guidelines



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