Academic Year 2018-19

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

Department Name	**Physics**

Program Name	**B.Sc.**

Program Outcomes(PO)

PO1	To provide in depth knowledge of scientific and technological aspects of Physics.
PO2	To familiarize with current and recent scientific and technological developments.
PO3	To enrich knowledge through problem solving, hand on activities, study visits, projects etc.
PO4	To train students in skills related to research, education, industry, and market.
PO5	To create foundation for research and development in Physics
PO6	To develop analytical abilities towards real world problems
PO7	To help students build-up a progressive and successful career in Physics
PO8	
PO9	
PO10	
PO11	
PO12	

Program Specific Outcome(PSO)

PSO1	Conceptual understanding of Physics and its practical applications and scope in the present world.
PSO2	Develop and construct practical model systems from their conceptual knowledge.
PSO3	Acquire conceptual understanding of Physics to General real-world situations.

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Class		F. Y. B. Sc.	Course Outcomes	Program Outcomes							PSOs		
Subject Code		71220		PO1	PO2	PO3	PO4	PO5	PO6	PO7	PSO1	PSO2	PSO3
Subject Name		Paper II(Physics Principles and Applications, Electromagnetics)	CO1	3	1	1	0	2	1	1	3	2	1
Semester No		I and II	CO2	3	1	2	0	1	1	1	3	2	1
Teacher Name		Y. B. Sawane	CO3	3	2	3	1	2	2	2	3	1	2
Course Outcomes			CO4	3	3	3	3	2	3	3	3	3	3
	CO1	1. To demonstrate an understanding of electromagnetic waves and its spectrum. Understand the types and sources of electromagnetic waves and applications. Demonstrate an understanding of the electric force, field and potential, and related concepts, for stationary charges. Calculate electrostatic field and potential of simple charge distributions using	CO5	2	2	3	2	3	3	2	2	2	2
	CO2	2. To understand the general structure of atom, spectrum of hydrogen atom. Coulomb's law and Gauss's law.	Average	2.80	1.80	2.40	1.20	2.00	2.00	1.80	2.80	2.00	1.80

	CO3	3. To understand the atomic excitation and LASER principles. Demonstrate an understanding of the dielectric and effect on dielectric due to electric field.
	CO4	4. To understand the bonding mechanism in molecules and rotational andvibrational energy levels of diatomic molecules. Demonstrate an understanding of the magnetic field for steady currents using Biot-Savart and Ampere's laws. Demonstrate an understanding of magnetization of materials.
	CO5	5. To demonstrate quantitative problem solving skills in all the topics covered. Demonstrate quantitative problem solving skills in all the topics covered.

Class		F. Y. B. Sc.	Course Outcomes	Program Outcomes							PSOs		
Subject Code		71230		PO1	PO2	PO3	PO4	PO5	PO6	PO7	PSO1	PSO2	PSO3
Subject Name		Practical	CO1	3	2	3	2	2	2	2	3	3	2
Semester No		I and II	CO2	3	3	3	3	2	2	3	2	2	2
Teacher Name		Y. B. Sawane	CO3	3	2	2	3	2	2	3	3	2	2
Course Outcomes			CO4	2	3	2	2	2	2	3	3	2	3
	CO1	Acquire technical and manipulative skills in using laboratory equipment, tools, and materials.	CO5	2	2	2	2	2	2	3	3	3	3
	CO2	Demonstrate an ability to collect data through observation and/or experimentation and interpreting data.	Average	2.60	2.40	2.40	2.40	2.00	2.00	2.80	2.80	2.40	2.40

	CO3	Demonstrate an understanding of laboratory procedures including safety, and scientific methods.
	CO4	Demonstrate a deeper understanding of abstract concepts and theories gained by experiencing and visualizing them as authentic phenomena.
	CO5	Acquire the complementary skills of collaborative learning and teamwork in laboratory settings.

Class	F. Y. B. Sc.	
Subject Code	71210	
Subject Name	Meachnaics and Heat and Thermodynamics	
Semester No	I and II	
Teacher Name	Dr. R V Late	
Course Outcomes		
	CO1	Demonstrate an understanding of Newton's laws and applying them in calculations of the motion of simple systems.
	CO2	Use the free body diagrams to analyse the forces on the object.
	CO3	Understand the concepts of energy, work, power, the concepts of conservation of energy and be able to perform calculations using them
	CO4	Understand the concepts of elasticity and be able to perform calculations using them.

Course Outcomes	Program Outcomes							PSOs		
	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PSO1	PSO2	PSO3
CO1	3	2	2	3	2	2	2	3	2	2
CO2	3	2	2	2	2	3	1	3	3	2
CO3	3	2	3	2	2	2	1	2	2	3
CO4	2	2	3	2	2	2	2	3	2	3
CO5	2	2	1	2	2	1	3	3	2	3
Average	2.60	2.00	2.20	2.20	2.00	2.00	1.80	2.80	2.20	2.60

	CO5	Understand the concepts of surface tension and viscosity and be able to perform calculations using them

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Class	S.Y.B.Sc.
Subject Code	PHY 211
Subject Name	Mathematical Methods of Physics
Semester No	3
Teacher Name	Gangadhar Chavan
Course Outcomes	
CO1	Understand the complex algebra useful in physics courses
CO2	Understand the concept of partial differentiation.
CO3	Understand the role of partial differential equations in physics
CO4	Understand vector algebra useful in mathematics and physics
CO5	Understand the singular points of differential equation.

Course Outcomes	Program Outcomes							PSOs		
	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PSO1	PSO2	PSO3
CO1	1	0	3	1	1	1	1	1	1	1
CO2	1	0	3	2	1	1	1	1	1	1
CO3	1	0	3	1	1	1	1	1	1	1
CO4	1	0	3	1	1	1	0	1	1	1
CO5	1	0	3	1	1	1	1	1	1	1
Average	1.00	0.00	3.00	1.20	1.00	1.00	0.80	1.00	1.00	1.00

Class	S.Y.B.Sc.
Subject Code	812A1
Subject Name	Electronics
Semester No	3
Teacher Name	Kalyan Chavan
Course Outcomes	
CO1	• Apply laws of electrical circuits to different circuits.
CO2	• Understand the relations in electricity
CO3	• Understand the properties and working of transistors.
CO4	• Understand the functions of operational amplifiers.
CO5	. • Understand the Boolean algebra and logic circuits.

Course Outcomes	Program Outcomes							PSOs		
	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PSO1	PSO2	PSO3
CO1	3	3	3	3	1	3	2	3	3	3
CO2	3	3	3	1	1	1	2	3	3	3
CO3	3	2	3	2	1	2	1	2	3	3
CO4	2	2	3	3	1	2	2	2	3	3
CO5	3	3	3	2	3	2	2	3	3	2
Average	2.80	2.60	3.00	2.20	1.40	2.00	1.80	2.60	3.00	2.80

Class	S.Y.B.Sc.
Subject Code	81222
Subject Name	Optics

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

Semester No		4	CO2	3	1	0	1	1	1	1	3	1	1
Teacher Name		Kalyan Chavan	CO3	2	2	0	3	1	1	1	2	3	3
Course Outcomes			CO4	3	3	3	0	2	2	2	3	2	3
	CO1	Acquire basic concepts of optics	CO5										
	CO2	Understand basics of aberrations	Average	2.75	2.25	1.50	1.25	1.25	1.50	1.25	2.75	2.00	2.25
	CO3	familiarity with optical equipments											
	CO4	understand interference, diffraction and polarization											
	CO5												

Class		S.Y.B.Sc.	Course Outcomes	Program Outcomes							PSOs		
Subject Code		81232		PO1	PO2	PO3	PO4	PO5	PO6	PO7	PSO1	PSO2	PSO3
Subject Name		Practical Course	CO1	2	3	3	3	3	3	3	2	2	2
Semester No		4	CO2	3	3	3	3	3	3	3	3	3	3
Teacher Name		Kalyan Chavan	CO3	1	1	3	3	3	3	3	1	1	2
Course Outcomes			CO4	1	1	3	3	3	3	3	1	1	3
	CO1	Use various instruments and equipment.	CO5										
	CO2	• Investigate the theoretical background to an experiment.	Average	1.75	2.00	3.00	3.00	3.00	3.00	3.00	1.75	1.75	2.50
	CO3	• Set up experimental equipment to implement an experimental approach.											
	CO4	• Analyse data, plot appropriate graphs and reach conclusions from your data analysis.											
	CO5												

Class		S.Y.B.Sc.	Course Outcomes	Program Outcomes							PSOs		
Subject Code		PHY 212 (81212)		PO1	PO2	PO3	PO4	PO5	PO6	PO7	PSO1	PSO2	PSO3
Subject Name		Oscillations Waves and Sound	CO1	1	1	2	2	2	2	2	2	2	2
Semester No		4	CO2	2	1	2	2	1	1	1	1	1	2
Teacher Name		Gangadhar Chavan	CO3	2	2	2	1	1	1	1	2	1	2
Course Outcomes			CO4	2	1	2	1	1	1	2	1	1	2
	CO1	Understand the physics and mathematics of oscillations.	CO5	2	2	2	2	1	1	1	1	1	2
	CO2	Solve the equations of motion for simple harmonic, damped, and forced oscillators. Formulate these equations and understand their physical content in a variety of applications, Describe oscillatory motion with graphs and equations, and use these descriptions to solve problems of oscillatory motion.	Average	1.80	1.40	2.00	1.60	1.20	1.20	1.40	1.40	1.20	2.00

	CO3	Explain oscillation in terms of energy exchange, giving various examples. Solve problems relating to undamped, damped and force oscillators and superposition of oscillations. Understand the mathematical description of travelling and standing waves.
	CO4	Explain in qualitative terms how frequency, amplitude, and wave shape affect the pitch, intensity, and quality of tones produced by musical instruments
	CO5	Recognise the one-dimensional classical wave equation and solutions to it. Explain the Doppler effect, and predict in qualitative terms the frequency change that will occur for a stationary and a moving observer. Define the decibel scale qualitatively, and give examples of sounds at various levels.

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			Course Outcomes	Program Outcomes							PSOs		
Class		T.Y.B.Sc.		PO1	PO2	PO3	PO4	PO5	PO6	PO7	PSO1	PSO2	PSO3
Subject Code		PHY-333	CO1	2	3	2	2	1	2	2	2	2	3
Subject Name		Classical Mechanics	CO2	2	2	2	3	2	1	2	2	3	2
Semester No		V	CO3	3	1	2	2	2	2	2	2	2	3
Teacher Name		Sachin.D.Ralegankar	CO4	2	3	3	3	2	3	3	2	2	3
Course Outcomes			CO5										
	CO1	To understand basic of Newtonian Mechanics	Average	2.25	2.25	2.25	2.50	1.75	2.00	2.25	2.00	2.25	2.75
	CO2	To understand Two body problem and Kepler's Laws of Planetary motion											
	CO3	To understand the basic of Scattering and its type.											
	CO4	To develop an understanding of Lagrangian and Hamiltonian formulation											
	CO5												

			Course Outcomes	Program Outcomes							PSOs		
Class		T Y B.Sc		PO1	PO2	PO3	PO4	PO5	PO6	PO7	PSO1	PSO2	PSO3
Subject Code		912B3	CO1	3	2	1	2	2	2	3	3	2	3
Subject Name		Elements of Materials Secience	CO2	2	3	1	2	2	2	3	3	2	3
Semester No		V	CO3										
Teacher Name		Pravin D. More	CO4										
Course Outcomes			CO5										
	CO1	Student understands the various properties of materials which are using day to day life.	Average	2.50	2.50	1.00	2.00	2.00	2.00	3.00	3.00	2.00	3.00
	CO2	They easily identify the concept of Physics used and extend their knowledge towards.											
	CO3												
	CO4												
	CO5												

Class	T. Y. B.SC
Subject Code	91254
Subject Name	Electronics
Semester No	VI
Teacher Name	Pravin D. More
Course Outcomes	
CO1	Able to design various circuits which can be used professionally.
CO2	Able to understand AC, DC current/voltages concept for safety measurements.
CO3	Able to design various types of power supply, which can be used professionally
CO4	Able to design communication systems.
CO5	

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

Class	T.Y.B.Sc.
Subject Code	PHY-344
Subject Name	Nuclear Physics
Semester No	VI
Teacher Name	Sachin D. Ralegankar
Course Outcomes	
CO1	To Understand the basic properties of Nucleus
CO2	To earn the knowledge of radioactivity and related various laws
CO3	To undertand basic forces and quark model
CO4	To develope the understanding between verious nuclear models
CO5	

Course Outcomes	Program Outcomes							PSOs		
	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PSO1	PSO2	PSO3
CO1	2	2	3	3	3	2	2	2	2	3
CO2	2	2	3	3	2	2	2	2	3	2
CO3	3	2	2	2	2	3	3	2	3	3
CO4	2	2	2	2	3	2	3			
CO5										
Average	2.25	2.00	2.50	2.50	2.50	2.25	2.50	2.00	2.67	2.67

Class	T.Y. B.Sc
Subject Code	91274
Subject Name	Laboratory Course I
Semester No	VI
Teacher Name	Pravin D. More
Course Outcomes	
CO1	Student understands therotical concept of Physics by performing practicals and hands on training
CO2	Student understands basic of instruments

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

	CO3	
	CO4	
	CO5	

Class		T.Y.B.Sc.
Subject Code		PH-354
Subject Name		Atomic and Molecular Physics
Semester No		V
Teacher Name		L.D.Deshmukh
Course Outcomes		
	CO1	Understand different atomic models from classical to quantum mechanical models.
	CO2	Spectra associated with one and two valence electron systems with examples
	CO3	Effect of magnetic and electric field on spectral lines can be study.
	CO4	Understand the concepts of atomic and molecular spectra's,
	CO5	Study the concepts of Raman Spectroscopy and its applications

Course Outcomes	Program Outcomes							PSOs		
	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PSO1	PSO2	PSO3
CO1	2	2	3	2	3	2	3	3	1	2
CO2	3	2	2	3	2	0	2	2	1	2
CO3	2	2	3	3	3	0	2	3	1	2
CO4	3	3	2	3	1	0	0	3	1	2
CO5	3	3	3	2	2	1	1	3	1	2
Average	2.60	2.40	2.60	2.60	2.20	0.60	1.60	2.80	1.00	2.00

Class		T.Y.B.Sc.
Subject Code		PHY-331
Subject Name		MATHEMATICAL METHODS IN PHYSICS - II
Semester No		V
Teacher Name		Dr. SUHAIL A. A. R. SAYYED
Course Outcomes		
	CO1	Thorough knowledge of Curvilinear Co-ordinates
	CO2	Understanding of Special Theory of Relativity and its applications
	CO3	Ability to solve differential equations using different methods
	CO4	Thorough understanding of Special Functions
	CO5	Ability to solve different problems in physics

Course Outcomes	Program Outcomes							PSOs		
	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PSO1	PSO2	PSO3
CO1	2	1	3	1	3	3	3	3	2	3
CO2	2	1	3	1	3	3	3	3	2	3
CO3	2	1	3	1	3	3	3	3	2	3
CO4	2	1	3	1	3	3	3	3	2	3
CO5	2	1	3	1	3	3	3	3	2	3
Average	2.00	1.00	3.00	1.00	3.00	3.00	3.00	3.00	2.00	3.00

Class		T.Y.B.Sc.

Course	Program Outcomes	PSOs

Subject Code		PHY-346H
Subject Name		Physics of Nanomaterials
Semester No		VI
Teacher Name		Dr. SUHAIL A. A. R. SAYYED
Course Outcomes		
	CO1	Understanding of basic properties of nanomaterials
	CO2	Understand different synthesis methods of nanomateirals
	CO3	Ability to apply different characterization techniques
	CO4	Thorough understanding of special nanomaterials
	CO5	Study of different appplications of nanomaterials

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

Class		T.Y.B.Sc.
Subject Code		PHY-363
Subject Name		Thermodynamics and Statistical Physics
Semester No		VI
Teacher Name		L.D.Deshmukh
Course Outcomes		
	CO1	The concepts of transport phenomenon.
	CO2	Understand the concept of throttling process
	CO3	Elementary concepts of Statistics such as Probability calculation mean value calculation
	CO4	Concepts about the types of ensembles
	CO5	Detail understanding about the classical and quantum mechanical distribution

Course Outcomes	Program Outcomes							PSOs		
	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PSO1	PSO2	PSO3
CO1	3	2	3	1	3	2	2	2	1	3
CO2	3	2	2	1	3	2	2	2	2	3
CO3	3	2	3	1	3	3	2	3	3	3
CO4	3	2	3	1	3	2	2	1	2	3
CO5	3	2	3	1	3	2	2	2	3	2
Average	3.00	2.00	2.80	1.00	3.00	2.20	2.00	2.00	2.20	2.80

Class		T. Y. B. Sc.
Subject Code		PHY332
Subject Name		Solid State Physics
Semester No		III
Teacher Name		K. V. Wagaskar
Course Outcomes		
	CO1	Have deep understanding of various types of crystal structures and should have understood the concept of reciprocal lattice.
	CO2	Have clear idea of various characterization techniques like x-ray diffraction, UV-visible spectroscopy, SEM, TGA etc.
	CO3	Have understood the free electron model, band formation and origin of band gap.

Course Outcomes	Program Outcomes							PSOs		
	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PSO1	PSO2	PSO3
CO1	3	3	3	1	2	3	1	2	3	2
CO2	2	2	3	1	2	3	1	2	2	1
CO3	2	3	3	1	2	3	2	3	2	2
CO4	3	3	3	2	2	3	2	2	3	2
CO5										
Average	2.50	2.75	3.00	1.25	2.00	3.00	1.50	2.25	2.50	1.75

	CO4	Be able to understand the theory of magnetism and phenomena like superconductivity.
	CO5	

			Course Outcomes	Program Outcomes							PSOs		
Class		T. Y. B. Sc.		PO1	PO2	PO3	PO4	PO5	PO6	PO7	PSO1	PSO2	PSO3
Subject Code		91214	CO1	3	2	3	0	1	2	1	2	3	2
Subject Name		Classical Electrodynamics	CO2	3	2	2	1	1	2	0	2	3	2
Semester No		IV	CO3	3	3	3	0	2	1	0	3	3	3
Teacher Name		K. V. Wagaskar	CO4	2	3	3	1	1	2	1	2	3	2
Course Outcomes			CO5	2	2	3	1	1	2	1	2	2	2
	CO1	Be able to use method of images in electrostatics to solve the boundary value problems.	Average	2.60	2.40	2.80	0.60	1.20	1.80	0.60	2.20	2.80	2.20
	CO2	Should have understood the basic laws in magneto statics like Biot-Savart's law, Ampere's law etc.											
	CO3	have understood the concept of magnetic vector potential											
	CO4	Have understood Maxwell's laws of electrodynamics.											
	CO5	Be able to solve Maxwell's equations in free space and write equation of plane e-m waves.											

			Course Outcomes	Program Outcomes							PSOs		
Class		T. Y. Bsc		PO1	PO2	PO3	PO4	PO5	PO6	PO7	PSO1	PSO2	PSO3
Subject Code		91294	CO1	3	3	2	3	3	2	3	3	2	3
Subject Name		Project	CO2	3	3	3	2	3	3	3	3	3	3
Semester No		VI	CO3	2	2	2	3	2	3	3	2	3	3
Teacher Name		Pravin More	CO4										
Course Outcomes			CO5										
	CO1	Project students learn applications of concept of physics, development and setting of experimental set ups	Average	2.67	2.67	2.33	2.67	2.67	2.67	3.00	2.67	2.67	3.00
	CO2	It also creates research aptitude amongst the students for further studies.											
	CO3	Some project which are applied can be used and find application in day to day life.											
	CO4												
	CO5												

Class	TYBSC
Subject Code	PH-335 (91253)
Subject Name	Computational Physics
Semester No	
Teacher Name	Shelke P B

Course Outcomes

	CO1	· In this course students will learn about basic concepts of C language and various numerical methods used for solving problems.
	CO2	· In C language students will learn about characters used in C, C-tokens, operators, variables, constants, keywords, special symbols, blank spaces, input output statements, iterative loops, if- statements, arrays, pointers, functions and graphics programming.
	CO3	In numerical analysis students will learn methods to find roots of equation, integration of a function.
	CO4	
	CO5	

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										
CO5										
Average	2.67	2.67	2.33	2.33	2.67	2.67	2.67	2.67	2.33	2.67

Class	TYBSC
Subject Code	PH-342(91224)
Subject Name	Quantum Mechanics
Semester No	
Teacher Name	Shelke P B

Course Outcomes

	CO1	Quantum Mechanics course is a foundation course. In this course, student will learn the historical aspects of development of quantum mechanics, understand and explain the differences between classical and quantum mechanics, understand the idea of wave function and the uncertainty, relations, solve Schroedinger equation for simple potentials.
	CO2	Also, students will gain a basic understanding of the formalism and 'language' of quantum mechanics especially commutation brackets, various quantum mechanical operators.
	CO3	
	CO4	
	CO5	

Course Outcomes	Program Outcomes							PSOs		
	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PSO1	PSO2	PSO3
CO1	3	3	3	1	3	2	1	3	3	2
CO2	3	3	2	1	3	2	1	2	3	2
CO3										
CO4										
CO5										
Average	3.00	3.00	2.50	1.00	3.00	2.00	1.00	2.50	3.00	2.00

CO-PO Mapping

			Course	PO1	PO2	PO3	PO4	PO5	PO6	PO7
		1	71220	2.80	1.80	2.40	1.20	2.00	2.00	1.80
		2	71230	2.60	2.40	2.40	2.40	2.00	2.00	2.80
FY	FY	3	71210	2.60	2.00	2.20	2.20	2.00	2.00	1.80
		1	PHY 211	1.00	0.00	3.00	1.20	1.00	1.00	0.80
		2	812A1	2.80	2.60	3.00	2.20	1.40	2.00	1.80
		3	81222	2.75	2.25	1.50	1.25	1.25	1.50	1.25
		4	81232	1.75	2.00	3.00	3.00	3.00	3.00	3.00
SY	SY	5	HY 212 (81212)	1.80	1.40	2.00	1.60	1.20	1.20	1.40
		1	PHY-333	2.25	2.25	2.25	2.50	1.75	2.00	2.25
		2	912B3	2.50	2.50	1.00	2.00	2.00	2.00	3.00
		3	91254	2.50	2.25	2.75	2.00	2.25	2.25	2.50
		4	PHY-344	2.25	2.00	2.50	2.50	2.50	2.25	2.50
		5	91274	3.00	3.00	2.50	3.00	3.00	2.50	3.00
		6	PH-354	2.60	2.40	2.60	2.60	2.20	0.60	1.60
		7	PHY-331	2.00	1.00	3.00	1.00	3.00	3.00	3.00
		8	PHY-346H	3.00	3.00	2.00	3.00	3.00	2.00	3.00
		9	PHY-363	3.00	2.00	2.80	1.00	3.00	2.20	2.00
		10	PHY332	2.50	2.75	3.00	1.25	2.00	3.00	1.50
		11	91214	2.60	2.40	2.80	0.60	1.20	1.80	0.60
		12	91294	2.67	2.67	2.33	2.67	2.67	2.67	3.00
		13	PH-335 (91253)	2.67	2.67	2.33	2.33	2.67	2.67	2.67
TY	TY	14	PH-342(91224)	3.00	3.00	2.50	1.00	3.00	2.00	1.00

CO-PO ATTAINMENT

PO1	PO2	PO3	PO4	PO5	PO6	PO7
0.56	0.36	0.48	0.24	0.4	0.4	0.36
1.213333	1.12	1.12	1.12	0.933333	0.933333	1.306667
0.52	0.4	0.44	0.44	0.4	0.4	0.36
0.2	0	0.6	0.24	0.2	0.2	0.16
1.904	1.768	2.04	1.496	0.952	1.36	1.224
0.55	0.45	0.3	0.25	0.25	0.3	0.25
1.75	2	3	3	3	3	3
0.552	0.429333	0.613333	0.490667	0.368	0.368	0.429333
0.45	0.45	0.45	0.5	0.35	0.4	0.45
1.3	1.3	0.52	1.04	1.04	1.04	1.56
2.5	2.25	2.75	2	2.25	2.25	2.5
0.45	0.4	0.5	0.5	0.5	0.45	0.5
3	3	2.5	3	3	2.5	3
2.184	2.016	2.184	2.184	1.848	0.504	1.344
1.04	0.52	1.56	0.52	1.56	1.56	1.56
1.56	1.56	1.04	1.56	1.56	1.04	1.56
3	2	2.8	1	3	2.2	2
1.3	1.43	1.56	0.65	1.04	1.56	0.78
2.6	2.4	2.8	0.6	1.2	1.8	0.6
2.666667	2.666667	2.333333	2.666667	2.666667	2.666667	3
1.386667	1.386667	1.213333	1.213333	1.386667	1.386667	1.386667
1.56	1.56	1.3	0.52	1.56	1.04	0.52

Percentage CO-PO ATTAINMENT

PO1	PO2	PO3	PO4	PO5	PO6	PO7
20	20	20	20	20	20	20
46.66667	46.66667	46.66667	46.66666667	46.66667	46.66667	46.66667
20	20	20	20	20	20	20
20	#DIV/0!	20	20	20	20	20
68	68	68	68	68	68	68
20	20	20	20	20	20	20
100	100	100	100	100	100	100
30.66667	30.66667	30.66667	30.66666667	30.66667	30.66667	30.66667
20	20	20	20	20	20	20
52	52	52	52	52	52	52
100	100	100	100	100	100	100
20	20	20	20	20	20	20
100	100	100	100	100	100	100
84	84	84	84	84	84	84
52	52	52	52	52	52	52
52	52	52	52	52	52	52
100	100	100	100	100	100	100
52	52	52	52	52	52	52
100	100	100	100	100	100	100
100	100	100	100	100	100	100
52	52	52	52	52	52	52
52	52	52	52	52	52	52

		CO-PSO MAPPING		
		Course	PSO1	PSO2	PSO3
FY	1	71220	2.80	2.00	1.80
	2	71230	2.80	2.40	2.40
	3	71210	2.80	2.20	2.60
SY	1	PHY 211	1.00	1.00	1.00
	2	812A1	2.60	3.00	2.80
	3	81222	2.75	2.00	2.25
	4	81232	1.75	1.75	2.50
	5	PHY 212 (81212)	1.40	1.20	2.00
TY	1	PHY-333	2.00	2.25	2.75
	2	912B3	3.00	2.00	3.00
	3	91254	2.75	2.75	2.25
	4	PHY-344	2.00	2.67	2.67
	5	91274	3.00	2.50	3.00
	6	PH-354	2.80	1.00	2.00
	7	PHY-331	3.00	2.00	3.00
	8	PHY-346H	3.00	2.00	3.00
	9	PHY-363	2.00	2.20	2.80
	10	PHY332	2.25	2.50	1.75
	11	91214	2.20	2.80	2.20
	12	91294	2.67	2.67	3.00
	13	PH-335 (91253)	2.67	2.33	2.67
	14	PH-342(91224)	2.50	3.00	2.00

CO-PSO ATTAINMENT

Course	PSO1	PSO2	PSO3
71220	0.56	0.4	0.36
71230	1.306667	1.12	1.12
71210	0.56	0.44	0.52
PHY 211	0.2	0.2	0.2
812A1	1.768	2.04	1.904
81222	0.55	0.4	0.45
81232	1.75	1.75	2.5
PHY 212 (81212)	0.429333	0.368	0.613333
PHY-333	0.4	0.45	0.55
912B3	1.56	1.04	1.56
91254	2.75	2.75	2.25
PHY-344	0.4	0.533333	0.533333
91274	3	2.5	3
PH-354	2.352	0.84	1.68
PHY-331	1.56	1.04	1.56
PHY-346H	1.56	1.04	1.56
PHY-363	2	2.2	2.8
PHY332	1.17	1.3	0.91
91214	2.2	2.8	2.2
91294	2.666667	2.666667	3
PH-335 (91253)	1.386667	1.213333	1.386667
PH-342(91224)	1.3	1.56	1.04

CO-PSO ATTAINMENT

Course	PSO1	PSO2	PSO3
71220	20	20	20
71230	46.66667	46.66667	46.66667
71210	20	20	20
PHY 211	20	20	20
812A1	68	68	68
81222	20	20	20
81232	100	100	100
PHY 212 (8	30.66667	30.66667	30.66667
PHY-333	20	20	20
912B3	52	52	52
91254	100	100	100
PHY-344	20	20	20
91274	100	100	100
PH-354	84	84	84
PHY-331	52	52	52
PHY-346H	52	52	52
PHY-363	100	100	100
PHY332	52	52	52
91214	100	100	100
91294	100	100	100
PH-335 (91	52	52	52
PH-342(91	52	52	52