Shri Mohatadevi Shikshan Sanstha, Aurangabad.
PRAGATI MAHAVIDYALAYA
Sawkheda, Tq. Sillod, Dist. Aurangabad.
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Estd: 2016

Ref No.: PMS/2024-2025/ Date : / /20

Seal

Program Outcomes (POs) – B.Sc. Physics

After completing the B.Sc. Physics program, the learner will be able to:

1. Demonstrate foundational and advanced understanding of core principles in physics.
2. Apply theoretical and experimental knowledge to solve problems in mechanics, electronics, thermodynamics, optics, and quantum physics.
3. Design and conduct scientific experiments and analyze data using standard tools and techniques.
4. Communicate scientific ideas clearly and effectively in oral and written forms.
5. Develop critical thinking, problem-solving, and analytical skills in real-life applications.
6. Understand the ethical and social responsibilities of scientific practices in local and global contexts.
7. Engage in interdisciplinary learning, innovation, and lifelong education for advanced studies or employment.

Program Specific Outcomes (PSOs) – B.Sc. Physics

After completing this programme, learners will be able to:

- Synthesize core principles across physics disciplines to develop a profound understanding, laying the foundation for specialization.
- Apply theoretical and experimental knowledge of physics in diverse contexts, fostering adaptability and innovative problem-solving skills.
- Evaluate complex physics problems critically, employing creative thinking to generate effective solutions.
- Communicate findings and ideas clearly and logically, demonstrating proficiency in conveying complex physics concepts.
- Demonstrate analytical prowess in data analysis and hypothesis formulation, facilitating proficient research conduct across physics domains.
- Lead and collaborate effectively in interdisciplinary teams, exhibiting adaptability and readiness for leadership roles while fostering a culture of continuous learning.
- Construct a framework for promoting multicultural competence and ethical values, fostering sustainability and responsible citizenship in the global physics community.

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Course Outcomes (COs) –Bloom's Taxonomy

Semester I:

Course Title	Credits	Course Outcomes	Bloom's Level
Modern Physics (Major Core)	2	CO1: Apply concepts of black body radiation, photoelectric and Compton effects	Apply
		CO2: Analyze experimental and theoretical aspects of quantum phenomena	Analyze
		CO3: Evaluate models and results to refine understanding of fundamental physics	Evaluate
		CO4: Design basic experiments in X-ray physics	Create
Electrical & Electronic Gadgets for All (OEC)	4	CO1: Identify conductors, calculate electricity bills	Remember, Apply
		CO2: Understand lighting/cooling appliances	Understand, Analyze
		CO3: Apply digital principles and differentiate analog-digital formats	Apply, Analyze
		CO4: Design secure digital strategies considering AI applications	Create, Evaluate
Performing Physics Experiments (VSC)	2	CO1: Analyze diode and rectifier circuits	Analyze
		CO2: Apply theorems for circuit efficiency	Apply
		CO3: Evaluate diode performance in regulation	Evaluate
		CO4: Experiment with black body radiation and quantum effect simulations	Apply, Create
Basic Measurements and Calculations (SEC)	2	CO1: Use instruments like calipers, stopwatches, DMM	Apply
		CO2: Analyze measurement errors	Analyze
		CO3: Construct and interpret linear/non-linear graphs	Create, Evaluate
		CO4: Perform statistical analysis of data	Evaluate

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Semester II:

Course Title	Credits	Course Outcomes	Bloom's Level
Basic Electronics (Major Core)	2	CO1: Apply binary logic and number systems to circuit design	Apply
		CO2: Analyze diode circuits and filters	Analyze
		CO3: Evaluate applications of Zener diodes	Evaluate
		CO4: Design voltage regulation systems	Create
Physics in Daily Life (OEC)	4	CO1: Analyze renewable energy systems and global energy issues	Analyze
		CO2: Evaluate personal carbon footprint	Evaluate
		CO3: Design strategies for reducing energy consumption	Create, Apply
		CO4: Understand components and impact of electric vehicles	Understand, Analyze
Physicists Exploring Through Experiments (SEC)	2	CO1: Analyze lens aberrations using optical bench	Analyze
		CO2: Apply optimal mobile camera settings	Apply
		CO3: Measure light intensity using Lux meters	Apply
		CO4: Design experiments for optical and mechanical dynamics	Create

Teacher HoD IQAC Principal

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