

# DYAL SINGH COLLEGE, KARNAL

## Lesson Plan

session 2022-23

Name of the Assistant/Associate Professor Rajesh Kumar

Class and Section: B.Sc NM A& B

Subject: Quantum and Laser Physics

Week	Date	Topics
1	01-Sep-22	Introduction of Syllabus
	02-Sep-22	Unit I: Origin quantum physics (Experimental basis) Overview, scale of quantum physics, boundary between classical and quantum phenomena
	03-Sep-22	Photon, Photoelectric effect, Compton effect (theory and result)
	04-Sep-22	<b>Sunday</b>
2	05-Sep-22	Introduction of Syllabus
	06-Sep-22	Unit I: Origin quantum physics (Experimental basis) Overview, scale of quantum physics, boundary between classical and quantum phenomena
	07-Sep-22	Photon, Photoelectric effect, Compton effect (theory and result)
	08-Sep-22	Frank- Hertz experiment, de-Broglie hypothesis. Davisson and Germer experiment
	09-Sep-22	Frank- Hertz experiment, de-Broglie hypothesis. Davisson and Germer experiment
	10-Sep-22	·G.P. Thomson experiment. Phase velocity, group velocity and their relation. Heisenberg's uncertainty principle
3	11-Sep-22	<b>Sunday</b>
	12-Sep-22	·G.P. Thomson experiment. Phase velocity, group velocity and their relation. Heisenberg's uncertainty principle
	13-Sep-22	Time energy and angular momentum, position uncertainty principle from de Broglie wave.
	14-Sep-22	Gamma Ray Microscope, Electron diffraction from a slit.

	15-Sep-22	Time energy and angular momentum, position uncertainty principle from de Broglie wave.
	16-Sep-22	Gamma Ray Microscope, Electron diffraction from a slit.
	17-Sep-22	revision of unit 1
	18-Sep-22	<b>Sunday</b>
4	19-Sep-22	Derivation of 1-D time-dependent Schrodinger wave equation
	20-Sep-22	Time-independent Schrodinger wave equation
	21-Sep-22	eigen values, eigen functions
	22-Sep-22	Derivation of 1-D time-dependent Schrodinger wave equation
	23-Sep-22	<b>Shaheedi Diwas</b>
	24-Sep-22	Time-independent Schrodinger wave equation
	25-Sep-22	<b>Sunday</b>
5	26-Sep-22	<b>Maharaja Agrasen Jayanti</b>
	27-Sep-22	wave functions and its significance
	28-Sep-22	Orthogonality and Normalization of function
	29-Sep-22	wave functions and its significance
	30-Sep-22	Orthogonality and Normalization of function
	01-Oct-22	concept of observer and operator
	02-Oct-22	<b>Sunday</b>
6	03-Oct-22	concept of observer and operator
	04-Oct-22	Expectation values of dynamical quantities, probability current density
	05-Oct-22	<b>Dusshera</b>
	06-Oct-22	Expectation values of dynamical quantities, probability current density
	07-Oct-22	Problems unit 1
	08-Oct-22	test unit 1
	09-Oct-22	<b>Sunday</b>
7	10-Oct-22	Unit II: Application of Schrodinger wave equation

	11-Oct-22	Free particle in one-dimensional box
	12-Oct-22	One dimensional step potential $E > V_0$ (Reflection and Transmission coefficient)
	13-Oct-22	<b>Karwachauth</b>
	14-Oct-22	Unit II: Application of Schrodinger wave equation
	15-Oct-22	Free particle in one-dimensional box
	16-Oct-22	<b>Sunday</b>
8	17-Oct-22	One dimensional step potential $E > V_0$ (Reflection and Transmission coefficient)
	18-Oct-22	Free particle in one-dimensional box
	19-Oct-22	One dimensional step potential $E < V_0$ (penetration depth calculation).
	20-Oct-22	One dimensional step potential $E > V_0$ (Reflection and Transmission coefficient)
	21-Oct-22	Free particle in one-dimensional box
	22-Oct-22	<b>Diwali holidays</b>
	23-Oct-22	<b>Sunday</b>
9	24-Oct-22	<b>Diwali holidays</b>
	25-Oct-22	<b>Diwali holidays</b>
	26-Oct-22	<b>Diwali holidays</b>
	27-Oct-22	One-dimensional potential barrier, $E < V_0$ (penetration or tunneling coefficient).
	28-Oct-22	One dimensional step potential $E > V_0$ (Reflection and Transmission coefficient)
	29-Oct-22	One dimensional step potential $E < V_0$ (penetration depth calculation).
	30-Oct-22	<b>Sunday</b>
10	31-Oct-22	Free particle in one-dimensional box
	#####	<b>Haryana day</b>
	#####	Solution of Schrodinger equation for harmonic oscillator
	#####	Solution of Schrodinger equation for harmonic oscillator
	#####	problems unit 2

	#####	test unit 2
	#####	<b>Sunday</b>
11	#####	problems unit 2
	#####	<b>Guru Nanak jayanti</b>
	#####	test unit 2
	#####	Unit III: Laser Physics –I
	#####	Absorption and emission of radiation
	#####	Main features of a laser: Directionality, high intensity, high degree of coherence
	#####	<b>Sunday</b>
	12	#####
#####		Absorption and emission of radiation
#####		Main features of a laser: Directionality, high intensity, high degree of coherence
#####		spatial and temporal coherence
#####		Einstein's coefficients and possibility of amplification
#####		momentum transfer, life time of a level
#####		<b>Sunday</b>
13		#####
	#####	Einstein's coefficients and possibility of amplification
	#####	momentum transfer, life time of a level
	#####	Fuchbauer landerburg formula
	#####	population inversion
	#####	resonance cavity
	#####	<b>Sunday</b>
	14	#####
#####		population inversion, resonance cavity, laser pumping
#####		homogeneous and inhomogeneous line broadening
#####		Threshold condition for laser emission
#####		line broadening mechanism
#####		Unit IV: Laser Physics – II He-Ne laser, RUBY laser
#####		<b>Sunday</b>

15	#####	house exam
	#####	house exam
	#####	house exam
	#####	house exam
	#####	house exam
	#####	house exam
	#####	<b>Sunday</b>
	#####	house exam
16	#####	Unit IV: Laser Physics – II He-Ne laser,RUBY laser
	#####	homogeneous and inhomogeneous line broadening
	#####	Optical properties of semiconductor
	16-Dec- 22	homogeneous and inhomogeneous line broadening
	17-Dec- 22	Optical properties of semiconductor
	18-Dec- 22	<b>Sunday</b>
	19-Dec- 22	Semiconductor laser
	20-Dec- 22	Applications of lasers in the field of medicine and industry
17	21-Dec- 22	Revision of Syllabus
	22-Dec- 22	Semiconductor laser
	23-Dec- 22	Applications of lasers in the field of medicine and industry
	24-Dec- 22	Revision of Syllabus

# DYAL SINGH COLLEGE, KARNAL

## Lesson Plan

session 2022-23

Name of the Assistant/Associate Professor : Dr. Rajni Seth

Class and Section: B.Sc NM A& B

Subject: Computer Programming and Thermodynamics

Week	Date	Topics
1	01-Sep-22	Introduction of Syllabus
	02-Sep-22	UNIT-1: Computer Programming Computer organization, Binary representation
	03-Sep-22	Algorithm development, Flow charts
	04-Sep-22	<b>Sunday</b>
2	05-Sep-22	Introduction of Syllabus
	06-Sep-22	UNIT-1: Computer Programming Computer organization, Binary representation
	07-Sep-22	Algorithm development, Flow charts
	08-Sep-22	FORTTRAN Preliminaries: Integer
	09-Sep-22	floating point arithmetic expression
	10-Sep-22	built in functions,
	11-Sep-22	<b>Sunday</b>
3	12-Sep-22	FORTTRAN Preliminaries: Integer
	13-Sep-22	floating point arithmetic expression
	14-Sep-22	built in functions,
	15-Sep-22	executable and non-executable statements
	16-Sep-22	input and output statements
	17-Sep-22	Formats, IF
	18-Sep-22	<b>Sunday</b>
4	19-Sep-22	executable and non-executable statements
	20-Sep-22	input and output statements
	21-Sep-22	Formats, IF
	22-Sep-22	DO statements
	23-Sep-22	<b>Shaheedi Diwas</b>
	24-Sep-22	GO TO statements
	25-Sep-22	<b>Sunday</b>
5	26-Sep-22	<b>Maharaja Agrasen Jayanti</b>
	27-Sep-22	DO statements
	28-Sep-22	GO TO statements
	29-Sep-22	Dimension arrays
	30-Sep-22	statement function
	01-Oct-22	function subprogram
	02-Oct-22	<b>Sunday</b>
6	03-Oct-22	Dimension arrays
	04-Oct-22	statement function
	05-Oct-22	<b>Dusshera</b>
	06-Oct-22	function subprogram

	07-Oct-22	Problems Unit 1
	08-Oct-22	Test Unit 1
	09-Oct-22	<b>Sunday</b>
7	10-Oct-22	Problems Unit 1
	11-Oct-22	Test Unit 1
	12-Oct-22	UNIT –2: Applications of FORTRAN programming Algorithm, Flow Chart and Programming for Print out of natural numbers
	13-Oct-22	<b>Karwachauth</b>
	14-Oct-22	UNIT –2: Applications of FORTRAN programming Algorithm, Flow Chart and Programming for Print out of natural numbers
	15-Oct-22	Range of the set of given numbers
	16-Oct-22	<b>Sunday</b>
8	17-Oct-22	Range of the set of given numbers
	18-Oct-22	Ascending and descending order
	19-Oct-22	Mean and standard deviation
	20-Oct-22	Range of the set of given numbers
	21-Oct-22	Ascending and descending order
	22-Oct-22	<b>Diwali holidays</b>
	23-Oct-22	<b>Sunday</b>
9	24-Oct-22	<b>Diwali holidays</b>
	25-Oct-22	<b>Diwali holidays</b>
	26-Oct-22	<b>Diwali holidays</b>
	27-Oct-22	Mean and standard deviation
	28-Oct-22	Least square fitting of curve
	29-Oct-22	Roots of quadratic equation
	30-Oct-22	<b>Sunday</b>
10	31-Oct-22	Least square fitting of curve
	01-Nov-22	<b>Haryana day</b>
	02-Nov-22	Roots of quadratic equation
	03-Nov-22	Product of two matrices
	04-Nov-22	Numerical integration Trapezoidal rule
	05-Nov-22	Simpson 1/3 rule
	06-Nov-22	<b>Sunday</b>
11	07-Nov-22	Product of two matrices
	08-Nov-22	<b>Guru Nanak jayanti</b>
	09-Nov-22	Numerical integration Trapezoidal rule, Simpson 1/3 rule
	10-Nov-22	UNIT-3: Thermodynamics-I Thermodynamic system and Zeroth law of thermodynamics. First law of thermodynamics and its limitations, reversible and irreversible process
	11-Nov-22	Second law of thermodynamics and its significance, Carnot theorem, Absolute scale of temperature
	12-Nov-22	Absolute Zero and magnitude of each division on work scale and perfect gas scale

	13-Nov-22	<b>Sunday</b>
12	14-Nov-22	UNIT-3: Thermodynamics-I Thermodynamic system and Zeroth law of thermodynamics. First law of thermodynamics and its limitations, reversible and irreversible process
	15-Nov-22	Second law of thermodynamics and its significance, Carnot theorem, Absolute scale of temperature
	16-Nov-22	Absolute Zero and magnitude of each division on work scale and perfect gas scale
	17-Nov-22	Joule's free expansion, , Joule Thomson effect, Joule-Thomson (Porous plug) experiment, conclusions and explanation, analytical treatment of Joule Thomson effect
	18-Nov-22	Entropy, calculations of entropy of reversible and irreversible process
	19-Nov-22	T-S diagram, entropy of a perfect gas
	20-Nov-22	<b>Sunday</b>
	13	21-Nov-22
22-Nov-22		Entropy, calculations of entropy of reversible and irreversible process
23-Nov-22		T-S diagram, entropy of a perfect gas
24-Nov-22		Nernst heat law(third law of thermodynamics)
25-Nov-22		Liquefaction of gases, (oxygen, air, hydrogen and helium)
26-Nov-22		Solidification of He below 4K
27-Nov-22		<b>Sunday</b>
14	28-Nov-22	Nernst heat law(third law of thermodynamics)
	29-Nov-22	Liquefaction of gases, (oxygen, air, hydrogen and helium)
	30-Nov-22	Solidification of He below 4K
	01-Dec-22	Cooling by adiabatic demagnetization.
	02-Dec-22	UNIT-4: Thermodynamics-II Derivation of Clausius-Clapeyron and Clausius latent heat equation and their significance,
	03-Dec-22	specific heat of saturated vapours,
	04-Dec-22	<b>Sunday</b>
15	05-Dec-22	house exam
	06-Dec-22	house exam
	07-Dec-22	house exam
	08-Dec-22	house exam
	09-Dec-22	house exam
	10-Dec-22	house exam
	11-Dec-22	<b>Sunday</b>
16	12-Dec-22	house exam



	13-Dec-22	development of Maxwell thermodynamical relations
	14-Dec-22	Thermodynamical functions: Internal energy (U), Helmholtz function (F), Enthalpy (H), Gibbs function (G) and the relations between them, derivation of Maxwell thermodynamical relations from thermodynamical functions,
	15-Dec-22	,Application of Maxwell relations: relations between two specific heats of gas, Derivation of Clausius-Clapeyron and Clausius equation, variation of intrinsic energy with volume for (i) perfect gas (ii) Vanderwall gas (iii) solids and liquids
	16-Dec-22	phase diagram and triple point of a substance
	17-Dec-22	derivation of Stefans law, adiabatic compression and expansion of gas & deduction of theory of Joule Thomson effect.
	18-Dec-22	<b>Sunday</b>
17	19-Dec-22	Cooling by adiabatic demagnetization.
	20-Dec-22	UNIT-4: Thermodynamics-II Derivation of Clausius-Clapeyron and Clausius latent heat equation and their significance,
	21-Dec-22	specific heat of saturated vapours,
	22-Dec-22	phase diagram and triple point of a substance
	23-Dec-22	development of Maxwell thermodynamical relations
	24-Dec-22	Thermodynamical functions: Internal energy (U)

Name of the teacher: <b>Dr. Devinder Singh</b> Class and Section: <b>B.Sc. - 5th Semester (A &amp; B)</b> Subject: <b>Nuclear Physics</b>		
<b>Week</b>	<b>Date</b>	<b>Topics</b>
1	01.09.2022 to 03.09.2022	Introduction, Nuclear composition - proton-electron hypothesis and proton-neutron hypothesis.
2	05.09.2022 to 10.09.2022	Nuclear mass and binding energy, systematics of nuclear binding energy, nuclear stability.
3	12.09.2022 to 17.09.2022	Nuclear size, spin, parity, statistics. Nuclear magnetic dipole moment and quadrupole moment.
4	19.09.2022 to 24.09.2022	Determination of nuclear mass by Bain-Bridge spectrometer, Bain-Bridge and Jordan mass spectrograph, Determination of charge by Mosley Law, Determination of size of nucleus by Rutherford Back Scattering
5	26.09.2022 to 01.10.2022	Alpha-disintegration and its theory. Energetics of alpha-decay. Origin of continuous beta spectrum (neutrino hypothesis), types of beta-decay and energetics of beta-decay.
6	03.10.2022 to 08.10.2022	Nature of gamma rays. Energetics of gamma rays. Interaction of heavy, charged particles (Alpha particles) Energies loss of heavy Charged particle (idea of Bethe formula, no derivation).
7	10.10.2022 to 15.10.2022	Range and straggling of alpha particles. Geiger-Nuttal law. Interaction of light charged particle (beta-particle). Energy loss of beta-particles(ionization). Range of electrons, absorption of beta particles.
8	17.10.2022 to 22.10.2022	Interaction of Gamma Ray: Passage of Gamma radiations through matter (Photoelectric. Compton and pair production effect) electron-positron annihilation. Absorption of Gamma rays (Mass attenuation coefficient) and its application.
9	27.10.2022 to 29.10.2022	Revision, Assignments, Test
10	31.10.2022 to 05.11.2022	Linear accelerator and Tandem accelerator.
11	07.11.2022 to 12.11.2022	Cyclotron and Betatron accelerators,

12	14.11.2022 to 19.11.2022	Ionization chamber, proportional counter. GM. Counter (detailed study),
13	21.11.2022 to 26.11.2022	Seintillation counter and semicounductor detector.
14	28.11.2022 to 03.12.2022	Nuclear reactions, Elastic scattering, Inelastic scattering, Nuclear disintegration, photonuclear reaction, Radiative capture Direct-reaction, Heavy ion reactions and spallation reactions.
15	05.12.2022 to 10.12.2022	Conservation laws, Q-value and reaction Threshold.
16	12.12.2022 to 17.12.2022	Nuclear fission and fusion reactors, (Principle, construction, working and uses }.

# DYAL SINGH COLLEGE, KARNAL

## Lesson Plan

session 2022-23

Name of the Assistant

Professor

Class and Section:

Subject:

Ms. Nidhi Jast

B.Sc NM A& B

Physics (Wave & Optics -I)

Week	Date	Topics
1	01-Sep-22	Introduction of Syllabus
	02-Sep-22	Unit-1: Interference I Interference by Division of Wave front: Young's double slit experiment
	03-Sep-22	Conditions of interference, coherence
	04-Sep-22	<b>Sunday</b>
2	05-Sep-22	Introduction of Syllabus
	06-Sep-22	Unit-1: Interference I Interference by Division of Wave front: Young's double slit experiment
	07-Sep-22	Conditions of interference, coherence
	08-Sep-22	Fresnel's biprism
	09-Sep-22	Applications of Fresnel's Biprism
	10-Sep-22	Lloyd's mirror
	11-Sep-22	<b>Sunday</b>
3	12-Sep-22	Difference between Bi-prism and Lloyd mirror fringes
	13-Sep-22	phase change on reflection
	14-Sep-22	Numerical Problems on Unit 1.
	15-Sep-22	Difference between Bi-prism and Lloyd mirror fringes
	16-Sep-22	phase change on reflection
	17-Sep-22	Numerical Problems on Unit 1.
	18-Sep-22	<b>Sunday</b>
4	19-Sep-22	Unit 2: Introduction Interference II Interference by Division of Amplitude
	20-Sep-22	Plane parallel thin film
	21-Sep-22	difference between interference and diffraction
	22-Sep-22	Unit 2: Introduction Interference II Interference by Division of Amplitude
	23-Sep-22	<b>Shaheedi Diwas</b>
	24-Sep-22	Plane parallel thin film
	25-Sep-22	<b>Sunday</b>
5	26-Sep-22	<b>Maharaja Agrasen Jayanti</b>
	27-Sep-22	production of colors in thin films

	28-Sep-22	classification of fringes in films
	29-Sep-22	production of colors in thin films
	30-Sep-22	classification of fringes in films
	01-Oct-22	Interference due to transmitted light and reflected light
	02-Oct-22	<b>Sunday</b>
6	03-Oct-22	Interference due to transmitted light and reflected light
	04-Oct-22	production of colors in thin films, classification of fringes in films
	05-Oct-22	<b>Dusshera</b>
	06-Oct-22	production of colors in thin films, classification of fringes in films
	07-Oct-22	Newton's rings due to reflected light
	08-Oct-22	Newton's rings due to transmitted light
	09-Oct-22	<b>Sunday</b>
7	10-Oct-22	Newton's rings due to reflected light
	11-Oct-22	Newton's rings due to transmitted light
	12-Oct-22	Applications of Newton's rings
	13-Oct-22	<b>Karwachauth</b>
	14-Oct-22	Applications of Newton's rings
	15-Oct-22	Interferometer: Michelson's interferometer
	16-Oct-22	<b>Sunday</b>
8	17-Oct-22	Interferometer: Michelson's interferometer
	18-Oct-22	applications of Michelson's interferometer (i) Standardization of a meter (ii) determination of wavelength.
	19-Oct-22	numerical Problems on Unit 2
	20-Oct-22	applications of Michelson's interferometer (i) Standardization of a meter (ii) determination of wavelength.
	21-Oct-22	numerical Problems on Unit 2
	22-Oct-22	<b>Diwali holidays</b>
	23-Oct-22	<b>Sunday</b>
	9	24-Oct-22
25-Oct-22		<b>Diwali holidays</b>
26-Oct-22		<b>Diwali holidays</b>
27-Oct-22		test of unit 1
28-Oct-22		Unit- 3: Introduction Diffraction I Fresnel's diffraction
29-Oct-22		Fresnel's assumptions
30-Oct-22		<b>Sunday</b>
10	31-Oct-22	test of unit 1

	#####	<b>Haryana day</b>
	#####	Unit- 3: Introduction Diffraction I Fresnel's diffraction
	#####	Fresnel's assumptions
	#####	half period zones
	#####	rectilinear propagation of light
	#####	<b>Sunday</b>
11	#####	rectilinear propagation of light
	#####	<b>Guru Nanak jayanti</b>
	#####	zone plate
	#####	half period zones
	#####	zone plate
	#####	Diffraction at a straight edge
	#####	<b>Sunday</b>
12	#####	half period zones
	#####	Diffraction at a straight edge
	#####	rectangular slit and circular aperture
	#####	rectangular slit and circular aperture
	#####	diffraction due to a narrow slit
	#####	diffraction due to a narrow wire
	#####	<b>Sunday</b>
13	#####	diffraction due to a narrow slit
	#####	diffraction due to a narrow wire
	#####	Numericals on unit 3
	#####	test of unit 3
	#####	Unit -4: Diffraction II Fraunhofer diffraction
	#####	single-slit diffraction
	#####	<b>Sunday</b>
14	#####	test of unit 3
	#####	Unit -4: Diffraction II Fraunhofer diffraction
	#####	single-slit diffraction
	#####	double-slit diffraction
	#####	N-slit diffraction
	#####	plane transmission grating spectrum
	#####	<b>Sunday</b>
15	#####	house exam
	#####	house exam
	#####	house exam
	#####	house exam
	#####	house exam

	#####	house exam
	#####	<b>Sunday</b>
16	#####	house exam
	#####	resolving power of telescope , grating
	#####	Rayleigh's criterion
	#####	double-slit diffraction
	#####	N-slit diffraction
	#####	plane transmission grating spectrum
	#####	<b>Sunday</b>
	#####	double-slit diffraction
	16-Dec-22	N-slit diffraction
	17-Dec-22	plane transmission grating spectrum
	18-Dec-22	<b>Sunday</b>
17	19-Dec-22	dispersive power of grating,
	20-Dec-22	resolving power of telescope , grating
	21-Dec-22	Revision of syllabus
	22-Dec-22	Revision of syllabus
	23-Dec-22	Revision of syllabus
	24-Dec-22	Revision of syllabus

# DYAL SINGH COLLEGE, KARNAL

## Lesson Plan

session 2022-23

Name of the Assistant/Associate

Professor

Dr. Rubi

Class and Section:

B.Sc NM A& B 1st sem

Physics : Classical Mechanics and theory of relativity, Properties of Matter and Kinetic Theory of Gases

Subject:

Week	Date	Topics
1	01-Sep-22	Introduction of Syllabus
	02-Sep-22	Basic Concepts of Classical Mechanics
	03-Sep-22	Mechanics of Single particle and Conservation theorms
	04-Sep-22	<b>Sunday</b>
2	05-Sep-22	Introduction of Syllabus
	06-Sep-22	Basic Concepts of Classical Mechanics
	07-Sep-22	Mechanics of Single particle and Conservation theorms
	08-Sep-22	conservation of total energy for single particle
	09-Sep-22	mechanics of system of particles
	10-Sep-22	conservation theorms of linear momentum and angular momentum for system of particles
	11-Sep-22	<b>Sunday</b>
3	12-Sep-22	conservation of total energy for single particle
	13-Sep-22	mechanics of system of particles
	14-Sep-22	conservation theorms of linear momentum and angular momentum for system of particles
	15-Sep-22	conservation theorem for total energy of system of particles
	16-Sep-22	centre of mass and equation of motion
	17-Sep-22	constrained motion
	18-Sep-22	<b>Sunday</b>
4	19-Sep-22	conservation theorem for total energy of system of particles
	20-Sep-22	centre of mass and equation of motion
	21-Sep-22	constrained motion
	22-Sep-22	test of unit 1
	23-Sep-22	<b>Shaheedi Diwas</b>
	24-Sep-22	Introduction of unit2: Generalized Notations
	25-Sep-22	<b>Sunday</b>
5	26-Sep-22	<b>Maharaja Agrasen Jayanti</b>
	27-Sep-22	test of unit 1
	28-Sep-22	Introduction of unit2: Generalized Notations
	29-Sep-22	Degrees of Freedom and Generalized Co-ordinates
	30-Sep-22	transformation equations
	01-Oct-22	generalized displacement, velocity and acceleration
	02-Oct-22	<b>Sunday</b>
6	03-Oct-22	Degrees of Freedom and Generalized Co-ordinates



	04-Oct-22	transformation equations
	05-Oct-22	<b>Dussehra</b>
	06-Oct-22	generalized momentum, force and potential
	07-Oct-22	Hamilton's variational principle
	08-Oct-22	lagrange's equation of motion from Hamilton's principle
	09-Oct-22	<b>Sunday</b>
7	10-Oct-22	generalized displacement, velocity and acceleration
	11-Oct-22	generalized momentum, force and potential
	12-Oct-22	Hamilton's variational principle
	13-Oct-22	<b>Karwachauth</b>
	14-Oct-22	linear harmonic oscillator, simple pendulum
	15-Oct-22	Atwood's machine
	16-Oct-22	<b>Sunday</b>
8	17-Oct-22	lagrange's equation of motion from Hamilton's principle
	18-Oct-22	linear harmonic oscillator, simple pendulum
	19-Oct-22	Atwood's machine
	20-Oct-22	problems of unit 2
	21-Oct-22	test of unit 2
	22-Oct-22	<b>Diwali holidays</b>
	23-Oct-22	<b>Sunday</b>
9	24-Oct-22	<b>Diwali holidays</b>
	25-Oct-22	<b>Diwali holidays</b>
	26-Oct-22	<b>Diwali holidays</b>
	27-Oct-22	introduction of unit 3: Theory of relativity
	28-Oct-22	frame of reference and limitations of Newton's law of motion
	29-Oct-22	Galilean transformations
	30-Oct-22	<b>Sunday</b>
10	31-Oct-22	introduction of unit 3: Theory of relativity
	01-Nov-22	<b>Haryana day</b>
	02-Nov-22	frame of reference and limitations of Newton's law of motion
	03-Nov-22	frame of reference with linear acceleration, classical relativity
	04-Nov-22	transformation equations for a frame of reference- inclined to an inertial frame
	05-Nov-22	transformation equations for a rotating frame of reference
	06-Nov-22	<b>Sunday</b>
11	07-Nov-22	Galilean transformations
	08-Nov-22	<b>Guru Nanak jayanti</b>
	09-Nov-22	frame of reference with linear acceleration, classical relativity
	10-Nov-22	non inertial frames
	11-Nov-22	the accelerated frame of reference

	12-Nov-22	the rotating frame of reference
	13-Nov-22	<b>Sunday</b>
12	14-Nov-22	transformation equations for a frame of reference- inclined to an inertial frame
	15-Nov-22	transformation equations for a rotating frame of reference
	16-Nov-22	non inertial frames
	17-Nov-22	effect of centrifugal and coriolis forces due to earth's rotation
	18-Nov-22	fundamental frame of reference
	19-Nov-22	michelson's morley experiment
	20-Nov-22	<b>Sunday</b>
	13	21-Nov-22
22-Nov-22		the rotating frame of reference
23-Nov-22		effect of centrifugal and coriolis forces due to earth's rotation
24-Nov-22		concept of Einstein's relativity
25-Nov-22		problems of unit3
26-Nov-22		test of unit3
27-Nov-22		<b>Sunday</b>
14	28-Nov-22	fundamental frame of reference
	29-Nov-22	michelson's morley experiment
	30-Nov-22	concept of Einstein's relativity
	01-Dec-22	introduction of unit 4
	02-Dec-22	lorentz transformation equations
	03-Dec-22	Applications of theory of relativity: Special theory of relativity, Lorentz co-ordinate and physical significance of Lorentz invariance, Length Contraction, Time Dilation, Twin Paradox, Velocity addition theorem
	04-Dec-22	<b>Sunday</b>
15	05-Dec-22	House examination
	06-Dec-22	House examination
	07-Dec-22	House examination
	08-Dec-22	House examination
	09-Dec-22	House examination
	10-Dec-22	House examination
	11-Dec-22	<b>Sunday</b>
16	12-Dec-22	House examination
	13-Dec-22	introduction of unit 4
	14-Dec-22	lorentz transformation equations
	15-Dec-22	Variation of mass with velocity, Mass energy equivalence, Transformation of relativistic momentum and energy,

	16-Dec-22	relation between relativistic momentum and energy, Mass, velocity, momentum and energy of zero rest mass.
	17-Dec-22	revision
	18-Dec-22	<b>Sunday</b>
	19-Dec-22	Applications of theory of relativity: Special theory of relativity, Lorentz co-ordinate and physical significance of Lorentz invariance, Length Contraction, Time Dilation, Twin Paradox, Velocity addition theorem
17	20-Dec-22	Variation of mass with velocity, Mass energy equivalence, Transformation of relativistic momentum and energy,
	21-Dec-22	relation between relativistic momentum and energy, Mass, velocity, momentum and energy of zero rest mass.
	22-Dec-22	problems of unit-4
	23-Dec-22	revision of full syllabus
	24-Dec-22	revision and class test

# DYAL SINGH COLLEGE, KARNAL

## Lesson Plan

Session 2022-23

Name of the Assistant/Associate

Professor

Ms. Gurpreet

Class and Section:

B.Sc. Non-Medical (Section-A& B)

Subject:

Paper-2 (Mechanics & Electricity)

Week	Date	Topics
1	01-Sep-22	Introduction of Syllabus and Scalar & Vector fields
	02-Sep-22	Gradient of a scalar and its physical significance
	03-Sep-22	Line, Surface and Volume integrals of a vector and their physical significance
	04-Sep-22	<b>Sunday</b>
2	05-Sep-22	Introduction of Syllabus and Scalar & Vector fields
	06-Sep-22	Gradient of a scalar and its physical significance
	07-Sep-22	Line, Surface and Volume integrals of a vector and their physical significance
	08-Sep-22	Divergence and curl of a vector & their physical significance
	09-Sep-22	Gauss's Divergence Theorem
	10-Sep-22	Stoke's Theorem
	11-Sep-22	<b>Sunday</b>
3	12-Sep-22	Divergence and curl of a vector & their physical significance
	13-Sep-22	Gauss's Divergence Theorem
	14-Sep-22	Stoke's Theorem
	15-Sep-22	Electric field, Derivation of Electric field from Potential as gradient, Electric Flux
	16-Sep-22	Derivation of Laplace and Poisson equations, Gauss's law
	17-Sep-22	Mechanical force of charged surface, Energy stored per unit volume in E.F.
	18-Sep-22	<b>Sunday</b>
4	19-Sep-22	Electric field, Derivation of Electric field from Potential as gradient,
	20-Sep-22	Derivation of Laplace and Poisson equations, Gauss's law
	21-Sep-22	Mechanical force of charged surface, Energy stored per unit volume in E.F.
	22-Sep-22	Test of Unit-1
	23-Sep-22	<b>Shaheedi Diwas</b>
	24-Sep-22	Introduction of Unit-2 : Connection between Electric & Magnetic Phenomenon
	25-Sep-22	<b>Sunday</b>
5	26-Sep-22	<b>Maharaja Agrasen Jayanti</b>
	27-Sep-22	Test of Unit-1
	28-Sep-22	Introduction of Unit-2 : Connection between Electric & Magnetic Phenomenon
	29-Sep-22	Magnetic Field, Magnetic flux, Magnetic force on moving charge, Lorentz Force

	30-Sep-22	Solenoidal nature of vector field, Properties of Magnetic Induction with proofs
	01-Oct-22	Introduction of Diamagnetic, Paramagnetic & Ferromagnetic Substances and some important terms
	02-Oct-22	<b>Sunday</b>
6	03-Oct-22	Magnetic Field, Magnetic flux, Magnetic force on moving charge, Lorentz Force
	04-Oct-22	Solenoidal nature of vector field, Properties of Magnetic Induction with proofs
	05-Oct-22	<b>Dussehra</b>
	06-Oct-22	Hysteresis loop, Hysteresis loss & its importance
	07-Oct-22	Theories of Magnetism : Langevin's Theory of Diamagnetism
	08-Oct-22	Langevin Theory of Paramagnetism
	09-Oct-22	<b>Sunday</b>
7	10-Oct-22	Introduction of Diamagnetic, Paramagnetic & Ferromagnetic Substances and some important terms
	11-Oct-22	Hysteresis loop, Hysteresis loss & its importance
	12-Oct-22	Theories of Magnetism : Langevin's Theory of Diamagnetism
	13-Oct-22	<b>Karwachauth</b>
	14-Oct-22	Domain Theory of Ferromagnetism : Curie-Weiss Law
	15-Oct-22	Numerical Problems of Unit-1 & Unit-2
	16-Oct-22	<b>Sunday</b>
8	17-Oct-22	Langevin Theory of Paramagnetism
	18-Oct-22	Domain Theory of Ferromagnetism : Curie-Weiss Law
	19-Oct-22	Problems of Unit-1
	20-Oct-22	Problems of Unit-2
	21-Oct-22	Test of Unit-2
	22-Oct-22	<b>Diwali holidays</b>
	23-Oct-22	<b>Sunday</b>
9	24-Oct-22	<b>Diwali holidays</b>
	25-Oct-22	<b>Diwali holidays</b>
	26-Oct-22	<b>Diwali holidays</b>
	27-Oct-22	Introduction of Unit-3 : Electromagnetic Theory, Maxwell's Equations
	28-Oct-22	Displacement current, Vector & Scalar Potentials
	29-Oct-22	Derivations of Maxwell's Equations & their Physical Significance
	30-Oct-22	<b>Sunday</b>
10	31-Oct-22	Introduction of Unit-3 : Electromagnetic Theory, Maxwell's Equations
	01-Nov-22	<b>Haryana day</b>
	02-Nov-22	Displacement current, Vector & Scalar Potentials
	03-Nov-22	Derivation of Maxwell's Equations in integral form & introduction of Electromagnetic waves
	04-Nov-22	Boundary Conditions at the interface of two different media
	05-Nov-22	Poynting Vector, Poynting Theorem & its derivation
	06-Nov-22	<b>Sunday</b>

11	07-Nov-22	Derivations of Maxwell's Equations & their Physical Significance
	08-Nov-22	<b>Guru Nanak jayanti</b>
	09-Nov-22	Derivation of Maxwell's Equations in integral form & introduction of Electromagnetic waves
	10-Nov-22	Revision of Unit-3
	11-Nov-22	Test of Unit-3
	12-Nov-22	Introduction of Unit-4 : Alternating Current, Direct Current
	13-Nov-22	<b>Sunday</b>
12	14-Nov-22	Boundary Conditions at the interface of two different media
	15-Nov-22	Poynting Vector, Poynting Theorem & its derivation
	16-Nov-22	Revision of Unit-3
	17-Nov-22	Mean value & Virtual Value of Alternating Current
	18-Nov-22	AC Circuit Analysis with Resistance, Inductance & Capacitance separately
	19-Nov-22	AC Circuit Analysis with Resistance & Inductance(LR), with Resistance & Capacitance(CR)
	20-Nov-22	<b>Sunday</b>
13	21-Nov-22	Test of Unit-3
	22-Nov-22	Introduction of Unit-4 : Alternating Current, Direct Current
	23-Nov-22	Mean value & Virtual Value of Alternating Current
	24-Nov-22	AC Circuit analysis with Capacitance & Inductance (LC)
	25-Nov-22	AC Circuit analysis of LCR Circuit
	26-Nov-22	Series Resonant Circuit
	27-Nov-22	<b>Sunday</b>
14	28-Nov-22	AC Circuit Analysis with Resistance, Inductance & Capacitance separately
	29-Nov-22	AC Circuit Analysis with Resistance & Inductance(LR), with Resistance & Capacitance(CR)
	30-Nov-22	AC Circuit analysis with Capacitance & Inductance (LC)
	01-Dec-22	Parallel Resonant Circuit
	02-Dec-22	Numerical Problems
	03-Dec-22	Sharpness of Resonance
	04-Dec-22	<b>Sunday</b>
15	05-Dec-22	House Exam
	06-Dec-22	House Exam
	07-Dec-22	House Exam
	08-Dec-22	House Exam
	09-Dec-22	House Exam
	10-Dec-22	House Exam
	11-Dec-22	<b>Sunday</b>
16	12-Dec-22	House Exam
	13-Dec-22	Revision of Unit-4
	14-Dec-22	Numerical Problems
	15-Dec-22	AC Circuit analysis of LCR Circuit
	16-Dec-22	Series Resonant Circuit
	17-Dec-22	Parallel Resonant Circuit

	18-Dec-22	Sunday
	19-Dec-22	Sharpness of Resonance
	20-Dec-22	Quality factor of Resonant Circuits
17	21-Dec-22	Test of Unit-4
	22-Dec-22	Quality factor of Resonant Circuits
	23-Dec-22	Revision of Unit-4
	24-Dec-22	Test of Unit-4

R. Arora