Academic Year	2020-21

B.P.H.E. Society's
Ahmednagar College, Ahmednagar
Internal Quality Assurance Cell
CO, PO, and PSO Attainment Sheet

Department Name	Physics

Program Name	M.Sc.

Program Outcomes(PO)

PO1	To foster scientific attitude, provide in-depth knowledge of scientific and technological concepts of Physics.
PO2	To enrich knowledge through problem solving, minor/major projects, seminars, tutorials, review of research articles/papers, participation in scientific events, study visits, etc.
PO3	To familiarize with recent scientific and technological developments.
PO4	To create foundation for research and development in Physics.
PO5	To help students to learn various experimental and computational tools thereby developing analytical abilities to address real world problems.
PO6	To train students in skills related to research, education, industry and market.
PO7	To help students to build-up a progressive and successful career in Physics
PO8	
PO9	
PO10	
PO11	
PO12	

Program Specific Outcome(PSO)

PSO1	Student will have in depth knowledge of the subject
PSO2	Students will have acquired necessary communication skills to teach Physics in Colleges
PSO3	Students will have acquired necessary skills for working in research institutes

Academic Year :	2020-21

Class		M.Sc.I	Course Outcomes	Program Outcomes							PSOs		
Subject Code		PHUT-112		PO1	PO2	PO3	PO4	PO5	PO6	PO7	PSO1	PSO2	PSO3
Subject Name		Classical Mechanics	CO1	2	2	2	3	2	1	1	2	2	1
Semester No		I	CO2	2	2	1	1	2	1	2	1	2	1
Teacher Name		Sachin D. Ralegankar	CO3										
Course Outcomes			CO4										
	CO1	**The students will be able to apply the Variational Principles to real physical problems.**	CO5										
	CO2	**The students will be able to model mechanical systems, both in inertial and rotating frames, using Lagrange and Hamilton equations.**	Average	2.00	2.00	1.50	2.00	2.00	1.00	1.50	1.50	2.00	1.00
	CO3												
	CO4												
	CO5												

Class		M.Sc.I	Course Outcomes	Program Outcomes							PSOs		
Subject Code		PHUT-121		PO1	PO2	PO3	PO4	PO5	PO6	PO7	PSO1	PSO2	PSO3
Subject Name		Electrodynamics	CO1	3	2	3	2	3	2	3	1	1	2
Semester No		II	CO2	3	3	2	2	3	2	2	2	2	2
Teacher Name		Sachin D. Ralegankar	CO3	2	3	3	2	3	2	2	1	2	1
Course Outcomes			CO4	3	3	2	3	2	2	3	1	1	1
	CO1	**Understanding of Basics laws of Electromagnetism.**	CO5										
	CO2	**To Understand and solve advanced problems based on classical electrodynamics using Maxwell's equation.**	Average	2.75	2.75	2.50	2.25	2.75	2.00	2.50	1.25	1.50	1.50

	CO3	To understand the Physical significance of Inhomogenous equations
	CO4	The students will have an understanding of the covariant formulation of electrodynamics and the concept of retarded time for charges undergoing acceleration.
	CO5	

Class		M.Sc I
Subject Code		PHCT-113
Subject Name		ELECTRONICS
Semester No		I
Teacher Name		Pravin D. More
Course Outcomes		
	CO1	Student can easily identify electronic devices used in home appliance. Hence, can develop their thinking level with appliances.
	CO2	In digital electronics, they easily understands data conversion takes place.
	CO3	
	CO4	
	CO5	

Course Outcomes	Program Outcomes							PSOs		
	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PSO1	PSO2	PSO3
CO1	2	2	2	2	3	2	3	3	3	3
CO2	3	2	2	3	3	2	2	3	3	2
CO3										
CO4										
CO5										
Average	2.50	2.00	2.00	2.50	3.00	2.00	2.50	3.00	3.00	2.50

Class		M.Sc.I
Subject Code		PHCT-111
Subject Name		Mathematical Methods in Physics
Semester No		I
Teacher Name		Dr. Suhail A. A. R. Sayyed
Course Outcomes		
	CO1	Understanding of Complex Ananlysis
	CO2	Understanding of Vector Spaces
	CO3	Understanding of Matrix Algebra
	CO4	Ability to derive recurrence relations for Special Functions
	CO5	Ability to solve Fourier Series and Fourier Transform problems

Course Outcomes	Program Outcomes							PSOs		
	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PSO1	PSO2	PSO3
CO1	3	3	2	3	2	2	3	3	3	3
CO2	3	3	2	3	2	2	3	3	3	3
CO3	3	3	2	3	2	2	3	3	3	3
CO4	3	3	2	3	2	2	3	3	3	3
CO5	3	3	2	3	2	2	3	3	3	3
Average	3.00	3.00	2.00	3.00	2.00	2.00	3.00	3.00	3.00	3.00

Class		M.Sc.I
Subject Code		PHOT(B2)
Subject Name		Physics of Nanomaterials
Semester No		II
Teacher Name		Dr. Suhail A. A. R. Sayyed
Course Outcomes		
	CO1	Understanding of quantum size effect
	CO2	Study of Physical and Chemical Synthesis Methods
	CO3	Understanding of special nanomaterials
	CO4	Understanding the properties of nanomaterials
	CO5	Understanding of applications of nanomaterials

Course Outcomes	Program Outcomes							PSOs		
	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PSO1	PSO2	PSO3
CO1	3	3	3	3	3	3	3	3	3	3
CO2	3	3	3	3	3	3	3	3	3	3
CO3	3	3	3	3	3	3	3	3	3	3
CO4	3	3	3	3	3	3	3	3	3	3
CO5	3	3	3	3	3	3	3	3	3	3
Average	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00

Class		M.Sc.I
Subject Code		PHOP(B2)
Subject Name		Physics of Nanomaterials
Semester No		II
Teacher Name		Dr. Suhail A. A. R. Sayyed
Course Outcomes		
	CO1	Understanding sol-gel method
	CO2	Understanding hydrothermal method
	CO3	Understanding CBD method
	CO4	Determine average crystalline size
	CO5	Determine bangap by UV-Vis

Course Outcomes	Program Outcomes							PSOs		
	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PSO1	PSO2	PSO3
CO1	3	3	3	3	3	3	3	3	3	3
CO2	3	3	3	3	3	3	3	3	3	3
CO3	3	3	3	3	3	3	3	3	3	3
CO4	3	3	3	3	3	3	3	3	3	3
CO5	3	3	3	3	3	3	3	3	3	3
Average	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00

Class		M.Sc. I
Subject Code		PHCT-123 (20233)
Subject Name		Quantum Mechanics
Semester No		II
Teacher Name		Prof. Shelke P. B.
Course Outcomes		
	CO1	In this course will learn basic as well as advanced concepts of quantum mechanics.

Course Outcomes	Program Outcomes							PSOs		
	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PSO1	PSO2	PSO3
CO1	3	3	3	3	2	2	1	3	2	2
CO2	3	2	2	2	2	1	2	2	3	2
CO3	2	3	2	2	2	2	1	2	2	3
CO4										
CO5										

	CO2	In basics concepts, apart from revision of basic concepts, students will also learn about Representation of states and dynamical variables, observables, selfadjoint operators, eigen functions and eigen values, degeneracy, Dirac delta function, Completeness and closure property, Physical interpretation of eigen values, eigen functions and expansion coefficients, eigen values and eigen functions of momentum operator	Average	2.67	2.67	2.33	2.33	2.00	1.67	1.33	2.33	2.33	2.33
	CO3	In advanced concepts, students will learn about Hilbert space, Dirac notations, operator method for solving SHO problem, theory of angular momentum and approximations methods such as Time-independent Perturbation theory, Time-dependent Perturbation theory, Fermi's golden rule, WKB approximation and Variational method and their applications											
	CO4												
	CO5												

Class	M.Sc. 1
Subject Code	PHCT122
Subject Name	Atoms and Molecules
Semester No	2
Teacher Name	R V Late

Course Outcomes

	CO1	In this course students will learn about atomic spectra, molecular spectra, resonance spectroscopy (ESR and NMR)
	CO2	Some concepts Laue theory of X-ray diffraction, Geometrical structure factor, Atomic scattering factor, Brillouin zone, Phonon, Vibrational modes of monoatomic linear lattice & diatomic lattice, Acoustic & optical modes of vibration
	CO3	Lattice heat capacity, Einstein & Debye model of lattice heat capacity;Normal & Umklapp processes
	CO4	students will understand principles of ESR and NMR, and construction of ESR and NMR spectrometers, and their applications.
	CO5	

Course Outcomes	Program Outcomes							PSOs		
	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PSO1	PSO2	PSO3
CO1	3	1	3	3	1	3	2	3	3	2
CO2	3	2	3	3	3	3	2	2	2	2
CO3	2	2	1	1	1	2	2	3	2	2
CO4	3	3	3	3	2	3	2	3	2	3
CO5										
Average	2.75	2.00	2.50	2.50	1.75	2.75	2.00	2.75	2.25	2.25

Class		M. Sc.-I
Subject Code		PHCP-115
Subject Name		Physics Laboratory – I
Semester No		I
Teacher Name		Y. B. Sawane
Course Outcomes		
	CO1	To learn to design and build various electronics experiments such as oscillators, waveform generator, V to F converter, etc.
	CO2	To develop ability to find faults in the electronic circuits.
	CO3	To learn handling various electronic instruments and components such as CRO, power supply, multimeter, IC 741.
	CO4	To understand precision rectifier and filter circuits.
	CO5	To correlate experimental results with the theory.

Course Outcomes	Program Outcomes							PSOs		
	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PSO1	PSO2	PSO3
CO1	3	3	3	3	3	2	2	3	3	3
CO2	2	3	2	3	2	3	3	3	3	3
CO3	2	3	3	3	2	3	3	2	2	3
CO4	3	3	3	3	3	2	3	3	2	2
CO5	3	3	2	3	2	3	3	2	3	2
Average	2.60	3.00	2.60	3.00	2.40	2.60	2.80	2.60	2.60	2.60

Class		M. Sc. I
Subject Code		**PHCP-125**
Subject Name		**Physics Laboratory - II**
Semester No		II
Teacher Name		Y. B. Sawane
Course Outcomes		
	CO1	1. Be able to perform experiments like Frank-Hertz experiment and should be able to analyze the data. Be able to perform experiment to determine skin depth of a conductor and compare the observed value with the theoretical value and find the sources of error.
	CO2	2. Be able to operate GM tube to study characteristics of radio activity. Be able to determine the Lande's g factor by using Electron spin resonance experiment.

Course Outcomes	Program Outcomes							PSOs		
	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PSO1	PSO2	PSO3
CO1	3	2	1	1	2	2	2	3	2	2
CO2	3	2	2	2	2	1	2	3	1	2
CO3	3	1	1	2	2	1	2	3	2	2
CO4	3	2	2	3	2	2	2	3	1	2
CO5	3	1	2	3	2	2	2	3	2	1
Average	3.00	1.60	1.60	2.20	2.00	1.60	2.00	3.00	1.60	1.80

	CO3	3 Be able to plan and perform experiment to study the electromagnetic damping using balastic galvanometer.
	CO4	4. Be able to get the iodine spectrum and study it.
	CO5	5. Be able to get steady interference pattern using etalon and determine the spacing between to plates of etalon. Should be able to understand the basics of determination of resistivity of a thin film by using four probe method.

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			Course Outcomes	Program Outcomes							PSOs		
Class		M.Sc II		PO1	PO2	PO3	PO4	PO5	PO6	PO7	PSO1	PSO2	PSO3
Subject Code		PHOT2444N	CO1	3	3	2	3	3	3	3	3	3	2
Subject Name		ELECTRONIC INSTRUMENTATION II	CO2	3	3	2	3	3	3	3	3	3	3
Semester No		IV	CO3	3	2	3	3	3	3	3	3	3	3
Teacher Name		Prof. Pravin D. More	CO4										
Course Outcomes			CO5										
	CO1	Student get the basic knowledge of process control system	Average	3.00	2.67	2.33	3.00	3.00	3.00	3.00	3.00	3.00	2.67
	CO2	Student understands selection of controllers and its use in automation industry											
	CO3	Student understands use MATLAB, Simulation											
	CO4												
	CO5												

			Course Outcomes	Program Outcomes							PSOs		
Class		M.Sc. 2		PO1	PO2	PO3	PO4	PO5	PO6	PO7	PSO1	PSO2	PSO3
Subject Code		PHOTD4	CO1	3	2	3	3	2	2	3	3	1	3
Subject Name		Physics of Semiconductor Devices	CO2	2	2	3	2	1	2	2	3	1	1
Semester No		3	CO3	2	3	3	2	1	2	2	2	1	1
Teacher Name		Kalyan Chavan	CO4	2	3	3	3	1	2	3	3	1	3
Course Outcomes			CO5	3	3	3	2	1	2	2	2	1	1
	CO1	Apply the knowledge of basic semiconductor material physics and understand fabrication processes.											

	CO2	Analyse the characteristics of various electronic devices like diode ,transistor etc.,.	Average	2.40	2.60	3.00	2.40	1.20	2.00	2.40	2.60	1.00	1.80
	CO3	Classify and Analyze the various circuit configurations of Transistor and MOSFETs.											
	CO4	TO understand the heterojunctions											
	CO5	Applications of Heterojunction											

Class	M.Sc. 2	Course Outcomes	Program Outcomes							PSOs		
Subject Code	PHCT 241		PO1	PO2	PO3	PO4	PO5	PO6	PO7	PSO1	PSO2	PSO3
Subject Name	Nuclear Physics	CO1	3	3	3	3	0	3	2	3	3	3
Semester No	4	CO2	3	2	3	3	0	3	2	3	3	2
Teacher Name	Kalyan Chavan	CO3	3	2	3	2	2	2	2	3	3	2
Course Outcomes		CO4	3	2	3	2	0	2	2	3	3	3
CO1	explain the ground state properties of the nucleus for study of the nuclear structure behavior.	CO5	2	2	3	2	2	1	2	3	3	2
CO2	demonstration of the shell model and collective model descriptions	Average	2.80	2.20	3.00	2.40	0.80	2.20	2.00	3.00	3.00	2.40
CO3	Understand concepts of reactors and accelerators											
CO4	to understand nuclear interactions and Particle Physics											
CO5	Applications of Fusion and Fission											

Class	M.Sc.II	Course Outcomes	Program Outcomes							PSOs		
Subject Code	PHCT-232		PO1	PO2	PO3	PO4	PO5	PO6	PO7	PSO1	PSO2	PSO3
Subject Name	Laser-Fundamentals and Applications	CO1	3	2	3	3	2	2	3	3	3	3
Semester No	III	CO2	3	2	3	2	1	2	2	3	3	2
Teacher Name	L.D.Deshmukh	CO3	3	3	3	2	1	2	2	3	3	2
Course Outcomes		CO4	3	3	3	3	1	2	3	3	3	3

	CO1	Able to understand the basic working principles of laser, characteristics of laser, interaction of radiation with matter: in terms of absorption and emission processes, as well as must condition to have a laser action	CO5	3	2	3	2	2	1	2	3	3	2
	CO2	Understand three level and four level laser system and their merits and demerits. Gaussian beam and their properties.	Average	3.00	2.40	3.00	2.40	1.40	1.80	2.40	3.00	3.00	2.40
	CO3	Stability condition for optical resonator in terms of g parameter											
	CO4	Idea about the types of laser depending on the active medium used for laser action and excitation mechanisms.											
	CO5	laser applications in varieties of field.											

Class		M.Sc. 2	Course Outcomes	Program Outcomes							PSOs		
Subject Code		PHOP234		PO1	PO2	PO3	PO4	PO5	PO6	PO7	PSO1	PSO2	PSO3
Subject Name		Physics of Thin Films	CO1	3	3	3	3	3	2	3	3	3	3
Semester No		3	CO2	2	2	3	3	3	1	2	2	3	3
Teacher Name		R V Late	CO3	3	2	3	2	3	1	3	3	2	3
Course Outcomes			CO4	2	2	2	2	2	2	2	2	2	2
	CO1	To introduce the students to basics area of research.	CO5	2	2	2	2	2	2	2	2	2	2
	CO2	Introduction to different types of experimental thin films deposition technique.	Average	2.40	2.20	2.60	2.40	2.60	1.60	2.40	2.40	2.40	2.60
	CO3	To understand the basic properties of thin film like how the electrical, optical and mechanical properties of thin film changes with film thickness.											
	CO4	To promote the students to seek research as career.											
	CO5	To prepare thin film structure by using various methods											

Class		M.Sc. II
Subject Code		PHCT 233
Subject Name		Experimental Techniques in Physics 1
Semester No		III
Teacher Name		Y. B. Sawane
Course Outcomes		
	CO1	After studying module number one, student should able to understand the types of signals and their analysis
	CO2	Understand the basic concepts of vacuum physics starts from basics and applications of vacuum technology , kinetic theory of gases, transport phenomenon, the types of flows etc.
	CO3	Able to understand the construction and basic working principles of types of vacuum pumps depending on the pressure ranges.
	CO4	Understand the knowledge about different vacuum measurement techniques.
	CO5	

Course Outcomes	Program Outcomes							PSOs		
	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PSO1	PSO2	PSO3
CO1	2	1	2	3	1	1	1	3	1	1
CO2	3	2	2	3	2	1	2	3	1	2
CO3	3	2	2	3	1	2	3	3	1	2
CO4	3	3	3	3	1	3	3	3	2	2
CO5										
Average	2.75	2.00	2.25	3.00	1.25	1.75	2.25	3.00	1.25	1.75

Class		M.Sc.II
Subject Code		PHCP-235
Subject Name		Physics Laboratory - III
Semester No		III
Teacher Name		Dr. Suhail A. A. R. Sayyed
Course Outcomes		
	CO1	Understanding of basics of C programming
	CO2	Understanding Numberical Methods
	CO3	To apply C programming for solving integration, differentiation, interpolation, montecarlo simulation etc.

Course Outcomes	Program Outcomes							PSOs		
	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PSO1	PSO2	PSO3
CO1	3	2	2	3	2	3	2	3	2	3
CO2	2	3	3	2	3	2	3	2	3	2
CO3	3	3	2	2	3	3	3	3	2	3
CO4	3	3	3	3	3	3	3	3	3	3
CO5	3	3	3	3	3	3	3	3	3	3
Average	2.80	2.80	2.60	2.60	2.80	2.80	2.80	2.80	2.60	2.80

	CO4	To study different Quantum Mechanics problems
	CO5	Solving Quantum Mechanics problems using C programming

Class		M. Sc.-II
Subject Code		20344N - PHOP-234-N
Subject Name		ELECTRONICS INSTRUMENTATION - I
Semester No		III
Teacher Name		K V Wagaskar
Course Outcomes		
	CO1	students should have gained sufficient knowledge of design and working of varies measuring Instruments
	CO2	students should have understood functional description of measuring instruments
	CO3	acquired necessary skills for designing new measuring instruments
	CO4	understood the functioning of various electrical transducers
	CO5	5. Understood the data acquisition systems transducers and Required skills for designing a sensor based application.

Course Outcomes	Program Outcomes							PSOs		
	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PSO1	PSO2	PSO3
CO1	3	3	2	3	0	1	2	2	1	3
CO2	3	2	2	2	0	1	2	2	2	3
CO3	3	2	3	2	0	1	2	2	1	3
CO4	2	3	2	2	0	1	2	3	1	2
CO5	2	2	3	3	0	1	2	2	1	3
Average	2.60	2.40	2.40	2.40	0.00	1.00	2.00	2.20	1.20	2.80

Class		M. Sc. -II
Subject Code		20442 - PHCT-242
Subject Name		MATERIALS SCIENCE
Semester No		IV
Teacher Name		K. V. Wagaskar
Course Outcomes		
	CO1	At the end of course Students should have gained deep understanding of the various properties of materials.

Course Outcomes	Program Outcomes							PSOs		
	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PSO1	PSO2	PSO3
CO1	2	3	3	2	1	2	2	2	2	2
CO2	3	3	2	3	2	2	1	2	3	2
CO3	3	3	3	2	2	2	2	2	3	2
CO4	2	3	3	3	1	2	1	1	3	1
CO5	3	2	2	3	1	1	1	2	2	2

	CO2	2. Students should be able to analyze the mechanism of formation of defects in the materials and estimate the densities of defects in the materials.	Average	2.60	2.80	2.60	2.60	1.40	1.80	1.40	1.80	2.60	1.80
	CO3	3. Students should be able to understand the mechanism of diffusion and the applications of diffusion.											
	CO4	4. Should be able to find the Gibb's free energy of mixing of solutions.											
	CO5	5. Should be able to draw and analyze phase diagrams of various systems of physical interest.											

Class	M.Sc. II	Course Outcomes	Program Outcomes							PSOs		
Subject Code	PHCT 242		PO1	PO2	PO3	PO4	PO5	PO6	PO7	PSO1	PSO2	PSO3
Subject Name	Experimental Techniques in Physics II	CO1	3	1	1	2	1	2	1	3	2	1
Semester No	IV	CO2	3	1	1	3	2	3	2	3	3	3
Teacher Name	Y. B. Sawane	CO3	3	1	2	3	2	3	1	3	1	1
Course Outcomes		CO4	3	1	2	3	3	3	3	3	2	2
	CO1	1 To know the various sources and detectors of the electromagnetic radiations. To know Operation principles of sensors such as electric, dielectric, acoustic, thermal, optical, mechanical, pressure, IR, UV, gas and humidity	CO5	3	1	2	3	1	2	2	3	2	2
	CO2	2 To understand Structural Characterization by X-ray Diffraction	Average	3.00	1.00	1.60	2.80	1.80	2.60	1.80	3.00	2.00	1.80
	CO3	3. To understand Principle, Instrumentation and Working of Thermo-gravimetric (TGA), Differential Thermal Analysis (DTA), Differential Scanning Calorimetry (DSC).											

	CO4	4. To gain insight in Morphological Characterization by studying SEM, TEM, STM, AFM and Magnetic Characterization by studying VSM.
	CO5	5. To gain knowledge regarding Spectroscopic characterization by studying IR, FTIR, UV-VIS, DRS, XPS, ESR and NMR techniques.

Class	M.Sc. II	Course Outcomes	Program Outcomes							PSOs		
Subject Code	20445		PO1	PO2	PO3	PO4	PO5	PO6	PO7	PSO1	PSO2	PSO3
Subject Name	Project	CO1	2	3	3	2	2	2	1	3	2	2
Semester No	IV	CO2	3	2	2	3	3	3	2	2	3	2
Teacher Name		CO3	3	3	3	2	2	2	1	3	2	3
Course Outcomes		CO4	2	3	2	3	3	3	2	2	3	2
		CO5										
		Average	2.50	2.75	2.50	2.50	2.50	2.50	1.50	2.50	2.50	2.25

	CO1	1. Project students learn applications of concept of physics, development and setting of experimental set ups.
	CO2	2. It also creates research aptitude amongst the students for further studies.
	CO3	3. Project study gives introduction to research work usually carried out in research degrees like M.Phil and Ph.D.
	CO4	4. Some project which are applied can be used and find application in day to day life.
	CO5	

CO-PO Mapping

			Course	PO1	PO2	PO3	PO4	PO5	PO6	PO7
		1	PHUT-112	2.00	2.00	1.50	2.00	2.00	1.00	1.50
		2	PHUT-121	2.75	2.75	2.50	2.25	2.75	2.00	2.50
		3	PHCT-113	2.50	2.00	2.00	2.50	3.00	2.00	2.50
		4	PHCT-111	3.00	3.00	2.00	3.00	2.00	2.00	3.00
		5	PHOT(B2)	3.00	3.00	3.00	3.00	3.00	3.00	3.00
		6	PHOP(B2)	3.00	3.00	3.00	3.00	3.00	3.00	3.00
		7	PHCT-123 (202	2.67	2.67	2.33	2.33	2.00	1.67	1.33
		8	PHCT122	2.75	2.00	2.50	2.50	1.75	2.75	2.00
		10	PHCP-115	2.60	3.00	2.60	3.00	2.40	2.60	2.80
FY	FY	11	PHCP-125	3.00	1.60	1.60	2.20	2.00	1.60	2.00
		1	PHOT2444N	3.00	2.67	2.33	3.00	3.00	3.00	3.00
		3	PHOTD4	2.40	2.60	3.00	2.40	1.20	2.00	2.40
		4	PHCT 241	2.80	2.20	3.00	2.40	0.80	2.20	2.00
		5	PHCT-232	3.00	2.40	3.00	2.40	1.40	1.80	2.40
		6	PHOP234	2.40	2.20	2.60	2.40	2.60	1.60	2.40
		7	PHCT 233	2.75	2.00	2.25	3.00	1.25	1.75	2.25
		8	PHCP-235	2.80	2.80	2.60	2.60	2.80	2.80	2.80
		9	20344N - PHOP	2.60	2.40	2.40	2.40	0.00	1.00	2.00
		10	20442 - PHCT-2	2.60	2.80	2.60	2.60	1.40	1.80	1.40
		11	PHCT 242	3.00	1.00	1.60	2.80	1.80	2.60	1.80
SY	SY	12	20445	2.50	2.75	2.50	2.50	2.50	2.50	1.50

CO-PO ATTAINMENT

PO1	PO2	PO3	PO4	PO5	PO6	PO7
1.04	1.04	0.78	1.04	1.04	0.52	0.78
2.75	2.75	2.5	2.25	2.75	2	2.5
0.5	0.4	0.4	0.5	0.6	0.4	0.5
1.56	1.56	1.04	1.56	1.04	1.04	1.56
2.52	2.52	2.52	2.52	2.52	2.52	2.52
3	3	3	3	3	3	3
1.386667	1.386667	1.213333	1.213333333	1.04	0.866667	0.693333
1.87	1.36	1.7	1.7	1.19	1.87	1.36
2.6	3	2.6	3	2.4	2.6	2.8
3	1.6	1.6	2.2	2	1.6	2
1.56	1.386667	1.213333	1.56	1.56	1.56	1.56
2.144	2.322667	2.68	2.144	1.072	1.786667	2.144
2.8	2.2	3	2.4	0.8	2.2	2
2.2	1.76	2.2	1.76	1.026667	1.32	1.76
1.248	1.144	1.352	1.248	1.352	0.832	1.248
1.87	1.36	1.53	2.04	0.85	1.19	1.53
2.8	2.8	2.6	2.6	2.8	2.8	2.8
2.6	2.4	2.4	2.4	0	1	2
2.6	2.8	2.6	2.6	1.4	1.8	1.4
3	1	1.6	2.8	1.8	2.6	1.8
2.5	2.75	2.5	2.5	2.5	2.5	1.5

Percentage CO-PO ATTAINMENT

PO1	PO2	PO3	PO4	PO5	PO6	PO7
52	52	52	52	52	52	52
100	100	100	100	100	100	100
20	20	20	20	20	20	20
52	52	52	52	52	52	52
84	84	84	84	84	84	84
100	100	100	100	100	100	100
52	52	52	52	52	52	52
68	68	68	68	68	68	68
100	100	100	100	100	100	100
100	100	100	100	100	100	100
52	52	52	52	52	52	52
89.33333	89.33333	89.33333	89.33333	89.33333	89.33333	89.33333
100	100	100	100	100	100	100
73.33333	73.33333	73.33333	73.33333	73.33333	73.33333	73.33333
52	52	52	52	52	52	52
68	68	68	68	68	68	68
100	100	100	100	100	100	100
100	100	100	100	#DIV/0!	100	100
100	100	100	100	100	100	100
100	100	100	100	100	100	100
100	100	100	100	100	100	100

CO-PSO MAPPING

		Course	PSO1	PSO2	PSO3
	1	PHUT-112	1.50	2.00	1.00
	2	PHUT-121	1.25	1.50	1.50
	3	PHCT-113	3.00	3.00	2.50
	4	PHCT-111	3.00	3.00	3.00
	5	PHOT(B2)	3.00	3.00	3.00
	6	PHOP(B2)	3.00	3.00	3.00
	7	PHCT-123	2.33	2.33	2.33
	8	PHCT122	2.75	2.25	2.25
	10	PHCP-115	2.60	2.60	2.60
FY	11	PHCP-125	3.00	1.60	1.80
	1	PHOT2444	3.00	3.00	2.67
	3	PHOTD4	2.60	1.00	1.80
	4	PHCT 241	3.00	3.00	2.40
	5	PHCT-232	3.00	3.00	2.40
	6	PHOP234	2.40	2.40	2.60
	7	PHCT 233	3.00	1.25	1.75
	8	PHCP-235	2.80	2.60	2.80
	9	20344N - F	2.20	1.20	2.80
	10	20442 - PH	1.80	2.60	1.80
	11	PHCT 242	3.00	2.00	1.80
SY	12	20445	2.50	2.50	2.25

CO-PSO ATTAINMENT

Course	PSO1	PSO2	PSO3
PHUT-112	0.78	1.04	0.52
PHUT-121	1.25	1.5	1.5
PHCT-113	0.6	0.6	0.5
PHCT-111	1.56	1.56	1.56
PHOT(B2)	2.52	2.52	2.52
PHOP(B2)	3	3	3
PHCT-123 (20233)	1.213333	1.213333	1.213333
PHCT122	1.87	1.53	1.53
PHCP-115	2.6	2.6	2.6
PHCP-125	3	1.6	1.8
PHOT2444N	1.56	1.56	1.386667
PHOTD4	2.322667	0.893333	1.608
PHCT 241	3	3	2.4
PHCT-232	2.2	2.2	1.76
PHOP234	1.248	1.248	1.352
PHCT 233	2.04	0.85	1.19
PHCP-235	2.8	2.6	2.8
20344N - PHOP-234-N	2.2	1.2	2.8
20442 - PHCT-242	1.8	2.6	1.8
PHCT 242	3	2	1.8
20445	2.5	2.5	2.25

Percentage CO-PSO ATTAINMENT

Course	PSO1	PSO2	PSO3
PHUT-112	52	52	52
PHUT-121	100	100	100
PHCT-113	20	20	20
PHCT-111	52	52	52
PHOT(B2)	84	84	84
PHOP(B2)	100	100	100
PHCT-123	52	52	52
PHCT122	68	68	68
PHCP-115	100	100	100
PHCP-125	100	100	100
PHOT2444	52	52	52
PHOTD4	89.33333	89.33333	89.33333
PHCT 241	100	100	100
PHCT-232	73.33333	73.33333	73.33333
PHOP234	52	52	52
PHCT 233	68	68	68
PHCP-235	100	100	100
20344N - F	100	100	100
20442 - PH	100	100	100
PHCT 242	100	100	100
20445	100	100	100