KRISHASAMY COLLEGE OF SCIENCE, ARTS, AND MANAGEMENT FOR WOMEN
DEPARTMENT OF PHYSICS
ACADEMIC YEAR – (2023-2024)
COURSE OUTCOMES& MAPPING

SUBJECT : PROPERTIES OF MATTER AND ACOUSTICS
SUBJECT CODE : 23UPHYC13

COURSE OUTCOME

After attending the course, the student will be able to:

CO1	Relate elastic behavior in terms of three moduli of elasticity and working of torsion pendulum.
CO2	Able to appreciate concept of bending of beams and analyze the expression, quantify, and understand nature of materials.
CO3	Explain the surface tension and viscosity of fluid and support the interesting phenomena associated with liquid surface, soap films provide an analogue solution to many engineering problems.
CO4	Analyze simple harmonic motions mathematically and apply them. Understand the concept of resonance and use it to evaluate the frequency of vibration. Set up experiment to evaluate frequency of ac mains
CO5	Understand the concept of acoustics, importance of constructing buildings with good acoustics. Able to apply their knowledge of ultrasonics in real life, especially in medical field and assimilate different methods of production of ultrasonic waves

MAPPING WITH PROGRAM OUTCOMES

Map course outcomes **(CO) for** each course with program outcomes **(PO)** in the 3-pointscaleof STRONG (**S**), MEDIUM (**M**) and LOW (**L**).

	PO1	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**	**PO7**	**PO8**	**PO9**	**PO10**
CO1	S	S	M	M	S	M	M	S	M	S
CO2	M	S	S	S	M	M	S	M	S	S
CO3	S	M	S	M	S	S	M	S	S	S
CO4	S	S	S	S	S	M	S	M	M	M
CO5	M	M	S	S	M	S	S	S	S	M

SUBJECT : PRACTICAL – I
SUBJECT CODE : 23UPHYP14

COURSEOUTCOMES

At the end of the course, he student will be able to:

CO1	Understand and determine accurately the length, radius by using screw gauge and vernier calipers.
CO2	Grasp and find the Young's modulus, rigidity modulus of solid materials
CO3	Recognize and estimate the surface tension and interfacial properties two immiscible liquids.
CO4	Appreciate and measure the internal friction between the layers of the liquid.
CO5	Perform experiments in sonometer and verification of laws of transverse vibrations.

MAPPINGWITH PROGRAMOUTCOMES:

Map course outcomes **(CO)** for each course with program outcomes **(PO)** inthe3-pointscaleofSTRONG(**S**), MEDIUM (**M**) and LOW (**L**).

	PO1	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**	**PO7**	**PO8**	**PO9**	**PO10**
CO1	S	S	S	S	S	S	S	M	S	M
CO2	M	S	S	S	M	S	S	M	M	M
CO3	S	S	S	M	S	S	S	M	S	M
CO4	S	S	S	S	S	S	S	M	M	M
CO5	S	M	S	S	S	S	S	M	M	S

SUBJECT : CHEMISTRY FOR PHYSICAL SCIENCE–I
SUBJECT CODE : 23UCHEE15

COURSE OUTCOME

CO1: Gain in-depth knowledge about the theories of chemical bonding, nuclear reactions and its applications.
CO2: Evaluate the efficiencies and uses of various fuels and fertilizers
CO3: Explain the type of hybridization, electronic effect and mechanism involved in the organic reactions.
CO4: Apply various thermodynamic principles, systems and phase rule.
CO5: Explain various methods to identify an appropriate method for the separation of chemical components

MAPPINGWITH PROGRAMOUTCOMES:

CO/PSO	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5
CO1	3	3	3	3	3
CO2	3	3	3	3	3
CO3	3	3	3	3	3
CO4	3	3	3	3	3
CO5	3	3	3	3	3
Weight age	15	15	15	15	15
Weighted percentage of Course Contribution to POs	3.0	3.0	3.0	3.0	3.0

Level of Correlation between PSO's and CO's

CO/PO	PO1	PO2	PO3	PO4	PO5
CO1	3	3	3	3	3
CO2	3	3	3	3	3
CO3	3	3	3	3	3
CO4	3	3	3	3	3
CO5	3	3	3	3	3
Weight age	15	15	15	15	15
Weighted percentage of Course Contribution to POs	3.0	3.0	3.0	3.0	3.0

Level of Correlation between PO's and CO's

SUBJECT : CHEMISTRY FOR PHYSICAL SCIENCE PRACTICALS –I
SUBJECT CODE : 23UCHEEP1

COURSE OUTCOME

CO1: Gain an understanding of the use of standard flask and volumetric pipettes, burette
.CO2: Design, carry out, record and interpret the results of volume trictitration.
CO3: Apply their skill in the analys is of water/hardness.
CO4: An alyze the chemical constituents in allied chemical products.

MAPPINGWITH PROGRAMOUTCOMES:

CO/PSO	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5
CO1	3	3	3	3	3
CO2	3	3	3	3	3
CO3	3	3	3	3	3
CO4	3	3	3	3	3
Weight age	12	12	12	12	12
Weighted percentage of Course Contribution to PSOs	3.0	3.0	3.0	3.0	3.0

Level of Correlation between PSO's and CO's

CO/PO	PO1	PO2	PO3	PO4	PO5
CO1	3	3	3	3	3
CO2	3	3	3	3	3
CO3	3	3	3	3	3
CO4	3	3	3	3	3
Weight age	12	12	12	12	12
Weighted percent age of Course Contribution to POs	3.0	3.0	3.0	3.0	3.0

Level of Correlation between PO's and CO's

SUBJECT : (Foundation Course) INTRODUCTORY PHYSICS
SUBJECT CODE : 23UPHYF17

COURSEOUTCOMES

At the end of the course, the student will be able to:

CO1	Apply concept of vectors to understand concepts of Physics and solve problems
CO2	Appreciate different forces present in Nature while learning about phenomena related to these different forces.
CO3	Quantify energy in different process and relate momentum, velocity, and energy
CO4	Differentiate different types of motions they would encounter in various courses and understand their basis
CO5	Relate various properties of matter with their behavior and connect them with different physical parameters involved.

MAPPINGWITH PROGRAMOUTCOMES

Map course out comes **(CO)** for each our switch program outcomes **(PO)** in the3-pointscaleofSTRONG(**S**), MEDIUM (**M**) and LOW (**L**).

	PO1	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**	**PO7**	**PO8**	**PO9**	**PO10**
CO1	S	S	S	S	S	S	S	M	S	M
CO2	M	S	S	S	M	S	S	M	M	M
CO3	S	S	S	M	S	S	S	M	S	M
CO4	S	S	S	S	S	S	S	M	M	M
CO5	S	M	S	S	S	S	S	M	M	S

SUBJECT : HEAT, THERMODYNAMICS AND STATISTICAL MECHANICS
SUBJECT CODE: 23UPHYC23

COURSE OUTCOMES

At the end of the course, the student will be able to:

CO1	Acquires knowledge on how to distinguish between temperature and heat. Introduce him/her to the field of thermometry and explain practical measurements of high temperature as well as low temperature physics. Student identifies the relationship between heat capacity and specific heat capacity. The study of Low temperature Physics sets the basis for the students to understand cryogenics, superconductivity, super fluidity and Condensed Matter Physics
CO2	Derive the efficiency of Carnot's engine. Discuss the implications of the laws of Thermodynamics in diesel and petrol engines
CO3	Able to analyze performance of thermodynamic systems viz efficiency by problems. Gets an insight into thermodynamic properties like enthalpy, entropy
CO4	Study the process of thermal conductivity and apply it to good and bad conductors. Quantify different parameters related to heat, relate them with various physical parameters and analyse them
CO5	Interpret classical statistics concepts such as phase space, ensemble, and Maxwell-Boltzmann distribution law. Develop the statistical interpretation of Bose-Einstein and Fermi-Dirac. Apply to quantum particles such as photon and electron

MAPPING WITH PROGRAM OUTCOMES:

Map course out comes **(CO)** for each course with program outcomes **(PO)** in the 3-pointscaleofSTRONG(**S**), MEDIUM (**M**) and LOW (**L**).

	PO1	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**	**PO7**	**PO8**	**PO9**	**PO10**
CO1	S	S	S	S	S	S	S	M	S	M
CO2	M	S	S	S	M	S	S	M	M	M
CO3	S	S	S	M	S	S	S	M	S	M
CO4	S	S	S	S	S	S	S	M	M	M
CO5	S	S	M	S	S	S	M	M	S	M

SUBJECT : PRACTICAL – II
SUBJECT CODE : 23UPHYP24

COURSEOUTCOMES

At the end of the course, the student will be able to:

CO1	Understand and determine accurately the elevation, depression of a loaded wooden bar using travelling microscope.
CO2	Grasp and find the Young's modulus, rigidity modulus of some selected solid materials
CO3	Recognize and estimate the density and frequency of AC supply using sonometer.
CO4	Appreciate and measure the thermal properties such as specific heat and thermal conductivity of solids.
CO5	perform experiments in potentiometer, Melde's apparatus, and deflection magnetometer

MAPPINGWITHPROGRAMOUTCOMES

Map course outcomes **(CO)** for each course with program outcomes **(PO)** inthe3-pointscaleofSTRONG(**S**), MEDIUM (**M**) and LOW (**L**).

	PO1	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**	**PO7**	**PO8**	**PO9**	**PO10**
CO1	S	S	S	S	S	S	S	M	S	M
CO2	M	S	S	S	M	S	S	M	M	M
CO3	S	S	S	M	S	S	S	M	S	M
CO4	S	S	S	S	S	S	S	M	M	M
CO5	S	M	S	S	S	S	S	M	M	S

SUBJECT : Chemistry for Physical Science–II
SUBJECT CODE : 23UPHYP24

COURSE OUTCOME

CO1: Write the IUPAC name for complex, different the orient explain the bonding in coordination compounds and water technology
CO2: Explain the preparation and property of carbohydrate, amino acids and nucleic acids.
CO3: Apply/demonstrate the electro chemistry principles in corrosion, electroplating and fuel cells.
CO4: Dentify the reaction rate, order for chemical reaction and explain the purpose of a catalyst.
CO5: outline the various type of photo chemical process.

MAPPINGWITHPROGRAMOUTCOMES

CO/PSO	PSO 1	PSO 2	PSO 3	PSO 4	PSO5
CO1	3	3	3	3	3
CO2	3	3	3	3	3
CO3	3	3	3	3	3
CO4	3	3	3	3	3
CO5	3	3	3	3	3
Weight age	15	15	15	15	15
Weighted percentage of Course Contribution to PSOs	3.0	3.0	3.0	3.0	3.0

Level of Correlation between PSO' sand CO's

CO/PO	PO1	PO2	PO3	PO4	PO5
CO1	3	3	3	3	3
CO2	3	3	3	3	3
CO3	3	3	3	3	3
CO4	3	3	3	3	3
CO5	3	3	3	3	3
Weight age	15	15	15	15	15
Weighted percentage of Course Contribution to POs	3.0	3.0	3.0	3.0	3.0

Level of Correlation between PO's and CO's

SUBJECT : Chemistry for Physical Science Practical's –II
SUBJECT CODE : 23UCHEEP2

COURSE OUTCOME

CO1: Gain an understanding of the use of standard flask and volumetric pipettes, burette.
CO2: Design, carryout, record and interpret the results of volumetric titration.
CO3: Apply the irk skill in the analysis of water/hardness.
CO4: Analyze the chemical constituents in allied chemical products.

MAPPINGWITHPROGRAMOUTCOMES

CO/PSO	PSO 1	PSO 2	PSO 3	PSO 4	PSO5
CO1	3	3	3	3	3
CO2	3	3	3	3	3
CO3	3	3	3	3	3
CO4	3	3	3	3	3
Weight age	12	12	12	12	12
Weighted percent age of Course Contribution to PSOs	3.0	3.0	3.0	3.0	3.0

Level of Correlation between PSO's and CO's

CO/PO	PO1	PO2	PO3	PO4	PO5
CO1	3	3	3	3	3
CO2	3	3	3	3	3
CO3	3	3	3	3	3
CO4	3	3	3	3	3
Weight age	12	12	12	12	12
Weighted percent age of Course Contribution to POs	3.0	3.0	3.0	3.0	3.0

Level of correlation between CO's and PO's

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COURSE OUTCOME & MAPPING

SUBJECT : PROPERTIES OF MATTER AND SOUND
SUBJECT CODE : 22UPHYC13

COURSE OUTCOMES

On completion of the course, the student would have learn the following:

1. Theory of Elasticity and bending of beams, Couple per unit twist of a wire, Torsional pendulum ideas.
2. have knowledge on surface properties of liquids and its determination methods.
3. Understood the viscous behaviour of liquids and gasses.
4. understood the Physics of sound and its applications
5. Learned the method of producing ultrasonic waves and its applications. The concepts of acoustic comfort and the theories used in building acoustics, use of sound in oil industry

OUTCOME MAPPING

CO/PO	PO1	PO2	PO3	PO4	PO5
CO1	3	3	3	2	3
CO2	3	3	3	2	2
CO3	3	2	3	3	2
CO4	2	3	2	2	3
CO5	3	2	3	3	3

1-LOW, 2- MODERATE, 3- HIGH

SUBJECT CODE : 22UPHYC14
SUBJECT : HEAT AND THERMODYNAMIC

COURSE OUTCOMES

1. After the completion this Course, the student would acquire the following:
2. Get an idea about the specific heat capacity and its determination methods.
3. Understood the kinetic theory of gases and gas laws.
4. Get acquainted with transmission of heat process and radiation laws.
5. Understood the method of generating low temperature and Superconductivity.
6. Learn the thermodynamic system and its associated laws.

OUTCOME MAPPING

CO/PO	PO1	PO2	PO3	PO4	PO5
CO1	3	3	3	3	3
CO2	2	3	3	2	2
CO3	3	2	3	3	2
CO4	2	3	2	2	3
CO5	3	2	3	3	3

CORRELATION LEVELS: 1- LOW, 2- MODERATE, 3- HIGH

SUBJECT CODE : 22UMATA01
SUBJECT : MATHEMATICS – I

COURSE OUTCOMES

On successful completion of the course, the students will be able to

1) Attain knowledge on finding approximate root for polynomial equations using Numerical methods.
2) Develop the skills of finding solutions of Simultaneous Linear equations.
3) Adopt techniques in solving problems involving Matrices
4) Provide skills on finding curvature and radius of curvature in Cartesian and polar co-ordinates.
5) Understand the applications of double and Triple integration in real life situation.

OUTCOME MAPPING

CO / PO	PO1	PO2	PO3	PO4	PO5
CO1	3	3	3	2	2
CO2	3	2	3	3	2
CO3	3	3	3	3	2
CO4	3	3	3	3	2
CO5	2	3	3	3	2

1-Low 2-Moderate 3- High

SUBJECT CODE: 22UPHYC23
SUBJECT : MECHANICS

COURSE OUTCOME

After the completion of the Course the student would understand the following:

1. The laws of conservation and collision of bodies
2. Calculate the moment of inertia of rigid body systems
3. Laws of gravitation, variation of ‘g’ and gravitational field and potential

4. The central force motion, centre of mass and variable mass systems
5. The friction, centre of gravity and flow of fluids

OUTCOME MAPPING

CO/PO	PO1	PO2	PO3	PO4	PO5
CO1	3	3	3	3	3
CO2	3	3	3	3	2
CO3	3	2	3	2	3
CO4	2	3	2	3	3
CO5	3	2	3	3	3

CORRELATION LEVELS: 1- LOW, 2- MODERATE, 3- HIGH

SUBJECT CODE : 22UPHYP24
SUBJECT : PRACTICAL – I

COURSE OUTCOMES

The student will be learn to determine the following physical properties:

1. Elastic properties of solids.
2. Physical properties of liquids
3. Thermal properties of matter
4. Optical and electrical properties of materials and semiconductors
5. Frequency of vibration, relative density, and acceleration due to gravity

OUTCOME MAPPING

CO/PO	PO1	PO2	PO3	PO4	PO5
CO1	3	2	3	2	2
CO2	2	3	2	3	2
CO3	3	2	3	2	2
CO4	3	3	2	2	3
CO5	2	2	3	2	3

CORRELATION LEVELS: 1- LOW, 2- MODERATE, 3- HIGH

SUBJECT CODE : 22UMATA02
SUBJECT : MATHEMATICS – II

COURSE OUTCOMES

On successful completion of the course, the students will be able to

1) Attain knowledge on finding the expansions of trigonometric functions and concept of hyperbolic and inverse hyperbolic functions.
2) Provide a basic knowledge of Partial Differential equations and develops knowledge on handle practical problems.
3) Adopt techniques in solving problems involving vector and scalar functions
4) Provide skills on finding derivatives and gradients on vector differentiation and Integration
5) Understand the applications of differentiation and integration in real life situation.

OUTCOME MAPPING

CO / PO	PO1	PO2	PO3	PO4	PO5
CO1	3	3	3	2	2
CO2	3	2	3	3	2
CO3	3	3	3	3	2
CO4	3	3	3	3	2
CO5	2	3	3	3	2

1-Low 2-Moderate 3- High

SUBJECT CODE : 22UPHYE26

SUBJECT : FUNDAMENTALS OF PHYSICS

COURSE OUTCOMES

Students studying Fundamentals of Physics course would have learn the following:

1. units and dimensions of various fundamental physical quantities
2. Different states of matter and conversion between them.
3. Types of energy and its conservation.
4. Pressure and temperature and their measurement using simple devices.
5. Principle and use of mirrors, lenses and scattering of light.

OUTCOME MAPPING

CO/PO	PO1	PO2	PO3	PO4	PO5
CO1	3	3	3	3	3
CO2	3	3	3	2	2
CO3	2	3	2	3	2
CO4	3	2	3	3	3
CO5	2	3	2	2	3

CORRELATION LEVELS: 1- LOW, 2- MODERATE, 3- HIGH

SUBJECT : OPTICS AND SPECTROSCOPY
SUBJECD COD : 22UPHYC33

COURSE OUTCOMES

On Completion of the course, the learner would well acquaint with the following:

1. The knowledge of geometric optics and aberrations in lens system helps in the practical design of optical systems and instruments.
2. The study of phenomena interference, thin films and its applications.
3. The knowledge about diffraction, Single Slit and Double Slit diffraction patterns.

OUTCOME MAPPING

CO/PO	**PO1**	**PO2**	**PO3**	**PO4**	**PO5**
CO1	**3**	**3**	**3**	**2**	**3**
CO2	**3**	**3**	**3**	**2**	**2**
CO3	**3**	**2**	**2**	**3**	**3**
CO4	**2**	**3**	**2**	**2**	**3**
CO5	**3**	**2**	**3**	**3**	**3**

CORRELATION LEVELS: 1- LOW, 2- MODERATE, 3- HIGH

SUBJECT : ALLIED CHEMISTRY-I
SUBJECD COD : 22UCHEA35

COURSE OUTCOMES

1) Acquire thorough Knowledge about Metallurgy and Fundamental concepts in Organic chemistry.
2) Acquire an idea about Chemical Kinetics.
3) Identify the Importance of Nuclear chemistry and Metallic Bond.
4) Acquire Knowledge on Photo chemistry
5) Extensive Knowledge about Fuels

Outcome Mapping

	PO1	PO2	PO3	PO4	PO5
CO1	2	3	2	3	3
CO2	2	3	3	3	3
CO3	3	2	3	3	2
CO4	3	3	2	2	3
CO5	3	3	3	3	2

1-Low 2-Moderate 3- High

SUBJECT : MOBILE CELLULAR TECHNOLOGY

SUBJECT CODE : 22UPHYE37-1

COURSE OUTCOMES

After completion of the above course material the student would have learnt the following:

1. Understand the cellular communication system.
2. Know the smart phones and various mobile standards like 1G, 2G, etc.
3. Chip level information and soldering and de-soldering the various components.

The network problems and SIM card problems and to learn the trouble shooting process.

OUTCOME MAPPING

CO/PO	PO1	PO2	PO3	PO4	PO5
CO1	3	3	3	3	3
CO2	3	2	2	3	3
CO3	3	3	3	2	2
CO4	2	3	3	3	3
CO5	2	2	2	2	3

CORRELATION LEVELS: 1- LOW, 2- MODERATE, 3- HIGH

SUBJECT : ELECTRICITY AND ELECTROMAGNETISM

SUBJECT CODE : 22UPHYC43

COURSE OUTCOMES

On completion of course students will be able to:

1. Explain the basic laws of electrostatics and their applications to capacitor.
2. Understood the use of Kirchhoff's law, magnetic induction and their applications.
3. Describe the laws of electromagnetic induction, self-inductance and mutual inductance.
4. Understand the phenomena of the growth and decay of current in a circuit containing L, C, and R and their AC behavior.
5. Get acquainted with the electromagnetic waves and Maxwell's equations and its implications.

OUTCOME MAPPING

CO/PO	PO1	PO2	PO3	PO4	PO5
CO1	3	3	3	3	3
CO2	3	3	3	2	2
CO3	2	3	2	3	2
CO4	2	3	2	2	3
CO5	3	2	3	2	3

CORRELATION LEVELS: 1- LOW, 2- MODERATE, 3- HIGH

SUBJECT : PRACTICAL - II
SUBJECT CODE: 22UPHYP44

COURSE OUTCOMES

On completion of the course students will have the following capabilities:

1. Develop the skill to calculate material properties.
2. Calibrate ammeter and specific resistance of wire.
3. Usage of Ballistic Galvanometer to compare emfs of cells
4. Learn to construct voltage regulator
5. Construct and check the operation of digital logic gates with discrete components and ICs.

OUTCOME MAPPING

CO/PO	PO1	PO2	PO3	PO4	PO5
CO1	3	3	3	2	3
CO2	2	3	2	3	2
CO3	3	2	3	2	2
CO4	3	3	3	2	3
CO5	2	2	3	2	2

CORRELATION LEVELS: 1- LOW, 2- MODERATE, 3- HIGH

SUBJECT : ALLIED CHEMISTRY-II
SUBJECT CODE: 22UCHEA45

COURSE OUTCOMES

1) Wide Knowledge about Coordination Chemistry.

2) Identify the importance of Carbohydrates, Amino acids and Proteins.
3) Acquire Knowledge about the action of drugs.
4) Able to understand about Paint and Varnishes.
5) Able to understand the concepts of pH and Buffers in living systems.

Outcome Mapping

	PO1	PO2	PO3	PO4	PO5
CO1	2	3	2	3	3
CO2	2	3	3	3	3
CO3	3	2	3	3	2
CO4	3	3	2	2	3
CO5	3	3	3	3	2

1-Low 2-Moderate 3- High

SUBJECT : ALLIED CHEMISTRY PRATICALS

SUBJECT CODE : 22UCHEAP46

COURSE OUTCOMES

1) Able to understand the techniques of Titrimetric Analysis.
2) Acquire knowledge in Analytical skills.
3) Analyse the given unknown solution and assess its normality.
4) Evaluate the amount of substance from the normality.
5) Predict the hardness of water samples using EDTA.

Outcome Mapping

	PO1	PO2	PO3	PO4	PO5
CO1	2	3	2	3	3
CO2	2	3	3	3	3
CO3	3	2	3	3	2
CO4	3	3	2	2	3
CO5	3	3	3	3	2

1-Low 2-Moderate 3- High

SUBJECT : ELECTRONICS TECHNOLOGY

SUBJECT CODE: 22UPHYS48

COURSE OUTCOMES

After finishing the course, the student would have learnt the following:

1. Get acquainted with the specific skills in the testing of components.
2. The functions and working of different power supply system and voltage regulation methods.
3. the principle and working of different domestic electrical and electronics appliances
4. Understood the various standard sockets, cables and modern communication standards.
5. The principle of operation of instruments in diagnosis, therapeutic treatment and imaging fields and their applications.

OUTCOME MAPPING

CO/PO	PO1	PO2	PO3	PO4	PO5
CO1	3	3	2	3	3
CO2	2	3	3	2	2
CO3	3	2	2	3	3
CO4	2	3	3	2	3
CO5	3	3	2	3	3

CORRELATION LEVELS: 1-LOW, 2- MODERATE, 3- HIGH

6.

SUBJECT : 22UPHYC51

SUBJECT CODE: ATOMIC AND MOLECULAR PHYSICS

COURSE OUTCOMES

After completing this course, the learner would be capable of:

1. Knowing the properties of cathode and positive rays, the experiments for finding the specific charge, and the principle and working of mass spectrograph.
2. Understanding the structure of the atom and the spectral lines.
3. analyzing the effects of magnetic field on atomic spectra
4. Understanding photoelectric effect and derive the Einstein’s photoelectric equation.
5. Recognizing various energy levels viz., rotational, vibrational etc. And learned the principle of Infrared spectroscopy, Raman effect and Laser

OUTCOME MAPPING

CO/PO	PO1	PO2	PO3	PO4	PO5
CO1	3	2	3	2	3
CO2	3	3	2	2	2
CO3	2	2	3	3	2
CO4	3	2	2	3	3
CO5	3	2	3	2	3

CORRELATION LEVELS: 1-LOW, 2- MODERATE, 3- HIGH

SUBJECT : 22UPHYC52
SUBJECT CODE: RELATIVITY AND QUANTUM MECHANICS

COURSE OUTCOMES

On completion of the course the students would have:

1. Obtained knowledge in concepts of special and general theory of relativity
2. Obtained idea about dual nature of matter
3. Ability to derive Schrodinger wave equation and understood Heisenberg's uncertainty principle.
4. Understood the application of Schrodinger's wave equations.
5. Get expose to operators and their commutation relations.

OUTCOME MAPPING

CO/PO	PO1	PO2	PO3	PO4	PO5
CO1	2	2	3	3	3
CO2	3	3	2	2	2
CO3	2	2	3	3	2
CO4	2	3	2	3	3
CO5	2	2	2	2	3

CORRELATION LEVELS: 1-LOW, 2- MODERATE, 3- HIGH

SUBJECT : 22UPHYC53

SUBJECT CODE: ANALOG ELECTRONICS

COURSE OUTCOMES

On completion of the course the students will be able to:

1. Work with semiconductors, p-n junction and special diodes
2. Know the transistor, its Characteristics and transistor amplifier
3. Apply feedback principle, understand oscillators and multivibrators
4. Understand the operation and importance of some special semiconductor devices
5. Acquire idea on Operational Amplifier IC and its applications.

OUTCOME MAPPING

CO/PO	PO1	PO2	PO3	PO4	PO5
CO1	3	3	3	2	3
CO2	3	3	3	3	2
CO3	2	2	2	2	2
CO4	3	3	3	3	3
CO5	2	3	2	3	3

CORRELATION LEVELS: 1- LOW, 2- MODERATE, 3- HIGH

SUBJECT : 22UPHYC54

SUBJECT CODE: DIGITAL ELECTRONICS

COURSE OUTCOMES

1. On completion of this course, the student will get acquainted with the following ideas:
2. Various number systems and their significance, number conversions and the theorems of Boolean algebra and basic logic gates.
3. The simplification methods of Boolean expression by algebra and K map
4. Knowledge on combinational logic circuits, arithmetic, encoder, decoders etc.,
5. The different varieties of Flip-flops, Shift registers and counters.

OUTCOME MAPPING

CO/PO	PO1	PO2	PO3	PO4	PO5
CO1	3	3	3	2	3
CO2	2	3	3	3	2
CO3	3	2	3	3	2
CO4	3	3	3	3	3
CO5	3	2	3	2	3

CORRELATION LEVELS: 1-LOW, 2- MODERATE, 3- HIGH

SUBJECT : 22UPHYC61
SUBJECT CODE : SOLID STATE PHYSICS

COURSE OUTCOMES

On completion of the course, the learner would be knowing the points listed below

1. The nature and behavior of bonding in solids
2. How crystalline materials are studied using diffraction techniques
3. The behavior of solids with their magnetic properties.
4. The concept of dielectric properties in solids
5. The importance of superconducting materials in engineering applications.

OUTCOME MAPPING

CO/PO	PO1	PO2	PO3	PO4	PO5
CO1	3	3	3	3	3
CO2	3	3	3	2	2
CO3	2	2	2	3	2
CO4	2	2	2	3	3
CO5	3	2	2	3	3

CORRELATION LEVELS: 1-LOW, 2- MODERATE, 3- HIGH

SUBJECT : NUCLEAR AND PARTICLE PHYSICS

SUBJECT CODE: 22UPHYC62

COURSE OUTCOMES

On completion of the course students would have understood the following:

1. Gain knowledge of Nuclei and nuclear models
2. Obtain ideas about radioactivity and α, β, γ rays
3. Know about various types of detectors and accelerators.
4. the concept of nuclear models and reactors.
5. knowledge about the basic interaction of fundamental particles and quark model.

OUTCOME MAPPING

CO/PO	PO1	PO2	PO3	PO4	PO5
CO1	3	3	3	2	3
CO2	3	3	3	2	2
CO3	2	2	2	3	2
CO4	2	3	2	2	3
CO5	3	2	3	3	3

CORRELATION LEVELS: 1- LOW, 2- MODERATE, 3- HIGH

SUBJECT : APPLIED ELECTRONICS

SUBJECT CODE: 22UPHYC63

COURSE OUTCOMES

After completion of the course, the student would have understood the following:

1. Timer IC and its working modes, fixed voltage regulators, optoelectronic devices
2. Theory of modulation, AM and FM, side bands, detection methods
3. Types of antennae, principle of TV broadcasting
4. The principle behind light wave communication and systems
5. Various types of electronic communication and RADAR

OUTCOME MAPPING

CO/PO	**PO1**	**PO2**	**PO3**	**PO4**	**PO5**
CO1	**3**	**2**	**2**	**2**	**3**
CO2	**2**	**3**	**3**	**2**	**2**
CO3	**2**	**2**	**2**	**3**	**2**
CO4	**2**	**2**	**2**	**2**	**3**
CO5	**3**	**2**	**2**	**3**	**3**

CORRELATION LEVELS: 1-LOW, 2- MODERATE, 3- HIGH

SUBJECT : MICROPROCESSOR AND ITS APPLICATIONS
SUBJECT CODE: 22UPHYE64

COURSE OUTCOMES

On the completion of the course, students will be able to do the following:

1. Understood the micro processor architecture, functions of pins
2. Learned instruction set of 8085 microprocessor and practice programming skills
3. Able to write time delay programs and would do interfacing of memory devices
4. Perform and analyse the Interfacing of I/O devices and their methods
5. Familiar with interfacing of Data converters and to use PPI 8255 IC

OUTCOME MAPPING

CO/PO	PO1	PO2	PO3	PO4	PO5
CO1	3	3	3	3	3
CO2	3	3	3	3	2
CO3	3	2	3	2	3
CO4	3	3	3	3	3
CO5	3	3	2	3	3

CORRELATION LEVELS: 1- LOW, 2- MODERATE, 3- HIGH

SUBJECT : GENERAL EXPERIMENTS
SUBJECT CODE : 22UPHYP65

COURSE OUTCOMES

After completing the above experiments, the leaner would be able to:

1. Estimate the elastic and optical properties of materials
2. Determine electrical properties of passive components using ballistic galvanometer
3. Determine magnetic properties of coil using magnetometers
4. Estimate the inductance of a coil using an AC bridge
5. Convert galvanometer for Volt and Current measurements

OUTCOME MAPPING

CO/PO	PO1	PO2	PO3	PO4	PO5
CO1	3	2	3	2	3
CO2	3	3	2	3	2
CO3	3	2	2	2	2
CO4	3	3	3	2	3
CO5	2	2	3	2	2

CORRELATION LEVEL: 1-LOW, 2-MODERATE, 3-HIGH

SUBJECT : ELECTRONICS EXPERIMENTS
SUBJECT CODE: 22UPHYP66

COURSE OUTCOMES

After finishing the course, the learner would be capable of:

1. Performing experiments to study the behavior of resonance, regulator, amplifier, oscillator, op amp application circuits
2. Performing experiment to study the characteristics of electronic devices
3. Studying the working of some combinational circuits
4. Understanding the operation of few sequential circuits
5. Knowing to program the microprocessor – Intel 8085

OUTCOME MAPPING

CO/PO	PO1	PO2	PO3	PO4	PO5
CO1	3	3	3	2	2
CO2	2	3	2	3	2
CO3	3	3	3	3	3
CO4	3	3	3	3	3
CO5	2	2	3	2	2

CORRELATION LEVEL: 1-LOW, 2-MODERATE, 3-HIGH