

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	27.01.25		
2	Algebra of matrices	28.01.25		
3	Algebra of matrices	29.01.25		

4	Algebra of matrices	30.01.25		
5	Elementary properties of determinants up to 3rd order	31.01.25		
6	Elementary properties of determinants up to 3rd order	03.02.25		
7	Inverse of a matrix	05.02.25		
8	Inverse of a matrix	06.02.25		
9	Inverse of a matrix	07.02.25		
10	consistency of equations	10.02.25		
11	consistency of equations	11.02.25		
12	Cramer's rule	13.02.25		
13	Cramer's rule.	14.02.25		
14	matrix inverse method to solve a system of linear equations in 3 variables.	17.02.25		
15	matrix inverse method to solve a system of linear equations in 3 variables.	18.02.25		
16	matrix inverse method to solve a system of linear equations in 3 variables.	19.02.25		
17	Integral Calculus: Integration as inverse operation of differentiation	20.02.25		
18	Integration as inverse operation of differentiation	21.02.25		
19	Integration as inverse operation of differentiation	24.02.25		
20	Integration as inverse operation of differentiation	25.02.25		
21	Simple integration by substitution	27.02.25		
22	Simple integration by substitution	28.02.25		
23	Simple integration by substitution	03.03.25		
24	Simple integration by substitution	04.03.25		
25	Integration by parts	05.03.25		
26	Integration by parts	06.03.25		
27	Integration by parts	07.03.25		
28	Integration by partial fractions	10.03.25		
29	Integration by partial fractions	11.03.25		
30	Integration by partial fractions	12.03.25		
31	Use of formulae	13.03.25		
32	Use of formulae	17.03.25		
33	Use of formulae	18.03.25		
34	Class test-I	19.03.25		
35	Applications of integration: Simple problem on evaluation of area bounded by a curve and axes.	20.03.25		
36	Simple problem on evaluation of area bounded by a curve and axes	21.03.25		
37	Simple problem on evaluation of area bounded by a curve and axes.	24.03.25		
38	Calculation of Volume of a solid formed by revolution of an area about axes.	25.03.25		
39	Calculation of Volume of a solid formed by revolution of an area about axes.	26.03.25		

40	Co-Ordinate Geometry: Equation of straight line in various standard forms	27.03.25		
41	Equation of straight line in various standard forms	28.03.25		
42	Equation of straight line in various standard forms	01.04.25		
43	Equation of straight line in various standard forms	02.04.25		
44	Inter section of two straight lines	03.04.25		
45	Angle between two lines	04.04.25		
46	Angle between two lines	07.04.25		
47	Parallel and perpendicular lines	08.04.25		
48	Parallel and perpendicular lines	09.04.25		
49	Perpendicular distance formula	10.04.25		
50	General equation of a circle and its characteristics	11.04.25		
51	To find the equation of a circle when Centre and radius, are given	16.04.25		
52	To find the equation of a circle given three points lying on it	17.04.25		
53	Class test-II	19.04.25		
54	To find the equation of a circle given three points lying on it	21.04.25		
55	To find the equation of a circle when coordinates of end points of a diameter are given	22.04.25		
56	Definition of conics (Parabola, Ellipse, Hyperbola)	23.04.25		
57	Parabola	24.04.25		
58	Ellipse	25.04.25		
59	Ellipse	28.04.25		
60	Hyperbola	30.04.25		
61	Problems on conics when their foci, directrices or vertices are given.	01.05.25		
62	Problems on conics when their foci, directrices or vertices are given.	02.05.25		
63	Differential Equations: Order and degree of differential equation	05.05.25		
64	Order and degree of differential equation	06.05.25		
65	Solution of first order and first degree differential equation by variable separable method	07.05.25		
66	Solution of first order and first degree differential equation by variable separable method	08.05.25		
67	Solution of first order and first degree differential equation by variable separable method	09.05.25		
68	Solution of first order and first degree differential equation by variable separable method	19.05.25		
69	Solution of first order and first degree differential equation by variable separable method	20.05.25		
70	DCS	21.05.25		
71	DCS	22.05.25		
72	DCS	23.05.25		
73	DCS	26.05.25		

74	DCS	27.05.25		
75	DCS	28.05.25		

Assignments:

Assignment	Contents of syllabus covered	Proposed Date	Actual date	Remarks
A-1	Determinants and Matrices, Integral Calculus	17.03.25		
A-2	Integral Calculus & Co-Ordinate Geometry	30.04.25		

House Test/Class Test:

House/Class Test	Contents of syllabus covered	Proposed Date	Actual date	Remarks
CT-I	30% of the syllabus	3 rd week of March 2024		
CT-II	Next 30% of the syllabus	3 rd week of April 2024		
House Test	80% of the syllabus	2nd week of May 2024		



Signature of Teacher

Dr. Reena 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
I.	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.	28/01/2025		
2	Definitions of wave velocity, frequency and wavelength and their relationship	29/01/2025		
3	Sound and light waves and their properties	31/01/2025		

4	DCS	03/02/2025	
5	Wave equation ($y = r \sin \omega t$) amplitude, phase, phase difference, Principle of superposition of waves and beat formation	04/02/2025	
6	Simple Harmonic Motion (SHM): definition, expression for displacement, velocity	05/02/2025	
7	Acceleration, time period, frequency of SHM, Free, forced and resonant vibrations and their examples.	07/02/2025	
8	DCS	10/02/2025	
9	Acoustics of buildings – reverberation, reverberation time, echo, noise, coefficient of absorption of sound	11/02/2025	
10	Methods to control reverberation time and their applications.	14/02/2025	
11	Ultrasonic waves – Introduction and properties, engineering and medical applications of ultrasonic.	17/02/2025	
12	DCS	18/02/2025	
	UNIT - 2: Optics -Basic optical laws- reflection and refraction	19/02/2025	
13	Refractive index, Images and image formation by mirrors,	21/02/2025	
14	Lens and thin lenses, lens formula, power of lens, magnification	24/02/2025	
15	DCS	25/02/2025	
16	Total internal reflection, Critical angle and conditions for total internal reflection, applications of total internal reflection in optical fiber.	28/02/2025	
17	Optical Instruments- simple and compound microscope	03/03/2025	
18	Astronomical telescope in normal adjustment and their magnifying power	04/02/2025	
19	DCS	05/02/2025	
20	UNIT - 3: Electrostatics - Coulomb's law, unit of charge.	07/03/2025	
21	Electric field, Electric lines of force and their properties.	10/03/2025	
22	Electric flux, Electric potential and potential difference	11/03/2025	
23	DCS	12/03/2025	
24	Gauss's law	17/03/2025	
25	Capacitor and its working, Capacitance and its units. Capacitance of a parallel plate capacitor	18/03/2025	
26	Series and parallel combination of capacitors (related numerical)	19/03/2025	
27	Dielectric and its effect on capacitance, dielectric break down	21/03/2025	
28	UNIT - 4: Current Electricity - Electric Current and its units, Direct and alternating current.	24/03/2025	
29	Resistance and its units, Specific resistance, Conductance, Specific conductance,	25/03/2025	
30	DCS	26/03/2025	
31	Series and parallel combination of resistances.	28/03/2025	
32	Factors affecting resistance of a wire, carbon resistances and colour coding, Ohm's law and its verification	01/04/2025	
33	DCS	02/04/2025	
34	Kirchhoff's laws, Concept of terminal potential difference and Electromotive force (EMF)	04/04/2025	
35	Heating effect of current, Electric power, Electric energy and its units (related numerical problems)	07/04/2025	
36	Advantages of Electric Energy over other forms of energy.	08/04/2025	
37	DCS	09/04/2025	

38	UNIT - 5: Electromagnetism- Types of magnetic materials: dia, para and ferromagnetic with their properties.	11/04/2025		
39	Magnetic field and its units, magnetic intensity, magnetic lines of force, magnetic flux and units, magnetization	16/04/2025		
40	Lorentz force (force on moving charge in magnetic field), Force on current carrying conductor.	21/04/2025		
41	DCS	22/04/2025		
42	Moving coil galvanometer; principle, construction and working	23/04/2025		
43	Conversion of a galvanometer into ammeter and voltmeter.	25/04/2025		
44	UNIT - 6: Semiconductor Physics- Energy bands in solids, Types of materials (insulator, semiconductor, conductor)	28/04/2025		
45	DCS	30/04/2025		
46	Intrinsic and Extrinsic semiconductors. p-n junction, Junction diode and V-I characteristics	02/05/2025		
47	Diode as rectifier – half wave and full wave rectifier (center taped).	13/05/2025		
48	Photocells, Solar cells; working principle and engineering applications.	14/05/2025		
49	DCS	16/05/2025		
50	UNIT - 7: Modern Physics- Lasers: Energy levels, ionization and excitation potentials; spontaneous and stimulated emission	19/05/2025		
51	Population inversion, pumping methods, optical feedback.	20/05/2025		
52	Types of lasers; Ruby, He-Ne Laser	21/05/2025		
53	DCS	23/05/2025		
54	Semiconductor laser and engineering and medical applications of lasers. laser characteristics	26/05/2025		
55	Fiber Optics: Introduction to optical fibers, light propagation, acceptance angle and numerical aperture	27/05/2025		
56	Fiber types, applications in; telecommunication, medical and sensors.	28/05/2025		

Assignments:

Assignment serial	Contents of syllabus covered	Proposed date	Actual date	Remarks
A-1	Wave motion and its applications & Optics	27/02/2025		
A-2	Electrostatics & Current electricity	03/04/2025		
A-3	Semiconductor & Modern Physics	08/05/2025		

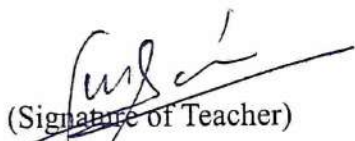
House Test/Class Test:

House/Class Test	Contents of syllabus covered	Proposed date	Actual date	Remarks
CT-I	30% of the syllabus	3rd week of March 2025		
CT-II	Next 30% of the syllabus	3rd week of April 2025		

House Test	80% of the syllabus	2nd week of May2025	
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Lab Plan:

Exp. No.	Name of experiment	Proposed Date G-1&G-2	Actual Date G-1&G-2	Remarks
1	To verify laws of reflection from a plane mirror/ interface.	04/02/2025 & 05/02/2025		
2	To verify laws of refraction (Snell's law) using a glass slab.	11/02/2025 & 19/02/2025		
3	To determine focal length and magnifying power of a convex lens.	18/02/2025 & 05/03/2025		
4	To verify Ohm's law by plotting a graph between current and potential difference.	03/03/2025 & 12/03/2025		
5	To verify laws of resistances in series and parallel combination.	10/03/2025 & 19/03/2025		
6	To verify Kirchoff's laws using electric circuits.	25/03/2025 & 26/03/2025		
7	To find resistance of a galvanometer by half deflection method.	08/04/2025 & 09/04/2025		
8	To convert a galvanometer into an ammeter.	22/04/2025 & 23/04/2025		


(Signature of Teacher)
(Manoj Kumar)


(Signature of HOD)

LESSON PLAN

Program Name	CIVIL ENGG.
Course/Subject Name	FUNDAMENTALS OF ELECTRICAL AND ELECTRONICS ENGG.
Course/Subject Code	ES 1J4
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 Education, 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

Teaching Plan:

Lecture No.	Topic Covered	Proposed date	Actual
1	Passive Active Components	27-01-2025	
2	Passive Active Components	28-01-2025	
3	Resistances, Capacitors, Inductors, Diodes, Transistors, FET, MOS and CMOS and their Applications	30-01-2025	
4	Resistances, Capacitors, Inductors, Diodes, Transistors, FET, MOS and CMOS and their Applications	01-02-2025	
5	Signals: DC/AC, voltage/current, periodic/non-periodic signals, average, rms, peak values, different types of signal waveforms	03-02-2025	
6	Signals: DC/AC, voltage/current, periodic/non-periodic signals, average, rms, peak values, different types of signal waveforms	04-02-2025	
7	Signals: DC/AC, voltage/current, periodic/non-periodic signals, average, rms, peak values, different types of signal waveforms	06-02-2025	
	Ideal/non-ideal voltage/current sources, independent/dependent voltage current sources.	08-02-2025	
9	Ideal/non-ideal voltage/current sources, independent/dependent voltage current sources.	10-02-2025	
10	Operational Amplifiers-Ideal Op-Amp,	11-02-2025	
11	Operational Amplifiers-Ideal Op-Amp	13-02-2025	
12	Practical op amp, Open loop and closed loop configurations	15-02-2025	
13	Practical op amp, Open loop and closed loop configurations	17-02-2025	
14	Application of Op-Amp as amplifier, adder, differentiator and integrator.	18-02-2025	
15	Application of Op-Amp as amplifier, adder, differentiator and integrator	20-02-2025	
16	Introduction to Boolean Algebra	22-02-2025	
17	Introduction to Boolean Algebra	24-02-2025	
18	Electronic Implementation Gates-Functional Block Approach, Storage elements-Flip Flops, Boolean Operations	25-02-2025	
19	Electronic Implementation ,Gates-Functional Block Approach, Storage elements-Flip Flops Boolean Operations	27-02-2025	
20	Functional block approach, Counters: Ripple, Up/down and decade, Introduction to digital IC Gates (of TTL Type	01-03-2025	
21	EMF, Current, Potential Difference	03-03-2025	
22	EMF, Current, Potential Difference	04-03-2025	
23	Power and Energy; M.M.F, magnetic force, permeability, hysteresis loop	06-03-2025	
24	Power and Energy; M.M.F, magnetic force, permeability, hysteresis loop	08-03-2025	
25	reluctance, leakage factor and BH curve; Electromagnetic induction	10-03-2025	
26	reluctance, leakage factor and BH curve; Electromagnetic induction	11-03-2025	
27	Faraday's laws of electromagnetic induction, Lenz's law; Dynamically induced emf	13-03-2025	
28	Faraday's laws of electromagnetic induction, Lenz's law; Dynamically induced emf	15-03-2025	

29	Statically induced emf; Equations of self and mutual inductance; Analogy between electric and magnetic circuits.	17-03-2025	
30	Statically induced emf; Equations of self and mutual inductance; Analogy between electric and magnetic circuits.	18-03-2025	
31	Cycle, Frequency, Periodic time, Amplitude, Angular velocity	20-03-2025	
32	Cycle, Frequency, Periodic time, Amplitude, Angular velocity	22-03-2025	
33	RMS value, Average value, Form Factor Peak Factor, impedance	24-03-2025	
34	RMS value, Average value, Form Factor Peak Factor, impedance	25-03-2025	
35	phase angle, and power factor	27-03-2025	
36	Mathematical and phasor representation of alternating EMF and current	29-03-2025	
37	Mathematical and phasor representation of alternating EMF and current	01-04-2025	
38	Voltage and Current relationship in Star and Delta connection	03-04-2025	
39	A.C in resistors, inductors and capacitors; A.C in R-L series	05-04-2025	
40	A.C in resistors, inductors and capacitors; A.C in R-L series	07-04-2025	
41	R-C series, R-L-C series and parallel circuits; Power in A. C. Circuits, power triangle.	08-04-2025	
42	R-C series, R-L-C series and parallel circuits; Power in A. C. Circuits, power triangle.	10-04-2025	
43	R-C series, R-L-C series and parallel circuits; Power in A. C. Circuits, power triangle.	12-04-2025	
44	phase angle, and power factor	17-04-2025	
45	Statically induced emf; Equations of self and mutual inductance; Analogy between electric and magnetic circuits.	19-04-2025	
46	Statically induced emf; Equations of self and mutual inductance; Analogy between electric and magnetic circuits.	21-04-2025	
47	General construction and principle of core and shell type of transformers	22-04-2025	
48	General construction and principle of core and shell type of transformers	24-04-2025	
49	EMF equation and transformation ratio of transformers General construction and principle of core and shell type of transformers	26-04-2025	
50	Mathematical and phasor representation of alternating EMF and current	28-04-2025	
51	Voltage and Current relationship in Star and Delta connection	01-05-2025	
52	EMF equation and transformation ratio of transformers	03-05-2025	
53	EMF equation and transformation ratio of transformers	05-05-2025	
54	EMF equation and transformation ratio of transformers	06-05-2025	
55	Auto transformers; Basic principle of Electromechanical energy conversion	08-05-2025	
56	Auto transformers; Basic principle of Electromechanical energy conversion	10-05-2025	
57	Auto transformers; Basic principle of Electromechanical energy conversion	13-05-2025	
58	Doubt clearing session/Revision Classes	15-05-2025	
59	Doubt clearing session/Revision Classes	17-05-2025	

60	Doubt clearing session/Revision Classes	19-05-2025		
61	Doubt clearing session/Revision Classes	20-05-2025		
62	Doubt clearing session/Revision Classes	22-05-2025		
63	Doubt clearing session/Revision Classes	24-05-2025		
64	Doubt clearing session/Revision Classes	26-05-2025		
65	Doubt clearing session/Revision Classes	27-05-2025		

Assignments:

Assignment serial	Contents of syllabus covered	Proposed date	Actual date	Remarks
A-1	Electric and Magnetic Circuits	22/03/2025		
A-2	A.C. Circuits & Transformers	20/04/2025		

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 2025		
CT-II	Next 30% of the syllabus	3rd week of April 2025		
House Test	80% of the syllabus	2nd week of May 2025		

Lab Plan:

Exp. No.	Name of experiment	Actual date		Remarks
		G-1	G-2	
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.			

	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			

(1) 
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(2)

LESSON PLAN

Program Name	CIVIL ENGG.
Course/Subject Name	Engineering Mechanics
Course/Subject Code	ES106 & ES 112
Course/Subject Coordinator Name	Er. Harnem Singh

Evaluation scheme

S.No.	Subject Name	Study scheme (Hrs/Week)	Marks in evaluation scheme			
			Internal Assessment		External Assessment	
			Theory	Practical	Theory	Practical
1.	Engineering Mechanics Theory & Engineering Mechanics lab	TH [3+1(DCS) + 2 (Lab)	40	40	60	60
Reference books			(i) D.S. Bedi, Engineering Mechanics, Khanna Publications, New Delhi (2008)			
			(ii) Khurmi, R.S., Applied Mechanics, S. Chand & Co. New Delhi.			
			(iii) Bansal R K, A text book of Engineering Mechanics, Laxmi Publications.			
			(iv) Ramamrutham, Engineering Mechanics, S. Chand & Co. New Delhi.			
			(v) Ram, H. D.; Chauhan, A. K., Foundations and Applications of Applied Mechanics, Cambridge University Press.			

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

CO1	Identify the force systems for given conditions by applying the basics of mechanics.
CO2	Determine unknown force(s) of different engineering systems.
CO3	Apply the principles of friction in various conditions for useful purposes
CO4	Find the centroid and centre of gravity of various components in engineering systems.

Teaching Plan:

L. No.	Topic Covered	Proposed Date	Actual Date	Remarks
1	Unit – I Basics of mechanics and force system Significance and relevance of Mechanics, Applied mechanics, Statics, Dynamics.	28/1/25		
2	Space, time, mass, particle, flexible body and rigid body. Scalar and vector quantity, Units of measurement (SI units)	29/1/25		
3	Force – unit, representation as a vector and by Bow's notation, characteristics and effects of a force, Principle of transmissibility of force.	30/1/25		
4	Force system and its classification	01/2/25		
5	Resolution of a force - Orthogonal components of a force, moment of a force, Varignon's Theorem.	4/2/25		
6	Composition of forces – Resultant, analytical method for determination of resultant for concurrent, non-concurrent and parallel co-planar force systems	5/2/25		
7	Law of triangle, parallelogram and polygon of forces.	6/2/25		
8	Unit– II Equilibrium: Equilibrium and Equilibrant, Free body and Free body diagram, Analytical and graphical meth	11/2/25		
9	Lami's Theorem – statement and explanation, Application for various engineering	12/2/25		
10	Types of beam, supports (simple, hinged, roller and fixed) and loads acting on beam (vertical point load, uniformly distributed load),	13-15/2/25		
11	Beam reaction for cantilever, simply supported beam with or without overhang – subjected to combination of Point load and uniformly distributed load	18/2/25		
12	Beam reaction graphically for simply supported beam subjected to vertical point loads	19/2/25		
13	Beam reaction for cantilever, simply supported beam with or without overhang – subjected to combination of Point load and uniformly distributed load	20-25/2/25		
14	Unit– III Friction: Friction and its relevance in engineering,	27/2/25		
15	Types and laws of friction, limiting equilibrium, limiting friction, co-efficient of friction,	1/3/25		

16	Angle of friction, angle of repose, relation between coefficient of friction and angle of friction	4/3/25	
17	Equilibrium of bodies on level surface subjected to force parallel and inclined to plane.	5/3/25	
18	Equilibrium of bodies on inclined plane subjected to force parallel to the plane only.	6/3/25	
19	Equilibrium of bodies on level surface subjected to force parallel and inclined to plane. Equilibrium of bodies on inclined plane subjected to force parallel to the plane only.	11/3/25	
20	Equilibrium of bodies on level surface subjected to force parallel and inclined to plane. Equilibrium of bodies on inclined plane subjected to force parallel to the plane only.	12/3/25	
21	NUMERICAL PROBLEMS ON CHAPTER 1(REVISION)	13-15/3/25	
22	NUMERICAL PROBLEMS ON CHAPTER 2(REVISION)	18/3/25	
23	NUMERICAL PROBLEMS ON CHAPTER 3(REVISION)	19/3/25	
24	Unit- IV Centroid and centre of gravity	20/3/25	
25	Centroid of geometrical plane figures (square, rectangle, triangle)	22/3/25	
26	Centroid of geometrical plane figures (square, rectangle, triangle, circle, semiCIRCLE)	25/3/25	
27	Centroid of composite figures composed of not more than two geometrical figures.	26/3/25	
28	Centroid of composite figures composed of not more than two geometrical figures.	27-29/3/25	
29	Centroid of composite figures composed of not more than two geometrical figures. Centre of Gravity of simple solids (Cube cuboid, cone, cylinder, sphere, hemisphere)	1/4/25	
30	Centroid of composite figures composed of not more than two geometrical figures. Centre of Gravity of simple solids (Cube cuboid, cone, cylinder, sphere, hemisphere)	2/4/25	
31	Centroid of composite figures composed of not more than two geometrical figures. Centre of Gravity of simple solids (Cube cuboid, cone, cylinder, sphere, hemisphere)	3-5/4/25	

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 2025		
CT-II	Next 30% of the syllabus	3rd week of April 2025		
House Test	80% of the syllabus	2nd week of May 2025		

Lab Plan:

Exp. No.	Name of experiment	Actual date		Remarks
		G-1	G-2	
1	To study various equipments related to Engineering Mechanics.	29/1/25	23/1/25	
2	To find the M.A., V.R., Efficiency and law of machine for Differential Axle and Wheel.	5/2/25	4/1/25	
3	To find the M.A., V.R., Efficiency and law of machine for Simple Screw Jack.	12/2/25	11/1/25	
4	Derive Law of machine using Worm and worm wheel.	19/2/25	18/1/25	
5	Determine resultant of concurrent force system applying Law of Polygon of forces using forcetable.	5/3/25	25/2/25	
6	Determine resultant of concurrent force system graphically.	12/3/25	4/3/25	
7	Determine resultant of parallel force system graphically.	19/3/25	11/3/25	
8	Verify Lami's theorem.	26/3/25	18/3/25	
9	Study forces in various members of Jib crane.	2/4/25	25/3/25	
10	Determine support reactions for simply supported beam.	9/4/25	1-3-25	
11	Obtain support reactions of beam using graphical method..	16/4/25	15-4-25	
12	Determine coefficient of friction for motion on horizontal and inclined plane.	23/4/25	22-4-25	
13	Determine centroid of geometrical plane figure	30/4/25	29-4-25	



(Signature of Teacher)

(Harnam Singh)



(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	Study Scheme (Hrs/Week)	Marks in evaluation scheme	
			Internal Assessment	External Assessment
			Theory	Theory
1.	Environmental Science	2hr (Th)	40	60
Reference books			(i) S.C.Sharma MP.Poonia, Environmental Studies, KhannaPublishingHouse, New Delhi.	
			(ii)C.N. R. Rao, Understanding Chemistry, Universities Press (India) Pvt.Ltd., 2011	
			(iii)O.P.Gupta, Elements of Environmental Pollution Control, Khanna Publishing House, New Delhi	
			(iv)Environmental Science By Mr. Aman Saini and Manoj Saini ,Tru Edu. Publications.	

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 methods 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	29.01.2025		
2	Aquatic (Lentic and Lotic) and terrestrial ecosystem Carbon, Nitrogen, cycle	30.01.2025		
3	Sulphur, Phosphorus cycle	05.02.2025		
4	Global warming -Causes, effects, process Green House Effect, Ozone depletion.	06.02.2025		
5	Unit- 2 Air and, Noise Pollution Definition of pollution and pollutant, Natural and manmade sources of air pollution (Refriger- ants, I.C., Boiler) ,	13.02.2025		
6	Air Pollutants: Types, Particulate Pollutants: Effects	19.02.2025		
7	Control of air pollution(Bag filter, Cyclone separator, Electrostatic Precipitator).	20.02.2025		
8	Gaseous Pollution Control: Absorber, Catalytic Converter, Effects of air pollution due to Refrigerants, I.C., Boiler	27.02.2025		
9	Noise pollution: sources of pollution, measurement of pollution level, Effects of Noise pollution, Noise pollution (Regulation and Control) Rules, 2000	05.03.2025		
10	Unit- 3 Water and Soil Pollution Sources of water pollution, Types of water pollutants, Characteristics of water pollutants Turbidity, pH, total suspended solids, total solids BOD and COD: Definition, calculation.	06.03.2025		
11	WasteWater Treatment: Primary methods: sedimentation, froth floatation	12.03.2025		
12	Secondary methods: Activated sludge treatment, Trickling filter, Bioreactor,	13.03.2025		

13	Tertiary Method: Membrane separation technology, RO (reverse osmosis).	19.03.2025		
14	CLASS TEST - I	20.03.2025		
15	Causes, Effects and Preventive measures of Soil Pollution: Causes-Excessive use of Fertilizers, Pesticides and Insecticides, Irrigation, E-Waste	26.03.2025		
16	Unit- 4 Renewable sources of Energy Solar Energy: Basics of Solar energy. Flat plate collector (Liquid & Air). Theory of flat plate collector. Importance of coating. Advanced collector	27.03.2025		
17	Solar pond. Solar water heater, solar dryer. Solar stills.	02.04.2025		
18	Biomass: Overview of biomass as energy source. Thermal characteristics of biomass as fuel. Anaerobic digestion. Biogas production mechanism. Utilization and storage of biogas.	03.04.2025		
19	Wind energy: Current status and future prospects of wind energy. Wind energy in India. Environmental benefits and the problem of wind energy.	09.04.2025		
20	New Energy Sources: Need of new sources. Different types new energy sources, Applications of (Hydrogen energy, Ocean energy resources, Tidal energy conversion.)	10.04.2025		
21	Concept, origin and power plants of geothermal energy.	16.04.2025		
22	CLASS TEST - II	17.04.2025		
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	23.04.2025		

24	Collection and disposal: MSW (3R, principles, energy recovery, sanitary landfill), Hazardous.	24.04.2025		
25	Waste Air quality act 2004, air pollution control act 1981 and water pollution and control act 1996.	30.04.2025		
26	Structure and role of Central and state pollution control board.	14.05.2025		
27	Concept of Carbon Credit, Carbon Footprint	21.05.2025		
28	Environmental management in fabrication industry. ISO14000: Implementation in industries, Benefits.	22.05.2025		

House/ Class Test	Contents of syllabus covered	Proposed Date/Slot	Actual date	Remarks
CT-I	30% of the syllabus	20.03.2025		
CT-II	Next 30% of the syllabus	17.04.2025		
House Test	80% of the syllabus	2 nd week of May, 2025		
Assign ments	Contents of syllabus covered	Proposed Date/Slot	Actual date	Remarks
A-1	Ecosystem , Air and, Noise Pollution, Water and Soil Pollution.	13.03.2025 /26.03.2025		
A-2	Renewable sources of Energy Solid Waste Management, ISO 14000 & Environmental Management.	24.04.2025 /21.05.2025		

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 (Carpentry shop)


Trade : Civil. Engg.

Session: Jan-June 2025

Sem: 2nd

Sr. No	Name of Practical	Proposed Date	Actual Date	Remarks
1	(i) Demonstration of different wood working tools/Machines.	27-01-2025		
		31-01-25 01-02-25		
		3-2-25 7-2-25		
2	(ii) Demonstration of different wood working processes like Planing, Marking, Chiseling, grooving, truning of wood etc.	10-2-25 14-2-25 15-2-25		
		17-2-25 21-2-25 22-2-25		
		24-2-25 28-2-25 01-03-25		
3	One Simple Job involving any one joint like mortise and tenon joint.	3-3-25 7-3-25		
		10-3-25 15-3-25		
		17-3-25 21-3-25 22-3-25		
4	Practice on Dovetail, bridle and half lap joint etc.	24-3-25 28-3-25 29-3-25		
		4-4-25 5-4-25 28-4-25 2-5-25 3-5-25 19-5-25		
		7-4-25 11-4-25 19-4-25 5-5-25 9-5-25 23-5-25		
		21-4-25 25-4-25 26-4-25 16-5-25 17-5-25 24-5-25		


 Workshop Instr.
 (Teh Singh)


 Foreman Instr.
 (Narekh kumar)


 Workshop Supdt.


 HOD

Lesson Plan/Lab Plan (Electrical shop)

Trade : Civil. Engg.

Session: Jan-June 2025

Sem: 2nd

Sr. No	Name of Practical	Proposed Date	Actual Date	Remarks
1	(i) Demonstration of advance power tools, Pneumatic tools, Electrical wiring tools and accessories.	G-II 27-1-25 31-1-25 1-2-25		
		G-III 3-2-25 7-2-25		
		G-I 10-2-25 14-2-25 15-2-25		
2	(ii) Tools for cutting and drilling (iii) Demonstration of measurement of current, voltage, Power and energy.	G-II 17-2-25 21-2-25 22-2-25		
		G-III 24-2-25 28-2-25 1-3-25		
		G-I 3-3-25 7-3-25		
3	Practice of simple lamp circuit (iv) One lamp controlled by one switch by surface conduit wiring. (v) Lamp Circuits- Connection of lamp and socket by seprate switches.	G-II 10-3-25 15-3-25		
		G-III 17-3-25 21-3-25 22-3-25		
		G-I 24-3-25 28-3-25 29-3-25		
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 4-4-25 5-4-25 28-4-25 2-5-25 3-5-25 19-5-25		
		G-III 7-4-25 11-4-25 19-4-25 5-5-25 9-5-25 23-5-25		
		G-I 21-4-25 25-4-25 26-4-25 16-5-25 17-5-25 24-5-25		

Workshop Instr.

Foreman Instr.

(Nanesh Kumar)

Workshop Supdt.

HOD

App. Sci. & Hum.

Lesson Plan/Lab Plan (Sheet Metal shop)

Trade : Civil. Engg.

Session: Jan-June 2025

Sem: 2nd

Sr. No	Name of Practical	Proposed Date	Actual Date	Remarks
1	(i) Demonstration of different sheet metal tools/machines	Q-III 27-1-25		
		31-1-25		
		01-2-25		
		3-2-25		
		Q-I 7-2-25		
		Q-II 10-2-25		
2	(ii) Demonstration of different sheet metal operations like sheet cutting, bending, edging.	Q-III 14-2-25		
		15-2-25		
		17-2-25		
		21-2-25		
		22-2-25		
		Q-I 24-2-25		
3	Demonstarion of sheet metal operation like curling, lancing soldering, brazing and riveting.	Q-I 28-2-25		
		1-3-25		
		Q-II 3-3-25		
		7-3-25		
		Q-III 10-3-25		
		15-3-25		
4	One simple job involving sheet metal operation and soldering and riveting	Q-I 17-3-25		
		21-3-25		
		22-3-25		
		24-3-25		
		Q-II 28-3-25		
		29-3-25		
		Q-III 4-4-25	3-5-25	
		5-4-25	19-5-25	
		28-4-25		
		2-5-25		
Q-I 7-4-25	9-5-25			
11-4-25	23-5-25			
19-4-25				
5-5-25				
Q-II 21-4-25	17-5-25			
25-4-25	24-5-25			
26-4-25				
16-5-25				

Workshop Instr.

(Dandin Susrna)

Foreman Instr.

(None/Kumar)

Workshop Supdt.

HOD

App. Sci. & Hum.

LESSON PLAN

Program Name	DIPLOMA IN Comp 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	27.01.25		
2	Algebra of matrices	28.01.25		
3	Algebra of matrices	29.01.25		

4	Algebra of matrices	30.01.25		
5	Elementary properties of determinants up to 3rd order	01.02.25		
6	Elementary properties of determinants up to 3rd order	03.02.25		
7	Inverse of a matrix	05.02.25		
8	Inverse of a matrix	06.02.25		
9	Inverse of a matrix	10.02.25		
10	consistency of equations	11.02.25		
11	consistency of equations	13.02.25		
12	Cramer's rule	15.02.25		
13	Cramer's rule.	17.02.25		
14	matrix inverse method to solve a system of linear equations in 3 variables.	18.02.25		
15	matrix inverse method to solve a system of linear equations in 3 variables.	19.02.25		
16	matrix inverse method to solve a system of linear equations in 3 variables.	20.02.25		
17	Integral Calculus: Integration as inverse operation of differentiation	22.02.25		
18	Integration as inverse operation of differentiation	24.02.25		
19	Integration as inverse operation of differentiation	25.02.25		
20	Integration as inverse operation of differentiation	27.02.25		
21	Simple integration by substitution	01.03.25		
22	Simple integration by substitution	03.03.25		
23	Simple integration by substitution	04.03.25		
24	Simple integration by substitution	05.03.25		
25	Integration by parts	06.03.25		
26	Integration by parts	10.03.25		
27	Integration by parts	11.03.25		
28	Integration by partial fractions	12.03.25		
29	Integration by partial fractions	13.03.25		
30	integration by partial fractions	15.03.25		
31	Use of formulae	17.03.25		
32	Use of formulae	18.03.25		
33	Use of formulae	19.03.25		
34	Class test-I	20.03.25		
35	Applications of integration: Simple problem on evaluation of area bounded by a curve and axes.	22.03.25		
36	Simple problem on evaluation of area bounded by a curve and axes	24.03.25		
37	Simple problem on evaluation of area bounded by a curve and axes.	25.03.25		
38	Calculation of Volume of a solid formed by revolution of an area about axes.	26.03.25		
39	Calculation of Volume of a solid formed by revolution of an area about axes.	27.03.25		


	Coordinate Geometry. Equation of straight line in various standard forms	29.03.25		
41	Equation of straight line in various standard forms	01.04.25		
42	Equation of straight line in various standard forms	02.04.25		
43	Equation of straight line in various standard forms	03.04.25		
44	Inter section of two straight lines	05.04.25		
45	Angle between two lines	07.04.25		
46	Angle between two lines	08.04.25		
47	Parallel and perpendicular lines	09.04.25		
48	Parallel and perpendicular lines	10.04.25		
49	Perpendicular distance formula	16.04.25		
50	General equation of a circle and its characteristics	17.04.25		
51	Class test-II	19.04.25		
52	To find the equation of a circle when Centre and radius, are given	21.04.25		
53	To find the equation of a circle given three points lying on it	22.04.25		
54	To find the equation of a circle given three points lying on it	23.04.25		
55	To find the equation of a circle when coordinates of end points of a diameter are given	24.04.25		
56	Definition of conics (Parabola, Ellipse, Hyperbola)	26.04.25		
57	Parabola	28.04.25		
58	Ellipse	30.04.25		
59	Hyperbola	01.05.25		
60	Problems on conics when their foci, directrices or vertices are given.	03.05.25		
61	Problems on conics when their foci, directrices or vertices are given.	05.05.25		
62	Differential Equations: Order and degree of differential equation	06.05.25		
63	Solution of first order and first degree differential equation by variable separable method	07.05.25		
64	Solution of first order and first degree differential equation by variable separable method	08.05.25		
65	Solution of first order and first degree differential equation by variable separable method	19.05.25		
66	Solution of first order and first degree differential equation by variable separable method	20.05.25		
67	Solution of first order and first degree differential equation by variable separable method	21.05.25		
68	DCS	22.05.25		
69	DCS	24.05.25		
70	DCS	26.05.25		
71	DCS	27.05.25		
72	DCS	28.05.25		

Assignments:

Assignment	Contents of syllabus covered	Proposed Date	Actual date	Remarks
A-1	Determinants and Matrices, Integral Calculus	15.03.25		
A-2	Integral Calculus & Co-Ordinate Geometry	03.05.25		

House Test/Class Test:

House/Class Test	Contents of syllabus covered	Proposed Date	Actual date	Remarks
CT-I	30% of the syllabus	3 rd week of March 2024		
CT-II	Next 30% of the syllabus	3 rd week of April 2024		
House Test	80% of the syllabus	2nd week of May 2024		


Signature of Teacher

Dr. Keena Kumari


Signature of HOD