

Rayat Shikshan Sanstha's
Annasaheb Awate Arts, Commerce & Hutatma Babu Genu
Science College, Manchar

CRITERION-II TEACHING-LEARNING EVALUATION

AQAR 2023-24

2.6.1. Program and Course Outcomes for all Programme offered by the Institution are Stated and Displayed on Website and Communicated to Teachers and Students

List of Documents:

1. Syllabus (Sample)
2. PO,PSO,CO displayed on college website
3. PO,PSO,CO displayed on college campus
4. Notice regarding communicating PO,PSO,CO to students
5. PO,PSO,CO communicated to students(Sample)

Savitribai Phule Pune University

(Formerly University of Pune)



First Year B.Sc. Program in Physics

(Faculty of Science & Technology)

F.Y.B.Sc. (Physics)

To be implemented from Academic Year 2024-2025

Table of Contents

Sr. No.	List of Contents	Page Number
	Abbreviations used	2
1	Introduction to Undergraduate Degree Course in Physics	3
2	Programme Duration and Exit Options	3-4
3	Programme Objectives	4
4	Programme Outcomes (PO)	4-6
5	Programme Structure (PS)	6
6	Teaching-Learning Process (TLP)	6-7
7	Assessment Methods (AM)	7
8	Scheme of Examination	8-9
List of Courses		
9	List of Discipline Specific Core (DSC) Courses (Major Core)	10-11
10	List of Discipline Specific Elective (DSE) Courses (Major Elective)	11
11	List of Vocational Skill Courses (VSC)	11
12	List of Indian Knowledge System (IKS) Courses	11
13	List of Minor (MN) Courses	12
14	List of Generic Elective (GE) /Open Elective (OE) Courses	12
15	List of Skill Enhancement Courses (SECs)	12
16	List of Value Education Courses (VEC)	13
17	List of Ability Enhance Courses (AEC)	13
18	List of Co-curricular Courses (CC)	13
Syllabus of Courses		
19	Syllabus of Discipline Specific Core (DSC) Courses (Major Core)	14-24
20	Syllabus of Generic Elective (GE) /Open Elective (OE) Courses	25-32
21	Syllabus of Skill Enhancement Courses (SECs)	33-49
22	Syllabus of Value Education Courses (VEC)	50-56
23	Syllabus of Co-curricular Courses (CC)	57

Abbreviations Used

- PO : Programme Outcomes
- PS : Programme Structure
- TLP : Teaching-Learning Process
- AM : Assessment Method
- DSC : Discipline Specific Core
- DSE : Discipline Specific Elective
- OE : Generic Electives
- OP : Open Electives
- VSC : Vocational Skill Courses
- SEC : Skill Enhancement Courses
- VSC* : Vocational Skill Courses
(Can be given as advanced practical course related to major)
- AEC : Ability Enhancement Courses
- IKS : Indian Knowledge System
- VEC : Value Education Courses

- OJT : On Job Training (Internship/ Apprenticeship)
- FP : Field projects
- CEP : Community engagement and service
- CC : Co-curricular Courses
- RM : Research Methodology
- RP : Research Project

1) Introduction to Undergraduate Degree Course in Physics:

As per the recommendations of UGC-F-2022, the undergraduate (UG) degree course in Physics is a 6-semester course spread over 3-academic years **OR** 8-semester course spread over 4-academic years. The Teaching Learning Process (TLP) is students' centric. It involves both theory and practical components. It offers a flexibility of programme structure while ensuring that the student gets a strong foundation in the subject and gains in-depth knowledge. Besides the DSCs (Major Core), a student has options courses from the syllabus comprising of DSEs (Electives), Minor, OE/GEs, SECs, AECs, RPs, RMs, OJT, FP, CEP, IKSs, VECs, CCs and VSCs. Hence, this will bring out the interdisciplinary as well as multidisciplinary approach and adherence to innovative ways within the curriculum framework. It also allow a students' maximum flexibility in pursuing his/her studies at the undergraduate (UG) level to the extent of having the liberty to eventually design the degree with multiple exit options. Students have these exits options depending upon the needs and aspirations of the student in terms of his/her goals of life, without compromising on the teaching learning, both in qualitative and quantitative terms. This will suit the present day needs of students in terms of securing their paths towards higher studies or employment.

2) Programme Duration and Exit Options:

The minimum credit to be earned by a student per semester is 18-credits and the maximum is 26 credits. However, students are advised to earn 22-credits per semester. This provision is meant to provide students the comfort of the flexibility of semester-wise academic load and to learn at his/her own pace. However, the mandatory number of credits which have to be secured for the purpose of award of Undergraduate Certificate/Undergraduate Diploma/Appropriate Bachelor's Degree in Physics are listed in Table-1.

Table-1: List of award of Undergraduate Certificate/ Undergraduate Diploma/Appropriate Bachelor's Degree in Physics

S. No.	Type of Award	Stage of Exit	Mandatory Credits to be Secured for the Award
1	Undergraduate Certificate in Physics	After successful completion of Semester II	44 and an additional 4 credits core NSQF Course/Internship
2	Undergraduate Diploma in Physics	After successful completion of Semester IV	88 and an additional 4 credits core NSQF Course/Internship
3	Bachelor of Science Physics	After successful completion of Semester VI	132
4	Bachelor of Science Physics (Honours)	After successful completion of Semester VIII	176
5	Bachelor of Science Physics (Honours with Research)	After successful completion of Semester VIII with minimum 28 GE credits in Discipline-2 (Minor)	176

a) Major Discipline (Physics) : A student pursuing four-year undergraduate programme in Physics (Core course) shall be awarded B.Sc. Honours degree with Major in Physics on completion of VIII Semester, if he/she secures in Physics at least 50% of the total credits i.e., at least 88 credits in Physics out of the total of 176 credits. He/she shall study 20 DSCs and at least 2 DSEs of Physics in eight semesters.

b) Minor Discipline (Discipline-2): A student of B.Sc. (Hons.) Physics may be awarded Minor in a discipline, other than Physics, on completion of VIII Semester, if he/she earns minimum 28 credits from seven GE courses of that discipline

3) Programme Objectives :

The undergraduate (UG) degree course in Physics aims to provide:

- Knowledge and skills to undertake higher studies/research in physics and related interdisciplinary areas thereby enabling students' employment/entrepreneurship.
- Critical and analytical thinking, scientific reasoning, problem-solving skills, communication skills and teamwork.
- Competence and skill in solving both theoretical and applied physics problems.
- In-depth knowledge in physics through understanding of key physical concepts, principles, theories and their manifestations.
- Exposure to the latest advances in physics, allied disciplines and research.
- A conducive learning environment to ensure cognitive development of students.
- Sufficient subject matter competence and enable students to prepare for various competitive examinations such as UGC-CSIR NET/JRF, GATE, GRE, IIT-JAM, and Civil Services Examinations.
- Moral and ethical awareness, leadership qualities, innovation and life-long learning.
- Multicultural competence and multilingualism.

4) Program Outcomes :

Physics program outcomes aim to produce physics graduates with a strong foundation in physical principles, scientific inquiry, critical thinking, and problem-solving, as well as effective communication, laboratory, and research skills. The learning outcomes of the undergraduate degree course in physics are as follows:

a) Role of Physics :

The students will develop awareness and appreciation for the significant role played by physics in current societal and global issues. They will be able to address and contribute to such issues through the skills and knowledge acquired during the programme. They will be able identify/mobilize appropriate resources required for a project, and managing a project through to completion, while observing responsible and ethical scientific conduct, safety and laboratory hygiene regulations and practices.

b) Physical Principles:

Understand and apply fundamental physical principles to analyze and solve problems in various contexts.

c) Research Skills :

The course provides an opportunity to students to hone their research and innovation skills through internship/apprenticeship/project/community-outreach/dissertation/Entrepreneurship/Academic-Project. It will enable the students to demonstrate mature skills in literature survey, information management skills, data

analysis, and research ethics. Physics research skill useful to design, conduct, and present original research projects, demonstrating skills in literature review, methodology, and data analysis.

d) Scientific Inquiry :

Design, conduct, and present experiments/investigations to answer scientific questions and test hypotheses.

e) Hands-on/ Laboratory Skills :

Comprehensive hands-on/ laboratory exercises/ demonstrate proficiency will impart analytical, computational and instrumentation skills. The students will be able to demonstrate mature skills for the collation, evaluation, analysis and presentation of information, ideas, concepts as well as quantitative and/or qualitative data.

f) Problem-Solving:

Apply physical principles and mathematical tools to solve complex problems in physics and related fields.

g) In-depth disciplinary knowledge :

The student will acquire comprehensive knowledge and understanding of the fundamental concepts, theoretical principles and processes in the main and allied branches of physics. The core papers will provide in-depth understanding of the subject. A wide choice of elective courses offered to the student will provide specialized understanding rooted in the core and interdisciplinary areas.

h) Interdisciplinary Approach:

Apply physical principles to understand and address challenges in other disciplines, such as engineering, biology, and environmental science.

i) Communication and IT Skills :

Various DSCs, DSEs, SECs, GEs and AECs have been designed to enhance student's ability to write methodical, logical and precise reports. The courses will, in addition, guide the student to communicate effectively through oral/poster presentations, writing laboratory/ project reports and dissertations. Several IT based papers in DSCs, DSEs, SECs and AECs will enable students to develop expertise in general and subject specific computational skills. Students can effectively communicate physical concepts, results, and ideas through written, oral, and visual means.

j) Critical and Lateral Thinking :

The programme will develop the ability to apply the underlying concepts and principles of physics and allied fields beyond the classrooms to real life applications, innovation and creativity. A student will be able to distinguish between relevant and irrelevant facts and information, discriminate between objective and biased information, apply logic to arrive at definitive conclusions, find out if conclusions are based upon sufficient evidence, derive correct quantitative results, make rational evaluations, and arrive at qualitative judgments according to established rules. Critically evaluate physical phenomena, arguments, and data to form informed conclusions.

k) Ethical Practice:

Demonstrate awareness of ethical considerations in scientific research, data management, and professional conduct.

7) Lifelong Learning:

Stay up-to-date with advancements in physics and related fields, fostering a culture of continuous learning and professional development.

5) Programme Structure :

The detailed Credit framework of undergraduate degree programme in Physics is provided in Table 2.

Table-2: Credit framework of undergraduate degree programme in Physics.

Level /Difficulty	Sem	Subject-1				Subject-2	Subject-3	GE/ OE	SEC	IKS	AEC	VEC	CC	Total
4.5/100	I	2(T)+2(P)				2(T)+2(P)	2(T)+2(P)	2(T)	2(P)	2(T) Generic	2(T)	2	-	22
	II	2(T)+2(P)				2(T)+2(P)	2(T)+2(P)	2(P)	2(P)	-	2(T)	2	2	22
Exit Option: Award of UG Certificate in Major with 44 credits and an additional 4 credits core NSQF Course/Internship OR Continue with Major and Minor.														
Continue Option: Student will select one subject among the (Subject-1, Subject-2, and Subject-3) as major and another as minor and third subject will be dropped.														
Level /Difficulty	Sem	Credits related to major				Minor		GE/ OE	SEC	IKS	AEC	VEC	CC	Total
		Discipline Specific Core (DSC) Major Core	Discipline Specific Elective (DSE) Major Elective	VSC	FP/ OJT /CEP									
5.0/200	III	4(T)+2(P)	-	2(T/P)	2 (FP)	2(T)+2(P)	-	2(T)	-	2(T) Major Subject Specific	2(T)	-	2	22
	IV	4(T)+2(P)	-	2(T/P)	2(CEP)	2(T)+2(P)	-	2(P)	2(P)	-	2(T)	-	2	22
Exit Option: Award of UG Diploma in Major and Minor with 88 credits and an additional 4 credits core NSQF Course/Internship OR Continue with Major and Minor.														
5.5/300	V	8(T)+4(P)	2(T)+2(P)	2(T/P)	2 (FP/ CEP)	2(T)	-	-	-	-	-	-	-	22
	VI	8(T)+4(P)	2(T)+2(P)	2(T/P)	4(OJT)	-	-	-	-	-	-	-	-	22
Total 3 Years		44	8	8	10	18	8	8	6	4	8	4	6	132
Exit Option: Award of UG degree in Major with 132 credits OR Continue with Major and Minor.														
6.0/400	VII	6(T)+4(P)	2(T)+2(P)	-	4(RP)	4(T)(RM)	-	-	-	-	-	-	-	22
	VIII	6(T)+4(P)	2(T)+2(P)	-	8(RP)	-	-	-	-	-	-	-	-	22
Total 4 Years		64	16	8	22	22	8	8	6	4	8	4	6	132
Exit Option: Award of UG Honours with Research Degree in Major and Minor with 176 credits.														
-OR-														
6.0/400	VII	10(T)+4(P)	2(T)+2(P)	-	-	4(T)(RM)	-	-	-	-	-	-	-	22
	VIII	10(T)+4(P)	2(T)+2(P)	-	4(OJT)	-	-	-	-	-	-	-	-	22
Total 4 Years		72	16	8	14	22	8	8	6	4	8	4	6	132
Exit Option: Award of UG Honours Degree in Major and Minor with 176 credits.														

6) Teaching-Learning Process :

- The undergraduate programme in Physics is designed to provide students with a sound theoretical background, practical training in all aspects of physics and research.
- It will help them develop an appreciation of the importance of physics in different contexts.
- The programme includes foundational as well as in-depth courses that span the traditional sub disciplines of physics.
- Along with the DSCs there are DSEs, GEs, SECs, AECs and VACs which address the need of the hour.
- Physics courses will be delivered through the conventional chalk and talk method, laboratory work, projects, case studies, field work, seminars, hands-on training/workshops in a challenging, engaging,

and inclusive manner that accommodates a variety of learning styles and ICT enabled teaching-learning tools (PowerPoint presentations, audio visual resources, e-resources, models, software, simulations, virtual labs, etc.).

- f) Students will be encouraged to carry out short term projects and participate in industrial and institutional visits and outreach programmes.
- g) Students will be introduced to scientific reasoning and discovery, innovative problem-solving methodologies, online quizzes, surveys, critical analysis etc. to develop convergent and divergent thinking abilities.
- h) The laboratory training complements the theoretical principles learned in the classroom and includes hands-on experience with modern instruments, computational data analysis, modelling, error estimation and laboratory safety procedures.
- i) Different pedagogies such as experiential learning, participative learning, project-based learning, inquiry-based learning and ICT pedagogy integration instruction (blended and flipped learning) will be adopted wherever possible.
- j) Students will be encouraged to work in groups to develop their interpersonal skills like communication and team work.
- k) Students' diligent and active participation/ engagement in industrial visits / internships / academic projects / dissertations will lay a strong foundation for a successful career in academics, industry, research, entrepreneurship and community outreach.

7) Assessment Methods :

The primary objective of assessment will be to assess the learning outcomes of the course in tune with the broad outcomes of strengthening core theoretical knowledge base, practical laboratory skills, and research. Assessment will be based on continuous evaluation (MCQs, Short Questions (SQ), Class Test (CT), Seminar, Presentation (PPT), Group Discussion (GD), Quiz, Assignment, Tutorials, etc.) and end of semester examination of Savitribai Phule Pune University, Pune.

(i) Internal Assessment or Continuous Evaluation:

During a semester, students' mastery of the various learning outcomes as described in the syllabus will be assessed through MCQs, Short Questions (SQ), Class Test (CT), Seminar, Presentation (PPT), Group Discussion (GD), Quiz, Assignment, Tutorials, etc. Each theory paper and practical paper will have 15 marks for internal assessment. The critical analysis of internal assessment or continuous evaluation outcomes will provide opportunities to improve the teaching-learning process by focusing on the areas that need conceptual strengthening, laboratory exposure or design of new experiments, and research.

(ii) End of Semester University Examinations:

The summative end-semester university examinations will be conducted for both theory and practical courses. Besides internal assessment, each theory paper and each practical paper will be of 35 marks for end of semester examination of the university.

Syllabus of Courses

19) Syllabus of Discipline Specific Core (DSC) Courses (Major Core)

Major Core (Semester I) (4 Credits) (2T+2P)

Semester-I

F.Y.B.Sc. (Physics) (Sem-I)

PHY-101-T : Fundamentals of Physics-I

Lectures: 30 hrs

(Credits-02)

- A) Course Objectives:** - This course aims to introduction of Mechanics.
- 1) Explain the concept of center of mass of systems of individual particles and of continuous distributions of matter, explain the principle of momentum conservation. Describe the difference between inelastic and elastic collisions.
 - 2) Describe the rotational motion of rigid bodies using the concepts of angular velocity and acceleration, rotational inertia, torque, and the rotational analog of Newton's law.
 - 3) Explain the relation between pressure and force. Explain why some objects float and others sink. Express conservation of mass and energy for fluids through the continuity equation and Bernoulli's equation.
 - 4) Introduce basic concept and principles in Physics.
 - 5) Introduce applications of basic Physics concept and principles for modern life.
- B) Course Outcomes (CO):** - Upon completion of this course student will able to
- 1) Articulate and apply the principle of conservation of mechanical energy to solve real life problems. Show the relation between force and energy using potential-energy curves.
 - 2) Understood the concept of center of mass and find out center of mass of systems of individual particles and of continuous distributions of matter. Apply principle of momentum conservation to systems of particles. Apply the appropriate conservation laws to analyze real world problems.
 - 3) Calculate the rotational inertias of objects with sufficient symmetry by summing or integrating. Solve problems that involve both linear and rotational motion. Calculate rotational kinetic energy, and explain its relation to torque and work.
 - 4) Understand relation between pressure and force; calculate pressure as a function of depth in liquids. Determine quantitatively the position of floating objects and the apparent weight of submerged objects. Use the continuity equation and Bernoulli's equation to solve problems involving fluid dynamics.
 - 5) Understand basic principles in Physics.
 - 6) Applications of physics principles to resolve community problems.
 - 7) Develop advanced thinking in future life style.
 - 8) Apply Knowledge of Physics principles in day today life

C) Instructional Design: -

- 1) Lecture method 2) Tutorial method 3) Use of Computer

D) Evaluation Strategies

- 1) Descriptive written exam 2) Assignments 3) Seminars, Oral, Viva.

E) Prerequisites:

- 1. Algebra and trigonometry:** Basic foundation in algebra and trigonometry
- 2. Calculus:** Basic background of Calculus
- 3. Physics Fundamentals:** Knowledge about the basic physical quantities and their SI and CGS unit system along with dimensions

F) Course Contents: -

Lectures: 30 hrs

Module - 01	Rotational Dynamics	10 H
	1.1 Torque, Angular Velocity and Angular Acceleration. (Revision) 1.2 Principle of Conservation of Angular Momentum. 1.3 Centre of Mass in uniformly distributed object. (Revision) 1.4 Statement of parallel axis and perpendicular axis theorem. 1.5 Moment of Inertia and Radius of gyration. 1.6 Calculation of moment of inertia for solid cylindrical, and spherical. 1.7 Kinetic Energy of Rotation 1.8 Rolling Motion on inclined plane 1.9 Moment of Inertia of a Flywheel Numerical Problem	
Module - 02	Fluid Mechanics	06 H
	i) Fluid Statics 2.1 Definition of a Fluid. 2.2 Pressure, Absolute Pressure and Gauge Pressure. (Revision) 2.3 Variation of Pressure with Depth. 2.4 Pascal's Laws (Statement) 2.5 Buoyancy and Archimedes Principle. (Statement) Numerical Problem ii) Fluid Dynamics 2.6 Equation of Continuity. 2.7 Bernoulli's Theorem.(Statement) 2.8 Application Based on Bernoulli's Equation: Torricelli's Theorem and Venturimeter.(only theory) 2.9 Viscosity, Viscous force and Effect of Temperature. (Revision) 2.10 Stokes' Law and Terminal Velocity. 2.11 Surface Tension, Surface Energy and angle of contact. (Revision) 2.12 Excess Pressure Inside liquid drop and Soap Bubble. 2.13 Determination of Surface Tension by Jaeger's Method. Numerical Problem	
Module - 03	Atomic Spectra	08H

	3.1 Inadequacy of classical physics, 3.2 Brief Review of Black body Radiation, 3.3 Photoelectric effect, (Statement) 3.4 Compton Effect, (Statement) 3.5 Dual nature of radiation wave nature of particles, 3.6 Atomic spectra, 3.7 Line spectra of hydrogen atom, 3.8 Ritz Rydberg combination principle, (only principle) 3.9 Alpha Particle Scattering, (Review) 3.10 Rutherford Scattering Formula, (Revision) 3.11 Rutherford Model of atom and its limitations. Numerical Problem	
Module - 04	Atomic Models	07H
	4.1 Bohr's Model of Hydrogen atom, 4.2 Explanation of atomic spectra, 4.3 Correction for finite mass of the nucleus, (Revision) 4.4 Bohr correspondence principle, 4.5 Limitations of Bohr model, 4.6 Discrete energy exchange by atom, 4.7 Frank Hertz Experiment, 4.8 Sommerfeld's modification of Bohr's Theory (Review) Numerical Problem	

Activities: Conduct **any one** classroom activity during class lecture for each module.

Module 1: Rotational Dynamics

Activity 1: Linear velocity of rotating objects.

Compare velocities of solid sphere, solid cylinder, hollow sphere and hollow cylinder on inclined plane.

Activity 2: Exploring Rotational Dynamics with Spinning Tops

Explain principle of rotational dynamics through hands on experiment with spinning top.

Activity 3: Spinning Wheel Challenge

Apply concepts of rotational dynamics, specifically related to angular velocity and angular acceleration.

Module 2: Fluid Mechanics

Activity 1: Sticky and non-sticky liquid

Demonstrate viscosity using sticky or non-sticky liquids.

Activity 2: Mixture of Sticky and non-sticky liquid

Mix non sticky liquid to the sticky liquid in defined quantities and measure viscosity. Find out viscosity is increasing or decreasing with increase of non-sticky liquid concentration.

Activity 3: Surface Tension

- Spread of oil on water
- Formation of water droplets with different surface tensions on various leaves
- Floating Needle
- Soap-powered boat

- Soap film Interference Pattern
- Explain surface tension using soap solution and piece of paper

Module 3: Atomic Spectra

- Line spectra of hydrogen atom
- Photoelectric effect
- Compton Effect,
- Scattering of particles
- Black body Radiation

Module 4: Atomic Models

- Correction for finite mass of the nucleus
- Discrete energy exchange by atom
- Frank Hertz Experiment

Reference Books:

1. Richard Wolfson, “Essential UNIVERSITY PHYSICS” 2nd Ed., Pearson Education, Inc., 2012.
2. David Halliday, Robert Resnick, and Jearl Walker, “Fundamentals of Physics”, 9th Ed., 2011.
3. H.C Verma, “Concept of Physics Part – I”, Bharati Bhawan Publication, 2021.
4. Hugh D. Young and Roger A. Freedman, “University Physics With Modern Physics”, 14th Ed., Pearson Education, 2017.
5. David Kleppner, Robert Kolenkow, “An Introduction to Mechanics (SIE)”, 1st Ed., McGraw Hill Education, 2017.
6. Surface Tension by C. V. Boys, <https://www.gutenberg.org/ebooks/33370>
7. Concepts of Modern Physics: A Beiser (6th ed., McGraw Hill, 2003)
8. Intermolecular and Surface Forces by Jacob N. Israelachvili
9. Problems in Physics: P. K. Srivastava, Wiley Eastern Ltd.
10. Mechanics-M. Das, P. K. Jena and R.N. Mishra (Srikrishna Publications)
11. Mechanics: D. S. Mathur, Revised by P. S. Hemne, S. Chand and Company, New Delhi.
12. Physics: Resnick, Halliday & Walker, Wiley
13. Mechanics: D. S. Mathur, Revised by P. S. Hemne, S. Chand and Company, New Delhi.
14. Modern Physics-Serway (CENGAGE Learnings)
15. Physics of Atoms and Molecules Bransden and Joachim (Pearson India)
16. Atomic and Nuclear Physics-A. B. Gupta (New Central)

*****XXX*****

PHY-102-P : General Physics Lab-I**Lectures: 60 hrs****(Credits-02)**

- A) Course Contents:** - This course aims to introduce the practical related with Mechanics and Physics Principles and its applications.
- B) Course Outcomes:** The practical knowledge of mechanics doing experiments. They would also learn optical phenomena such as interference, diffraction and dispersion and do experiments related to optical devices: Prism, grating, spectrometers

Section I: Mechanics and its application (Any-6)

Sr. No.	Title of the Experiments
1	To study and use of various measuring instrument's 1. Vernier caliper 2. Micrometer Screw Gauge 3. Travelling Microscope 4. Spectrometer
2	To determine an acceleration due to gravity "g" by using Bar Pendulum
3	To determine an acceleration due to gravity "g" by using Kater's Pendulum
4	To determine the Coefficient of Viscosity by using Poiseuille's method
5	To study and verify Bernoulli's Theorem.
6	To determine the moment of inertia of Disc by Torsional Oscillations.
7	To determine the moment of inertia of a Flywheel.
8	To determine the surface tension using Capillary Rise method
9	To determine the Surface Tension of Water by using Jaeger's method
10	To determine the Surface Tension of Mercury by using Quincke's Method.
11	To determine the Surface Tension of Mercury by using Method of Ripples.

Section II: Physics Principles and Applications (Any-6)

Sr. No.	Title of the experiments
1	To study of Spectrometer Calibration (Determination of Angle of the Prism and Refractive Indices of different colors)
2	To determine the Dispersive Power of the Material of a Prism.
3	To determine the Cauchy's Constants A and B of the Material of a Prism
4	To determine the Planck's Constant.
5	To study the I-V characteristics, and calculate FF, Efficiency of p-n junction Solar Cell
6	To determine the first excitation potential of gas by Frank Hertz Experiment
7	To study of Divergence of LASER beam.
8	To determine the Diameter of Thin Wire by using LASER light.
9	To determine the wavelength of LASER light by using Plane Diffraction Grating.
10	To study of Total Internal Reflection using LASER light.
11	To determine the particle size of any sample material powder by using LASER light.
12	To determine wavelength of LASER using Metric Ruler (Scale)
13	To demonstrate how the gamma-ray energy varies following Compton scattering.

Section III: Additional Activities to be conducted during the semester (Any-3)

1. Mini Projects with report (Minimum 10 pages with completion certificate daily signed by project guide and HOD of Department).
2. Study tour / Industrial visit / Field visit with report.
3. Plotting of any two graphs using spreadsheets (of data obtained from various experiments performed by the student in the semester).
4. Any two computer aided demonstrations (Using computer simulations or animations on YouTube).
5. Demonstrations – Any one demonstrations of other experiments.

Study tour: Student have to participate in study tour organized by department to study about physics in Industry / Company / Organization / Research Institute / Research organization / Small scale industry / University Department and compulsory submitted study tour report.

Note: Students have to perform **12**-experiments (6-experiments from Section-I and 6 experiments form Section-II)

And

Participated in additional any **three** activities equivalent to **3-experiments** with 12-experiments. Total laboratory work with additional activities should be **15**-experiments.

References :

1. B. L. Flint and H.T. Worsnop, “*Advanced Practical Physics for students*”, Asia Publishing House, 1971.
2. Michael Nelson and Jon M. Ogborn, “*Advanced level Physics Practical*”, 4th Edition, Heinemann Educational Publishers, reprinted 1985.
3. I. Prakash and Ramakrishna, “*A Text Book of Practical Physics*”, 11th Edition, Kitab Mahal, 2011.

Xxxxxx ooo xxxX

Semester-II

Major Core (Semester-II) (6 Credits) (2T+1P)

Note: Every subject has 2 credits

F.Y.B.Sc. (Physics) (Sem-II)

PHY-151-T : Fundamentals of Physics-II

Lectures: 30 hrs

(Credits-02)

- A) Course Objectives:** - This course aims to introduce Physics of Thermodynamics to the students. Objectives are.
- 1) To Study the basic concepts of Thermal Physics.
 - 2) To Study the basic concepts of electricity and magnetism
 - 3) To impart the knowledge and applications about thermal physics, electricity and magnetism in our day to day life.
- B) Course Outcomes (CO):** Upon Completion of this course, the students will be able to:
- 1) Understand the basic concepts of Thermodynamics and laws of thermodynamics.
 - 2) Identify the different states of system and their dependence on various thermodynamic variables.
 - 3) Understand different thermodynamic processes and their applications.
 - 4) Understand different heat engines and their working principles.
 - 5) Learn the heat radiation mechanism and relate this course to the daily chores through some applications.
 - 6) Understand concept of electricity and magnetism.
- C) Instructional Design:** -
- 1) Lecture Method
 - 2) Tutorial Method
 - 3) Seminars
 - 4) Use of Multimedia
 - 5) Creation of online resources
- D) Evaluation Strategies**
- 1) Descriptive written exam
 - 2) Assignments
 - 3) Seminars, Oral, Viva.
- E) Prerequisites:**
- Physics Fundamentals:** Knowledge about the basic physical quantities and their SI and CGS unit system along with dimensions, and basics concept about electric circuits
- F) Course Contents:** - **Lectures: 30 hrs**

Module - 01	Thermal Physics	15 H
	1.1 Concepts of Heat and Temperature, 1.2 Zeroth law of thermodynamics, 1.3 Thermodynamic variables, and equation of state. (Revision) 1.4 Van der Waal's equation of state, 1.5 First Law of Thermodynamics and its differential form (Revision)	

	1.6 Application of the first law of Thermodynamics 1.7 Second law of thermodynamics (Kelvin's & Clausius' statements), 1.8 Carnot's cycle, and its efficiency 1.9 Concept of Entropy, principle of increase of entropy, Entropy of steam 1.10 Applications of Second law of thermodynamics: 1.11 Third law of Thermodynamics 1.12 Applications of Third law of thermodynamics: Numerical problems	
Module - 02	Electrostatics	10 H
	2.1 Concept of Electric Charge, Electrostatic Forces (Coulomb's law) 2.2 Electric lines, field & its Physical significance 2.3 Concept of electric flux 2.4 Gauss's law in electrostatics and its applications 2.5 Concept of Electric Potential 2.6 Concept of Electrostatic Energy 2.7 The four quantities for point charges 2.8 Relationship between Electric Field, Electric Force, Electric Potential, and Electric Potential Energy 2.9 Concept of Electric dipole & Dipole moment 2.10 Torque on a dipole placed in an electric field 2.11 Concept of Dielectric & Polarization 2.12 Relation between E, D & P 2.13 Gauss law in dielectric 2.14 Concept of Capacitor, Capacitance and its applications Numerical Problem	
Module - 03	Magnetostatics	05H
	<ul style="list-style-type: none"> ○ Magnetic Field Lines, Magnetic Force & its properties ○ Biot-Savart's law and its applications ○ Ampere's circuital law and its applications ○ Introduction to Magnetization ○ Types of Magnetic Materials Numerical Problem	

Activities: Conduct **any one** classroom activity during class lecture for each module.

Module 1: Thermal Physics

Activity 1: Perform an activity to understand the concept of Carnot Engine:

Activity 2: Perform an activity to explain the concept of Otto Engine:

Activity 3: Perform an activity to explain the concept of Diesel Engine:

Activity 4: Perform an activity to understand the applications of Thermodynamics first law:

Activity 5: Perform an activity to understand the applications of Thermodynamics second law:

Activity 6: Perform an activity to understand the applications of Thermodynamics third law:

Module 2: Electrostatics

Activity 1: Perform an activity to explain the concept of static charges:

Activity 2: <https://phet.colorado.edu/en/simulations/capacitor-lab-basics>

Use the [link](#) to

1. Explain the relationships between voltage, charge, stored energy, and capacitance
2. Predict how capacitance changes when the plate area or plate separation changes
3. Describe how charge drains away from a capacitor into a light bulb

Module 3: Magnetostatics

Activity 1:

1. Levitating magnets with eddy currents
2. Maglev train
3. Perform an activity to show magnetic field lines using bar magnet and iron filings(particles)

Reference Books:

- 1) Concept of Physics: H. C. Verma, Bharati Bhavan Publisher.
- 2) Heat and Thermodynamics: Brijlal, N. Subrahmanyam, S. Chand and Company Ltd.
- 3) Heat and Thermodynamics: Mark W. Zemansky, Richard H. Dittman, 7th Edition, Mc-Graw Hill, International Edition.
- 4) Thermodynamics and Statistical Physics: J. K. Sharma, K. K. Sarkar, Himalaya Publishing House.
- 5) Thermal Physics (Heat and Thermodynamics): A. B. Gupta, H. P. Roy books and Allied (P) Ltd. Calcutta.
- 6) Instrumentation: Devices & Systems by Rangan, Mani, and Sarma.
- 7) Theory and Experiments on Thermal Physics by P. K. Chakrabarti, New Central Book Agency (P) Ltd. Landon.
- 8) Electricity and Magnetism: Brij Lal, N. Subramanyan, S. Chand & Co.
- 9) Electricity and Magnetism : R. Murugesan, S. Chand & Co.
- 10) Concept of Physics : H. C. Verma
- 11) Fundamentals of Physics: D. Halliday and R. Resnick and J. Walker, Wiley Publications
- 12) Electromagnetics: B.B. Laud, New Age International (P) Ltd.
- 13) Electricity and Electronics: D.C. Tayal, Himalaya Publishing House, Mumbai
- 14) Introduction to Electrodynamics: D.G. Griffith, Pearson Publications
- 15) Electricity and Magnetism: N.S. Khare and S.S. Shrivastav, Atmaram and Sons
- 16) Classical Electromagnetism: H.C. Verma, Bharati Bhavan Publisher

*****XXX*****

PHY-152-P : General Physics Lab-II

Lectures: 60 hrs

(Credits-02)

- A) Course Objectives:** - This course aims to introduce the practical related with thermal Physics and Electricity and Magnetism.
- B) Course Outcomes:** The practical knowledge of Thermodynamics, Electricity and magnetism doing experiments: Engine, electric vibrations. They would also learn electric phenomena such as diode, CRO and do experiments related to electric devices.

Section I: Thermal Physics (any 6)

Sr.No	Title of the Experiments
1	To determine the Coefficient of Thermal Conductivity by Lee's method.
2	To determine the Specific Heat of Graphite.
3	To study the Carnot's cycle by drawing graphs of Isothermal and Adiabatic curves.
4	To investigate the first law and Second law of thermodynamic using heat Engine
5	To study the 2 / 4-Stroke Petrol Engine.
6	To study the 4-Stroke Diesel Engine.
7	To determine the Temperature Coefficient of Thermistor.
8	To study the Thermocouple as a Thermometer
9	To determine the Calorific Values of Different Fuels.
10	To determine the Temperature Coefficient of Resistivity of PTC / NTC type Material.
11	To determine the Coefficient of Linear Expansion of Metals.
12	To determine the specific heat capacity of water by electrical method.
13	To determine the specific heat capacity of a given solid by the method of mixtures.

Section II: Electricity and Magnetism (any 6)

Sr. No	Title of the experiments
1	Study of Kirchhoff's Voltage and Current Law.
2	Study of AC and DC Voltage Sensitivity by using CRO.
3	Study of I-V Characteristics of p-n Diode and Zener Diode.
4	Study of Charging and Discharging of a Capacitor.
5	Study of L-R Circuit
6	Study of Impedance of series LCR series circuit.
7	Study of Series and Parallel circuit using Capacitor (Voltage-Current Division Rule)
8	Determination of Frequency of AC by using Sonometer.
9	Study of Digital Multimeter for measuring (i) Resistances, (ii) AC and DC Voltages, (iii) DC Current, and (iv) checking electrical fuses.
10	Comparison of Capacitor using De Sauty's Method
11	Measurement of Dielectric Constant using Schering Bridge Experiment
12	Charges and Fields 1.0.59 (colorado.edu) :

	To study lines of forces and electric field due to a dipole. Place 1 nC charge at 2m apart and determine the electric field at given positions(0,0,), (1,0), (0,1), (0,-1), (-1,0), (2,0), (3,0), (2,1),(2,-1), (1,1),(-1,-1) and also draw equipotential surface for 1 V, 2 V, 3 V, 5 V, 10 V, 20 V and -1V, -2V, -3V, -5V, -10V, -20V
13	To verify Ampere's Law experimentally by graphing the magnetic field strength.

Section III: Additional Activities to be conducted during the semester (Any Three)

1. Mini Projects with report.
2. Study tour / industrial visit / Field visit with report.
3. Plotting of any two graphs using spreadsheets (of data obtained from various experiments performed by the student).
4. Any two computer aided demonstrations (Using computer simulations or animations).
5. Demonstrations – Any one demonstrations.

Study tour: Student have to participate in study tour organized by department to study about physics in Industry / Company / Organization / Research Institute / Research organization / Small scale industry / University Department and compulsory submitted study tour report.

Note: Students have to perform **12**-experiments (6-experiments from Section-I and 6 experiments form Section-II)

And

Participated in additional any **three** activities equivalent to **3-experiments** with 12-experiments. Total laboratory work with additional activities should be **15**-experiments.

References :

1. B. L. Flint and H.T. Worsnop, “*Advanced Practical Physics for students*”, Asia Publishing House, 1971.
2. Michael Nelson and Jon M. Ogborn, “*Advanced level Physics Practical*”, 4th Edition, Heinemann Educational Publishers, reprinted 1985.
3. I. Prakash and Ramakrishna, “*A Text Book of Practical Physics*”, 11th Edition, Kitab Mahal, 2011.
4. D. P. Khandelwal, “*A Laboratory Manual of Physics for undergraduate classes*”, Vani Publication, 1985,

Xxxxxx ooo xxxxxX

20) Syllabus of Generic Elective (GE)/Open Elective (OE) Courses :

F.Y.B.Sc. (Physics) (Sem-I)

OE-101-PHY-T : Physics of Daily Life

Lectures: 30 hrs

(Credits-02)

A) Course Objective- The course aims to

- 1) The Recall, understand, use and apply the scientific knowledge set out in the syllabus.
- 2) Learn, recognize and apply basic physical principles related to climate, human body and Technology.
- 3) Learn about earth's atmosphere and related phenomena.
- 4) Solve simple physics related problems. Apply the simple law of nature to different fields of science, engineering and technology.
- 5) Evaluate relevant scientific information and make informed judgements about it.

B) Course Outcomes- Upon completion of the course, the students will able to

- 1) Every student will be able to study physics on a deeper level and to uses basic physics concepts to navigate everyday life.
- 2) Every student will be able to build essential scientific knowledge and skills for life-long learning.

C) Instructional Design-

- 1) Lecture Method
- 2) Use of Multimedia,
- 3) Creation of Online resources
- 4) Seminars

D) Evaluation Strategies-

- 1) Objective
- 2) Assignments
- 3) Seminars
- 4) Practical

E) Course Content :

Module: - 01	Physics in Earth's Atmosphere	10 hrs
	Sun, Earth's atmosphere as an ideal gas; Pressure, temperature and density, Pascal's Law and Archimedes' Principle, Coriolis's acceleration and weather systems, Rayleigh scattering, the red sunset, Reflection, refraction and dispersion of light, Total internal reflection, Rainbow.	
Module: - 02	Physics in Human Body and Sports	10 hrs
	The eyes as an optical instrument, Vision defects, Rayleigh criterion and resolving power, Sound waves and hearing, Sound intensity, Decibel scale, Energy budget and temperature control, Physics in Sports: The sweet spot, Dynamics of rotating objects, Running, Jumping and pole vaulting, Motion of a spinning ball, Continuity and Bernoulli equations, Turbulence and drag.	
Module: - 03	Physics in Technology	10 hrs
	Microwave ovens, Lorentz force, Global Positioning System, CCDs, Lasers, Displays, Optical recording, CD, DVD Player, Tape records, Electric motors, Hybrid car, Telescope, Microscope, Projector etc.	

Reference Books:

1. H. C. Verma, Concepts of Physics (Bharati Bhawan publishers and distributors, New Delhi, India) 2011.
2. Sears and Zeemansky, University Physics (Addison Wesley, Boston, USA) 2007.
3. B. Lal and Subramaniam, Electricity and Magnetism (Ratan Prakashan Mandir, Agra, India) 2013.
4. Physics in Daily Life, Jo Hermans, EDP Sciences
5. E. Hecht, Optics (Addison Wesley, Boston, USA) 2001.
6. M. Nelkon and P. Parker, Advanced Level Physics (Heinemann International, London, U.K.) 2012.
7. How Things Work, The Physics of Everyday Life, Louis A. Bloomfield, Wiley, 2013.

*****XOX*****

F.Y.B.Sc. (Physics) (Sem-I)
OE-102-PHY-T : Biological Physics

Lectures: 30 hrs

(Credits-02)

A) Course Objective- The course aims to –

1. Understanding of Biological Systems
2. Bridging the Gap Between Physics and Biology
3. Understand the role of light in the physiology of living organisms.
4. Understand the physical principles that govern cellular processes, such as transport across cell membranes, cell division, and signal transduction.

B) Course Outcomes- Upon completion of the course, the students will able to

1. Understand the biological systems.
2. Understand the principles of interaction of light with organic molecules and their significance in environment.
3. Understand the physics principles and concepts with living systems and their significance.

C) Instructional Design-

1. Lecture Method
2. Use of Multimedia,
3. Creation of Online resources
4. Seminars

D) Evaluation Strategies-

2. Descriptive
2. Assignments
3. Seminars

E) Course Content-

Module- 1	Cell Organization	7 hrs
	Cell as the basic structural unit, Origin & organization of Prokaryotic and Eukaryotic cell, Cell size & shape, Fine structure of Prokaryotic & Eukaryotic cell organization Internal architecture of cells, cell organelles, compartment & assemblies membrane system, Ribosome, Polysomes, Lysosomes & Peroxisomes, Connection between cell & its environment, Extracellular Matrix. Structure & function of Nucleic acids, Amino acids & Proteins, Carbohydrates, Lipids, Vitamins & hormones	
Module-2	Photosynthesis	7 hrs
	Photosynthesis phenomenon, Chlorophyll molecules, Chloroplasts, Photochemical Systems, Interaction of photons with chemical compounds, photosensitive chemicals, photo induced electronic transitions in organic molecules, quantum yield, photo induced chemical reactions, Electron Transport Processes, Molecular Mechanism of Photoreception, Bioluminescence, Bacteriorhodopsin.	
Module- 3	Physical Concepts in Biophysics	6 hrs
	Thermodynamics of Biological system: First and second laws of thermodynamics, activation energy, Biological systems as open, non-equilibrium systems, Concept of free energy, unavailable energy and entropy, heat content of food, bomb calorimetry, Enthalpy, Negative	

	entropy as applicable to biological systems. Thermodynamics of passive and active transport, glycolytic oscillations, biological clocks. Bioenergetics: Concept of energy coupling in biological processors, Energy requirements in cell metabolism, structure and role of mitochondria, high energy phosphate bond, energy currency of cell, Biological oxidation, Electron-transport chain, Oxidative Phosphorylation including chemiosmotic hypothesis.	
Module–4	Physical Concepts understanding through Demonstrations / Experiments	10 hrs
	<ol style="list-style-type: none"> 1. To study the principle of spectrophotometer. To verify the Lambert Beer's law. 2. To determine the beer's limit and measurement of molar and percent extinction coefficient. 3. Spot test for carbohydrates. 4. To Isolate of Casein from milk. 5. Use of pH meter and measuring the pH of the buffer solutions 	

F) Reference Books:

1. Ackerman E.A. Ellis, L.E.E. & Williams L.E. (1979), Biophysical Science, Prentice-Hall Inc.
2. Barrow. C. (1974), Physical Chemistry for Life Sciences, McGraw-Hill.
3. Berns M.W. (1982), Cells, Holt Sounders International Editors.
4. Bloomfield V.A. and Harrington R.E. (1975), Biophysical chemistry, W.A. Freeman and CO.
5. Cantor C.R. and Schimmel P.R. (1980), Biophysical chemistry, W.A. Fremman and Co.
6. Casey E.J. (1967), Biophysics, concepts and mechanisms. Affiliated East west press.

*****XOX*****

PO, PSO, CO DISPLAYED ON COLLEGE WEBSITE

Department Of Economics

93225 04992 87674 03354 aacmanchar@gmail.com

RTI | ALUMNI | TENDER | CONTACT | TEACHER LOGIN | STUDENT LOGIN

ANNASAHEB AWATE ARTS, COMMERCE & HUTATMA BABU GENU SCIENCE COLLEGE, MANCHAR
Affiliated to Savitribai Phule Pune University, Pune 411007 Re-accredited at 'A' Grade by NAAC, Bengaluru.

HOME ABOUT ADMINISTRATION DEPARTMENTS STUDENT CORNER SUPPORT SERVICES & FACILITIES ACTIVITIES IQAC RESEARCH NAAC NIRF LIBRARY

Art's Home Departments Economics

Departments Quick Link

- Economics UG
- Economics PG
- Economics Research Center
- English UG
- English PG
- Geography
- History
- Marathi UG
- Marathi PG

Department Of Economics

- + Vision and Mission
- + Faculty Profile
- + Courses
- + Syllabus
- **Program Outcomes (POs), Program Specific Outcomes (PSOs) and Course Outcomes(COs)**

Program Outcomes (POs) And Program Specific Outcomes (PSOs)
Course Outcomes (COs)

21°C Mostly cloudy Search ENG IN 22:23 20-02-2024

Department Of Psychology

aacmanchar.edu.in/dept_psych.php

HOME ABOUT ADMINISTRATION DEPARTMENTS STUDENT CORNER SUPPORT SERVICES & FACILITIES ACTIVITIES IQAC RESEARCH NAAC NIRF LIBRARY

Geography
History
Marathi UG
Marathi PG
Political Science
Psychology
Commerce UG
Commerce PG
Botany UG
Botany PG
Botany Research Center
Biotechnology
Chemistry UG
Chemistry PG
Chemistry Research Center
Electronic Science
Mathematics
Physics UG

Program Outcomes (POs), Program Specific Outcomes (PSOs) and Course Outcomes (COs)

Programme Outcomes(PO):

At the end of the Program, students will be able to:

- ✓ POs 1: : Beahaviour: Students modified their behavior as per the moral value, ethics and learnt to express themselves in socially acceptable way.
- ✓ POs 2: Application of Psychological knowledge: Students demonstrate their abilities to apply what they have learned regarding the basic issues in Psychology to factual, practical, theoretical, and philosophical issues by participating in various activities.
- ✓ POs 3: Interaction: Students make meaningful interaction in group/society and Communicate their ideas effectively in writing and orally.
- ✓ POs 4: Personality: Students have developed personality traits and they reflect the same through their demeanor.
- ✓ POs 5: : Leadership: Leadership qualities are developed among students which enables them to take initiatives, develop positive attitude, and solve problems and to take decisions.
- ✓ POs 6: : Understanding human nature: Students developed understanding of human nature which motivate and direct their learning, growth and conduct and make them good Citizens.

Program Specific Outcomes (PSOs).

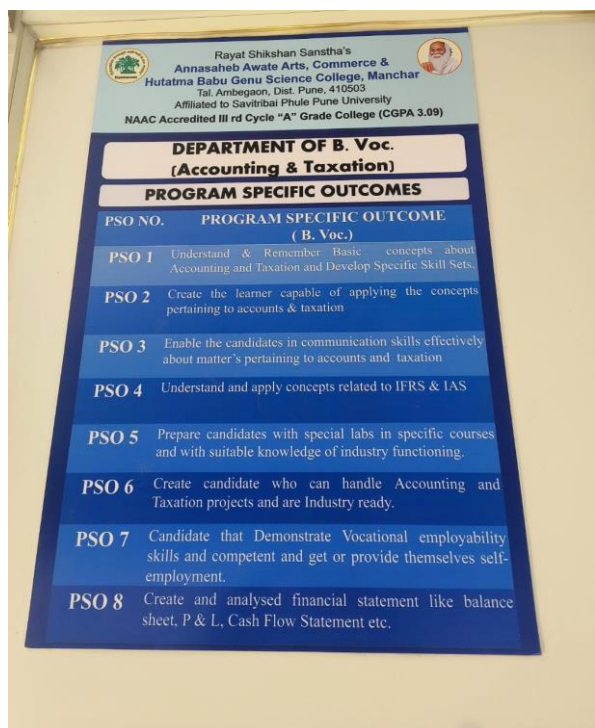
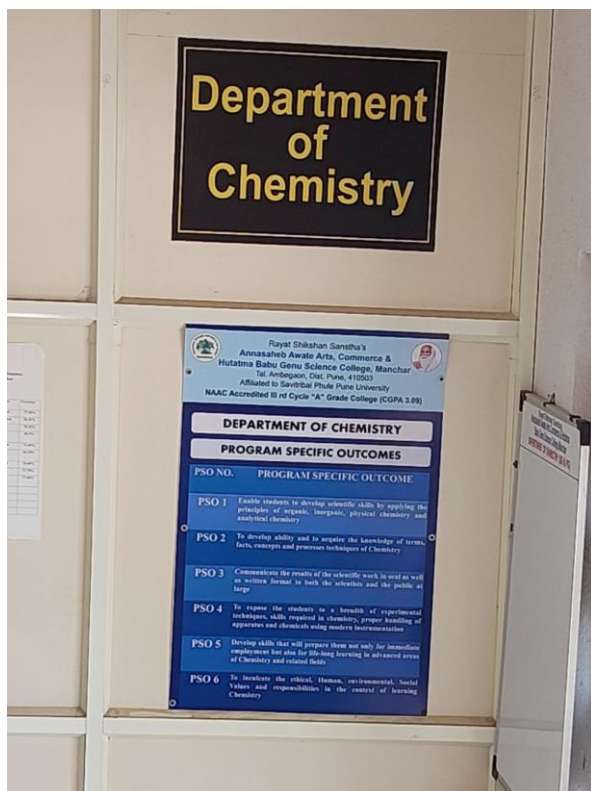
A degree in Psychology provides with the wide range of transferable skills which is important :

- ✓ PSOs 1: Inculcate moral value and ethics in students.
- ✓ PSOs 2: Developed knowledge and skills required to engage in practice or research in a specific area within psychology
- ✓ PSOs 3: Enable students to make meaningful interaction in groups/society.
- ✓ PSOs 4: Developed the personality traits among students.
- ✓ PSOs 5: Developed leadership quality.
- ✓ PSOs 6: Bring about the behavioral change of the student and make them good citizen.

Course Outcomes (COs)

21°C Mostly cloudy Search ENG IN 22:24 20-02-2024

PO, PSO, CO DISPLAYED ON COLLEGE CAMPUS



PO, PSO, CO QR CODES DISPLAYED ON COLLEGE CAMPUS




Rayat Shikshan Sanstha's
Annasaheb Awate Arts, Commerce & Hutatma Babu Genu
Science College, Manchar

Notice

Date-04/08/2023

It is hereby informed to all Head of the Departments to make a provision to deliver Program Outcomes (PO), Program Specific Outcomes (PSO) and Course Outcomes (CO) by the respective teachers to the students of all the classes and keep a record of it. Also display the PO, PSO and CO on the Department notice board.


Principal,
Annasaheb Awate College
Manchar, (Dist. Poon)



Education through self-help - **KARMAVEER**
Rayat Shikshan Sanstha's



**Annasaheb Awate Arts, Commerce,
Hutatma Babu Genu Science College &
Sou. Kusumben Kantilal Shah Arts,
Commerce, Science Junior College,
Manchar, Tal. Ambegaon, Dist. Pune. 410 503**

NAAC 3rd Cycle- "A" Grade 2018

Best College Award - 2018, by
Savitribai Phule Pune University Pune.

Teacher's Diary

Academic Year - 2023 - 2024

Name of the Teacher : Ms Mahakal S.C.

Department : Physics

ALLOTMENT OF WORK LOAD

So. No.	Calss	Subject	Paper	Work load
1.	S.Y.B.Sc.	Physics-II Instrumentation	Instrumentation . PHY- 232 .	3 .
2.	T.Y.B.Sc.	Physics .	Physics Workshop . Skills .	3 .
3.	T.Y.B.Sc .	Physics -	Practicals .	
4.	MSc-II .	Physics .	Experimental Methods in Physics .	3 .



Signature
of the Teacher





Head

Department of _____



Principal

Annasaheb Awate Arts, Commerce &
Hutatma Babu Genu Science College,
Manchar, Tal. Ambegaon, Dist. Pune

DAILY RECORD

Date: 31 / 07 / 2023

Day: Monday


Class / Time	Topic	Synopsis
Sy. BSc. 12:40 to 1:25	Syllabus and course outcome	<ul style="list-style-type: none">* Introduction of CO* Discussion of PSO & PO* Discussion of Syllabus

Teaching Methods / Teaching Aids: PPT Presentation

Books / References: Syllabus of SPPU website


Signature Teacher




Head
Department of Physics
A.A. College, Manchar

DAILY RECORD

Date : 09 / 08 / 2023 .

Day : Wednesday.


Class / Time	Topic	Synopsis
SYBSc . 12:40 to 1:25	Instrumentation .	<ul style="list-style-type: none"> * Static Characteristics . 1) Accuracy 2) Precision . 3) Sensitivity .
TYBSc . 1:25 to 2:10	Phis .	<ul style="list-style-type: none"> * Discussion of CO , PO & PSO . * Discussion of Rubrics and * assessment methods .

Teaching Methods / Teaching Aids : PPT Presentation .

Books / References : Syllabus document of TYBSc . Physics on SPPU Website


Signature Teacher




Head
Department of Physics
A.A. College Manchar



Education through self-help - **KARMAVEER**
Rayat Shikshan Sanstha's



**Annasaheb Awate Arts, Commerce,
Hutatma Babu Genu Science College &
Sou. Kusumben Kantilal Shah Arts,
Commerce, Science Junior College,
Manchar, Tal. Ambegaon, Dist. Pune. 410 503**

NAAC 3rd Cycle- "A" Grade 2018

Best College Award - 2018, by
Savitribai Phule Pune University Pune.

Teacher's Diary


Academic Year - 2023 - 2024

Name of the Teacher : Prof. Shieke H.S.


Department : Physics


ALLOTMENT OF WORK LOAD

So. No.	Calss	Subject	Paper	Work load
1)	F.Y. B.Sc.	Physics	PHY 122: Electricity & Magnetism	3
2)	S.Y. B.Sc.	Physics	Practical	8
3)	T.Y. B.Sc.	Physics	PHY 361: Solid state Physics	3
4)	M.Sc.-II	Physics	Physics of semiconductor devices	4


Signature
of the Teacher




Head
Department of _____


Principal
Annasaheb Awate Arts, Commerce &
Hutatma Babu Genu Science College,
Manchar, Tal. Ambegaon, Dist. Pune

DAILY RECORD

Date : 13 / 12 / 2023

Day : Wednesday

Class / Time	Topic	Synopsis
FY BSc 2:30 pm to 3:15 pm	Electrostatics	→ Introduction of CO, PSO & POs for the course of electrostatics → Discussion regarding it with students → Discussion of various evaluation methods → Assessment methods → Internal Examination - 10 marks → Assignment - 5 marks → classroom interactions - 5 marks

Teaching Methods / Teaching Aids : chalkboard method

Books / References : —

Shirce
Signature Teacher



RSR
Head
Department of
A.A. College, Manchar

DAILY RECORD


Date: 18 / 12 / 2023

Day: Monday

Class / Time	Topic	Synopsis
S.Y. B.Sc. 10 am to 1 pm	Complex Numbers	<p>Revision</p> <ul style="list-style-type: none"> * Discussion of CO, PO, PSO * Syllabus discussion
F.Y. B.Sc. 3:15 pm to 4:00 pm	Electrostatics	<ul style="list-style-type: none"> * Electric potential due to a point charge $V = \frac{1}{4\pi\epsilon_0} \frac{q}{r} \text{ (derivation)}$ <ul style="list-style-type: none"> * Potential energy of a charge concept * Electrical potential energy of a system $U = \frac{1}{2} \left(\frac{1}{4\pi\epsilon_0} \right) \sum_{i=1}^n \sum_{i \neq j} \frac{q_i q_j}{r_{ij}}$

Teaching Methods / Teaching Aids: Chalkboard method

Books / References: Nirali Prakashan


Signature Teacher




Head
Department of Physics
A.A. College, Manchar

Rayat Shikshan Sanstha's
**Annasaheb Awate Arts, Commerce &
Hutatma Babu Genu Science College**



Manchar, Dist. Pune. (MAHARASHTRA) 410 503

PERSONAL RECORD

Name of the Teacher : Madhe B.A.

Qualification : M.Com, SET

Department : Commerce & Management

Designation : AP

Date of oppointment : 18/10/2021

Present garde : _____

Residential address : _____

Phone Number : _____

Blood Group : _____

PAN No. : _____

Saving A/c. No. : _____

P.E.A/c. No. _____

DAILY RECORD

Date: 15/07/2024

Day: ~~Monday~~ Monday

Class / Time	Topic	Synopsis
8.00 am to 8.45 am [S.Y. B.com] (B)	CO, PO, PSO Syllabus	- Delivering CO, PO, PSO to student - Syllabus ① Unit-I Management ② Unit-II Understanding Management: Planning & Decision Making ③ Unit-III Management at Work: The process of organizing & Staffing ④ Unit-IV Result Orientation: Direction & Team work.
8.45 am to 9.30 am [T.Y. B.com]	CO, PO, PSO, Syllabus.	- Delivering CO, PO, PSO to student - Syllabus - ① સરકારી નીતિ અને મર્યાદા સ્થાપના 20 ② સરકાર, નીતિ અને મર્યાદા સ્થાપનાની તકનીક ③ ભાગલાલ મોજાની નીતિ કરતો શાળા, યુનિવર્સિટી ④ યુનિવર્સિટી નીતિ.
10.25 am to 11.10 am [T.Y. B.com]	MSME Policy, 2020	* ગુણવત્તા અને વાર્ષિક રીપોર્ટ * ભાગલાલ મોજાની નીતિ અને વૈશિષ્ટ્ય

Teaching Methods / Teaching Aids :

Books / References :

Signature Teacher

Head
Department of Commerce
A.A.C. Manchar.
Tal. Ambegaon, Dist. Pune



Rayat Shikshan Sanstha's
**Annasaheb Awate Arts, Commerce &
Hutatma Babu Genu Science College**

Manchar, Dist. Pune. (MAHARASHTRA) 410 503

PERSONAL RECORD

Name of the Teacher : Miss: Raut S.V.

Qualification : M. Com GPCA

Department : Department of Commerce.

Designation : Assistant professor.

Date of appointment : 07/09/2022

Present garde : —

Residential address : Manchar

Phone Number : 9858442020.

Blood Group : O+

PAN No. : —

Saving A/c. No. : —

P.E. A/c. No. : —



Semester - First

DAILY RECORD

Date : 27 / 07 / 2023

Day : Thursday

Class / Time	Topic	Synopsis
F.Y.B.Lom (Marathi)	Organisational Skill Development कार्यालय संकल्पना	कार्यालय संकल्पना कार्यालयाची आवश्यकता कार्यालयाची गरज - Discussion on course outcome and program outcome of this subject
T.Y.B.Lom		General lecture Give the information about Cost and Works A/c - II - discussion on course outcome & program outcome of this (PSC) sub. and give the information about its students.

Teaching Methods / Teaching Aids :

Books / References :

Shivan
Prof : T. S. V.

Head

Head

Department of Commerce

Rayat Shikshan Sanstha's
**Annasaheb Awate Arts, Commerce &
Hutatma Babu Genu Science College**



Manchar, Dist. Pune. (MAHARASHTRA) 410 503

PERSONAL RECORD

Name of the Teacher : Prof. Kalokhe D. V.

Qualification : M.com, B.ed.

Department : Commerce

Designation : Assistant Professor

Date of appointment : 11/09/2016

Present grade : —

Residential address : AP Manchar - Tal- Ambegaon Dist- Pune.

Phone Number : 7219304850

Blood Group : A+ve.

PAN No. : CQBPK.6627G.

Saving A.c. No. : 68099941128—

P.E.A.c. No. : —

DAILY RECORD

Date: 23/11/2024

Day: Monday



Class / Time	Topic	Synopsis
T.Y.B. com I	Business Entrepreneurship - III	* syllabus given & discuss - co, po, ps o about subject ..
II T.Y.B. com (B)	Auditing	<p>Objective of Auditing</p> <p>A) Primary objective</p> <ol style="list-style-type: none"> i) Ensuring the Accuracy of the Annual Accounts ii) Make sure that the Accounts are kept as per the Rules <p>B) Secondary objective</p> <ol style="list-style-type: none"> 1) Finding Errors in Accounting 2) Detecting Fraud, Embezzlement in Accounting 3) Curbing Fraud, Embezzlement 4) Control Effects on Accounts Department Staff 5) Satisfying Govt. officials

Teaching Methods / Teaching Aids :

Books / References :

Signature Teacher



Head

Department of

Head 23/11/24