LESSON PLAN

Program Name	DIPLOMA IN Civil Engg.
Course/Subject Name	Mathematics-II
Course/Subject Code	BS 102
Course/Subject Coordinator Name	Dr. Reena Kumari

Evaluation scheme

S.No.	Subject Name	Study scheme (Hrs/Week)	Marks in evaluation scheme			
			Internal Assessment		External Assessment	
			Theory	Practical	Theory	Practical
1.	Mathematics-II	4(Th)+1(DCS)	40	-	60	-

Reference books:	(1) B.S. Grewal, Higher Engineering Mathematics, Khanna Publishers, New Delhi, 40th Edition, 2007.
	(2) G. B. Thomas, R.L. Finney, Calculus and Analytic Geometry, Addison Wesley, 9th Edition, 1995.
	(3) S.S. Sabharwal, Sunita Jain, Eagle Parkashan, Applied Mathematics, Vol. I & II, Jalandhar.
	(4) Comprehensive Mathematics, Vol. I & II by Laxmi Publications, Delhi.
	(5) Reena Garg & Chandrika Prasad Advanced Engineering Mathematics, Khanna Publishing House, New Delhi.

Course Outcomes: After the completion of the course, the students will be able to learn:

CO1	The students are expected to acquire necessary background in Determinants and Matrices so as to appreciate the importance of the Determinants are the factors that scale different parameterizations so that they all produce same overall integrals, i.e. they are capable of encoding the inherent geometry of the original shape.
CO2	The cumulative effect of the original quantity or equation is the Integration
CO3	The coordinate geometry provides a connection between algebra and geometry through graphs of lines and curves.
CO4	Tell the difference between a resultant and a concurrent force to model simple physical problems in the form of a differential equation, analyze and interpret the solutions.

Teaching Plan:

Lecture No.	Name of topic	Proposed date	Actual date	Remarks
1	**Determinants and Matrices**: Algebra of matrices	29/01/24		
2	Algebra of matrices	30/01/24		
3	Elementary properties of determinants up to 3rd order	31/01/23		

4	Elementary properties of determinants up to 3rd order	01/02/24		
5	DCS	02/02/24		
6	Inverse of a matrix	05/02/24		
7	Inverse of a matrix	06/02/24		
8	consistency of equations	07/02/24		
9	consistency of equations	08/02/24		
10	DCS	09/02/24		
11	Crammer's rule	12/02/24		
12	Crammer's rule.	13/02/24		
13	matrix inverse method to solve a system of linear equations in 3 variables.	14/02/24		
14	matrix inverse method to solve a system of linear equations in 3 variables.	15/02/24		
15	DCS	16/02/24		
16	**Integral Calculus:** Integration as inverse operation of differentiation	19/02/24		
17	Integration as inverse operation of differentiation	20/02/24		
18	Integration as inverse operation of differentiation	21/02/24		
19	Integration as inverse operation of differentiation	22/02/24		
20	DCS	23/02/24		
21	Simple integration by substitution	26/02/24		
22	Simple integration by substitution	27/02/24		
23	Simple integration by substitution	28/02/24		
24	Integration by parts	29/02/24		
25	DCS	01/03/24		
26	Integration by parts	04/03/24		
27	Integration by parts	05/03/24		
28	Integration by partial fractions	06/03/24		
29	Integration by partial fractions	07/03/24		
30	Integration by partial fractions	11/03/24		
31	Use of formulae	12/03/24		
32	Use of formulae	13/03/24		
33	Use of formulae	14/03/24		
34	DCS	15/03/24		
35	Class Test –I	18/03/24		
36	Applications of integration: Simple problem on evaluation of area bounded by a curve and axes.	19/03/24		
37	Simple problem on evaluation of area bounded by a curve and axes.	20/03/24		

38	Simple problem on evaluation of area bounded by a curve and axes.	21/03/24		
39	DCS	22/03/24		
40	Calculation of Volume of a solid formed by revolution of an area about axes.	26/03/24		
41	Calculation of Volume of a solid formed by revolution of an area about axes.	27/03/24		
42	**Co-Ordinate Geometry:** Equation of straight line in various standard forms	28/03/24		
43	Equation of straight line in various standard forms	01/04/24		
44	Equation of straight line in various standard forms	02/04/24		
45	Equation of straight line in various standard forms	03/04/24		
46	Inter section of two straight lines	04/04/24		
47	DCS	05/04/24		
48	Angle between two lines	08/04/24		
49	Parallel and perpendicular lines	09/04/24		
50	Perpendicular distance formula	10/04/24		
51	DCS	12/04/24		
52	General equation of a circle and its characteristics	16/04/24		
53	General equation of a circle and its characteristics	18/04/24		
54	Class Test-II	19/04/24		
55	To find the equation of a circle when Centre and radius, are given	22/04/24		
56	To find the equation of a circle given three points lying on it	23/04/24		
57	To find the equation of a circle when coordinates of end points of a diameter are given	24/04/24		
58	Definition of conics (Parabola, Ellipse, Hyperbola)	25/04/24		
59	DCS	26/04/24		
60	Parabola	29/04/24		
61	Ellipse	30/04/24		
62	Hyperbola	01/05/24		
63	Problems on conics when their foci, directrices or vertices are given.	02/05/24		
64	DCS	03/05/24		
65	Problems on conics when their foci, directrices or vertices are given.	06/05/24		
66	**Differential Equations:** Order and degree of differential equation	07/05/24		
67	Solution of first order and first degree differential equation by variable separable method	08/05/24		
68	Solution of first order and first degree differential equation by variable separable method	09/05/24		
69	Solution of first order and first degree differential equation by variable separable method	20/05/24		
70	Solution of first order and first degree differential equation by variable separable method	21/05/24		
71	DCS	22/05/24		
72	DCS	24/05/24		

73	DCS		25/05/24		

Assignments:

Assignment serial	Contents of syllabus covered	Actual date	Remarks
A-1	Determinants and Matrices, Integral Calculus	15/03/24	
A-2	Integral Calculus & Co-Ordinate Geometry	06/05/24	

House Test/Class Test:

House/Class Test	Contents of syllabus covered	Proposed Date	Actual date	Remarks
CT-I	30% of the syllabus	3rd week of March 2024		
CT-II	Next 30% of the syllabus	3rd week of April 2024		
House Test	80% of the syllabus	3rd week of May 2024		

Signature of Teacher

Dr Leena Kumari

Signature of HOD

LESSON PLAN

Program Name	CIVIL ENGG
Course/Subject Name	Applied Physics-II
Course/Subject Code	BS-104 & BS-106
Course/Subject Coordinator Name	Manoj Kumar

Evaluation scheme

S.No.	Subject Name	Study scheme (Hrs/Week)	Marks in evaluation scheme			
			Internal Assessment		External Assessment	
			Theory	Practical	Theory	Practical
1.	Applied physics-II & Applied Physics-II lab	TH [3+1(DCS) + 2 (Lab)	40	40	60	60
Reference books		(i) Fundamental of Physics By Halliday/Resnick/Walker				
		(ii) New simplified Physics by S.L.Arora				
		(iii) Applied Physics, Vol. I and Vol. II, TTTI Publications, Tata McGraw Hill, Delhi				
		(iv) Engineering Physics by DK Bhattacharya & Poonam Tandan; Oxford University Press, New Delhi				
		(v) Applied Physics-II by Manoj Kumar Saini & Amit Pathak, True Education Publications				

Course Outcomes: After the completion of the course the student will be able to

CO1	Describe waves and wave motion, periodic and simple harmonic motions and solve simple problems.
CO2	Explain ultrasonic waves and engineering, medical and industrial applications of Ultrasonic. Apply acoustics principles to various types of buildings for best sound effect.
CO3	Describe the refractive index of a liquid or a solid and will be able to explain conditions for total internal reflection.
CO4	Define capacitance and its unit, explain the function of capacitors in simple circuits, and solve simple problems.
CO5	Differentiate between insulators, conductors and semiconductors, and define the terms: potential, potential difference, electromotive force.
CO6	Express electric current as flow of charge, concept of resistance, measure of the parameters: electric current, potential difference, resistance.
CO7	Explain the operation of appliances like moving coil galvanometer, simple DC motors.
CO8	Illustrate the conditions for light amplification in various LASER and laser based instruments and optical devices.
CO9	Appreciate the potential of optical fiber in fields of medicine and communication.

Teaching Plan:

L. No.	Topic Covered	Proposed Date	Actual Date	Remarks
1	UNIT - 1: Wave motion and its applications- Wave motion, transverse and longitudinal waves with examples.	29/01/2024		
2	Definitions of wave velocity, frequency and wavelength and their relationship	30/01/2024		
3	Sound and light waves and their properties	31/01/2024		
4	DCS	01/02/2024		
5	Wave equation ($y = r \sin \omega t$) amplitude, phase, phase	05/02/2024		

	difference, Principle of superposition of waves and beat formation	06/02/2024			
6	Simple Harmonic Motion (SHM): definition, expression for displacement, velocity	07/02/2024			
7	Acceleration, time period, frequency of SHM, Free, forced and resonant vibrations and their examples.	08/02/2024			
8	DCS	12/02/2024			
9	Acoustics of buildings – reverberation, reverberation time, echo, noise, coefficient of absorption of sound	13/02/2024			
10	Methods to control reverberation time and their applications.	14/02/2024			
11	Ultrasonic waves – Introduction and properties, engineering and medical applications of ultrasonic.	15/02/2024			
12	DCS	19/02/2024			
	UNIT - 2: Optics -Basic optical laws- reflection and refraction	20/02/2024			
13	Refractive index, Images and image formation by mirrors,	21/02/2024			
14	Lens and thin lenses, lens formula, power of lens, magnification	22/02/2024			
15	DCS	26/02/2024			
16	Total internal reflection, Critical angle and conditions for total internal reflection, applications of total internal reflection in optical fiber.	27/02/2024			
17	Optical Instruments- simple and compound microscope	28/02/2024			
18	Astronomical telescope in normal adjustment and their magnifying power	29/02/2024			
19	DCS	04/03/2024			
20	UNIT - 3: Electrostatics- Coulomb's law, unit of charge.	05/03/2024			
21	Electric field, Electric lines of force and their properties.	06/03/2024			
22	Electric flux, Electric potential and potential difference	07/03/2024			
23	DCS	11/03/2024			
24	Gauss's law	12/03/2024			
25	Capacitor and its working, Capacitance and its units. Capacitance of a parallel plate capacitor	13/03/2024			
26	Series and parallel combination of capacitors (related numerical)	18/03/2024			
27	Dielectric and its effect on capacitance, dielectric break down	19/03/2024			
28	UNIT - 4: Current Electricity- Electric Current and its units, Direct and alternating current.	20/03/2024			
29	Resistance and its units, Specific resistance, Conductance, Specific conductance,	21/03/2024			
30	DCS	26/03/2024			
31	Series and parallel combination of resistances.	27/03/2024			
32	Factors affecting resistance of a wire, carbon resistances and colour coding, Ohm's law and its verification	28/03/2024			
33	DCS	01/04/2024			
34	Kirchhoff's laws, Concept of terminal potential difference and Electromotive force (EMF)	02/04/2024			
35	Heating effect of current, Electric power, Electric energy and its units (related numerical problems)	03/04/2024			
36	Advantages of Electric Energy over other forms of energy.	04/04/2024			
37	DCS	08/04/2024			
38	UNIT - 5: Electromagnetism- Types of magnetic materials: dia, para and ferromagnetic with their properties.				

39	Magnetic field and its units, magnetic intensity,magnetic lines of force, magnetic flux and units, magnetization	09/04/2024		
40	Lorentz force (force on moving charge in magnetic field), Force on current carrying conductor.	16/04/2024		
41	DCS	18/04/2024		
42	Moving coil galvanometer; principle, construction and working	22/04/2024		
43	Conversion of a galvanometer into ammeter and voltmeter.	23/04/2024		
44	UNIT - 6: Semiconductor Physics-Energy bands in solids, Types of materials (insulator, semiconductor, conductor)	24/04/2024		
45	DCS	25/04/2024		
46	Intrinsic and Extrinsic semiconductors. p-n junction,Junction diode and V-I characteristics	29/04/2024		
47	Diode as rectifier – half wave and full wave rectifier (center taped).	30/04/2024		
48	Photocells, Solar cells; working principle and engineering applications.	01/05/2024		
49	DCS	02/05/2024		
50	UNIT - 7: Modern Physics- Lasers: Energy levels, ionization and excitation potentials; spontaneous and stimulated emission	06/05/2024		
51	Population inversion, pumping methods, optical feedback.	07/05/2024		
52	Types of lasers;Ruby, He-Ne Laser	08/05/2024		
53	DCS	09/05/2024		
54	Semiconductor laser and engineering and medical applications of lasers. laser characteristics	20/05/2024		
55	Fiber Optics: Introduction to optical fibers, light propagation, acceptance angle and numerical aperture	21/05/2024		
56	Fiber types, applications in; telecommunication, medical and sensors.	22/05/2024		

Assignments:

Assignment serial	Contents of syllabus covered	Proposed date	Actual date	Remarks
A-1	Wave motion and its applications & Optics	27/02/2024		
A-2	Electrostatics & Current electricity	05/04/2024		
A-3	Semiconductor & Modern Physics	10/05/2024		
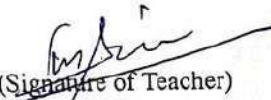
House Test/Class Test:

House/Class Test	Contents of syllabus covered	Proposed date	Actual date	Remarks
CT-I	30% of the syllabus	3rd week of March 2024		
CT-II	Next 30% of the syllabus	3rd week of April 2024		
House Test	80% of the syllabus	3rd week of May2024		

Lab Plan:

Exp. No.	Name of experiment	Actual date		Remarks
		G-1	G-2	
1	To verify laws of reflection from a plane mirror/ interface.			
2	To verify laws of refraction (Snell's law) using a glass slab.			
3	To determine focal length and magnifying power of a convex lens.			
4	To verify Ohm's law by plotting a graph between current and potential difference.			
5	To verify laws of resistances in series and parallel combination.			
6	To verify Kirchhoff's laws using electric circuits.			
7	To find resistance of a galvanometer by half deflection method.			
8	To convert a galvanometer into an ammeter.			
9	To convert a galvanometer into a voltmeter.			

(Signature of Teacher)

(Signature of HOD)

LESSON PLAN

ProgramName	DIPLOMA (Civil Engg.)
Course/Subject Name	Environmental science
Course/SubjectCode	AU(102)
Course/SubjectCoordinatorName	Mr. Aman Saini

Evaluation scheme

S.No.	SubjectName	Studyscheme· (Hrs/Week)	Marks in evaluation scheme	
			Internal Assessment	External Assessment
			Theory	Theory
1.	Environmental Science	2(Th)	40	60
Reference books			(i) S.C.Sharma&M.P.Poonia, Environmental Studies, KhannaPublishingHouse, New Delhi.	
			(ii)C.N. R. Rao, Understanding Chemistry, Universities Press (India) Pvt.Ltd., 2011	
			(iii)O.P.Gupta, ElementsofEnvironmentl Pollution Control, Khanna Publishing House, New Delhi .	
			(iv)Keshav Kant, Air Pollution & Control, Khanna Publishing House, New Delhi (Edition 2018).	

Course Outcomes: After the completion of the course the student will be able to

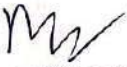| CO1	To solve various engineering problems applying ecosystem to produce eco – friendly products
CO2	To use relevant air and noise control method to solve domestic and industrial problems.
CO3	To use relevant water and soil control method to solve domestic and industrial problems
CO4	To recognize relevant energy sources required for domestic and industrial applications
CO5	To Solve local solid and e-waste problems

Teaching Plan:

Lecture No.	Name of topic	Proposed Date	Actual Date	Remarks
1	**Unit-1 Ecosystem** Structure of ecosystem, Biotic & Abiotic components Food chain and food web	01/02/2024		
2	Aquatic (Lentic and Lotic) and terrestrial ecosystem Carbon, Nitrogen, cycle	02/02/2024		
3	Sulphur, Phosphorus cycle	08/02/2024		
4	Global warming -Causes, effects, process Green House Effect, Ozone depletion.	08/02/2024 09/02/2024		
5	**Unit– 2 Air and, Noise Pollution** Definition of pollution and pollutant, Natural and manmade sources of air pollution (Refriger- ants, I.C., Boiler) ,	15/02/2024		
6	Air Pollutants: Types, Particulate Pollutants: Effects	16/02/2024		
7	Control of air pollution(Bag filter, Cyclone separator, Electrostatic Precipitator).	22/02/2024		
8	Gaseous Pollution Control: Absorber, Catalytic Converter, Effects of air pollution due to Refrigerants, I.C., Boiler	23/02/2024		
9	Noise pollution: sources of pollution, measurement of pollution level, Effects of Noise pollution, Noise pollution (Regulation and Control) Rules, 2000	29/02/2024		
10	**Unit- 3 Water and Soil Pollution** Sources of water pollution, Types of water pollutants,.	01/03/2024		
11	Characteristics of water pollutants Turbidity, pH, total suspended solids, total solids BOD and COD: Definition, calculation	07/03/2024		
12	Waste Water Treatment: Primary methods: sedimentation, froth floatation	14/03/2024		
13	Secondary methods: Activated sludge treatment. Trickling filter, Bioreactor,	15/03/2024		
14	Tertiary Method: Membrane sepa ration technology, RO (reverse osmosis).	21/03/2024		

15	Causes, Effects and Preventive measures of Soil Pollution: Causes-Excessive use of Fertilizers, Pesticides and Insecticides, Irrigation, E-Waste	22/03/2024		
16	**Unit– 4 Renewable sources of Energy** Solar Energy: Basics of Solar energy. Flat plate collector (Liquid & Air). Theory of flat plate col- lector. Importance of coating. Advanced collector	28/03/2024		
17	Solar pond. Solar water heater, solar dryer. Solar stills.	04/04/2024		
18	Biomass: Overview of biomass as energy source. Thermal characteristics of biomass as fuel. Anaerobic digestion. Biogas production mechanism. Utilization and storage of biogas.	05/04/2024		
19	Wind energy: Current status and future prospects of wind energy. Wind energy in India. Environmental benefits and problem of wind energy.	12/04/2024		
20	New Energy Sources: Need of new sources. Different types new energy sources.	18/04/2024		
21	Applications of (Hydrogen energy, Ocean energy resources, Tidal energy conversion.)	19/04/2024		
22	Concept, origin and power plants of geothermal energy.	25/04/2024		
23	**Unit-5 Solid Waste Management, ISO 14000 & Environmental Management** Solid waste generation- Sources and characteristics of : Municipal solid waste, E- waste, bio- medical waste.Metallic wastes and Non-Metallic wastes (lubricants, plastics, rubber) from industries	26/04/2024		
24	Collection and disposal: MSW (3R, principles, energy recovery, sanitary landfill), Hazardous.	02/05/2024		
25	Waste Air quality act 2004, air pollution control act 1981 and water pollution and control act1996.	03/05/2024		
26	Structure and role of Central and state pollution control board.	09/05/2024		

27	Concept of Carbon Credit, Carbon Footprint	16/05/2024		
28	Environmental management in fabrication industry. ISO14000: Implementation in industries, Benefits.	17/05/2024		

House Test/Class Test:

House/Class Test	Contents of syllabus covered	Proposed Date	Actual Date	Remarks
CT-I	30% of the syllabus	3rd week of March, 2024		
CT-II	Next 30% of the syllabus	3rd week of April, 2024		
House Test	80% of the syllabus	3rd week of May, 2024		
Assignments	Contents of syllabus covered	Proposed Date	Actual Date	Remarks
A-1	Ecosystem , Air and, Noise Pollution			
A-2	Water and Soil Pollution, Renewable sources of Energy			
A-3	Solid Waste Management, ISO 14000 & Environmental Management			

Signature of teacher

HOD(AS& H)

LESSON PLAN

Branch	Civil Engineering
Course Title	Engineering Workshop Practice
Course Code	ES103
Number Of Credits	1.5 (L : 0 , DCS : 3 , P : 3)
Course Category	ES

Evaluation Scheme

Sr. No.	Subject Name	Study Scheme Hrs/Week	Marks Evaluation Scheme			
			Internal Assessment		External Assessment	
1	Engineering Workshop Practice		Theory	Practical	Theory	Practical
		06 Hrs/week		40		60
2	Reference Books	S.K. Hajara Chaudhary , Media Promoters and publishers				
		K.Venkat Reddy, B.S. Publication Hyderabad				

Course Outcome:

CO1	Acquire skills in basic engineering practice to identify, select and use various marking, measuring, and holding, striking and cutting tools & equipment's and machines
CO2	Understand job drawing and complete jobs as per specifications in allotted time.
CO3	CO3 Inspect the job for the desired dimensions and shape.
CO4	Operate, control different machines and equipment's adopting safety practices

Lesson Plan/Lab Plan (Electrical shop)

Trade : Civil Engg.

Sem: 2nd

Session: Jan - June 2024

Sr. No	Name of Practical	Proposed Date		Actual Date	Remarks
1	(i)Demonstrarion of advance power tools, Pneumatic tools, electrical wiring tools and accessories.	G-II	31-1-24 02-2-24 03-2-24		
		G-III	07-2-24 09-2-24		
		G-I	14-2-24 16-2-24 17-2-24		
2	(ii)Tools for cutting and drilling (iii) Demonstration of measurement of current, voltage, Power and energy.	G-II	21-2-24 23-2-24 28-2-24		
		G-III	01-3-24 02-3-24 06-3-24		
		G-I	13-3-24 15-3-24 16-3-24		
3	Practice of simple lamp circuit (iv) One lamp conrtrolled by one switch by surface conduit wiring. (v) Lamp circuits- connection of lamp and socket by seprate switches.	G-II	20-3-24 22-3-24 23-3-24		
		G-III	27-3-24 30-3-24		
		G-I	03-4-24 05-4-24 06-4-24		
4	(vi) Connection of Fluorescent lamp/tube light (vii) Simple Lamp Circuits install bedroom lighting. (viii) Simple lamp circuit install stair case wiring	G-II	10-4-24 12-4-24 01-5-24 03-5-24		
		G-III	19-4-24 20-4-24 04-5-24 08-5-24		
		G-I	24-4-24 26-4-24 27-4-24 22-5-24 24-5-24		

W/shop Instr.

Foreman Instr.

Workshop Supdt.

HOD
App. Sc. Hum.

Lesson Plan/Lab Plan (Carpentry shop)

Session: Jan - June 2024

Trade : Civil Engg.

Sem: 2nd

Sr. No	Name of Practical	Proposed Date	Actual Date	Remarks
1	(i)Demonstration of different wood working tools/Machines	G-I 31-1-2024 2-2-2024 3-2-2024		
		G-II 7-2-2024 9-2-2024		
		G-III 14-2-2024 16-2-2024 17-2-2024		
2	(ii) Demonstration of different wood working processes like Plaining, Marking, chiseling, grooving, truning of wood etc.	G-I 21/2/2024 20/2/24 28/2/24		
		G-II 1/3/24 2/3/24 6/3/24		
		G-III 13/3/24 15/3/24 16/3/24		
3	One simple job involving any one joint like mortise and tenon Joint.	G-I 20/3/24 22/3/24 23/3/24		
		G-II 27/3/24 30/3/24		
		G-III 3/4/2024 4/4/24 6/4/24		
4	Practice on Dovetail, bridle and Half lap Joint etc.	G-I 10/4, 12/4 1/5/24 3/5/24		
		G-II 19/4/24 20/4/24 4/5/24 8/5/24		
		G-III 24/4/24 26/4/24 27/4/24 22/5/24 24/5/24		

W/shop Instr.

Foreman Instr.

Workshop Supdt.

HOD

App. Sc. Hum.

Lesson Plan/Lab Plan (Sheet Metal shop)

Trade : Civil Engg.		Session: Jan - June 2024		
Sem: 2nd				
Sr. No	Name of Practical	Proposed Date	Actual Date	Remarks
1	(i)Demonstration of different Sheet metal tools/ Machines	31/01-24 G-III 02-02-24 03-02-24		
		07-02-24 G-I 09-02-24		
		14-02-24 G-II 16-02-24 17-02-24		
2	(ii) Demonstration of different Sheet Metal operations like sheet cutting, bending, edging	21-02-24 G-III 23-02-24 28-02-24		
		01-03-24 G-I 02-03-24 06-03-24		
		13-03-24 G-II 15-03-24 16-03-24		
3	Demonstration of sheet metal operations like curling, lancing soldering, brazing and riveting	20-03-24 G-III 22-03-24 23-03-24		
		27-03-24 G-I 30-03-24		
		03-04-24 G-II 05-04-24 06-04-24		
4	One simple job involving sheet metal operation and soldering and riveting.	10-4-24 12-4-24 G-III 01-5-24 03-5-24		
		19-4-24 G-I 20-4-24 04-5-24 08-5-24		
		24-4-24 G-II 26-4-24 27-4-24 22-5-24 24-5-24		

W/shop Instr.

Foreman Instr.

Workshop Supdt.

HOD
App. Sc. Hum.

LESSON PLAN

Program Name	CIVIL ENGG
Course/Subject Name	FUNDAMENTALS OF ELECTRICAL AND ELECTRONICS ENGG.
Course/Subject Code	ES 104
Course/Subject Coordinator Name	ASHOK KUMAR

Evaluation scheme

S.No.	Subject Name	Study scheme (Hrs/Week)	Marks in evaluation scheme			
			Internal Assessment		External Assessment	
			Theory	Practical	Theory	Practical
1.	FEEE & FEEE LAB	TH [3+1(DCS) + 2 (Lab)	40	40	60	60
	Reference books		1. Ritu Sahdev, Basic Electrical Engineering, Khanna Publishing House, 2018. 2. Mittle and Mittal, Basic Electrical Engineering, McGraw Education, New Delhi, 2015, ISBN : 978-0-07-0088572-5. 3. Saxena, S. B. Lal, Fundamentals of Electrical Engineering, Cambridge University Press, latest edition ISBN : 9781107464353. 4. Theraja, B. L., Electrical Technology Vol – I, S. Chand publications, New Delhi, 2015, ISBN: 9788121924405. 5. Theraja, B. L., Electrical Technology Vol – II, S. Chand publications, New Delhi, 2015, ISBN: 9788121924375. 6. Jegathesan, V., Basic Electrical and Electronics Engineering, Wiley India, New Delhi, 2015, ISBN : 97881236529513. 7. Sedha, R.S., A text book of Applied Electronics, S.Chand ,New Delhi, 2008, ISBN-13: 978-8121927833. 8. Malvino, Albert Paul, David, Electronics Principles, McGraw Hill Eduction, New Delhi,2015, ISBN-13: 0070634244-978. 9. Mehta, V.K., Mehta, Rohit, Principles of Electronics, S. Chand and Company, New Delhi, 2014, ISBN-13-9788121924504. 10. Bell Devid, Fundamental of Electronic Devices and Circuits, Oxford University Press, New Delhi 2015 ISBN : 9780195425239.			

Course Outcomes: After the completion of the course the student will be able:

• To express different elements and concepts of electrical engineering field
• To understand basic concepts of various active and passive electronic components, Signals, Op-Amp

• To use Digital Electronics and their applications

e No.	Topic Covered	Proposed date	Actual Date	Remarks
1	Passive Active Components	29-01-2024		
2	Passive Active Components	30-01-2024		
3	Resistances, Capacitors, Inductors, Diodes, Transistors, FET, MOS and CMOS and their Applications	01-02-2024	'	
4	Resistances, Capacitors, Inductors, Diodes, Transistors, FET, MOS and CMOS and their Applications	03-02-2024		
5	Signals: DC/AC, voltage/current, periodic/non-periodic signals, average, rms, peak values, different types of signal waveforms	05-02-2024		.
6	Signals: DC/AC, voltage/current, periodic/non-periodic signals, average, rms, peak values, different types of signal waveforms	06-02-2024		
7	Signals: DC/AC, voltage/current, periodic/non-periodic signals, average, rms, peak values, different types of signal waveforms	08-02-2024		
8	Ideal/non-ideal voltage/current sources, independent/dependent voltage current sources.	12-02-2024		
9	Ideal/non-ideal voltage/current sources, independent/dependent voltage current sources.	13-02-2024		
10	Operational Amplifiers-Ideal Op-Amp,	15-02-2024		
11	Operational Amplifiers-Ideal Op-Amp	17-02-2024		
12	Practical op amp, Open loop and closed loop configurations	19-02-2024		
13	Practical op amp, Open loop and closed loop configurations	20-02-2024		
14	Application of Op-Amp as amplifier, adder, differentiator and integrator.	22-02-2024		
15	Application of Op-Amp as amplifier, adder, differentiator and integrator	26-02-2024		
16	Introduction to Boolean Algebra	27-02-2024		
17	Introduction to Boolean Algebra	29-02-2024		.
18	Electronic Implementation Gates-Functional Block Approach, Storage elements-Flip Flops, Boolean Operations	02-03-2024		
19	Electronic Implementation ,Gates-Functional Block Approach, Storage elements-Flip Flops Boolean Operations	04-03-2024		
20	Functional block approach, Counters: Ripple, Up/down and decade, Introduction to digital IC Gates (of TTL Type	05-03-2024		
21	EMF, Current, Potential Difference	07-03-2024		
22	EMF, Current, Potential Difference	11-03-2024		
23	Power and Energy; M.M.F, magnetic force, permeability, hysteresis loop	12-03-2024		
24	Power and Energy; M.M.F, magnetic force, permeability, hysteresis loop	14-03-2024		
25	reluctance, leakage factor and BH curve; Electromagnetic induction	16-03-2024	'	
26	reluctance, leakage factor and BH curve; Electromagnetic induction	18-03-2024		
27	Faraday's laws of electromagnetic induction, Lenz's law; Dynamically induced emf	19-03-2024		
28	Faraday's laws of electromagnetic induction, Lenz's law; Dynamically induced emf	21-03-2024		.

	Topic	Date			
	Statically induced emf; Equations of self and mutual inductance; Analogy between electric and magnetic circuits.	23-03-2024			
	Statically induced emf; Equations of self and mutual inductance; Analogy between electric and magnetic circuits.	26-03-2024			
31	Cycle, Frequency, Periodic time, Amplitude, Angular velocity	28-03-2024			
32	Cycle, Frequency, Periodic time, Amplitude, Angular velocity	30-03-2024			
33	RMS value, Average value, Form Factor Peak Factor, impedance	01-04-2024			
34	RMS value, Average value, Form Factor Peak Factor, impedance	02-04-2024			
35	phase angle, and power factor	04-04-2024			
36	Mathematical and phasor representation of alternating EMF and current	06-04-2024			
37	Mathematical and phasor representation of alternating EMF and current	08-04-2024			
38	Voltage and Current relationship in Star and Delta connection	09-04-2024			
39	A.C in resistors, inductors and capacitors; A.C in R-L series	16-04-2024			
40	A.C in resistors, inductors and capacitors; A.C in R-L series	18-04-2024			
41	R-C series, R-L-C series and parallel circuits; Power in A. C. Circuits, power triangle.	20-04-2024			
42	R-C series, R-L-C series and parallel circuits; Power in A. C. Circuits, power triangle.	22-04-2024			
43	R-C series, R-L-C series and parallel circuits; Power in A. C. Circuits, power triangle.	23-04-2024			
44	phase angle, and power factor	25-04-2024			
45	Statically induced emf; Equations of self and mutual inductance; Analogy between electric and magnetic circuits.	27-04-2024			
46	Statically induced emf; Equations of self and mutual inductance; Analogy between electric and magnetic circuits.	29-04-2024			
47	General construction and principle of core and shell type of transformers	30-04-2024			
48	General construction and principle of core and shell type of transformers	02-05-2024			
49	EMF equation and transformation ratio of transformers General construction and principle of core and shell type of transformers	04-05-2024			
50	Mathematical and phasor representation of alternating EMF and current	06-05-2024			
51	Voltage and Current relationship in Star and Delta connection	07-05-2024			
52	EMF equation and transformation ratio of transformers	09-05-2024			
53	EMF equation and transformation ratio of transformers	11-05-2024			
54	EMF equation and transformation ratio of transformers	13-05-2024			
55	Auto transformers; Basic principle of Electromechanical energy conversion	14-05-2024			
56	Auto transformers; Basic principle of Electromechanical energy conversion	16-05-2024			
57	Auto transformers; Basic principle of Electromechanical energy conversion	18-05-2024			
58	Doubt clearing session/Revision Classes	20-05-2024			
59	Doubt clearing session/Revision Classes	21-05-2024			

Doubt clearing session/Revision Classes | 25-05-2024 |

Teaching Plan:

Assignments:

Assignment serial	Contents of syllabus covered	Proposed date	Actual date	Remarks
A-1	Electric and Magnetic Circuits	22/03/2024		
A-2	A.C. Circuits &Transformers	20/04/2024		

House Test/Class Test:

House/Class Test	Contents of syllabus covered	Proposed date	Actual date	Remarks
CT-I	30% of the syllabus	3rd week of March 2024		
CT-II	Next 30% of the syllabus	3rd week of April 2024		
House Test	80% of the syllabus	3rd week of May2024		

Lab Plan:

Exp. No.	Name of experiment	Actual date G-1	G-2	Remarks
1	Determine the permeability of magnetic material by plotting its B-H curve.			
2	Measure voltage, current and power in 1-phase circuit with resistive load.			
3	Measure voltage, current and power in R-L series circuit.			
4	Determine the transformation ratio (K) of 1-phase transformer.			
5	Connect single phase transformer and measure input and output quantities.			

6	Make Star and Delta connection in induction motor starters and measure the line and phase values.			
7	Identify various passive electronic components in the given circuit.			
8	Connect resistors in series and parallel combination on bread board and measure its value using digital multimeter.			
9	Connect capacitors in series and parallel combination on bread board and measure its value using multimeter.			
10	Identify various active electronic components in the given circuit.			
11	Use multimeter to measure the value of given resistor.			
12	Use LCR-Q tester to measure the value of given capacitor and inductor.			
13	Determine the value of given resistor using digital multimeter to confirm with colour code.			
14	Test the PN-junction diodes using digital multimeter.			
15	Test the performance of PN-junction diode.			
16	Test the performance of Zener diode.			
17	Test the performance of LED.			
18	Identify three terminals of a transistor using digital multimeter.			
19	Test the performance of NPN transistor.			
20	Determine the current gain of CE transistor			
21	Test the performance of transistor switch circuit.			
22	Test the performance of transistor amplifier circuit.			
23	Test Op-Amp as amplifier and Integrator			

(Signature of Teacher)

27.01.2024

(Signature of HOD)AMAN SAINI