

# DYAL SINGH COLLEGE, KARNAL

## Lesson Plan

Name of the Associate Professor

session 2020-21

Prof. Rajesh Arora

Class and Section:

B.Sc NM A& B

Subject:

Quantum and Laser Physics , Atomic and Molecular Spectroscopy

Week	Days	Topics
1	Nov 2-7,2020	Overview, scale of quantum physics, boundary between classical and quantum, phenomena, Photon, Photoelectric effect, Compton effect (theory and result), Frank- Hertz experiment
2	Nov 9-14,2020	de-Broglie hypothesis. Davisson and Germer experiment, ·G.P. Thomson experiment. Phase velocity, group velocity and their relation. Heisenberg's uncertainty principle.
3	Nov. 16-21,2020	Time energy and angular momentum, position uncertainty. Uncertainty principle from de Broglie wave. (Wave-particle duality). Gamma Ray Microscope
4	Nov. 23-28,2020	Electron diffraction from a slit. Derivation of 1-D time-dependent Schrodinger wave equation (subject to force, free particle). Time-independent Schrodinger wave equation
5	Nov 30- Dec. 5,2020	eigen values, eigen functions, wave functions and its significance. Orthogonality and Normalization of function
6	Dec 7-12,2020	concept of observer and operator. Expectation values of dynamical quantities, probability current density
7	Dec. 14-19,2020	Application of Schrodinger wave equation: solution of Schrodinger wave equation, eigen functions, eigen values, quantization of energy and momentum, nodes and anti nodes, zero point energy
8	Dec 21-26, 2020	Application continued..

9	Dec 28 2020-Jan 2,2021	Absorption and emission of radiation, Main features of a laser: Directionality, high intensity, high degree of coherence
10	Jan 4-9,2021	spatial and temporal coherence, Einstein's coefficients and possibility of amplification, momentum transfer, life time of a level
11	Jan. 11-16,2021	kinetics of optical absorption ((two and three level rate equation, Fuchbauer landerburg formula).population inversion: A necessary condition for light amplification, resonance cavity
12	Jan 18-23, 2021	laser pumping, Threshold condition for laser emission, line broadening mechanism
13	Jan 25-30, 2021	homogeneous and inhomogeneous line broadening (natural, collision and Doppler broadening)
14	Feb 1-6, 2021	He-Ne laser and RUBY laser (Principle, Construction and working)
15	Feb 8-13,2021	Optical properties of semiconductor (Principle, Construction and working)
16	Feb 15-20, 2021	Applications of lasers in the field of medicine and industry.
17	April 15-17, 2021	Orbital magnetic dipole moment (Bohr megnaton), behavior of magnetic dipole in external magnetic filed; Larmors' precession and theorem. Penetrating and Non-penetrating orbits, Penetrating orbits on the classical model; Quantum defect
18	April 19-24,2021	spin orbit interaction energy of the single valance electron, spin orbit interaction for penetrating and non-penetrating orbits. quantum mechanical relativity correction, Hydrogen fine spectra
19	April 26- May 1,2021	Main features of Alkali Spectra and their theoretical interpretation, term series and limits, Rydeburg-Ritze combination principle, Absorption spectra of Alkali atoms.

20	May 3-8 ,2021	observed doublet fine structure in the spectra of alkali metals and its Interpretation, Intensity rules for doublets, comparison of Alkali spectra and Hydrogen spectrum .
21	May 10-15,2021	Essential features of spectra of Alkaline-earth elements, Vector model for two valence electron atom: application of spectra. Coupling Schemes;LS or Russell – Saunders Coupling Scheme and JJ coupling scheme, Interaction energy in L-S coupling (sp, pd configuration), Lande interval rule.
22	May 17-22,2021	equivalent and non-equivalent electrons, Two valence electron system-spectral terms of non-equivalent and equivalent electrons, comparison of spectral terms in L-S And J-J coupling
23	May 24-29,2021	Hyperfine structure of spectral lines and its origin; isotope effect, nuclear spin.
24	May 31- June 5,2021	Zeeman Effect (normal and Anomalous),Experimental set-up for studying Zeeman effect, Explanation of normal Zeeman effect(classical and quantum mechanical)
25	June 7-12,2021	Explanation of anomalous Zeeman effect(Lande g-factor), Zeeman pattern of D1 and D2 lines of Na atom, Paschen-Back effect of a single valence electron system
26	June 14-19, 2021	Sommerfeld's extension of Bohr's model, Sommerfeld relativistic correction, Shortcomings of Bohr-Sommerfeld theory
27	June 21-26,2021	Weak field Stark effect of Hydrogen atom Introduction of early observations, emission and absorption spectra, atomic spectra, wave number, spectrum of Hydrogen atom in Balmer series, Bohr atomic model(Bohr's postulates) , spectra of Hydrogen atom

28	June 28- July 3,2021	Sommerfeld's extension of Bohr's model, Sommerfeld relativistic correction, Shortcomings of Bohr-Sommerfeld theory
29	July 5-10,2021	variation in Rydberg constant due to finite mass, shortcomings of Bohr's theory, Wilson Sommerfeld quantization rule, de-Broglie interpretation of Bohr quantization law, Bohr's corresponding principle

# DYAL SINGH COLLEGE, KARNAL

## Lesson Plan

Name of the Associate Professor

session 2020-21

Class and Section:

Dr. Rajni Seth

B.Sc NM A& B

Subject:

Physics : Computer Programming and Thermodynamics, Statistical Physics

Week	Days	Topics
1	Nov 2-7,2020	Computer organization, Binary representation, Algorithm development, Flow charts and their interpretation.
2	Nov 9-14,2020	FORTRAN Preliminaries: Integer and floating point arithmetic expression, built in functions
3	Nov. 16-21,2020	executable and non-executable statements, input and output statements, Formats, IF, DO and GO TO statements
4	Nov. 23-28,2020	Dimension arrays, statement function and function subprogram.
5	Nov 30- Dec. 5,2020	Algorithm, Flow Chart and Programming for Print out of natural numbers
6	Dec 7-12,2020	Range of the set of given numbers, Ascending and descending order
7	Dec. 14-19,2020	Mean and standard deviation, Least square fitting of curve, Roots of quadratic equation
8	Dec 21-26, 2020	Product of two matrices, Numerical integration (Trapezoidal rule and Simpson 1/3 rule) .
9	Dec 28 2020-Jan 2,2021	Thermodynamic system and Zeroth law of thermodynamics. First law of thermodynamics and its limitations, reversible and irreversible process.
10	Jan 4-9,2021	Second law of thermodynamics and its significance, Carnot theorem, Absolute scale of temperature, Absolute Zero and magnitude of each division on work scale and perfect gas scale
11	Jan. 11-16,2021	Joule's free expansion, Joule Thomson effect, Joule-Thomson (Porous plug) experiment, conclusions and explanation, analytical treatment of Joule Thomson effect.
12	Jan 18-23, 2021	Entropy, calculations of entropy of reversible and irreversible process , T-S diagram, entropy of a perfect gas, Nernst heat law(third law of thermodynamics)

13	Jan 25-30, 2021	Liquefaction of gases, (oxygen, air, hydrogen and helium), Solidification of He below 4K, Cooling by adiabatic demagnetization.
14	Feb 1-6, 2021	Derivation of Clausius-Clapeyron and Clausius latent heat equation and their significance, specific heat of saturated vapours, phase diagrams and triple point of a substance, development of Maxwell thermodynamical relations
15	Feb 8-13, 2021	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
16	Feb 15-20, 2021	Application of Maxwell relations, derivation of Stefan's law, adiabatic compression and expansion of gas & deduction of theory of Joule Thomson effect.
17	April 15-17, 2021	Microscopic and Macroscopic systems, events-mutually exclusive, dependent and independent. Probability, statistical probability, A-priori Probability and relation between them, probability theorems
18	April 19-24, 2021	some probability considerations, combinations possessing maximum probability, combination possessing minimum probability, Tossing of 2, 3 and any number of Coins, Permutations and combinations
19	April 26- May 1, 2021	distributions of $N = 2, 3, 4$ ) distinguishable and indistinguishable particles in two boxes of equal size, Micro and Macro states, Thermodynamical probability, Constraints and Accessible states, Statistical fluctuations
20	May 3-8, 2021	general distribution of distinguishable particles in compartments of different sizes, Condition of equilibrium between two systems in thermal contact-- $\beta$ parameter, Entropy and Probability (Boltzmann's relation)
21	May 10-15, 2021	Postulates of statistical physics, Phase space, Division of Phase space into cells, three kinds of statistics, basic approach in three statistics. M. B. statistics applied to an ideal gas in equilibrium
22	May 17-22, 2021	speed distribution law & velocity distribution law. Expression for average speed, r.m.s. speed, average velocity, r. m. s. velocity, most probable energy & mean energy for Maxwellian distribution

# DYAL SINGH COLLEGE, KARNAL

2020-21

## Lesson Plan

23	May 24-29,2021	Need for Quantum Statistics: Bose-Einstein energy distribution law, Application of B.E. statistics to Planck's radiation law B.E. gas,
24	May 31- June 5,2021	F.D. gas and Degeneracy, Fermi energy and Fermi temperature, Fermi Dirac energy distribution law, Fermi Dirac gas and degeneracy,
25	June 7-12,2021	Zero point energy, Zero point pressure and average speed (at 0 K) of electron gas, Specific heat anomaly of metals and its solution
26	June 14-19, 2021	M.B. distribution as a limiting case of B.E. and F.D. distributions, Comparison of three statistics
27	June 21-26,2021	Dulong and Petit law. Derivation of Dulong and Petit law from classical physics
28	June 28- July 3,2021	Specific heat at low temperature, Einstein theory of specific heat Fermi energy and Fermi temperature, Fermi Dirac energy distribution law for electron gas in metals
29	July 5-10,2021	Criticism of Einstein theory, Debye model of specific heat of solids, success and shortcomings of Debye theory, comparison of Einstein and Debye theories. Degeneracy and B.E. Condensation, Fermi- Dirac energy distribution law

Name of the teacher:  
Class and Section:  
Subject:

**Dr. Devinder Singh**  
**B.Sc. - 5th Semester (A & B)**  
**Nuclear Physics**

<b>Week</b>	<b>Date</b>	<b>Topics</b>
1	02.11.2020 to 07.11.2020	Introduction, Nuclear composition - proton-electron hypothesis and proton-neutron hypothesis.
2	09.11.2020 to 14.11.2020	Nuclear mass and binding energy, systematics of nuclear binding energy, nuclear stability.
3	16.11.2020 to 21.11.2020	Nuclear size, spin, parity, statistics. Nuclear magnetic dipole moment and quadrupole moment.
4	23.11.2020 to 28.11.2020	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	30.11.2020 to 05.12.2020	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	07.12.2020 to 12.12.2020	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	14.12.2020 to 19.12.2020	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	21.12.2020 to 26.12.2020	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	28.12.2020 to 02.01.2021	Revision, Assignments, Test
10	04.01.2021 to 09.01.2021	Linear accelerator and Tandem accelerator.
11	11.01.2021 to 16.01.2021	Cyclotron and Betatron accelerators,



12	18.01.2021 to 23.01.2021	Ionization chamber, proportional counter. GM. Counter (detailed study),
13	25.01.2021 to 30.01.2021	Scintillation counter and semiconductor detector.
14	01.02.2021 to 06.02.2021	Nuclear reactions, Elastic scattering, Inelastic scattering, Nuclear disintegration, photonuclear reaction, Radiative capture Direct-reaction, Heavy ion reactions and spallation reactions.
15	08.02.2021 to 13.02.2021	Conservation laws, Q-value and reaction Threshold.
16	15.02.2021 to 20.02.2021	Nuclear fission and fusion reactors, (Principle, construction, working and uses).

**DYAL SINGH COLLEGE, KARNAL**  
2020-21  
**Lesson Plan**

Name of the teacher: **Dr. Devinder Singh**  
Class and Section: **B.Sc. - 6th Semester (A & B)**  
Subject: **Solid State and Nano Physics**

Week	Date	Topics
1	15.04.2021 to 17.04.2021	Crystalline and glassy forms, liquid crystals, crystal structure, periodicity, lattice and basis.
2	19.04.2021 to 24.04.2021	Crystal translational vectors and axes. Unit cell and Primitive cell, Wigner Seitz primitive cell, Symmetry operations for a two and three dimensional crystal.
3	26.04.2021 to 01.05.2021	Bravais lattices in two and three dimensions. Crystal planes and Miller indices, Interplaner spacing.
4	03.05.2021 to 08.05.2021	Crystal structures of Zinc Sulphide, Sodium Chloride and Diamond.
5	10.05.2021 to 15.05.2021	X-ray diffraction, Bragg's law and experimental X-ray diffraction methods.

6	17.05.2021 to 22.05.2021	K-space and reciprocal lattice and its physical significance.
7	24.05.2021 to 29.05.2021	Reciprocal lattice vectors, need of reciprocal lattice.
8	31.05.2021 to 05.06.2021	Reciprocal lattice to a s.c. lattice, b.c.c. lattice and f.c.c lattice.
9	07.06.2021 to 12.06.2021	Revision, Assignments, Test
10	14.06.2021 to 19.06.2021	Historical introduction, Survey of superconductivity, Super conducting systems, High $T_c$ Super conductors.
11	21.06.2021 to 26.06.2021	Isotopic Efect, Critical Magnetic Field, Meissner Effect, London Theory and Pippards' equation.
12	28.06.2021 to 03.07.2021	Classification of Superconductors (Type I and Type II), BCS Theory of Superconductivity, Flux quantization.
13	05.07.2021 to 10.07.2021	Josephson Effect (AC and DC), Practical applications of superconductivity and their limitations, Power application of superconductors.

# DYAL SINGH COLLEGE, KARNAL

## Lesson Plan

session 2020-21

Name of the Assistant Professor

Dr. Ambika Rani

Class and Section:

B.Sc NM A& B (1st sem & 2nd sem)

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

Subject:

Week	Days	Topics
1	Nov 2-7,2020	Basic concepts of Classical mechanics Mechanics of single and system of particles, Conversion law of linear momentum
2	Nov 9-14,2020	Angular momentum and mechanical energy for a particle and a system of particles, Centre of Mass and equation of motion, Constrained Motion
3	Nov. 16-21,2020	Generalized Notations Degrees of freedom and Generalized coordinates,
4	Nov. 23-28,2020	Transformation equations, Generalized Displacement, Velocity, Acceleration, Momentum
5	Nov 30- Dec. 5,2020	Force and Potential, Hamilton's variational principle
6	Dec 7-12,2020	Lagrange's equation of motion from Hamilton's principle, Linear Harmonic oscillator
7	Dec. 14-19,2020	Simple pendulum, Atwood's machine
8	Dec 21-26, 2020	Frame of reference, limitation of Newton's law of motion, Inertial frame of reference, Galilean transformation
9	Dec 28 2020-Jan 2,2021	Frame of reference with linear acceleration, Classical relativity- Galilean invariance
10	Jan 4-9,2021	Transformation equation for a frame of reference-inclined to an inertial frame and Rotating frame of reference,
11	Jan. 11-16,2021	Non-inertial frames-The accelerated frame of reference and rotating frame of reference , Effect of centrifugal and coriolis forces due to Earth's rotation, Fundamental frame of reference, Michelson- Morley's experiment,concept of Einstein's relativity.

12	Jan 18-23, 2021	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
13	Jan 25-30, 2021	theorem, Variation of mass with velocity, Mass energy equivalence, Transformation of relativistic momentum and energy,
14	Feb 1-6, 2021	relation between relativistic momentum and energy, Mass, velocity, momentum and energy of zero rest mass.
15	Feb 8-13,2021	revision of syllabus
16	Feb 15-20, 2021	revision of syllabus
17	April 15-17, 2021	Rotation of rigid body, Moment of inertial, Torque, angular momentum, Kinetic Energy of rotation. Theorem of perpendicular and parallel axes (with proof)
18	April 19-24,2021	Moment of inertia of solid sphere, hollow sphere, spherical shell, solid cylinder
19	April 26- May 1,2021	hollow cylinder and solid bar of rectangular cross-section, Fly wheel
20	May 3-8 ,2021	Moment of inertia of an irregular body, Acceleration of a body rolling down on an inclined plane
21	May 10-15,2021	Elasticity, Stress and Strain, Hook's law, Elastic constant and their relations, Poisson's ratio, Torsion of cylinder and twisting couple
22	May 17-22,2021	Determination of coefficient of modulus of rigidity for the material of wire by Maxwell's needle, Bending of beam
23	May 24-29,2021	Cantilever and Centrally loaded beam, Determination of Young's modulus for the material of the beam and Elastic constants for the material of the wire by Searle's method.
24	May 31- June 5,2021	Assumption of Kinetic theory of gases, pressure of an ideal gas (with derivation), Kinetic interpretation of Temperature
25	June 7-12,2021	Ideal Gas equation, Degree of freedom, Law of equipartition of energy and its application for specific heat of gases
26	June 14-19, 2021	Real gases, Vander wall's equation, Brownian motion( Qualitative)

27	June 21-26,2021	Maxwell's distribution of speed and velocities (derivation required),Experimental verification of Maxwell's law of speed distribution
28	June 28- July 3,2021	most probable speed, average and r.m.s. speed, Mean free path, Transport of energy and momentum, Diffusion of gases
29	July 5-10,2021	revision of syllabus

# DYAL SINGH COLLEGE, KARNAL

## Lesson Plan

Name of the Assistant Professor

session 2020-21

Class and Section:

Ms. Nidhi Jast

B.Sc NM A& B

Subject:

Physics (Wave & Optics )

Week	Days	Topics
1	Nov 2-7,2020	Interference by Division of Wave front: Young's double slit experiment, Coherence, Conditions of interference
2	Nov 9-14,2020	Fresnel's biprism and its applications to determine the wavelength of sodium light and thickness of a mica sheet
3	Nov. 16-21,2020	Lloyd's mirror, Difference between Bi-prism and Llyod mirror fringes,
4	Nov. 23-28,2020	phase change on reflection, problems discussion, numericals
5	Nov 30- Dec. 5,2020	Interference by Division of Amplitude: Plane parallel thin film, production of colors in thin films
6	Dec 7-12,2020	classification of fringes in films, Interference due to transmitted light and reflected light, wedge shaped film
7	Dec. 14-19,2020	Newton's rings, it's applications
8	Dec 21-26, 2020	Interferometer: Michelson's interferometer and its applications
9	Dec 28 2020-Jan 2,2021	Fresnel's diffraction: Fresnel's assumptions and half period zones
10	Jan 4-9,2021	rectilinear propagation of light, zone plate
11	Jan. 11-16,2021	diffraction at a straight edge, rectangular slit and circular aperture, narrow slit and wire
12	Jan 18-23, 2021	Fraunhoffer diffraction: single-slit diffraction, double-slit diffraction, N-slit diffraction, plane transmission grating spectrum
13	Jan 25-30, 2021	dispersive power of grating, limit of resolution, Rayleigh's criterion, resolving power of telescope and a grating
14	Feb 1-6, 2021	prism and grating spectra
15	Feb 8-13,2021	revision

16	Feb 15-20, 2021	Polarization: Polarisation by reflection, refraction and scattering, Malus Law, Phenomenon of double refraction
17	April 15-17, 2021	Huygen's wave theory of double refraction (Normal and oblique incidence), Analysis of polarized Light
18	April 19-24,2021	Nicol prism, Quarter wave plate and half wave plate, production and detection of (i) Plane polarized light (ii) Circularly polarized light and (iii) Elliptically polarized light
19	April 26- May 1,2021	Optical activity, Fresnel's theory of optical rotation, Specific rotation, Polarimeters (half shade and Biquartz)
20	May 3-8 ,2021	Fourier theorem and Fourier series, evaluation of Fourier coefficient, importance and limitations of Fourier theorem
21	May 10-15,2021	even and odd functions, Fourier series of functions $f(x)$ between (i) 0 to $2\pi$ , (ii) $-\pi$ to $\pi$ , (iii) 0 to $\pi$
22	May 17-22,2021	(iv) $-L$ to $L$ , complex form of Fourier series, Application of Fourier theorem for analysis of complex waves
23	May 24-29,2021	half and full wave rectifier outputs
24	May 31- June 5,2021	Parseval identity for Fourier Series, Fourier integrals,Fourier transforms and its properties
25	June 7-12,2021	Application of Fourier transform (i) for evaluation of integrals, (ii) for solution of ordinary differential equations
26	June 14-19, 2021	FT of $f(x)= e^{-x^2/2}$ , problems discussion and numerical
27	June 21-26,2021	Matrix methods in paraxial optics, effects of translation and refraction,derivation of thin lens and thick lens formulae, unit plane, nodal planes, system of thin lenses.
28	June 28- July 3,2021	Optical fiber, Critical angle of propagation, Mode of Propagation, Acceptance angle, Fractional refractive index change

29	July 5-10,2021	Numerical aperture, Types of optics fiber, Normalized frequency, Pulse dispersion, Attenuation, Applications, Fiber optic Communication, Advantages
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# DYAL SINGH COLLEGE, KARNAL

## Lesson Plan

session 2020-21

Name of the Assistant Professor

Dr. Rubi

Class and Section:

B.Sc NM A& B 1st year

Subject:

Physics ( Vector background and Electric field, semiconductor devices )

Week	Days	Topics
1	Nov. 2-7,2020	Gradient of a scalar and its physical significance, Line, Surface and Volume integrals of a vector and their physical significance
2	Nov. 9-14, 2020	Flux of a vector field, Divergence and curl of a vector and their physical significance, Gauss's divergence theorem
3	Nov.16-21 , 2020	Stoke's theorem. Derivation of electric field E from potential as gradient
4	Nov. 23-28, 2020	Derivation of Laplace and Poisson equations, Electric flux, Gauss's Law
5	Nov. 30-Dec. 5,2020	Mechanical force of charged surface, Energy per unit volume.
6	Dec.7-12, 2020	Magnetic induction, Magnetic flux, Solenoidal nature of vector field of induction, properties of B
7	Dec.14-19 , 2020	Electronic theory of dia and paramagnetism, Domain theory of ferromagnetism (Langevin's theory)
8	Dec.21- 24, 2020	Cycle of magnetization- hysteresis,loop ( Energy dissipation, Hysteresis loss and importance of Hysteresis Curve)
9	Dec 27, 2020 - Jan 2,2021	Maxwell equations and their derivations, Displacement current, Vector and Scalar potentials
10	Jan 4-9, 2021	Boundary conditions at interface between two different media, Poynting vector and Poynting theorem.
11	Jan.11-16, 2021	A.C. circuit analysis using complex variable with (a) Capacitance and Resistance (CR)
12	Jan. 18-23, 2021	(b) Resistance and Inductance (LR) (c) Capacitance and Inductance (LC),and (d) Capacitance, Inductance and Resistance (LCR)
13	Jan. 25-30, 2021	numerical problems
14	Feb1-6, 2021	Series and parallel resonance circuit, Quality factor (sharpness of resonance).
15	Feb. 8-13,2021	revision of syllabus
16	Feb. 15-20, 2021	revision of syllabus
	<b>2nd sem</b>	
1	April 15-17, 2021	Energy bands in solids, Intrinsic and extrinsic semiconductors, carrier mobility and electrical resistivity of semiconductors

2	April 19-24, 2021	Hall effect, p-n junction diode and their characteristics,
3	April 26-May 1,2021	Zener and Avalanche breakdown, Zener diode, Zener diode as a voltage regulator
4	May 3-8,2021	Light emitting diodes (LED), Photoconduction in semiconductors, Photodiode, Solar Cell
5	May 10-15,2021	p-n junction as a rectifier, half wave and full wave rectifiers
6	May 17-22,2021	filters (series inductor, shunt capacitance, L-section or choke, n and R.C. filter circuits)
7	May 24-29, 2021	Transistors : Junction transistors, Working of NPN and PNP transistors
8	May 31, June 1-5,2021	Three configurations of transistor (C-B, C-E, C-C modes),Common base, common emitter and common collector characteristics of transistor
9	june 7-12, 2021	Constants of a transistor and their relation,Advantages and disadvantages of C-E configuration
10	June 14-19, 2021	D.C. load line .Transistor biasing; various methods of transistor biasing and stabilization,Amplifiers, Classification of amplifiers
11	June 21-26, 2021	common base and common emitter amplifiers, coupling of amplifiers,various methods of coupling
12	June 28-July 3,2021	Resistance- Capacitance (RC), coupled amplifier (two stage, concept of band width, no derivation),Feedback in amplifiers, advantages of negative feedback, emitter follower, distortion in amplifiers
13	July 5-10,2021	Oscillators, Principle of oscillation, classification of oscillators,Tuned collector common emitter oscillator, Hartley oscillator, C.R.O. (Principle and Working).

R. Arora