E.M. GOPALAKRISHNA KONE YADAVA WOMEN'S COLLEGE

An Autonomous Institution –Affiliated to Madurai Kamaraj University
Re-accredited (3rd Cycle) with Grade A+ & CGPA 3.51 by NAAC

LESSON PLAN
2022-2023

DEPARTMENT OF **PHYSICS**

(UG –Even Semester)

E.M.GOPALAKRISHNA KONE YADAVA WOMEN'S COLLEGE

An Autonomous Institution –Affiliated to Madurai Kamaraj University
Re-accredited (3rd Cycle) with Grade A+ and CGPA 3.51 by NAAC

LESSON PLAN
2022-2023

Class : I B.Sc Physics **Semester : II**
Sub. Code : 22OUPH21
Title of the Paper: Heat and Thermodynamics **Total Hours: 60 Hours**

Month	Unit	Description of the Syllabus	Hours Allocated	Teaching Mode & Methods	Course Teacher Signature
December	I	Calorimetry Definitions – Newton's law of cooling-Specific heat of liquid by Joule's electrical method –Two Specific heats(C_p&C_V) of a gas(Mayer's relation) – Specific heat of a gas at constant volume by Joly's Differential Steam Calorimeter-Specific heat of a gas at constant pressure by Regnault's method- Dulong and Petit's law.	12	Chalk & Talk	E. Chris Monica
January	II	**Transmission of Heat and Radiation** Introduction – Coefficient of thermal conductivity- Lee's disc method for bad conductors-Spherical shell method (Radial flow of heat)- Cylindrical flow of heat - Thermal Radiation – Applications of heat radiation - Blackbody-Black body in practice-Stefan-Boltzmann law-Wien's Displacement law- Rayleigh-Jeans law-Planck's Radiation law-Planck's Quantum Postulates-Experimental verification of Stefan's law.	12	Chalk & Talk	E. Chris Monica.
February	III	**Low Temperature physics** Introduction-Liquefaction of air Linde's Process-Principle of Cascaded cooling Liquefaction of oxygen-Liquefaction of Hydrogen- Liquefaction of Helium (k.Onne's method)-Helium I &Helium II	12	Chalk & Talk	
March	IV	**Kinetic Theory of Gas** Kinetic model (Postulates of kinetic theory of gases)-Degrees of freedom - Maxwell's law of equipartition of energy- Specific heats of Mono –Di and polyatomic gas-Adiabatic Expansion of an Ideal gas-Mean free path.	12	Chalk & Talk	E. Chris Monica
April	V	**Thermodynamics** First Law of Thermodynamics- Adiabatic process-Isothermal process-Carnot's Ideal heat engine - Second Law of thermodynamics- change in entropy – Change in Entropy in adiabatic process- change of entropy in reversible cycle- change of entropy in irreversible process–Relation of thermodynamical Potentials with their variables(Maxwell's equations).	12	Chalk & Talk	

Signature of the HOD

Signature of the Principal

PRINCIPAL I/C
E.M.G. YADAVA WOMEN'S COLLEGE
MADURAI-625014

E.M.GOPALAKRISHNA KONE YADAVA WOMEN'S COLLEGE

An Autonomous Institution –Affiliated to Madurai Kamaraj University
Re-accredited (3rd Cycle) with Grade A+ and CGPA 3.51 by NAAC

LESSON PLAN
2022-2023

Class : I B.Sc Physics | **Semester : II**

Sub. Code : 22OUPHSE21 | **Total Hours : 30 Hours**

Title of the Paper: Basic Instrumentation Skill

Month	Unit	Description of the Syllabus	Hours Allocated	Teaching Mode & Methods	Course Teacher Signature
Dec	I	**Ammeter, Voltmeter, Ohmmeter-**Ammeter – DC voltmeter –Digital voltmeter-Ohmmeter-Series type ohmmeter – shunt type ohmmeter.	6	Chalk & Talk	P.R.
January	II	**Multimeter-**Digital multimeter – Measurementofresistance – measurement of inductance–measurementof capacitance – measurement of Q	6	Chalk & Talk	P.R.
February	III	**Transducer** Introduction-Capacitive transducer-Inductive transducer-Linear variable differential transducers-Oscillation transducers-Potentiometric transducer-Resistance thermometer.	6	Chalk & Talk	P.R.
March	IV	**Cathode ray oscilloscope-**CRO - Vertical and horizontal voltage amplifiers- Power supply circuits– Cathode ray tube – Special Oscilloscopes- Applications of CRO.	6	Chalk & Talk	
April	V	**Measuring Instruments-** Frequency meter –Time meter-Energy meter –Power meter –Watt meter – Electrodynamometer Watt meter.	6	Chalk & Talk	

Signature of the HOD

Signature of the Principal

PRINCIPAL I/C
E.M.G. YADAVA WOMEN'S COLLEGE
MADURAI-[illegible]14

E.M.GOPALAKRISHNA KONE YADAVA WOMEN'S COLLEGE

An Autonomous Institution –Affiliated to Madurai Kamaraj University
Re-accredited (3rd Cycle) with Grade A+ and CGPA 3.51 by NAAC

LESSON PLAN
2022-2023

Class : I B.Sc Physics | **Semester : II**
Sub. Code : 22OUPHSE22 | **Total Hours : 60 Hours**
Title of the Paper: Renewable Energy And Energy Harvesting

Month	Unit	Description of the Syllabus	Hours Allocated	Teaching Mode & Methods	Course Teacher Signature
Dec	I	**Solar Energy** Introduction –The Sun – The Earth – Sun Earth radiation spectrum-Solar Collectors – Flat plate collector – solar water heater – Solar cooker – Box type solar cooker – Paraboloidal dish type solar cooker – Solar PV systems – Classification – Stand-alone solar PV system- Grid interactive solar PV system.	6	Chalk & Talk	B. Subha
January	II	**Wind Energy Harvesting** Origin of Winds –Major application of wind power Wind Turbine siting – Horizontal axis wind turbine (HAWT) - Vertical axis wind turbine (VAWT) – Effects of wind speed and grid condition.	6	Chalk & Talk	B. Subha
February	III	**Ocean energy:** Introduction – Tidal energy- Origin and nature of tidal energy – Limitations of tidal energy – Tidal energy technology – Tidal range power.	6	Chalk & Talk	K Sri Iswarya
March	IV	**Biomass energy:** Introduction – Photosynthesis process- Biofuels – Biomass resources – Biomass conversion technologies - classification of Biogas plants.	6	Chalk & Talk	K Sri Iswarya
April	V	**Geothermal energy:** Introduction – Applications- origin and distribution of geothermal energy – Types of geothermal resources – Geothermal energy in india.	6	Chalk & Talk	K.S. Iswarya B. Subha

Signature of the HOD

Signature of the Principal

PRINCIPAL VC
E.M.G. YADAVA WOMEN'S COLLEGE
MADURAI-625014

E.M.GOPALAKRISHNA KONE YADAVA WOMEN'S COLLEGE

An Autonomous Institution –Affiliated to Madurai Kamaraj University
Re-accredited (3rd Cycle) with Grade A+ and CGPA 3.51 by NAAC

LESSON PLAN
2022-2023

Class : I B.Sc Physics
Sub. Code : 22OUPHID2
Title of the Paper: Astrophysics

Semester : II
Total Hours : 30 Hours

Month	Unit	Description of the Syllabus	Hours Allocated	Teaching Mode & Methods	Course Teacher Signature
December	I	**History of astronomy** Acient Astronomy – Surya sidhanta – Modern Astronomy – Tycho Brahe – John Kepler – Galileo – Sir Isaac Newton – Edmund Halley – M.Leavitt.	6	Chalk & Talk	E. chris monica
January	II	**The earth** The zones of earth- shape of the earth- radius of the earth- rotation of earth-Foucault's pendulum experiment-gyroscope experiment.	6	Chalk & Talk	E. chris monica
February	III	**The moon** Introduction- phases of moon- successive phases of moon- lunar librations- summer and winter full moons- path of the moon with respect to the sun- Surface structure of the moon- The tides.	6	Chalk & Talk	E. chris monica
March	IV	**The stellar universe** Introduction- Stellar motion- Solar motion- Constellation- The milky way-survey of constellations-winter constellations-spring constellations-summer constellations-autumn constellations	6	Chalk & Talk	E. chris monica
April	V	**Stars** Introduction- Distance of stars- Magnitude of stars- Absolute magnitudes- The colour and size of the stars- Star clusters.	6	Chalk & Talk	E. chris monica

Signature of the HOD

Signature of the Principal

PRINCIPAL I/C
E.M.G. YADAVA WOMEN'S COLLEGE
MADURAI-625014

E.M.GOPALAKRISHNA KONE YADAVA WOMEN'S COLLEGE

An Autonomous Institution –Affiliated to Madurai Kamaraj University
Re-accredited (3rd Cycle) with Grade A+ and CGPA 3.51 by NAAC

LESSON PLAN
2022-2023

Class : II B.Sc Physics
Sub. Code : 21P41 **Semester : IV**
Title of the Paper: Optics **Total Hours : 60 Hours**

Month	Unit	Description of the Syllabus	Hours Allocated	Teaching Mode & Methods	Course Teacher Signature
December	I	**Geometrical optics:** Introduction-Dispersion-Angular and Chromatic Dispersions-Deviation without Dispersion-Dispersion without Deviation-Aberration-First order theory-Third order theory-Spherical aberration-Chromatic Aberration-Chromatic Aberration in a Lens-Objective and Eyepiece-Huygens Eyepiece-Ramsden Eyepiece-Comparison of Ramsden Eyepiece with Huygens Eyepiece.	12	Chalk & Talk	S. Ameer Nisha Bibi
January	II	**Interference:** Introduction-Light waves-Superposition of waves-Interference -Young's double slit experiment-Wavefront division-Coherence-Condition for interference-Thin Flim- Newton's rings- Condition for Bright and Dark rings - Michelson's interferometer (Construction and Working).	12	Chalk & Talk	S. Ameer Nisha Bibi
February	III	**Diffraction:** Introduction-Huygens-Fresnel theory-Fresnel's assumptions-Rectilinear propagation of light-Fresnel and Fraunhoffer types of Diffraction- Fraunhoffer diffraction at a single slit- Fraunhoffer Diffraction at a circular aperture.	12	Chalk & Talk	K. Sri Ishwarya
March	IV	**Polarization:** Introduction-Polarization-Unpolarized and polarized light-Natural light is unpolarized light-Types of polarization-Plane Polarized -Brewster's law-Polarizer and Analyser(only)-Malus's law, Huygen's explanation of Double refraction-Nicol prism-Effect of polarizer on light of different polarizations.	12	Chalk & Talk	K. Sri Ishwarya
April	V	**Lasers:** Introduction - Attenuation of light in an optical medium-Thermal equilibrium-Interaction of light with matter-Einstein coefficients and their relations-Light amplification-Meeting the three requirements- Types of lasers-Ruby laser-Laser Beam Characteristics-Applications..	12	Chalk & Talk	S. Ameer Nisha Bibi K. Sri Ishwarya

Signature of the HOD

Signature of the Principal

PRINCIPAL I/C
E.M.G. YADAVA WOMEN'S COLLEGE
MADURAI-14

E.M.GOPALAKRISHNA KONE YADAVA WOMEN'S COLLEGE

An Autonomous Institution –Affiliated to Madurai Kamaraj University
Re-accredited (3rd Cycle) with Grade A+ and CGPA 3.51 by NAAC

LESSON PLAN
2022-2023

Class : III B.Sc Physics **Semester : VI**
Sub. Code : 17P61
Title of the Paper: Solid state physics **Total Hours : 60 Hours**

Month	Unit	Description of the Syllabus	Hours Allocated	Teaching Mode & Methods	Course Teacher Signature
December	I	**Interatomic force &bonding in solids:** **Interatomic force:** Introduction – Force between atoms-Cohesion of Atoms and Cohesive energy – calculation of Cohesive energy. **Bonding in solids:** Ionic Bonding –Bond energy of NaCl Molecule-Calculation of Lattice energy of Ionic crystal-The Born –Haber cycle –Properties of Ionic solids – Examples of Ionic solids –Covalent bond –Metallic bond –Hydrogen bond.	12	Chalk & Talk	S. priyanka
January	II	**Crystal physics:** Introduction –Lattice points and space lattice – Unit cells and Lattice parmeters-Crystal systems-Metallic crystal structures for SC, BCC, & FCC structures - Other cubic crystal structure - Miller Indices & important features of Miller Indices. **X-ray diffraction &diffraction method:** Bragg's law – Derivation of Bragg's equation.	12	Chalk & Talk	S. priyanka
February	III	**Magnetism in solids:** Magnetic Terminology –Types of Magnetism – Dia magnetism -(Langevin's classical theory)-Paramagnetism –(Langevin's classical theory)-Ferro magnetism-Weiss theory-concepts of Domains and Hysteresis- Anti Ferro magnetism-Ferri magnetism.	12	Chalk & Talk	S. Ameer Nishe Bibi
March	IV	**Super conductivity:** Introduction –Electrical Resistivity –Perfect Diamagnetism or Meissner Effect – Super currents and Critical Temperature -Type-I –Type-II Superconductors.	12	Chalk & Talk	S. Ameer Nishe Bibi
April	V	**Semi conductors:** Introduction –Pure or Intrinsic Semiconductors – Impurity or Extrinsic Semiconductor –Drift velocity, Mobility and conductivity of intrinsic semiconductors-Carrier concentration and Fermi level for intrinsic semiconductors.	12	Chalk & Talk	S. priyanka S. Ameer Nishe Bibi

Signature of the HOD

Signature of the Principal

PRINCIPAL I/C
E.M.G. YADAVA WOMEN'S COLLEGE
MADURAI-625014

E.M.GOPALAKRISHNA KONE YADAVA WOMEN'S COLLEGE

An Autonomous Institution –Affiliated to Madurai Kamaraj University
Re-accredited (3rd Cycle) with Grade A+ and CGPA 3.51 by NAAC

LESSON PLAN
2022-2023

Class : III B.Sc Physics **Semester : VI**
Sub. Code : 17P62
Title of the Paper: Spectroscopy **Total Hours : 60 Hours**

Month	Unit	Description of the Syllabus	Hours Allocated	Teaching Mode & Methods	Course Teacher Signature
December	I	**Spectra of atoms** Angular Momentum of Many Electron Atoms - Normal Zeeman effect-Anomalous Zeeman Effect-Paschen-Bach Effect-Influence of Nuclear Spin-Hyperfine Structure-Stark Effect-Rydberg Atoms-Lamb Shift-Characteristic X-Ray Spectra-Moseley's Law.	12	Chalk & Talk	E. Chris Monica
January	II	**Rotation of molecules** Classification of molecules – Interaction of radiation with rotating molecule – Rotational spectra of rigid Diatomic molecule – Isotope effect in Rotational spectra – Intensity of Rotational lines – Non-rigid rotator – Vibrational excitation effect – Linear polyatomic molecules – Symmetric top molecules - Asymmetric top molecules.	12	Chalk & Talk	E. Chris Monica
February	III	**IR spectroscopy-diatomic molecule** Introduction-Vibrational Energy of a Diatomic Molecule -Infrared Selection rules-Vibrating Diatomic Molecule-Diatomic Vibrating Rotator-Asymmetry of Rotation-Vibration Band- rotation – Vibration spectra of polyatomic molecules.	12	Chalk & Talk	
March	IV	**Raman spectroscopy** Introduction- Theory of Raman Scattering-Rotational Raman Spectra- Vibrational Raman Spectra-Mutual Exclusion Principle -Industrial Applications-Raman Microscopy.	12	Chalk & Talk	E. Chris Monica
April	V	**Electronic spectra of Diatomic molecules** Introduction –Vibrational Coarse Structure-Franck-Condon Principle- Intensity of Vibrational Electronic Spectra- Rotational Fine Structure of Electronic-Vibration Spectra- Photoelectron Spectroscopy.	12	Chalk & Talk	

Signature of the HOD

Signature of the Principal
E.M.G. YADAVA WOMEN'S COLLEGE
MADURAI-[redacted]14

E.M.GOPALAKRISHNA KONE YADAVA WOMEN'S COLLEGE

An Autonomous Institution –Affiliated to Madurai Kamaraj University
Re-accredited (3rd Cycle) with Grade A+ and CGPA 3.51 by NAAC

LESSON PLAN

2022-2023

Class : III B.Sc Physics **Semester : VI**
Sub. Code : 17PE6A
Title of the Paper: Theoretical Physics **Total Hours : 60 Hours**

Month	Unit	Description of the Syllabus	Hours Allocated	Teaching Mode & Methods	Course Teacher Signature
December	I	Classical Mechanics Conservative Forces-Conservation theorem for energy of a particle-Mechanics of a system of particles-Degrees of Freedom – Constraints- Types of Constraints -Generalized co-ordinates- Transformation Equations - D'Alembert's Principles-Lagrangian Functions-Lagrange's Equation of Motion - Derivation of Lagrange's Equation of Motion -Application of Lagrange's Equation- Simple Pendulum – Compound Pendulum - The Atwood's Machine - The Hamiltonian Function H - Hamiltonian equation with derivation.	12	Chalk & Talk	S. praveen
January	II	Statistical Mechanics Microscopic and Macroscopic descriptions-Ensembles-Degenerate and Non degenerate Ensembles-Phase space-Micro and Macro states- Thermodynamic probability- Boltzmann's theorem on entropy and probability –Derive the Boltzmann relation connecting entropy and Probability-Fundamental postulates of statistical mechanics- Statistical equilibrium. Maxwell-Boltzmann distribution law-Application of Maxwell-Boltzmann distribution law to an ideal gas-Maxwell-Boltzmann velocity distribution law.	12	Chalk & Talk	S. praveen
February	III	Quantum Statistics Introduction-Quantum statistics of identical particles - Bose-Einstein distribution law-Application of B.E Statistics-Planck's law of radiation-deduction-Wien's and Rayleigh-Jean's law-Fermi Dirac Distribution Law – Application of Fermi Driac Statistics-Comparision of three statists.	12	Chalk & Talk	S. praveen K. Sriswathi
March	IV	**Wave Mechanics** Introduction- The De-Broglie wavelength- Davisson and Germer's Experiment- G.P.Thomson's experiment- Wave velocity of De-Broglie waves- Group velocity of De- Broglie waves- Expression for Group velocity- Relation between group velocity and wave velocity-Heisenberg's Uncertainty principle	12	Chalk & Talk	K. Sriswathi
April	V	Relativity Frames of reference-Galilean transformation equation-Michelson Morley experiment-Postulates of Special theory of Relativity-Lorentz transformation equations-Derivation of the Lorentz transformation equations - Einstein's Mass- Energy Relation- Relation between the total energy, rest energy and the Momentum.	12	Chalk & Talk	K. Sriswathi

Signature of the HOD

Signature of the Principal

PRINCIPAL
E.M.G. YADAVA WOMEN'S COLLEGE
MADURAI-625014

E.M.GOPALAKRISHNA KONE YADAVA WOMEN'S COLLEGE

An Autonomous Institution –Affiliated to Madurai Kamaraj University
Re-accredited (3rd Cycle) with Grade A+ and CGPA 3.51 by NAAC

LESSON PLAN
2022-2023

Class : III B.Sc Physics **Semester : VI**
Sub. Code : 17SEP61
Title of the Paper: Introduction to Microcontrollers 8051 **Total Hours : 30 Hours**

Month	Unit	Description of the Syllabus	Hours Allocated	Teaching Mode & Methods	Course Teacher Signature
December	I	**Introduction to Microcontrollers** Introduction – Microcontrollers and Microprocessors– History of Microcontrollers and Microprocessors – Embedded Versus External Memory Devices- 8-bit and 16-bit Microcontrollers-CISC and RISC and Processors- Harvard and Von Neumann Architectures- Commercial Microcontroller Devices .	6	Chalk & Talk	S.priyanka
January	II	**8051 Microcontrollers** Introduction- MCS -51 Architecture -Registers in MCS-51- General-purpose or working Registers – Stack pointer and program counter – Special Function Registers (SFR).	6	Chalk & Talk	S.priyanka
February	III	**8051 Pin Description, Connections, I/O Ports and Memory Organization** 8051 Pin Description-8051 Connections -8051 Parallel I/O Ports-Memory Organization.	6	Chalk & Talk	S.priyanka
March	IV	**MCS-51 Addressing Modes and Instructions** 8051 Addressing Modes- MCS-51 Instruction Set-8051 Instructions and Simple Programs- Using Stack Pointer	6	Chalk & Talk	S.priyanka
April	V	**8051 Assembly Language Programming Tools** 8051 Assembly Language Programming – 8051 assembler – 8051 programming Template - Development Systems and Tools – Software Simulators of 8051.	6	Chalk & Talk	S.priyanka

Signature of the HOD

Signature of the Principal
PRINCIPAL I/C
E.M.G. YADAVA WOMEN'S COLLEGE
MADURAI-625014

E.M.GOPALAKRISHNA KONE YADAVA WOMEN'S COLLEGE

An Autonomous Institution –Affiliated to Madurai Kamaraj University
Re-accredited (3rd Cycle) with Grade A+ and CGPA 3.51 by NAAC

LESSON PLAN
2022-2023

Class : III B.Sc Physics **Semester : VI**
Sub. Code : 174VE6
Title of the Paper: Value Education **Total Hours : 30 Hours**

Month	Unit	Description of the Syllabus	Hours Allocated	Teaching Mode & Methods	Course Teacher Signature
December	I	Value Education – Need and Importance – Objectives - Types of Values-Nature and concept of Moral education – Value Education Vs Moral Education.	6	Chalk & Talk	B.Subha
January	II	Values of Home –Role of Women in Decision Making – Parental Care-Care of the Aged –Family Conflicts and Resolutions-Gender Justice-Social Justice- Social Integration- Socio Political Awareness.	6	Chalk & Talk	
February	III	Character Formation towards Positive Personality – Truthfulness, Sacrifice, Sincerity, Self control, Altruism, Tolerance, Confidence, Honesty and Courage.	6	Chalk & Talk	B.Subha
March	IV	Karma Yoga in Hinduism –Love and Justice in Christianity –Brotherhood in Islam, Compassion in Buddhism –Ahimsa in Jainism and Courage in Sikhism – Need for Religious Harmony.	6	Chalk & Talk	
April	V	Human rights –Fundamental Rights –Human Rights Act 1993 (Amended 2006)- Consumer Protection Act 1986 – Right to Information Act 2005 –Right to Education Act 2009-Protective Laws for Women –Dowry Prohibition Act 1961 (Amended 1986)And Domestic Violence Act 2005- Constitutional Values- Liberty- Democracy – International Peace.	6	Chalk & Talk	B.Subha

Signature of the HOD

Signature of the Principal
PRINCIPAL I/C
E.M.G. YADAVA WOMEN'S COLLEGE
MADURAI-625014

E.M.GOPALAKRISHNA KONE YADAVA WOMEN'S COLLEGE

An Autonomous Institution –Affiliated to Madurai Kamaraj University
Re-accredited (3rd Cycle) with Grade A+ and CGPA 3.51 by NAAC

LESSON PLAN
2022-2023

Class : I B.Sc Mathematics **Semester : II**
Sub. Code : 22OUMAGEPH2
Title of the Paper: Physics-II Thermal physics **Total Hours : 60 Hours**

Month	Unit	Description of the Syllabus	Hours Allocated	Teaching Mode & Methods	Course Teacher Signature
December	I	**Thermal expansion**: Linear expansion of solids- Linear expansivity of crystals-Determination of α by Air Wedge method- Expansion of anisotropic solids–Thermostat-Bimetallic thermostat -Isothermal change-Adiabatic change-Equation for the adiabatic change of a perfect gas-The two specific heat capacities of a gas-Difference between the two specific heat capacities–Joly's differential steam calorimeter for finding C_v-Regnault's method to find C_p.	12	Chalk & Talk	S. Ameen Nishe Beb
January	II	**Conduction, Convection:**Introduction-Lee's disc method of determining the thermal conductivity of bad conductor-Analogy between heat flow and electric current-Wiedemann -Franz law- Convection –Convection in the atmosphere- Lapse rate- Green house effect- Atmospheric pollution.	12	Chalk & Talk	S. Ameen Nishe Beb
February	III	**Radiation**: Introduction-Stefan's law –Determination of Stefan's constant by filament heating method –Solar constant –Determination of solar constant by water flow Pyrheliometer-Temperature of the sun - Solar spectrum-Energy distribution in black body spectrum- Statement of Planck's law of radiation-Wien's law -Rayleigh Jean's law.	12	Chalk & Talk	S. Ameen Nishe Beb
March	IV	**Kinetic theory of gases:** Postulates of the kinetic theory of gases- Expression for the pressure of a gas-Mean free path-Transport phenomena-Expression for the coefficient of Diffusion and viscosity-Expression for the coefficient of thermal conductivity -Degrees of freedom-Boltzmann's law of equipartition of energy-Atomicity of gases.	12	Chalk & Talk	
April	V	**Thermodynamics:** Heat engine-Expression for the efficiency of a Carnot's engine- Carnot's theorem -Second law of thermodynamics-Entropy-Changes of entropy in Carnot's cycle-Change of entropy in conversion of ice into steam -Joule Kelvin effect- Porous Plug experiment–Theory of Porous Plug experiment-Superconductivity.	12	Chalk & Talk	

Signature of the HOD

Signature of the Principal
PRINCIPAL I/C
E.M.G. YADAVA WOMEN'S COLLEGE
MADURAI-625 014.

E.M.GOPALAKRISHNA KONE YADAVA WOMEN'S COLLEGE

An Autonomous Institution –Affiliated to Madurai Kamaraj University
Re-accredited (3rd Cycle) with Grade A+ and CGPA 3.51 by NAAC

LESSON PLAN

2022-2023

Class : II B.Sc Maths
Sub. Code : 21AP4
Title of the Paper: Optics

Semester : IV

Total Hours : 60 Hours

Month	Unit	Description of the Syllabus	Hours Allocated	Teaching Mode & Methods	Course Teacher Signature
December	I	**Geometrical optics** Convex lens –Principal Focus and Focal Planes-Refraction through a thin lens- Definition of Cardinal points and Respective Planes-Dispersion through a Prism-Cauchy's Formula- Achromatic in Prisms- Dispersion without Deviation-Direct vision Spectroscope. **Aberrations in Lenses:** Spherical aberration in a lens-Chromatic aberration in a lens-Achromatic Combination of Lenses.	12	Chalk & Talk	E. Uthra Monica
January	II	**Interference** Introduction-Theory of interference fringes-Fresnel's Biprism-Displacement of fringes-Colours of thin films-Newton's rings-Determination of wavelength of sodium light by Newton's rings –Determination of refractive index of a liquid by Newton's rings-Michelson's interferometer-Uses of Michelson's interferometer	12	Chalk & Talk	E. Uthra Monica
February	III	**Diffraction** Introduction-Fresnel's explanation of rectilinear propagation of light-Zone plate-Diffraction at a circular aperture-Diffraction at a thin wire-Fraunhofer diffraction at a single slit-Fraunhofer diffraction at a double slit-Plane transmission diffraction grating-Dispersive power of a grating - Resolving power of telescope-Resolving power of prism-Resolving power of a plane diffraction grating	12	Chalk & Talk	S. priyanka
March	IV	**Polarisation** Introduction-Polarisation by reflection-Pile of plates-Law of Malus-Double refraction- Huygen's theory of double refraction in uniaxial crystals-Huygen's construction for double refraction in uniaxial crystals-Quarter wave plate-Half wave plate-Specific Rotation-Laurent's half shade polarimeter-Determination of Specific Rotation of sugar Solution	12	Chalk & Talk	E. Uthra Monica S. priyanka
April	V	**Spectroscopy** Introduction-Infrared spectroscopy- Ultraviolet spectroscopy-Quartz Spectroscopy near U.V region-Application of Ultraviolet Spectroscopy-Rayleigh's scattering-Raman effects-Experimental study of Raman effect-Quantum theory of raman effect-Application of raman effect-Nuclear magnetic resonance.	12	Chalk & Talk	S. priyanka

Signature of the HOD

Signature of the Principal
PRINCIPAL i/c
E.M.G. YADAVA WOMEN'S COLLEGE
MADURAI-[illegible]14

E.M.GOPALAKRISHNA KONE YADAVA WOMEN'S COLLEGE

An Autonomous Institution –Affiliated to Madurai Kamaraj University
Re-accredited (3rd Cycle) with Grade A+ and CGPA 3.51 by NAAC

LESSON PLAN

2022-2023

Semester : IV

Class : II B.Sc Chemistry
Sub. Code : 21AP2
Title of the Paper: Physics – II Thermal Physics

Total Hours : 60 Hours

Month	Unit	Description of the Syllabus	Hours Allocated	Teaching Mode & Methods	Course Teacher Signature
December	I	**Thermal expansion**: Linear expansion of solids- Linear expansivity of crystals-Determination of α by Air Wedge method- Expansion of anisotropic solids- Solids of low expansivity &their uses-Anomalous expansion of water –Thermostat- Bimetallic thermostat -Isothermal change-Adiabatic change-Equation for the adiabatic change of a perfect gas-The two specific heat capacities of a gas-Difference between the two specific heat capacities–Joly's differential steam calorimeter for finding C_v-Regnault's method to find C_p.	12	Chalk & Talk	
January	II	**Conduction,Convection:** Introduction-Lee's disc method of determining the thermal conductivity of bad conductor-Analogy between heat flow and electric current-Wiedemann -Franz law-Thermal conductivity of air-Lee's disc method-Convection – Convection in the atmosphere- .0-Stability of the atmosphere- Green house effect- Atmospheric pollution.	12	Chalk & Talk	S. Ameer Nisha Beb
February	III	**Radiation**: Introduction-Stefan's law –Determination of Stefan's constant by filament heating method –Solar constant – Determination of solar constant by water flow Pyrheliometer-Temperature of the sun - Temperature of the sun using Wien's Displacement law-Solar spectrum-Energy distribution in black body spectrum- Statement of Planck's law of radiation-Wien's law - Rayleigh Jean's law.	12	Chalk & Talk	S. Ameer Nisha Beb
March	IV	**Kinetic theory of gases:** Postulates of the kinetic theory of gases-Expression for the pressure of a gas-Mean free path-Transport phenomena-Expression for the coefficient of Diffusion &viscosity-Expression for the coefficient of thermal conductivity-Maxwell's law of distribution of molecular speeds-Degrees of freedom-Boltzmann's law of equipartition of energy-Atomicity of gases.	12	Chalk & Talk	S. Ameer Nisha Beb
April	V	**Thermodynamics:** Heat engine-Expression for the efficiency of a Carnot's engine- Carnot's theorem -Second law of thermodynamics-Entropy-Changes of entropy in Carnot's cycle-Change of entropy in conversion of ice into steam -Joule Kelvin effect- Porous Plug experiment–Theory of Porous Plug experiment- Adiabatic diamagnetisation-Superconductivity.	12	Chalk & Talk	

Signature of the HOD

Signature of the Principal

PRINCIPAL
E.M.G. YADAVA WOMEN'S COLLEGE
MADURAI-625 014

E.M.GOPALAKRISHNA KONE YADAVA WOMEN'S COLLEGE

An Autonomous Institution –Affiliated to Madurai Kamaraj University
Re-accredited (3rd Cycle) with Grade A+ and CGPA 3.51 by NAAC

LESSON PLAN

2022-2023

Class : III B.Sc Chemistry **Semester : VI**
Sub. Code : 21AP4
Title of the Paper: Optics **Total Hours : 60 Hours**

Month	Unit	Description of the Syllabus	Hours Allocated	Teaching Mode & Methods	Course Teacher Signature
December	I	**Geometrical optics** Convex lens –Principal Focus and Focal Planes-Refraction through a thin lens- Definition of Cardinal points and Respective Planes-Dispersion through a Prism-Cauchy's Formula- Achromatic in Prisms- Dispersion without Deviation-Direct vision Spectroscope. **Aberrations in Lenses:** Spherical aberration in a lens-Chromatic aberration in a lens-Achromatic Combination of Lenses.	12	Chalk & Talk	E. Chris Mon
January	II	**Interference** Introduction-Theory of interference fringes-Fresnel's Biprism-Displacement of fringes-Colours of thin films-Newton's rings-Determination of wavelength of sodium light by Newton's rings –Determination of refractive index of a liquid by Newton's rings-Michelson's interferometer-Uses of Michelson's interferometer	12	Chalk & Talk	E. Chris Mon
February	III	**Diffraction** Introduction-Fresnel's explanation of rectilinear propagation of light-Zone plate-Diffraction at a circular aperture-Diffraction at a thin wire-Fraunhofer diffraction at a single slit-Fraunhofer diffraction at a double slit-Plane transmission diffraction grating-Dispersive power of a grating - Resolving power of telescope-Resolving power of prism-Resolving power of a plane diffraction grating	12	Chalk & Talk	S. priyanka
March	IV	**Polarisation** Introduction-Polarisation by reflection-Pile of plates-Law of Malus-Double refraction- Huygen's theory of double refraction in uniaxial crystals-Huygen's construction for double refraction in uniaxial crystals-Quarter wave plate-Half wave plate-Specific Rotation-Laurent's half shade polarimeter-Determination of Specific Rotation of sugar Solution	12	Chalk & Talk	S. priyanka E. Chris Mon
April	V	**Spectroscopy** Introduction-Infrared spectroscopy- Ultraviolet spectroscopy-Quartz Spectroscopy near U.V region-Application of Ultraviolet Spectroscopy-Rayleigh's scattering-Raman effects-Experimental study of Raman effect-Quantum theory of raman effect-Application of raman effect-Nuclear magnetic resonance.	12	Chalk & Talk	S priyanka

Signature of the HOD

Signature of the Principal
E.M.G. YADAVA WOMEN'S COLLEGE
MADURAI [redacted]14.