M.V.MUTHIAH GOVT.ARTS COLLEGE FOR WOMEN,DINDIGUL
DEPARTMENT OF PHYSICS
B.Sc. PHYSICS
2021-2022
COURSE OUTCOMES

SEMESTER-I

COURSE CODE: U21PHT11
SUBJECT   : PROPERTIES OF MATTER AND SOUND

Course Outcomes (CO):

CO1: Evaluate modulus of different materials -K3
CO2: Acquire knowledge on properties of liquids -K2
CO3: Understand the physics of sound and its applications -K2
CO4: Learn about different methods of producing Ultrasonic wavesand its
      applications- K1
CO5 :Apply the theories in building acoustics -K3

COURSE CODE: U21PHP11
SUBJECT   : PRACTICAL-I

Course Outcomes (CO):

CO1:Able to Estimate Errors-K3
CO2:Calculate the change in dimension of bar-K4
CO3:Determine focal length of different lenses-K4
CO4:Determine co-efficient of viscosity of liquids-K3
CO5:Compare and measure the potential difference of
EMF-K4

SEMESTER-II
COURSE CODE: U21PHT21
SUBJECT   : MECHANICS

Course Outcomes (CO):

CO1:Learn about laws involved in mechanics-K1
CO2:Understand the forces imposed on a dynamic rigidbody-K
CO3:Determine gravitational field and potential value-K3
CO4:Apply conservation laws in collision experiments-K3
CO5:Understand the concepts of static and hydrodynamics-K2

COURSE CODE: U21PHT22
SUBJECT   : HEAT AND THERMO DYNAMICS

Course Outcomes (CO):

CO1:Understand the basics of thermodynamics and theirapplications-K2
CO2:Learn the basics of low temperature and how toconstruct a
         successful   experiment   using   low temperature-K2
CO3:Learn experimental   Methods   To Determine Thetransmission of
heat-K2
CO4:Understand the kinetic theory of gas-K2
CO5:Analyze the laws of thermodynamics and maxwell'sThermo dynamical
relations-K4

SEMESTER-III

COURSE CODE: U21PHT31
SUBJECT   : OPTICS AND SPECTROSCOPY

Course Outcomes (CO):

CO1:
Learn about various lens and its aberrations-K1
CO2:
Acquire knowledge about interference and interferometers-K2
CO3:
Understand about the diffraction phenomenon and resolvingpower in optical
instruments-K3
CO4:
Study about polarization-K2
CO5:
Apply different spectroscopic technique to obtaininformation about the molecule-
K2

COURSE CODE: U21PHE311
SUBJECT   : ENERGYPHYSICS

Course Outcomes (CO):

CO1:
Know about conventional and non-conventionalsources of energy-K1
CO2:
Understand about solar energy and its appliances-K3
CO3:
Know about Photovoltaic Systems and Point out thetypes of solar cells and its applications-K2
CO4:
Understand about Biomass-K2
CO5:
Examine the different wind energy sources-K3

COURSE CODE: U21PHE312
SUBJECT   : WAVES AND OSCILLATIONS

Course Outcomes (CO):

CO1:
Understand the concept of SHM-K2
CO2:
Analyze the different types of vibration-K4
CO3:
Acquire the knowledge of wave motion-K3
CO4:
Know the properties of sound-K3
CO5:
Apply the knowledge to ultrasonic waves-K3

SEMESTER- IV

COURSE CODE: U21PHT41
SUBJECT   : ELECTRICITY AND ELECTROMAGNETISM

Course Outcomes(CO):

CO1:
Study about magnetic field produced in electric circuits-K1
CO2:
Learn about capacitor and its type-K1
CO3:
Acquire knowledge about electromagnetic induction-K2
CO4:
Analyses and solves electrical circuits with dc and acsource-K4
CO5:Gain knowledge about Maxwell Equation-K2

COURSE CODE: U21PHP42
SUBJECT   : PRACTICAL-II

Course Outcomes(CO):

CO1:Able to characterize diodes-K3
CO2:Determine dispersive and resolving power of prism-K4
CO3:Determine wave length of Sodium vapor light-K4
CO4:Analyze working of different flip flop-K3
CO5:Verify bridges and LCR connections-K4

COURSE CODE: U21PHE431
SUBJECT   : MEDICAL PHYSICS

Course Outcomes (CO):

CO1:Understands Basic Anatomical Terminology-K2
CO2:Applies medical physics to know the different aspectsof the body-K3
CO3:Analyze the performance of transducer-K4
CO4:Learn about Electro Cardio Graph(ECG)and itsapplication-K3
CO5:Study about EEG and EMG and its application-K3

COURSE CODE: U21PHE432

SUBJECT   : MATERIALS SCIENCE

Course Outcomes(CO):

CO1:Classify the materials based on their bonding-K2
CO2:Learn phase diagram to understand material phasetransformation-K2
CO3:Understand the conducting, semiconducting, superconducting,dielectric, ferro-electric and piezo electric behavior of material-K2
CO4:Gain knowledge on vacuum technology for application inmaterial synthesis-K3
CO5:Characterize materials using nondestructive testing-K4

COURSE CODE: U21PHT51

SUBJECT   : ATOMIC AND NUCLEAR PHYSICS

Course Outcomes (CO):

CO1:
Acquire knowledge on the fundamental principlesgoverning the structure of the atom-K1
CO2:
Gain knowledge in atomic physics to follow courses at theAdvanced level-K2
CO3:
Obtain knowledge about fine structure of spectral lines-K2
CO4:
Understanding on the basics of nuclear physics that treatsatomic nuclei as self-bound many-body quantum systems-K2
CO5:
Learn about nuclear reaction and radio activity-K1

COURSE CODE: U21PHT52
SUBJECT   : CLASSICAL AND STATISTICALMECHANICS

Course Outcomes (CO):

CO1:
Knowledge about mechanics of the particles-K1
CO2:
Differentiate Lagrangian equation of systems forconservative and non-conservative systems-K3
CO3:
Apply Hamiltonian function for various application-K3
CO4:
Understand about classical and quantum statistics-K1
CO5:
Acquire   knowledge   to   apply   the   principles   ofstatistical mechanics to selected problems-K2

COURSE CODE: U21PHT53
SUBJECT   : BASICS OF DATA COMMUNICATIONAND PROGRAMMING IN C

Course Outcomes (CO):

CO1:
Gains knowledge about network and transmissionmode-K1
CO2:
Understand about series and parallel transmission-K2
CO3:
Differentiate analog and digital network-K4
CO4:
Study about basic structure of C Programming-K2
CO5:
Understand about statement and commands used in Cprogramming-K2

COURSE CODE: U21PHT54
SUBJECT   : BASIC ELECTRONICS ANDCOMMUNICATION

Course Outcomes (CO):

CO1:
Acquire knowledge on transistor and its applications-K2
CO2:
Study about linear circuit theorems and diode-K1
CO3:
Study about different number systems and basics of logic gates-K1
CO4:
Understand the operation of sequential logic circuits-K2
CO5:
Design communication system with different modulation-K3

COURSE CODE: U21PHP53
SUBJECT   : PRACTICAL-III

Course Outcomes (CO):

CO1:Able to fabricate bridges and measure inductance
-K3
CO2:
Compare EMF value using potentiometer-K4
CO3:
Determine wave lengths of visible light-K4
CO4:
Compare voltmeter and charge sensitivity using spotgalvanometer-K3
CO5:
Determine Cauchy's constant-K4

COURSE CODE: U21PHE531
SUBJECT   : NUMERICALMETHODS

Course Outcomes (CO):

CO1:
Understand basics of Errors and Root of Equations-K2
CO2:
Solve problem using Matrix and Linear Equations-K3
CO3:
Interprets Numerical Differentiation and Integration-K3
CO4:
Able to apply Differential Equations for differentproblems-K4
CO5:
Enhance problem solving skill using Interpolation andApproximation-K2

COURSE CODE: U21PHE532
SUBJECT   : BASIC INSTRUMENTATION

Course Outcomes (CO):

CO1:
Understand CRO as a versatile measuring device-K2
CO2:
Learn to trace circuits of electronic equipment's-K2
CO3:
Use Digital multimeter / VTVM to measure voltages-K3
CO4:
Apply knowledge to troubleshoot the circuit-K3
CO5:
Skilled in winding a coil /transformer-K4

COURSE CODE: U21PHS531
SUBJECT   : MICRO PROCESSORFUNDAMENTALS

Course Outcomes(CO):

CO1:Know the basic ideas on microprocessor ,memory andI/O devices-K2
CO2:Familiar with the basic concepts of microprocessorarchitecture and interfacing-K2
CO3:Acquire skills in the programming instruction sets ofmicroprocessors-K4
CO4:Acquire skills in interrupts-K2
CO5:Apply the programming instructions to perform simpleprograms using microprocessor-K2

COURSE CODE: U21PHS532
SUBJECT   : TELEVISION TRANSMISSION &RECEIVER

Course Outcomes(CO):

CO1:
Learn about components present in TV system-K1
CO2:
Differentiate AM and FM Channel band-K3
CO3:
Gain knowledge about different types of Camera-K2
CO4:
Acquire knowledge about colour television-K3
CO5:
Analyze the transmission of TV using different media-K4

COURSE CODE: U21PHT61
SUBJECT   : RELATIVITY AND QUANTUMMECHANICS

Course Outcomes (CO):

CO1:
Gain knowledge in the concepts of special and theory ofrelativity-K1
CO2:
Evolve ideas about dual nature of matter-K2
CO3:
Understand about Schrodinger equation-K2
CO4:
Learn about different operator mechanism-K2
CO5:
Apply of Schrödinger's equation to micro system-K3

COURSE CODE: U21PHT62
SUBJECT   : SOLID STATE PHYSICS

Course Outcomes(CO):

    CO1:
    Understand about different crystal structure-K1
    CO2:
    Analyze structure of different crystalline material anddefects-K4
    CO3:
    Able to know about the inter atomic forces and bondsbetween solid-K2
    CO4:
    Analyze the various kinds of magnetic materials-K4
    CO5:
    Understand the dielectric properties of crystallinestructures-K2

COURSE CODE: U21PHT63
SUBJECT   : MATHEMATICAL PHYSICS

Course Outcomes (CO):

CO1:Able to apply vector and scalar operator in differentapplications-K3
CO2:
Understand different orders of differential equation-K2
CO3:
Able to apply Matrix and functions of matrices indifferent problems.-K4
CO4:
Enhance problem solving skill using Laplace transform-K3
CO5:
Solve different problems using Partial Differentialequations-K4

COURSE CODE: U21PHT64
SUBJECT   : NANO PHYSICS

Course Outcomes (CO):

CO1:Identify   the   Nano particles and
apply physics concepts to the nano – scale and nanocontinuum domain.-K4
CO2:Identify the Quantum hetero structure and acquire theknowledge in
application of Quantum dots-K4
CO3:Understands about Nano tubes, Allotropes and itsstructure and synthesis-K2
CO4:Acquires knowledge about the   Nano crystalline
soft materials, Super-paramagnetism, Quantum cellularautomata-K2
CO5:Apply Nano technology in different fields-K3

COURSE CODE: U21PHP64
SUBJECT   : PRACTICAL-IV

Course Outcomes(CO):

CO1:Design Half and Full subtractor-K3
CO2:Study the characteristics of diode and transistor-K4
CO3:Analyze arithmetical operation using OP-Amp-K4
CO4:Construct oscillator and multivibrator and determineits frequency.-K3
CO5:Verify Demorgan's theorem-K4

COURSE CODE: U21PHE641
SUBJECT   : ASTROPHYSICS

Course Outcomes(CO):

CO1:
Assess the design of physical nature of celestial bodies throughco-ordinates of space and time-K2
CO2:
Apply various optical instruments and explore the observableuniverse-K3
CO3:
Understand about Structure and properties of Sun and Earth.-K2
CO4:
Relate to   the   stellar observations, the   properties,   their environment and even the presence of planets with appropriatetheories.-K3
CO5:
Evaluate the structure of milky way galaxy and all its contents with cosmology for the study of the character and evolution of theuniverse.-K3

COURSE CODE: U21PHE642
SUBJECT   : ATMOSPHERIC PHYSICS

Course Outcomes(CO):

CO1:
Understand the characteristic of earth's atmosphere-K2
CO2:
Study about the fundamental forces and conservation lawsgoverning the earth-K2
CO3:
Acquire knowledge about atmospheric wave-K2
CO4:
Use the radar theory in data analysis and tool techniques-K4
CO5:
Evaluate the application of aerosols-K5

COURSE CODE: U21PHS641
SUBJECT   : PROBLEMS SOLVING SKILLS IN PHYSICS

Course Outcomes(CO):

CO1:Develop problem solving skill in mechanics-K3
CO2:Apply thermodynamics principle to solve entropyrelated problem-K3
CO3:Determine electrostatic quantities using theorem-K4
CO4:Develop problem solving in Quantum Mechanics-K3
CO5:To   appear for   research   oriented   competitive examinations-K3

COURSE CODE: U21PHS642
SUBJECT   : WEATHER FORECASTING

Course Outcomes (CO):

CO1:
Learn elementary   ideas   about atmosphere   i.e.,temperature, cyclone etc.-
K1
CO2:
Understand about weather measurement-K2
CO3:
Gain Knowledge about climatic change-K2
CO4:
Acquire ideas about weather system-K2
CO5:
Analysis on weather forecasting-K4

COURSE CODE: U21MAA11
SUBJECT   : ANCILLARY MATHEMATICS I

CO1:Remember numbers, sequences, series,basic summaries frompartial fraction, equations, matrices
-K1
CO2:Understand trigonometric values and Interpolation-K2
CO3:Solve problems by using theorems.-K3
CO4:Analyze homogeneous and non-homogeneous linear equations.-K4
CO5:Analyze and Evaluate inverse functions.-K4,K5

COURSE CODE: U21PHA33
SUBJECT   : ALLIED CHEMISTRY THEORYPHYSICAL SCIENCES

Course outcomes
CO1:
Students can gain the knowledge on the handling of chemicals anderrors in chemical analysis.-K2, K3
CO2:
Learn Chemical Bonding and Hybridization-K2
CO3:
Learn the calculations of preparing standard solutions-K2, K3
CO4:
Understand and   appreciate the advanced   concepts and rateequations in chemical kinetics.-K2
CO5:
Calculate change in thermodynamic properties, equilibriumconstants, partial molar quantities, chemical potential-K2

COURSE CODE: U21PHA44
SUBJECT : ALLIED CHEMISTRY PRACTICAL-PHYSICAL SCIENCES

CO1:
Learn the concept of Titration methods and various Titrations-K2
CO2:
Understand the Acidimetry and alkalimetry titrations-K2
CO3:
The preparation of standard solutions and methods of analyze thevarious salt-K2, K4
CO4
Understand the calculations of molarity, molality and Normality of thesolution-K2
CO5:
Understand the concept of Iodometry titrations-K2

SUBJECT : ALLIED PHYSICS (for B.Sc Mathematics / B.ScChemistry)

Course Outcomes(CO):

CO1:Analyze center of gravity-K4
CO2:Learn about modulus, viscosity and surface tension ofmaterials-K2
CO3:Study the characteristics of diode and transistor-K1
CO4:Understand about aberration and different propertiesof lenses-K2
CO5:Gain knowledge about atomic model and basicnuclear properties-K2

ALLIED PRACTICALS

Course Outcomes (CO):

CO1:Able to Estimate Errors-K3
CO2:Analyze dimensional change of bar-K4
CO3:Determine viscosity of liquid-K4
CO4:Study the characteristics of diode and ICs-K3
CO5:Determine surface tension of liquid-K4