NGF COLLEGE OF ENGINEERING & TECHNOLOGY

DEPARTMENT OF ELECTRONICS & COMMUNICATION ENGINEERING

LESSON PLAN (July-Dec 2025)

B. TECH 2nd YEAR ECE (SEMESTER -III)
COURSE STRUCTURE

Sr. No.	Category	Course Code	Course Title	Hours per week			Credits	Sessional Marks	Final Marks	Total
				L	T	P				
1	PCC	EEU-201-V	Electronics Devices	3	0	0	3	25	75	100
2	PCC	EEU-203-V	Digital System Design	3	0	0	3	25	75	100
3	PCC	EEU-205-V	Network Theory	3	0	0	3	25	75	100
4	ESC	OEU-201-V	Engineering Mechanics	3	1	0	4	25	75	100
5	BSC	MTU-211-V	Mathematics-III	3	1	0	4	25	75	100
6	MC	VAC-121-V	Indian Constitution/ Essence of Indian Traditional Knowledge	2	0	0	0	25	75	100
7	PCC	EEU-207-V	Electronics Devices Lab	0	0	2	1	15	35	50
8	PCC	EEU-209-V	Digital System Design Lab	0	0	2	1	15	35	50
9	PCC	EEU-211-V	Network Theory Lab	0	0	2	1	15	35	50
10	PROJ	EEU-213-V	Electronics Project Workshop-I	0	0	6	3	30	70	100
			Total Credits				**23**	225	625	850

NGF COLLEGE OF ENGINEERING & TECHNOLOGY

DEPARTMENT OF ELECTRONICS & COMMUNICATION ENGINEERING

LESSON PLAN (July-Dec 2025)

Name of Teacher: Vaishali Munjal **Designation: Assistant Professor**
SubjectName: Electronic Device
Branch: ECE **Semester:3rd** **Subject Code:EEU-201-V**
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

Prof. (Dr.) Kuldeep Tomar

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NGF COLLEGE OF ENGINEERING & TECHNOLOGY

DEPARTMENT OF ELECTRONICS & COMMUNICATION ENGINEERING

LESSON PLAN (July-Dec 2025)

Name of Teacher: Anjali Kaushik **Designation: Assist. Prof.** **Subject Name: DSD**

Branch: ECE **Semester:3rd** **Subject Code: EEU-203-V**
Date of Start: 25/07/2025 **Total Load: 29.2hrs** **Date of Completion:24/11/2025**

Module/Unit-1: Logic Simplification

S.No	Name of Topic	Hours
1	Logic Simplification, Combinational Logic Design	50min
2	Review of Boolean Algebra	50min
3	De Morgan ‘s Theorem	50min
4	SOP & POS forms	50min
5	Canonical forms	50min
6	Karnaugh maps up to 6 variables	50min
	Total	300min=5hrs

Module/Unit 2: MSI Devices

S.No	Name of Topic	Hours
1	MSI devices like Comparators	50min
2	Multiplexers	50min
3	Encoder, Decoder	50min
4	Driver &Multiplexed Display	50min
5	Half and Full Adders, Subtractors	50min
6	Serial and Parallel Adders,	50min
7	BCD Adder	50min
8	Barrel shifter and ALU	50min
	Total	400min=6.7hrs

Module/Unit-3: Sequential Logic Design.

S.No	Name of Topic	Hours
1	Introduction of Sequential Logic Design	50min

2	Building blocks like S-R, JK, Master-Slave JK FF , Edge triggered FF Ripple and Synchronous counters	50min
3	Ripple and Synchronous counters	50min
4	Shift registers, Finite state machines,	50min
5	Design of synchronous FSM,	50min
6	Algorithmic State Machines charts.	50min
7	Designing synchronous circuits like Pulse train generator,	50min
8	Pseudo Random Binary Sequence generator, Clock generation	50min
	Total	400min=6.7hrs

Module/Unit-4: Logic Families and semiconductors

S.No	Name of Topic	Hours
1	TTL NAND gate	50min
2	Specifications, Noise margin, Propagation delay, fan-in, fan-out, Tristate TTL	50min
3	ECL,CMOS families and their interfacing, Memory elements	50min
4	Concept of Programmable logic devices like FPGA	50min
5	Logic implementation using Programmable Devices.	50min
	Total	250min=4.1hrs

Module/Unit-5: : VLSI Design flow

S. No	Name of Topic	Hours
1	Design entry, Schematic	50min
2	FSM & HDL	50min
3	Different modelling styles in VHDL	50min
4	Data type sand objects	50min
5	Dataflow	50min
6	Behavioural and Structural Modelling	50min
7	Synthesis and Simulation VHDL constructs	50min
8	Codes for combinational and sequential circuits	50min
	Total	400min=6.7hrs

TEXT BOOKS:

1. R.P.Jain,"ModerndigitalElectronics", TataMcGrawHill, 4thedition,2009.
2. DouglasPerry, "VHDL", TataMcGrawHill,4thedition, 2002.
3. W.H. Gothmann, "Digital Electronics- An introduction to theoryand practice", PHI, 2nd edition, 2006.

REFERENCE BOOKS:

1. D.V.Hall,"DigitalCircuitsandSystems", TataMcGrawHill, 1989.
2. CharlesRoth,"DigitalSystemDesignusingVHDL",TataMcGrawHill2nd edition2012.

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NGF COLLEGE OF ENGINEERING & TECHNOLOGY

DEPARTMENT OF ELECTRONICS & COMMUNICATION ENGINEERING

LESSON PLAN(July-Dec 2024)

Name of Teacher: Neha Gautam **Designation: Assit. Prof.** **SubjectName: NT**
Branch: ECE **Semester:3rd** **Subject Code:EEU-205-V**

Date of Start: 23/07/2025 **Total Load: 22hrs** **Date of Completion: 22/11/2025**

Module/Unit-1 Node and Mesh Analysis.

S.No	Name of Topic	Hours
1	Node and Mesh Analysis, matrix approach of network containing voltage and current sources, and reactances,	50MIN
2	source transformation and duality	50MIN
3	Superposition theorem	50MIN
4	Reciprocity theorem	50MIN
5	Thevenin's, Norton's theorem	50MIN
6	Maximum power Transfer theorem	50MIN
7	compensation and Tallegen's theorem as applied to AC, circuits	50MIN
8	Trigonometric and exponential fourier series	50MIN
9	Fourier series: Discrete spectra and symmetry of waveform, ,	50MIN
10	steady state response of a network to non-sinusoidal periodic inputs	
11	power factor, effective values	50MIN
12	, Fourier transform and continuous spectra,	50MIN
13	three phase unbalanced circuit and power calculation	50MIN
	Total	650MIN=10.8HRS

Module/Unit 2-. Laplace transforms and properties

S.No	Name of Topic	Hours
1	Partial fractions, singularity functions,	50MIN
2	waveform synthesis	50MIN
3	analysis of RC	50MIN
4	RL, and RLC networks with and without initial conditions with Laplace transforms	50MIN
5	evaluation of initial conditions	50MIN

	Total	250MIN=4.1HRS

Module/Unit 3 – Transient behaviour

S.No	Name of Topic	Hours
1	Transient behaviour, concept of complex frequency, ,	50MIN
2	Driving points and transfer functions poles and zeros of admittance function, their properties	50MIN
3	sinusoidal response from pole-zero locations,	50MIN
4	convolution theorem	50MIN
5	Two four port network and interconnections	50MIN
6	Behaviors of series and parallel resonant circuits,.	50MIN
7	Introduction to multirate signal processing,	50MIN
8	Introduction to band pass, low pass, high pass and band reject filters	50MIN
	Total	450MIN=7.5HRS

TEXT BOOKS:

1. S.K.Mitra, Digital Signal Processing: A computer based approach.TMH

2. J.R. Johnson, Introduction to Digital Signal Processing, Prentice Hall, 1992.

REFERENCE BOOKS:

1.A.V. Oppenheim and Schafer, Discrete Time Signal Processing, Prentice Hall, 1989.

2. John G. Proakis and D.G. Manolakis, Digital Signal Processing: Principles, Algorithms And Applications, Prentice Hall, 1997.

3 L.R. Rabiner and B. Gold, Theory and Application of Digital Signal Processing, Prentice Hall, 1992.

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Academics

NGF COLLEGE OF ENGINEERING & TECHNOLOGY

DEPARTMENT OF MECHANICAL ENGINEERING

LESSON PLAN (JULY-DEC 2025)

Name of Teacher: DHEERAJ SHARMA **Designation:** ASSISTANT PROFESSOR
Semester: 3rd **Subject Name:** ENGINEERING MECHANICS
Branch: ECE& ME **Subject Code:** OEU-201-V
Date of Start: 21/07/2025 **Total Load:** ...47..hrs **Date of Completion:** 29/11/2025

Module/Unit-1: Introduction to Engineering Mechanics

S.No	Name of Topic	Hours
1	Force Systems: Basic concepts, Particle equilibrium in 2 D & 3-D, Rigid Body equilibrium.	2
2	System of Forces: Coplanar and Concurrent Forces, Components of forces in Space, Resultant	1
3	Moment of Forces and its Application	3
4	Couples, Equilibrium of System of Forces, Equations of Equilibrium of Coplanar Systems and Spatial Systems. (8)	1
	NUMERICAL PRACTICE	1
	Total	8

Module/Unit-2: FRICTION

S.No	Name of Topic	Hours
1	Friction: Types of friction, Limiting friction, Laws of Friction,	1
2	Static and Dynamic Friction; Motion of Bodies,	1
3	wedge friction, screw jack & differential screw jack.	2
4	NUMERICAL PRACTICE	1
	Total	5

Module/Unit-3: Structural Analysis

S.No	Name of Topic	Hours
1	Structural Analysis: Equilibrium in three dimensions. Trusses ,	1
2	Method of Joints with example	1
3	Method of Sections with example practise	2
4	Zero force members. Beams & types of beams	1
5	Frames & Machines.	2
	Total	7

Module/Unit 4-. Centroid and Centre of Gravity

S.No	Name of Topic	Hours
1	Centroid of simple figures from first principle, centroid of composite sections	1
2	Centre of Gravity; Area moment of inertia- Definition, Moment of inertia of plane sections from first principles,	2
3	Theorems of moment of inertia, Moment of inertia of standard and composite	3

	sections; Mass moment inertia of circular plate, Cylinder, Cone, Sphere, Hook.	
4	Numerical practise	1
	Total	7

Module/Unit-5: . Virtual Work and Energy Methods

S.No	Name of Topic	Hours
1	Virtual displacements, Principle of virtual work for particle and ideal system of rigid bodies, Degrees of Freedom. Active force diagram	2
2	systems with friction, mechanical efficiency	2
3	.Conservative forces and potential energy (elastic and gravitational), energy equation for equilibrium. Applications of energy method for equilibrium. Stability.	2
	Total	7

Module/Unit 6-.. Particle dynamics

S.No	Name of Topic	Hours
1	Particle dynamics: Rectilinear motion, Plane curvilinear motion (rectangular, path, and polar coordinates). 3-D curvilinear motion; Relative and constrained motion;	3
2	Newton's 2nd law (rectangular, path, and polar coordinates).	2
3	Work-kinetic energy, power, potential energy. Impulse momentum (linear, angular); Impact (Direct and oblique).	3
	Total	8

Module/Unit 7- Kinematics and Kinetics of Rigid Bodies

S.No	Name of Topic	Hours
1	Kinematics and Kinetics of Rigid Bodies: Basic terms, general principles in dynamics; Types of motion,	2
2	Instantaneous centre of rotation in plane motion and simple problems;	1
3	D' Alembert's principle and its applications in plane motion and connected bodies;	1
4	Work energy principle and its application in plane motion of connected bodies; Kinetics of rigid body rotation. (8)	1
	Total	5

Recommended/ Reference Books:

1. Irving H. Shames, Engineering Mechanics, Prentice Hall

2. F. P. Beer and E. R. Johnston, Vector Mechanics for Engineers, Vol I - Statics, Vol II, –

Dynamics, Tata McGraw Hill

3. R. C. Hibbler, Engineering Mechanics: Principles of Statics and Dynamics, Pearson Press.

4. Hibler and Gupta, Engineering Mechanics (Statics, Dynamics) by Pearson Education.

5. Reddy Vijaykumar K. and K. Suresh Kumar, Singer's Engineering Mechanics.

6. Bansal R.K., A Text Book of Engineering Mechanics, Laxmi Publications.

7. Khurmi R.S., Engineering Mechanics, S. Chand & Co.

8. Tayal A.K., Engineering Mechanics, Umesh Publications.

9. Engineering Mechanics , D. S kumar

10. Engineering Mechanics by R. K Rajput

Web Links:

S.No.	Address of web source	Content
1.	https://youtu.be/tJw_-gx-i-0	Principle of Virtual Work: Lecture- 1
2.	https://youtu.be/6n61rjociHQ	Principle of Virtual Work: Lecture- 2
3.	https://youtu.be/zGsGupbv_SI	Energy Relations
4.	https://youtu.be/VQRcChR9IkU	Friction- Lecture- 1
5.	https://youtu.be/jpvt1D4jG9w	Friction- Lecture- 2
6.	https://youtu.be/BytusqcT_F0	Friction- Lecture- 3

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NGF COLLEGE OF ENGINEERING & TECHNOLOGY

DEPARTMENT OF ELECTRONICS & COMMUNICATION ENGINEERING

LESSON PLAN (Jan-July 2025)

Name of Teacher:Dr Vishal Chand Goel **Designation:Associate professor**

SubjectName: Mathematics -IIIrd
Branch:ECE **Semester:IIIrd** **Subject Code:MTU-211-V**
Date of Start:8 august2025 **Total Load: 37** **Date of Completion: 23 NOV 2025**

Module/Unit-1: Transform Calculus - 1

S.No	Name of Topic	Hours
1	Transform Calculus-1: Polynomials – Orthogonal Polynomials – Lagrange's	2
2	Chebysev Polynomials; Trigonometric Polynomials.	1
3	Laplace Transform	1
4	Properties of Laplace Transform,	1
5	Laplace transform of periodic functions	1
6	Finding inverse Laplace transform by different methods	2
7	convolution theorem	2
8	Solving ODEs and PDEs by Laplace Transform method.	2
9	Evaluation of integrals by Laplace transform,	1
	Total	13

Module/Unit 2- Transform Calculus - 2

S.No	Name of Topic	Hours
1	Transform Calculus-2: Fourier transforms,	4
2	Z-transform : Properties, methods,	6
	Total	12

Module/Unit 2- Transform Calculus - 2

S.No	Name of Topic	Hours
1	Vector differentiation	1
2	gradient, divergence and curl,	3

3	line and surface integrals	2
4	statements and illustrations of theorems of Green	1
5	Stokes Theorem	1
6	Gauss Theorem	1
7	path independence	1
8	arc length parameterization, applications.	1
	Total	11

TEXT BOOKS:

1. , N.P.Bali Engineering Mathematics
2. B.S. Grewal, Higher Engineering Mathematics, Khanna Publishers

REFERENCE BOOKS:

1. Erwin Kreyszig, Advanced Engineering Mathematics,
2 Veerarajan T., Engineering Mathematics, Tata McGraw-Hill, New Delhi
3 S.S. Sastry, Introductory methods of numerical analysis

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NGF COLLEGE OF ENGINEERING & TECHNOLOGY

DEPARTMENT OF ELECTRICAL COMMUNICATION AND ENGINEERING

LESSON PLAN (July-Dec 2025)

Name of Teacher: Ms.Priyanka **Designation:Assistant Professor**
SubjectName:Indian Constitution

Branch:EE **Semester:3rd** **Subject Code:VAC-121-V**
Date of start: 22/07/2025 **Total load: 30 hours** **Date of complete:24/11/25**

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

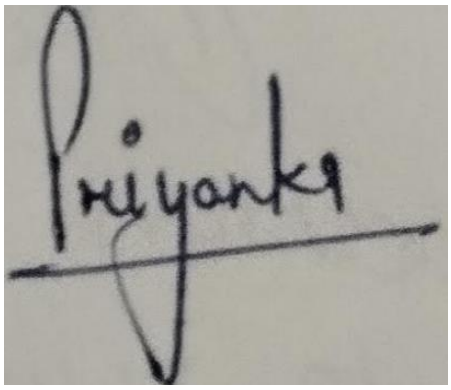
S.No	Name of Topic	Hours
1	Scheme of the fundamental right to equality	50 mins
2	Scheme of the fundamental right to equality under article 19	100mins
3	Scope of the right to life	50 mins
4	Scope of the right to personal liberty	50 mins
5	Article 21	50 mins
	Total	300mins

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 ELECTRONICS & COMMUNICATION ENGINEERING

LESSON PLAN (July-Dec 2025)

Name of Teacher: Ms Vaishali Munjal **Designation: Assistant professor**
Subject Name: ED Lab
Branch: ECE **Semester: 3RD** **Subject Code:EEU-207-V**
Date of Start: 23/07/2025 **Total Load:25hrs** **Date of Completion: 24/11/2025**

EXPERIMENTS

S.No	Name of Topic	Hours
1	To study the V-I characteristics of a PN diode .	100 MIN
2	**i. To study the V-I characteristics of a Zener diode.**	100 MIN
3	Design & Analysis of Zener Diode as a voltage regulator.	100 MIN
4	Implementation of BJT as an Switch	100 MIN
5	Design & implementation of Half wave rectifier.	100 MIN
6	Implementation of BJT as an Amplifier	100 MIN
7	Design & implementation of Full Wave Rectifier (Center - Tapped & Bridge type)	100 MIN
8	Study of V-I Characteristics of Bipolar Junction Transistor(BJT) in CE, CB, & CC Configurations.	100 MIN
9	Study of Clipping Circuits (positive & negative clipper)	100 MIN
10	Frequency response of CE Amplifier	100 MIN
	Total	25 hrs

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NGF COLLEGE OF ENGINEERING & TECHNOLOGY

DEPARTMENT OF ELECTRONICS & COMMUNICATION ENGINEERING

LESSON PLAN (July-Dec 2025)

Name of Teacher: ANJALI KAUSHIK **Designation: Assistant professor**
Subject Name: DSD LAB
Branch: ECE **Semester: 3RD** **Subject Code: EEU-209-V**
Date of Start: 23/07/2025 **Total Load:15 hrs** **Date of Completion: 24/12/2025**

EXPERIMENT-1

S. No	Name of Topic	Hours
1	Study of TTL gates – AND, OR, NOT, NAND, NOR, EX-OR, EX-NOR.	100 MIN
	Total	1hr 40 min

EXPERIMENT-2

S.No	Name of Topic	Hours
1	Design & realize a given function using K-maps and verify its performance.	100 MIN
	TOTAL	1hr 40 min

EXPERIMENT-3

S. No	Name of Topic	Hours
1	To verify the operation of multiplexer & Demultiplexer.	100 MIN
	TOTAL	1hr 40 min

EXPERIMENT-4

S. No	Name of Topic	Hours
1	To verify the operation of comparator.	100 MIN
	TOTAL	1hr 40 min

EXPERIMENT-5

S. No	Name of Topic	Hours
1	To verify the truth tables of S-R, J-K, T & D type flip flops.	100 MIN
	TOTAL	1hr 40 min

EXPERIMENT-6

S. No	Name of Topic	Hours
1	To verify the operation of bi-directional shift register.	100 MIN
	TOTAL	1hr 40 min

EXPERIMENT-7

S. No	Name of Topic	Hours
1	To design & verify the operation of 3-bit synchronous counter.	100 MIN
	TOTAL	1hr 40 min

EXPERIMENT-8

S. No	Name of Topic	Hours
1	Design all gates using VHDL.	100 MIN
	TOTAL	1hr 40 min

EXPERIMENT-9

S. No	Name of Topic	Hours
1	Write VHDL programs for the following circuits, check the wave forms and the hardware generated a. half adder b. full adder	100 MIN
	TOTAL	1hr 40 min

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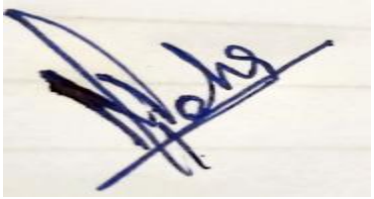
LESSON PLAN (July-Dec 2025)

Name of Teacher: Neha Gautam **Designation: Assistant proff.** **Subject Name:NT lab**
Branch: Electronics **Semester: 3rd** **Subject Code: EEU-211- V**
Date of Start: 25/07/2025 **Total Load:20hrs** **Date of Completion: 13/12/2025**

EXPERIMENTS

S.No	Name of Topic	Hours
1	Transient response of RC circuit.	**100 MIN**
2	Transient response of RL circuit numbers	**100 MIN**
3	To find the resonance frequency, Band width of RLC series circuit.	**100 MIN**
4	To calculate and verify —Z" parameters of a two port network.	**100 MIN**
5	To calculate and verify —Z" parameters of a two port network.	**100 MIN**
6	To calculate and verify "Y" parameters of a two port network. 6. To determine equivalent parameter of parallel connections of two port network	**100 MIN**
7	To plot the frequency response of low pass filter and determine half-power frequency	**100 MIN**
8	To plot the frequency response of high pass filters and determines the half-power frequency	**100 MIN**
9	. To plot the frequency response of band-pass filters and determines the band-width.	**100 MIN**
10	To calculate and verify "ABCD" parameters of a two port network.	**100 MIN**
11	To synthesize a network of a given network function and verify its response.	**100MIN**
12	Introduction of P-Spice	**100MIN**
	Total	**20 hrs**



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NGF COLLEGE OF ENGINEERING & TECHNOLOGY

DEPARTMENT OF ELECTRONICS & COMMUNICATION ENGINEERING

LESSON PLAN (July - Dec2025)

Name of Teacher: Ms Usha Bhardwaj **Designation:Assistant Professor**
Subject Name:Electronics Workshop-1
Branch:ECE (Semester:III) **Subject Code:EEU-213-V**
Date of Start: 23st July 2024 **Total Load: 23hrs**
Date of Completion: 21thNov 2025

Experiment-1

S.No	Name of Topic	Hours
1	Testing of Electronics Devices 1) Diode 2) Transoms 3) Capacitors 4) Inductor	100 mins
2	Testing of Electronics Devices 1) Diode 2) Transoms 3) Capacitors 4) Inductor	100 mins
	Total	200 mins

Experiment- 2

S.No	Name of Topic	Hours
1	Design, Fabrication, Testing & Measurement of half & full wave rectifier	100 mins
2	Design, Fabrication, Testing & Measurement of half & full wave rectifier	100 mins
	Total	200 mins

Experiment- 3

S.No	Name of Topic	Hours

1	Design and fabrication of fixed & variable regulators (Zenes, Transistor and IC	100 mins
2	Design and fabrication of fixed & variable regulators (Zenes, Transistor and IC	100 mins
	Total	200 mins

Experiment- 4

S.No	Name of Topic	Hours
1	Design of transistor as a switch, amplifier and multivibrator	100 mins
2	Design of transistor as a switch, amplifier and multivibrator	100 mins
	Total	200 mins

Experiment- 5

S.No	Name of Topic	Hours
1	To study of 555 as Astable, Monostable, Bistable multivibrator	100 mins
2	To study of 555 as Astable, Monostable, Bistable multivibrator	100 mins
	Total	200 mins

Experiment- 6

S.No	Name of Topic	Hours
1	To design various applications of OP amp such as 1) Amplifiers (Inverting & Non Inverting) 2) Adder, Subtractor & scale changer 3) Integrator and differentiator 4) Oscillator and Schmitt trigger	100 mins
2	To design various applications of OP amp such as 1) Amplifiers (Inverting & Non Inverting) 2) Adder, Subtractor & scale changer 3) Integrator and differentiator 4) Oscillator and Schmitt trigger	100 mins
	Total	200 mins

Experiment- 7

S.No	Name of Topic	Hours
1	Mini project based on anolog circuits of above.	100 mins
2	Mini project based on anolog circuits of above.	100 mins

	Total	200 mins

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B.TECH 3rd YEAR ECE (SEMESTER -V)
COURSE STRUCTURE

Sr. No.	Category	Course Code	Course Title	Hours per week			Credits	Sessional Marks	Final Marks	Total
				L	T	P				
1	PCC	ECC02	Electromagnetic Waves	3	0	0	3	25	75	100
2	PCC	EC502	Probability Theory and Stochastic Processes	3	0	0	3	25	75	100
3	PCC	ECC04	Digital Signal Processing	3	0	0	3	25	75	100
4	PEC		Program Elective-I	3	0	0	3	25	75	100
5	MC	MC03	Environmental Sciences	2	0	0	0	25	75	100
6	OEC		OE-1	3	0	0	3	25	75	100
7	PCC	ECC53	Digital Signal Processing Lab	0	0	2	1	15	35	50
8	PCC	ECC52	Electromagnetic Waves Lab	0	0	2	1	15	35	50
9	PROJ	ES555	Electronics Project Workshop-III	0	0	6	3	30	70	100
			Total Credits				**20**	210	590	800

	Course Code	Course Title
Program Elective-I	ECEL501	CMOS Design
	ECEL502	Nano Electronics
	ECEL503	Power Electronics
	ECEL504	Introduction to MEMS

	Course Code	Course Title
Open Elective-I	OEL501	Smart Materials and Systems
	OEL502	Electrical Measurement and Instrumentation
	OEL503	Intelligent Instrumentation
	OEL504	Electromechanical Energy Conversion
	OEL505	Renewable Power Generation Systems

OPTED SUBJECTS FOR ECE 5TH SEM 2025

S.no	Code	Subject name
1	ECC02	Electromagnetic Waves
2	EC502	Probability Theory and Stochastic Processes
3	ECC04	Digital Signal Processing
4	Program Elective-I ECEL501	CMOS Design
5	MC03	Environmental Sciences
6	Open Elective-I OEL505	Renewable Power Generation Systems
7	ECC53	Digital Signal Processing Lab
8	ECC52	Electromagnetic Waves Lab
9	ES555	Electronics Project Workshop-III

NGF COLLEGE OF ENGINEERING & TECHNOLOGY
DEPARTMENT OF ELECTRONICS & COMMUNICATION ENGINEERING
LESSON PLAN (July-Dec 2025)

Name: Usha Bhardwaj **Designation :Assistant Professor**
Subject Name: Electromagnetic Waves
Branch: ECE (Semester:5th) **Subject Code:ECC02**

Date of Start: 22/07/2025 **Total Load: 33hrs** **Date of Completion: 20/11/2025**

Module/Unit-1: Transmission lines

S.No	Name of Topic	Hours
1	Equations of Voltage and Current on TX line	50min
2	propagation constant and characteristic impedance	50min
3	reflection coefficient and VSWR	50min
4	Impedance Transformation on Loss-less and Low loss Transmission line	50 min
5	Power transfer on TX line	50min
6	Smith Chart	50min

7	Admittance Smith Chart	50min
8	Applications of transmission lines	50min
9	Impedance Matching	50min
10	use transmission line sections as circuit elements.	50min
	Total	500min=8.3hrs

Module/Unit 2- Maxwell's Equation

S.No	Name of Topic	Hours
1	Basics of Vectors	50min
2	Vector calculus	50min
3	Basic laws of Electromagnetic	50min
4	Maxwell's Equations	50min
5	Boundary conditions at Media Interface	50 min
	Total	250min=4.1hrs

Module/Unit 3- Uniform Plane Wave

S.No	Name of Topic	Hours
1	Uniform plane wave	50min
2	Propagation of wave	50min
3	Wave polarization	50min
4	Poincare's Sphere	50min
5	Wave propagation in conducting medium	50min
6	phase and group velocity	50min
7	Power flow and Poynting vector	50min
8	Surface current and power loss in a conductor	50min
	Total	400min=6.6hrs

Module/Unit 4- Plane Waves at Media Interface

S.No	Name of Topic	Hours

1	Plane wave in arbitrary direction	50min
2	Reflection and refraction at dielectric interface	50min
3	Total internal reflection	50min
4	wave polarization at media interface	50min
5	Reflection from a conducting boundary	50min
	Total	250min=4.1hrs

Module/Unit 5-.Wave Propagation in Parallel Plane Waveguide

S.No	Name of Topic	Hours
1	Analysis of waveguide general approach	50min
2	Rectangular waveguide	50min
3	Surface currents on the waveguide walls	50min
4	Field visualization	50min
5	Attenuation in waveguide	50 min
	Total	250min=4.1hrs

Module/Unit 6-Radiation

S.No	Name of Topic	Hours
1	Solution for potential function	50min
2	Radiation from the Hertz dipole	50min
3	Power radiated by hertz dipole	50min
4	Radiation Parameters of antenna	50min
5	Receiving antenna	50min
6	Monopole and Dipole antenna	50min
	Total	300min=5hrs

TEXT BOOKS/REFERENCE BOOKS:

• R.K. Shevgaonkar, Electromagnetic Waves, Tata McGraw Hill India, 2005

• E.C. Jordan & K.G. Balmain, Electromagnetic waves & Radiating Systems, Prentice Hall, India.

• Narayana Rao, N: Engineering Electromagnetic, 3rd ed., Prentice Hall, 1997.

• David Cheng, Electromagnetic, Prentice Hall

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

NGF COLLEGE OF ENGINEERING & TECHNOLOGY
DEPARTMENT OF ELECTRONICS & COMMUNICATION ENGINEERING
LESSON PLAN (2025)

Name of Teacher:Ms Meenu Rani Designation:AP
SubjectName:PTSP
Branch: ECE Semester : 5th sem Subject Code: EC502
Date of Start: 22-07-25 Total Load: 23hrs Date ofCompletion: 22-11-25

Module/Unit-1: .....

S.No	Name of Topic	Hours
1	Sets and set operations	50 min
2	Probability space	50 min
3	Conditional probability	50 min
4	Conditional probability	50 min
5	Bayes theorem	50 min
6	Numerical practice	50 min
7	Combinatorial probability	50 min
8	sampling models.	50 min
9	Numerical practice	50 min
10	Numerical practice	50 min

	Total	5hs

Module/Unit 2-.....

S.No	Name of Topic	Hours
1	Discrete random variables	50 min
2	probability mass function	50 min
3	probability mass function	50 min
4	probability distribution function	50 min
5	example random variables and distributions	50 min
6	Continuous random variables	50 min
7	Continuous random variables	50 min
8	probability density function	50 min
9	probability distribution function,	50 min
10	example distributions	50 min
	Total	5hrs

Module/Unit 3-.....

S.No	Name of Topic	Hours
1	Joint distributions	50 min
2	functions of one and two random variables	50 min
3	moments of random variables	50 min
4	moments of random variables	50 min
5	Conditional distribution	50 min
6	densities and moments	50 min
7	Characteristic functions of a random variable	50 min
8	Markov	50 min
9	Chebyshev and Chernoff bounds	50 min
10	Chebyshev and Chernoff bounds	50 min
	Total	5hrs

Module/Unit 4-.....

S.No	Name of Topic	Hours
1	Random sequences	50 min
2	modes of convergence	50 min
3	modes of convergence (everywhere, almost everywhere, probability, distribution and mean square),	50 min
4	Limit theorems	50 min
5	Strong and weak laws of large numbers	50

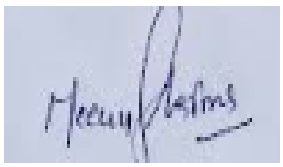
		min
6	Strong and weak laws of large numbers	50 min
7	central limit theorem	50 min
8	central limit theorem	50 min
	Total	4hrs

Module/Unit 5-.....

S.No	Name of Topic	Hours
1	Random process.,.,.	50 min
2	Stationary processes	50 min
3	Mean and covariance functions	50 min
4	Ergodicity	50 min
5	Transmission of random process through LTI,	50 min
6	Power spectral density	50 min
7	Power spectral density	50 min
	Total	3hrs50m

TEXT BOOKS/ REFERENCE BOOKS:

1. 1. H. Stark and J. Woods, ``Probability and Random Processes with Applications to Signal Processing," Third Edition, Pearson Education.
2. A.Papoulis and S. Unnikrishnan Pillai, ``Probability, Random Variables and Stochastic Processes," Fourth Edition, McGraw Hill.
3. K. L. Chung, Introduction to Probability Theory with Stochastic Processes, Springer International.
4. P. G. Hoel, S. C. Port and C. J. Stone, Introduction to Probability, UBS Publishers.
5. P. G. Hoel, S. C. Port and C. J. Stone, Introduction to Stochastic Processes, UBS Publishers.
6. S. Ross, Introduction to Stochastic Models, Harcourt Asia, Academic Press.



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NGF COLLEGE OF ENGINEERING & TECHNOLOGY
DEPARTMENT OF ELECTRONICS & COMMUNICATION ENGINEERING
LESSON PLAN(July-Dec 2024)

Name of Teacher: Neha Gautam **Designation: Assit. Prof.** **SubjectName: DSP**
Branch: ECE **Semester:5TH** **Subject Code:ECC04**

Date of Start: 23/07/2025 **Total Load: .15hrs** **Date of Completion: 22/11/2025**

Module/Unit-1: .....Discrete time signals.

S.No	Name of Topic	Hours
1	Sequences, representation of signals on orthogonal basis,	50MIN
2	Sampling and reconstruction of signals	50MIN
3	Discrete systems attributes,	50MIN
4	Z-Transform, Analysis of LSI systems,	50MIN
5	frequency Analysis, Inverse Systems,	50MIN
6	Discrete Fourier Transform (DFT),	50MIN
7	Fast Fourier Transform Algorithm,	50MIN

8	Implementation of Discrete Time Systems	50MIN
	Total	400MIN=6.6HRS

Module/Unit 2-.Design of FIR Digital filters

S.No	Name of Topic	Hours
1	Window method,	50MIN
2	Park-McClellan's method	50MIN
3	Design of IIR Digital Filters,	50MIN
4	Butterworth Approximations,	50MIN
5	Chebyshev and Elliptic Approximations,	50MIN
6	Low pass, Band pass, Band stop and High pass filters.	50MIN
	Total	300MIN=5HRS

Module/Unit 3 -Effect of finite register length in FIR filter design,

S.No	Name of Topic	Hours
1	Effect of finite register length in FIR filter design,	50MIN
2	Introduction to multirate signal processing,	50MIN
3	Application of DSP	50MIN
	Total	150MIN=3HRS

TEXT BOOKS:

1. S.K.Mitra, Digital Signal Processing: A computer based approach.TMH

2. J.R. Johnson, Introduction to Digital Signal Processing, Prentice Hall, 1992.

REFERENCE BOOKS:

1.A.V. Oppenheim and Schafer, Discrete Time Signal Processing, Prentice Hall, 1989.

2. John G. Proakis and D.G. Manolakis, Digital Signal Processing: Principles, Algorithms And Applications, Prentice Hall, 1997.

3 L.R. Rabiner and B. Gold, Theory and Application of Digital Signal Processing, Prentice Hall, 1992.

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

NGF COLLEGE OF ENGINEERING & TECHNOLOGY
DEPARTMENT OF ELECTRONICS & COMMUNICATION ENGINEERING
LESSON PLAN (July-Dec 2025)

Name of Teacher:Ms. Meenu Rani **Designation:AP** **SubjectName:CMOS Design**
Branch:ECE **Semester:V**
SubjectCode:ECEL501

Date of Start: 22nd July 2025 **Total Load: 24 hrs** **Date of Completion: 22th Nov. 2025**

Module/Unit-1: Review of MOS Transistor Model

S.No	Name of Topic	Hours
1	Introduction to IC technology	50 mins
2	**MOS Transistor enhancement mode and depletion mode operations,**	50 mins
3	fabrication of NMOS,	50 mins
4	CMOS,	50 mins
5	Equivalent circuit model for MOSFET	50 mins
	Total	250 mins

Module/Unit 2-Ideal and Non Ideal Behaviour of MOS Transistor

S.No	Name of Topic	Hours
1	Ideal I-V characteristics, threshold voltage	50 mins
2	MOS transistor transconductance	50 mins
3	Non ideal I-V effects, velocity saturation	50 mins
4	channel length modulation, body effects, subthreshold conduction	50 mins

5	junction leakage, tunneling and temperature dependence	50 mins
6	**Transistor as a switch, Pass transistor**	50 mins
7	**alternative forms of pull-up in inverter**	50 mins
8	**Inverter characteristics,**	50 mins
9	**CMOS and nMOS-inverters**	50 mins
10	**Latch up in CMOS circuitry**	50 mins
	TOTAL	500 mins

Module/Unit-3: Integrated Circuit Layout

S.No	Name of Topic	Hours
1	Basic physical design of simple logic gates using n-MOS	50 mins
2	**, pMOS and CMOS**	50 mins
3	stick diagrams, design rule	50 mins
	Total	150 mins

Module/Unit-4: MOS Performance Estimation

S.No	Name of Topic	Hours
1	Delay, RC delay model	50 mins
2	**linear delay model**	50 mins
3	Parasitic delay, logical path efforts,	50 mins
4	power dissipation	50 mins
5	interconnect and robustness in CMOS circuits	50 mins
	Total	250 mins

Module/Unit-5:. Combinational Logic Design

S.No	Name of Topic	Hours
1	CMOS logic family including static	50 mins
2	**dynamic and dual rail logic.**	50 mins
	Total	100 mins

Module/Unit-6:. Sequential Logic Design

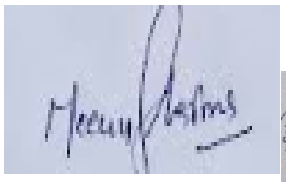
S.No	Name of Topic	Hours
1	Static circuits	50 mins
2	**design of latches and flip flop.**	50 mins
	Total	100 mins

TEXT BOOKS:

1. N. H.E. Weste and D.M. Harris, CMOS VLSI DESIGN: A Circuit and System perspective, Pearson Education India.
2. D.A. Pucknell, K. Eshraghian, Basic VLSI Design, Prentice Hall India, Third Edition, 1994
3. S.M. Kang, Y. Leblebici, CMOS Digital Integrated Circuits, Analysis and Design, Tata McGraw Hill,Third Edition, 2003.
4. D. Das, VLSI Design, Oxford Higher Education, 2010

REFERENCE BOOKS:

.1. Integrated Circuits: K.R. Botkar; Khanna Publication
2. C.Mead and L. Conway, Introduction to VLSI Systems, Addison Wesley, 1971.
3. J. Rabaey, Digital Integrated Circuits: A Design Perspective, Prentice Hall India, 1997.



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NGF COLLEGE OF ENGINEERING & TECHNOLOGY

ELECTRONICS & COMMUNICATION ENGINERRING

LESSON PLAN (July-Dec2024)

Name of Teacher: Poonam chaudhary **Designation:** Astt. Professor

SubjectName: Environmental studies

Branch: Electronics and Computer Engineering **Semester:5th**
Subject Code: MC 03
Date of Start: 23 July-2025 Total Load: 21.667 hrs Date of Completion: 21-Nov-2025

Module/Unit-1: THE MULTIDISCIPLINARY NATURE OF ENVIRONMENTAL STUDIES

S.No	Name of Topic	Hours
1	Definition, scope and importance	50 min
2	Need for public awareness	50 min
	Total	**1hour20 min**

Module/Unit 2 :NATURAL RESOURCES: RENEWABLE AND NON-RENEWABLE

S.No	Name of Topic	Hours
1	**RESOURCES** Natural resources and associated problems, ***Forest resources***: Use and over-exploitation, deforestation, case studies. Timber extraction, mining, dams and their effects on forests and tribal people	50 min

2	***Water resources***: Use and over-utilization of surface and ground water, floods, drought, conflicts over water, dams-benefits and problems. ***Mineral resources***: Use and exploitation, environmental effects of extracting and mineral resources, case studies.	50 min
3	***Food resources***: World food problems, changes caused by agriculture and overgrazing, effects of modern agriculture, fertilizer-pesticide problems, water logging, salinity, case studies	50 min
4	***Energy resources****: Growing energy needs, renewable and non- renewable energy sources, use of alternate energy sources. Case studies. Land resources: Land as a resource, land degradation, man induced landslides, soil erosion and desertification. Role of an individual in conservation of natural resources. Equitable use of resources for sustainable lifestyles.*	50 min
	Total	**3 hours 20 min**

Module/Unit 3: ECOSYSTEMS

S.No	Name of Topic	Hours
1	Concept of an ecosystem Structure and Concept of an ecosystem, Structure and function of an ecosystem. Producers, consumers and decomposers	50 min
2	Energy flow in the ecosystem	50 min
3	Ecological succession. Food chains, food webs and ecological pyramids, Introduction, types, characteristic features, structure	50 min
4	function of the following ecosystem: a) Forest ecosystem b) Grassland ecosystem c) Desert ecosystem d) Aquatic ecosystems (ponds, streams, lakes, rivers, oceans, estuaries).	50 min
	Total	**3 hours 20 min**

Module/Unit 4 :BIODIVERSITY AND ITS CONSERVATION

S.No	Name of Topic	Hours
1	Definition: genetic, species and ecosystem diversity. Biogeographical classification of India. Value of biodiversity: consumptive use, productive use, social, ethical, aesthetic and option values	50 min
2	Biodiversity at global, National and local levels.India as a mega-diversity nation.Hotspots of biodiversity. Threats to biodiversity: habitat loss, poaching of wildlife, manwildlife conflicts.	50 min
3	ngered and endemic species of India. Conservation of biodiversity: insitu and ex-situ conservation of biodiversity.	50 min
	Total	**2 hours 30 min**

Module/Unit 5: ENVIRONMENTAL POLLUTION

S.No	Name of Topic	Hours
1	Definition, Causes, effects and control measures of: Air pollution b) Water pollution c) Soil pollution d)	50 min
2	Marine pollution e) Noise pollution f) Thermal pollution g) Nuclear hazards	50 min
3	Solid waste Management: Causes, effects and control measures of urban and industrial wastes	50 min
4	Role of an individual in prevention of pollution. Pollution case studies	50 min
5	ster management: floods, earthquake, cyclone and landslides.	50 min
	Total	**4 hours 10 min**

Module/Unit 6: SOCIAL ISSUES AND THE ENVIRONMENT

S.No	Name of Topic	Hours
1	From Unsustainable to Sustainable development Urban problems related to energy. Water conservation, rain water harvesting, watershed management. Resettlement and rehabilitation of people; its problems and concerns.	50 min
2	Case studies, Environmental ethics: Issues and possible solutions. Climate change, global warming, acid rain, ozone layer depletion, nuclear accidents and holocaust. Case studies. Wasteland reclamation. Consumerism and waste products	50 min
3	Environment Protection Act. Air (Prevention and Control of Pollution) Act. Water (Prevention and Control of Pollution) Act	50 min
4	Wildlife Protection Act. Forest Conservation Act. Issues involved in enforcement of environmental legislation, Public awareness.	50 min
	Total	**3 hours 20 min**

Module/Unit 7: HUMAN POPULATION AND THE ENVIRONMENT

S.No	Name of Topic	Hours
1	Population growth, variation among nations. Population explosion	50 min
2	Family Welfare Programme, Environment and human health, Human Rights Value Education.	50 min
3	HIV/AIDS. Women and Child Welfare	50 min
4	Role of Information Technology in Environment and human health. Case Studies	50 min
	Total	**3 hours 20 min**

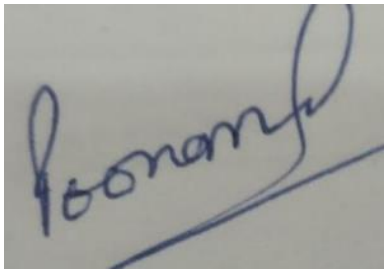
TEXT BOOKS:

1. Environment studies by Benny joseph,Tata McGraw Hill Co,New Delhi.

2. Environment science by Daniel. B.Botking & Edwards A.keller,wiley INDIA edition.
3.

REFERENCE BOOKS:

1. ANUBHA KAUSHIK & CP KAUSHIK (NEW AGE INTERNATIONAL PUBLISHERS)
2 Environmental Studies by Benny Joseph‖, Tata McGraw Hill Co, New Delhi
3 Environmental Engineering and science‖ by Gilbert M. Masters and Wendell P. Ela 2008 PHI Learning Pvt Ltd



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NGF COLLEGE OF ENGINEERING & TECHNOLOGY
DEPARTMENT OF ELECTRONICS & COMMUNICATION ENGINEERING
LESSON PLAN (July-DEC 2025)

Name of Teacher: Ms Anisha **Designation: Assistant Professor**

SubjectName: Renewable Power Generation Systems

Branch: ECE **Semester:5TH** **Subject Code: OEL505**

Date of Start:23/7/2025 **Total Load: 40hrs** **Date of Completion: 24/11/2025**

Module/Unit-1: Environmental aspects of electric power generation from conventional sources

S.No	Name of Topic	Hours
1	Overview of fossil fuel with its advantages and disadvantages	50 min
2	Environmental aspects of fossil fuel	50 min
3	Atmospheric pollution with its Environmental aspects	50 min
4	effects of hydro-electric projects	50 min
5	disposal of nuclear waste	50 min
6	GHG emission from various energy sources and its effects	50 min
7	GHG emission types	50 min
8	need for renewable energy sources	50 min
	Total	7 HRS

Module/Unit 2- Solar Photo-Voltaic system

S.No	Name of Topic	Hours
1	Solar radiation and its measurement	50 min
2	Angle of sun rays on solar collector	50 min
3	optimal angle for fixed collector	50 min

4	sun tracking	50 min
5	an introduction to solar cell, solar PV module	50 min
6	PV system design and applications	50 min
7	stand-alone and grid connected systems	50 min
8	environmental impacts of Solar radiation	50 min
		7 HRS

Module/Unit 3- Wind power generation

S.No	Name of Topic	Hours
1	Wind energy, classification of wind turbines	50 min
2	aerodynamic operation of wind turbine	50 min
3	extraction of wind turbine power	50 min
4	, wind turbine power curve	50 min
5	horizontal axis wind turbine generator	50 min
6	modes of wind power generation	50 min
7	stand-alone and grid connected system	50 min
8	environmental impacts	50 min
	Total	7 HRS

Module/Unit 4- Fuel cell system

S.No	Name of Topic	Hours
1	Principle of operation of fuel cell	50 min
2	technical parameters of fuel cell	50 min
3	Type of fuel cell	50 min
4	Advantages disadvantages with applications of fuel cell	50 min
5	power plants & types	50 min
6	energy output, efficiency and emf of fuel cell	50 min
7	operating characteristics, applications of power plants	50 min
8	environmental impacts of power plants	50 min
	Total	7 HRS

Module/Unit 5- Hybrid energy systems

S.No	Name of Topic	Hours
1	hybrid systems , Need for hybrid systems	50 min
2	Types of hybrid systems	50 min
3	configuration and coordination of hybrid systems	50 min

4	electrical interface of hybrid systems	50 min
5	PV-Diesel, Wind diesel	50 min
6	wind-PV, wind-PV	50 min
7	fuel cell	50 min
	Total	6 HRS

TEXT BOOKS:

1. G D Rai, _Non-conventional Energy sources‘, Khanna Publishers, 5th Edition, 2014.
2. D P Kothari, K C Singal and Rakesh Ranjan, _Renewable Energy Sources and Emerging Technologies‘ 2nd Edition, 2012.
3. C S Solanki, _Solar Photo-voltaics – Fundamentals, Technologies and Applications‘, PHI Pvt., Ltd., 2 nd Edition, 2011.
4. S N Bhadra, D Kastha and S Banerjee, _Wind Electric Systems‘, Oxford Publications, 2nd Edition, 2007.

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

NGF COLLEGE OF ENGINEERING & TECHNOLOGY

DEPARTMENT OF ELECTRONICS& COMM. ENGINEERING

LESSON PLAN (July-Dec 2025)

Name of Teacher: Neha Gautam Designation: Assistant proff. Subject Name:DSP lab
Branch: Electronics Semester: 5th Subject CodeECC04)
Date of Start: 23/07/2025 Total Load:20hrs Date of Completion: 23/11/2025

EXPERIMENTS

S.No	Name of Topic	Hours
1	Write a program using MATLAB for generation of basic signals- unit impulse, unit step, exponential, sine and cosine signals.	**100 MIN**
2	Write a program using MATLAB for discrete time Convolution of two given signals.	**100 MIN**
3	Write a program using MATLAB for correlation	**100 MIN**
4	Write a program using MATLAB to observe the effect of noise on input signal and get filtered signal.	**100 MIN**
5	Write a program using MATLAB to design analog High pass, Low pass, using Chebyshev type I.	**100 MIN**
6	Write a program using MATLAB to design analog band pass, band stop, using Chebyshev type I	**100 MIN**
7	Write a program using MATLAB to design analog High pass, Low pass, using Chebyshev type II.	**100 MIN**
8	To plot the frequency response of high pass filters and determines the half-power frequency	**100 MIN**
9	. To plot the frequency response of band-pass filters and determines the band-width.	**100 MIN**
10	Write a program using MATLAB to design analog band pass, band stop, using Chebyshev type II	**100**

		MIN
11	Write a program using MATLAB to design analog High pass, Low pass, using butter worth.	**100MIN**
	Total	**18.3hrs**

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

NGF COLLEGE OF ENGINEERING & TECHNOLOGY
DEPARTMENT OF ELECTRONICS & COMMUNICATION ENGINEERING
LESSON PLAN (July - Dec2025)

Name of Teacher: Ms Usha Bhardwaj **Designation :Assistant Professor**
Subject Name : Electromagnetic Waves Lab
Branch : ECE (Semester : V) **Subject Code:ECC52**
Date of Start: 22July 2024 **Total Load: 14hrs**
Date of Completion : 24/11/ 2025

Experiment-1

S.No	Name of Topic	Hours
1	Study of characteristic of the Reflex Klystron Tube and to determine its electronics tuning range	100 mins
	Total	100 mins

Experiment- 2

S.No	Name of Topic	Hours
1	To determine the Standing Wave Rational Reflection Coefficient.	100 mins
	Total	100 mins

Experiment- 3

S.No	Name of Topic	Hours
1	To determine the Standing Wave Rational Reflection Coefficient	100 mins
	Total	100 mins

Experiment- 4

S.No	Name of Topic	Hours
1	To measure an unknown Impedance with Smith Chart.	100 mins
	Total	100 mins

Experiment- 5

S.No	Name of Topic	Hours
1	Study of V-I characterstics of Gunn Diode	100 mins
	Total	100 mins

Experiment- 6

S.No	Name of Topic	Hours
1	Study of the following characteristics of Gunn Diode (a)Output power and frequency as a function of Bias Voltage. (B) Square wave modulation through PIN Diode.	100 mins
	Total	100 mins

Experiment- 7

S.No	Name of Topic	Hours
1	To plot the radiation pattern & find out the gain of a wave-guide Antenna.	100 mins
	Total	100 mins

Experiment- 8

S.No	Name of Topic	Hours
1	Study the function of multi-block direction coupler by measuring the following: (A) To measure the main line and auxiliary line VSWR. (B) To measure the coupling factor and directivity.	100 mins
	Total	100 mins

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

NGF COLLEGE OF ENGINEERING & TECHNOLOGY
DEPARTMENT OF ELECTRONICS & COMMUNICATION ENGINEERING
LESSON PLAN (July-Dec 2025)

Name of Teacher:Ms. Meenu Rani **Designation: AP** **SubjectName:EPW3**
Branch:ECE **Semester:V**
Subject Code:ES555
Date of Start: 23rd July 2025 **Total Load:17 hrs** **Date of Completion: 24th Nov. 2025**

Experiment - 1

S.No	Name of Topic	Hours
1	To design and simulate a Half Adder circuit using basic logic gates in Multisim and verify its truth table	100 mins

Experiment - 2

S.No	Name of Topic	Hours
1	To design and simulate a Full Adder circuit using basic logic gates in Multisim and verify its truth table	100 mins

Experiment - 3

S.No	Name of Topic	Hours
1	To design and simulate a Half Subtractor circuit using basic logic gates in Multisim and verify its truth table	100 mins

Experiment - 4

S.No	Name of Topic	Hours
1	To design and simulate a 1-to-4 Demultiplexer circuit using basic logic gates in Multisim and verify its output behavior based on select inputs.	100 mins

Experiment - 5

S.No	Name of Topic	Hours
1	To design and simulate a Half Wave Rectifier circuit using a diode in Multisim and observe the output waveform across the load resistor.	100 mins

Experiment - 6

S.NO	Name of Topic	Hours
1	To design and simulate a Full Wave Rectifier circuit using two diodes and a center-tap transformer in Multisim, and observe the output waveform across the load resistor.	100 mins

Experiment - 7

S.NO	Name of Topic	Hours
1	To design and simulate a Bridge Rectifier circuit using four diodes in Multisim and observe the output waveform across the load resistor.	100 mins

Experiment - 8

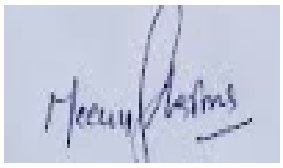
S.NO	Name of Topic	Hours
1	To design and simulate a T (Toggle) Flip-Flop circuit using logic gates in Multisim and verify its truth table and behavior	100 mins

Experiment - 9

S.NO	Name of Topic	Hours
1	To design and simulate a D (Data or Delay) Flip-Flop circuit using logic gates or IC in Multisim and verify its truth table and behavior.	100 mins

Experiment - 10

S.NO	Name of Topic	Hours
1	To design and simulate an SR (Set-Reset) Flip-Flop circuit using logic gates or IC in Multisim and verify its truth table and behavior.	100 mins



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B.TECH 4th YEAR ECE (SEMESTER -VII)
COURSE STRUCTURE
(May be carried out in 8th Semester*)**

Sr. No.	Category	Course Code	Course Title	Hours per week			Credits	Sessional Marks	Final Marks	Total
				L	T	P				
1	PEC		Program Elective-V	3	0	0	3	25	75	100
2	PEC		Program Elective-VI	3	0	0	3	25	75	100
3	PEC		Program Elective-VII	3	0	0	3	25	75	100
4	OEC		OE-III	3	0	0	3	25	75	100
5	OEC		OE-IV	3	0	0	3	25	75	100
6	PROJ	ECP701	Major Project	0	0	2	1	15	35	50
7	ESC	ES751	Electronics Workshop-V	0	0	4	2	15	35	50
			Total Credits				18	155	445	600

	Course Name	Course Title
Program Elective-V	ECEL701	Antenna and Propagation
	ECEL702	High Speed Electronics
	ECEL703	Wavelets
Program Elective-VI	ECEL704	Fiber Optic Communication
	ECEL705	Adaptive Signal Processing
	ECEL706	Mixed Signal Design
Program Elective-VII	ECEL707	Basics of Satellite Communication (Satellite Communication*-Old Name)
	ECEL708	Embedded Systems
	ECEL709	Error Correcting Codes

	Course Code	Old Course Code	Course Title
Open Elective-III	OEC-CS-602-I	OEL701*	Human Resource Management
	OEL702		Introduction to Power Plant Engineering (Power Plant Engineering*- Old Name)
	PEC-CSD-602	OEL703*	Soft Computing
	OEL704		Display Devices
	OEC-CS-701(I)	OEL705*	Financial Management
Open Elective-IV	OEL706		Non Linear Control System
	OEL707		Operational Research
	OEL708		Fundamental of Operating System (Operating System*-Old Name)
	OEL709		Industrial Safety Engineering
	OEL710		Introduction to Cloud Computing (Cloud Computing*-Old Name)

* Old Name/code

OPTED SUBJECTS FOR 7TH SEM

S.no	Code	Course Title
1	**Program Elective-V** ECEL701	Antenna and Propagation
2	**Program Elective-VI** ECEL704	Fiber Optic Communication
3	**Program Elective-VII** ECEL707	Basics of Satellite Communication (Satellite Communication*-Old Name)
4	**Open Elective-III** OEC-CS-602-I	Human Resource Management
5	**Open Elective-IV** OEL710	Introduction to Cloud Computing (Cloud Computing*-Old Name)
6	**PROJ** ECP701	Major Project
7	ES751	Electronics Workshop-V

NGF COLLEGE OF ENGINEERING & TECHNOLOGY
DEPARTMENT OF ELECTRONICS & COMMUNICATION ENGINEERING
LESSON PLAN (July-Dec 2025)

Name of Teacher : Usha Bhardwaj **Designation : Assistant Professor**
Subject Name: A&P **Total Load: 30 hrs**
Branch: ECE (Semester:7th) **Subject Code:ECEL701**

Date of Start: 21/07/2025 **Date of Completion: 20/11/2025**

Module/Unit-1: Fundamental Concepts..

S.No	Name of Topic	Hours
1	Physical concept of radiation, Radiation pattern,	50min
2	near-andfar-field regions,	50min
3	reciprocity, directivity,	50min
4	gain, effective aperture,	50min
5	polarization, input impedance, efficiency,	50min
6	Friis transmission equation,	50min
7	radiation integrals and auxiliary potential functions.	50min
	Total	350min=6.8hrs

Module/Unit 2 Radiation from Wires and Loops..

S.No	Name of Topic	Hours
1	Infinitesimal dipole, finite-length dipole	50min
2	linear elements near conductors,	50min
3	dipoles for mobile communication,	50min
4	small circular loop	50min
	Total	200min=3.3hrs

Module/Unit 3Aperture and Reflector Antennas

S.No	Name of Topic	Hours

1	Huygens' principle, radiation from rectangular and circular apertures, design considerations	50min
2	Babinet's principle, Radiation from sectoral	50min
3	pyramidal horns, design concepts,	50min
4	Prime-focus parabolic reflector cassegrain antennas.	50min
	Total	200min=3.3hrs

Module/Unit 4-Broadband Antennas

S.No	Name of Topic	Hours
1	Log-periodic antennas	50min
2	Yagi-Uda antennas	50min
3	frequency independent antennas,	50min
4	Broadcast antennas.	50min
	Total	200min=3.3hrs

Module/Unit 5-Micro strip Antennas.

S.No	Name of Topic	Hours
1	Basic characteristics of micro strip antennas,	50min
2	Feding methods,	50min
3	Methods of analysis,	50min
4	Design of rectangular patch antennas	50min
5	Design of circular patch antennas	50 min
	Total	250min=4.1hrs

Module/Unit 6-.Antenna Arrays:

S.No	Name of Topic	Hours
1	Analysis of uniformly spaced arrays with uniform and non-uniform	50min
2	Excitation amplitudes,	50min
3	Extension to planar arrays,	50min

4	Synthesis of antenna arrays using	50min
5	Schelkunoff polynomial method,	50min
6	Woodward-Lawson method	50min
	Total	300min=5hrs

Module/Unit 7-.Basic Concepts of Smart Antennas

S.No	Name of Topic	Hours
1	Concept and benefits of smart antennas	50min
2	Fixed weight beam forming basics,	50min
3	Adaptive beam forming	50min
4	Different modes of Radio Wave propagation used in current practice.	50min
	Total	200min=3.3hrs

TEXT BOOKS:

1. J.D. Kraus, Antennas, McGraw Hill, 1988.
2. I.J. Bahl and P. Bhartia, Micro Strip Antennas, Artech House, 1980.
3. R.E. Crompton, Adaptive Antennas, John Wiley

REFERENCE BOOKS:

1. C.A. Balanis, Antenna Theory - Analysis and Design, John Wiley, 1982.
2. R.E. Collin, Antennas and Radio Wave Propagation, McGraw Hill, 1985.
3. R.C. Johnson and H. Jasik, Antenna Engineering Handbook, McGraw ill, 1984
4. 4R.K. Shevgaonkar, Electromagnetic Waves, Tata McGraw Hill, 2005.

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: 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

S.No	Name of Topic	Hours
	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

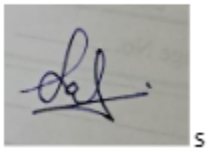
UNIT-VI: WDM SYSTEMS

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

S.No	Name of Topic	Hours
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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NGF COLLEGE OF ENGINEERING & TECHNOLOGY
DEPARTMENT OF ELECTRONICS & COMMUNICATION ENGINEERING
LESSON PLAN(July-Dec 2025)

Name of Teacher: Neha Gautam **Designation: Assit. Prof.** **SubjectName: SC**
Branch: ECE **Semester:7TH** **Subject Code: ECEL-707**

Date of Start: 23/07/2025 **Total Load: .22hrs** **Date of Completion: 22/11/2025**

Module/Unit-1: Introduction

S.No	Name of Topic	Hours
1	Principles and architecture of satellite Communication	50min
2	Internal Architecture of 8086	50min
3	Brief history of Satellite systems	50min
4	Advantages, disadvantages, applications and.	50min
5	frequency bands used for satellite communication	50min
	Total	250min=4.1hrs

Module/Unit 2-. Orbital Mechanics.

S.No	Name of Topic	Hours
1	Orbital equations	50min
2	Kepler's laws	50min
3	Apogee and Perigee for an elliptical orbit,	50min
4	evaluation of velocity	50min
5	orbital period, angular velocity etc. of a satellite	50min
6	concepts of Solar day and Sidereal day	50min
	Total	300min=5hrs

Module/Unit-3: .. Satellite sub-systems.

S.No	Name of Topic	Hours
1	Study of Architecture and Roles of various sub-systems of a satellite system such as Telemetry	50min
2	Tracking	50min
3	command and monitoring (TTC & M)	50min
4	Attitude and orbit control system (AOCS)	50min
5	Communication sub-system	50min
6	power subsystems etc.	50min
	Total	300min=5hrs

Module/Unit-4: Typical Phenomena in Satellite Communication

S.No	Name of Topic	Hours
1	Typical Phenomena in Satellite Communication	50min
2	Solar Eclipse on satellite, its effects, remedies for Eclipse	50min
3	Sun Transit Outage phenomena, its effects and remedies	50min
4	Doppler frequency shift phenomena and expression for Doppler shift.	50min
	Total	200min=3.3hrs

Module/Unit-5: Satellite link budget

S.No	Name of Topic	Hours
1	Flux density and received signal power equations	50min
2	Calculation of System noise temperature for satellite receiver, noise power calculation	50min
3	Drafting of satellite link budget	50min
4	C/N ratio calculations in clear air and rainy conditions.	50min
	Total	200min=3.3hrs

Module/Unit-6: .. Modulation and Multiple Access Schemes.

S.No	Name of Topic	Hours
1	Various modulation schemes used in satellite communication,	50min
2	Meaning of Multiple Access,	50min
3	Multiple access schemes based on time, frequency, and code sharing namely.	50min
4	TDMA, FDMA	50min
5	CDMA	50min
	Total	250min=4.1hrs

TEXT BOOKS:

1. W. Bostian, Jeremy E. Allnutt: Satellite Communications: Wiley India. 2nd edition 2002

2. Dennis Roddy: Satellite Communication: 4th Edition, McGraw Hill,2009

REFERENCE BOOKS:

1 Tri T. Ha: Digital Satellite Communications: Tata McGraw Hill, 2009

Signature of Teacher **Approved by HOD/Dean** **Approved by IQAC**
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NGF COLLEGE OF ENGINEERING & TECHNOLOGY
Department of Electronics and Communication Engineering
LESSON PLAN (July-Dec 2025)

Name of Teacher: Ritu Dagar **Designation:** Assistant Professor/COE Coordinator
Subject Name: Human Resource Management **Branch:** Department of Electronics & Communication Engineering
Semester: 7th **Subject Code:** OEC-CS-602-I
Date of Start: 28 July, 2025 **Total Load:** 25 lectures (20 hrs, 50 min)
Date of Completion: 24 Nov,2025

Module/Unit-1: Human Resource Management

S.No	Name of Topic	Hours
1	concept, evolution and scope;	50 minutes
2	Strategic objectives of HR management;	50 minutes
3	Roles, responsibilities and competencies of HR manager;	50 minutes
4	Challenges to HR professionals;	50 minutes
5	Human Resource Planning & Forecasting: significance and process;	50 minutes
6	Human Resource Information System.	50 minutes
7	Revision	50 minutes
	Total	5 Hours, 50 minutes

Module/Unit- 2: HR Sourcing and Recruitment; Selection:

S.No	Name of Topic	Hours
1	Selection process, Placement; Induction and Socialization	50 minutes
2	Induction and Socialization	50 minutes
3	Job Analysis: job Description and job Specification;	50 minutes
4	Job Design: approaches and methods;	50 minutes
5	Job Evaluation-concept & methods;	50 minutes
6	Performance Management System;	50 minutes
7	Appraisal and counselling.	50 minutes
	Total	5 Hours, 50 minutes

Module/Unit- 3:Training process, training need analysis (TNA)

S.No	Name of Topic	Hours
1	Training methods and techniques;	50 minutes
2	Designing Training programs;	50 minutes
3	Training evaluation;	50 minutes
4	Career planning and Development;	50 minutes
5	Potential Appraisal and Succession planning;	50 minutes
6	Employee Compensation: basic concepts & determinants;	50 minutes
7	New trends in compensation management.	50 minutes
	Total	5 Hours, 50 min

Module/Unit-4:Industrial Relations and Grievance Handling

S.No	Name of Topic	Hours
1	Employee welfare; Dispute Resolution;	50 minutes
2	International Human Resource Management;	50 minutes
3	Contemporary Issues in HRM: knowledge Management, HR Audit & Accounting, HR in virtual organizations, ethics & corporate social responsibility	50 minutes

4	Revision	50 minutes
	Total	3 Hours, 20 minutes

TEXT BOOKS / REFERENCE BOOKS:

TEXT/REFERENCE BOOKS

1. K. Aswathapa, “Human resource Management: Text and cases", 6th edition, Tata MeGraw Hill, New Delhi.
2.Uday Kumar Haldar & Juthika Sarkar,” Human resource Management", New Delhi Oxford University Press
3.De Cenvo, Da & Robbins S.P, “Fundamentals of Human Resource Management"” 9th edition, New York, John Wiley & Sons
4. Gary Dessler, “Human Resource Management”, 1lth edition New Delhi:Pearson Prentice Hall.
5. TanujaAgarwala, “Strategic Human resource Management'", Oxford University Press

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Ritu Dagar

NGF COLLEGE OF ENGINEERING & TECHNOLOGY
DEPARTMENT OF ELECTRONICS & COMMUNICATION ENGINEERING
LESSON PLAN (July-Dec 2025)

Name of Teacher:Ms. Meenu Rani **Designation: AP** **SubjectName:CC**
Branch:ECE **Semester:vii** **Subject Code:OEL710**
Date of Start: 23rd July 2025 **Total Load:17 hrs** **Date of Completion: 24th Nov. 2025**

Module/Unit – 1 Review of Cloud Computing

S.No	Name of Topic	Hours
1	Overview of Distributed Computing, Cluster Computing	50 mins

2	Grid Computing, Technologies for Network based systems	50 mins
3	Software environments for Distributed Systems and Clouds	50 mins
4	Overview of Services	50 mins
5	d Service oriented Architecture.	50 mins
	Total	250mins

Module/Unit – 2 Virtualization

S.No	Name of Topic	Hours
1	Virtual Machines and Virtualization	50 mins
2	Implementation levels of Virtualization	50 mins
3	Virtualization structures/tools and Mechanisms	50 mins
4	Virtualization of CPU, Memory and I/O Devices	50 mins
5	Storage Virtualization	50 mins
	Total	250mins

Module/Unit – 3 Cloud Computing Challanges

S.No	Name of Topic	Hours
1	Cloud Computing, Properties, challenges	50 mins
2	Service models, IaaS, PaaS and SaaS	50 mins
3	Deployment models, Service Composition and orchestration	50 mins
4	Architecture design of Compute and Storage cloud	50 mins
5	Public Cloud Platforms,	50 mins
6	Inter Cloud Resource Management.	50 mins
	Total	300mins

Module/Unit –4 Cloud Programming

S.No	Name of Topic	Hours
1	Cloud Programming and Software Environments,	50 mins
2	Parallel and Distributed Programming paradigms	50 mins
3	, Programming on AWS, Azure and GAE	50 mins
4	Cloud software environments Eucalyptus,	50 mins
5	Open Stack, Open Nebula	50 mins
	Total	250mins

Module/Unit – 5 Cloud Security

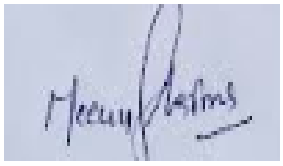
S.No	Name of Topic	Hours
1	Cloud Security, Infrastructure security	50 mins
2	Data security, Identity and access management Privacy	50 mins
3	, Audit and Compliance.	50 mins
	Total	150mins

Text Book 1.

Kai Hwang, Geoffrey C, Fox and Jack J, Dongarra, "Distributed and Cloud Computing from Parallel Processing to the Internet of Things", Morgan Kaufmann, Elsevier, 2012.

Reference Books

1. Barrie Sosinsky, "Cloud Computing Bible" John Wiley & Sons, 2010. 2. Tim Mather, Subra Kumaraswamy, and Shahed Latif, "Cloud Security and Privacy An Enterprise Perspective on Risks and Compliance", O'Reilly 2009.



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NGF COLLEGE OF ENGINEERING & TECHNOLOGY

DEPARTMENT OF ELECTRONICS & COMMUNICATION ENGINEERING

LESSON PLAN (July-Dec 2025)

Name of Teacher:Ms. Meenu Rani **Designation: AP**
SubjectName:MP Lab
Branch:ECE **Semester:vii** **Subject Code:ES555**
Date of Start: 23rd July 2025 **Total Load:30 hrs** **Date of Completion: 24th Nov. 2025**

Teaching Plan: Project Lab (Approx. 9 Lectures)
Course Title: Project Lab Course
Type: Practical
Duration: 9 Lectures
Total Duration per Lecture: 18hrs
Faculty In-Charge: Ms. Meenu Rani
Department: ECE
Session: 7TH SEM (JULY- DEC)

Course Objectives:

● To enable students to identify, plan, and execute a real-world problem through project development.
● To apply theoretical knowledge to practical applications.
● To develop teamwork, project management, and documentation skills
. ● To familiarize students with software/hardware design tools, development methodologies, and testing processes.

Learning Outcomes:

● Identify and define a project problem.
● Conduct literature surveys and feasibility analyses. ● Design and develop a functional prototype/system
. ● Demonstrate technical presentation and documentation skills.
● Work effectively as a team and manage project timelines.

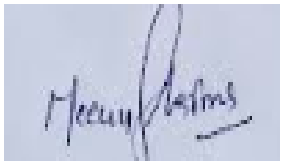
Lecture-Wise Teaching Plan

Lecture No.	Topics / Activities	Learning Outcome
1	Introduction to project lab:overview of Objectives, assessment pattern and project Categories.	Understanding of lab and. expectations structure
2	Project Ideation & Problem Identification: Brainstorming and group formation . Guidance on selecting innovative and f e a s i ble	Finalization of problem and team statement
3	Literature Review & Feasibility Study : Discuss how to conduct literatur surveys using research databases Assess technical, financial, and operational feasibility	submissio no finital project synopsis

4	Project Proosal Presentation (Sta g e –I) : Each team Presents thir idea , objetives , and feasibility to the faculty for approval	proposal and mentor feedback
5	project designs connetions and concepts	submission of . design documents
6	Tools finalisation	project devlo -pment ready
7	Module division and implementation phase	demonstration of Initial implementat -ation phase
8	Testing and Validation	finalize the proj -ect setup
9	Viva Voc and Submission	Complition of Project with certifi cate

Assessment Criteria:

Component	Weightage
Project Proposal & Design	15%
Mid-Term Evaluation	25%
Implementation & Innovation	25%
Final Presentation & Viva	25%
Report & Documentation	10%



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Academics

NGF COLLEGE OF ENGINEERING & TECHNOLOGY

DEPARTMENT OF ELECTRONICS & COMMUNICATION ENGINEERING

LESSON PLAN (July - Dec2025)

Name : Ms Usha Bhardwaj **Designation:Assistant Professor**

Subject Name: Electronics Workshop-5

Branch:ECE(Semester: VII) **Subject Code:ES751**

Date of Start: 21st July 2024 **Total Load: 14.hrs** **Date of Completion: 19thNov 2025**

Experiment-1

S.No	Name of Topic	Hours

1	Study of different types of Network cables and practically implenent the cross-wired cable and straiught through using clamping tool.	100 mins
	Total	100 mins

Experiment- 2

S.No	Name of Topic	Hours
1	Study of network devices in detail.	100 mins
	Total	100 mins

Experiment- 3

S.No	Name of Topic	Hours
1	Study of Network IP.	100 mins
	Total	100 mins

Experiment- 4

S.No	Name of Topic	Hours
1	connect the computers in Local Area Network	100 mins
	Total	100 mins

Experiment- 5

S.No	Name of Topic	Hours
1	Study of basic network command and network cinfiguration commands.	100 mins
	Total	100 mins

Experiment- 6

S.No	Name of Topic	Hours
1	Configure a Network topology using packet tracer software.	100 mins
	Total	100 mins

Experiment- 7

S.No	Name of Topic	Hours

1	Configure a Network using distance vector routing protocol.	100 mins
2	Configure a Network using distance vector routing protocol.	100 mins
	Total	200 mins

Experiment- 8

S.No	Name of Topic	Hours
1	Configure Network using Link State Vector Routing Protocol	100 mins
	Total	100 mins

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