SECOND-YEAR OF BACHELOR OF SCIENCE Physics (MAJOR AND MINOR) REVISED SYLLABUS ACCORDING TO CBCS NEP2020

COURSE TITLE: **Physics Practical-II**

SEMESTER-IV

W.E.F. 2024-2025

RECOMMENDED BY THE BOARD OF STUDIES IN PHYSICS
AND
APPROVED BY THE ACADEMIC COUNCIL

Devrukh Shikshan Prasarak Mandal's
Nya. Tatyasaheb Athalye Arts, Ved. S. R. Sapre Commerce, and Vid. Dadasaheb Pitre Science College (Autonomous), Devrukh.
Tal. Sangameshwar, Dist. Ratnagiri-415804, Maharashtra, India

Academic Council Item No:

Name of the Implementing Institute	:	Nya. Tatyasaheb Athalye Arts, Ved. S. R. Sapre Commerce, and Vid. Dadasaheb Pitre Science College (Autonomous), Devrukh. Tal. Sangameshwar, Dist. Ratnagiri-415804,
Name of the Parent University	:	University of Mumbai
Name of the Programme	:	Bachelor of Science
Name of the Department	:	Physics
Name of the Class	:	Second Year
Semester	:	Fourth
No. of Credits	:	02
Title of the Course	:	Physics Practical-II
Course Code	:	S210PHP
Name of the Vertical in adherence to NEP 2020	:	Major and Minor
Eligibility for Admission	:	Any student admitted to Second Year of B.Sc. Degree Programme in adherence to Rules and Regulations of the University of Mumbai and Government of Maharashtra
Passing Marks	:	40%
Mode of Assessment	:	Summative at the end of semester
Level	:	UG
Pattern of Marks Distribution for SEE	:	100 %
Status	:	NEP-CBCS
To be implemented from Academic Year	:	2024-2025
Ordinances /Regulations (if any)		

Syllabus for Second Year of Bachelor of Science in Physics

(With effect from the academic year 2024-2025)

SEMESTER-IV **Paper No.– 1**

Course Title: Physics Practical-II **No. of Credits - 02**

Type of Vertical: Major and Minor **COURSE CODE: S210PHP**

Learning Outcomes Based on BLOOM's Taxonomy:

After completing the course, the learner will be able to…		
Course Learning Outcome No.	Blooms Taxonomy	Course Learning Outcome
CLO-01	Remember	Understand practical skills while performing experiments
CLO-02	Understand	Understand the use of apparatus and their use without fear & hesitation.
CLO-03	Apply	Correlate the physics theory concepts to practical application
CLO-04	Analyze	Understand the concept of errors and their estimation.

1. Minimum **06** experiments from each group are to be performed and reported in the journal.
2. The certified journal must contain a minimum of **12** experiments in semester−III.
3. A separate index and certificate in journal is must for each semester course.

Syllabus for Second Year of Bachelor of Science in Physics

(With effect from the academic year 2024-2025)

SEMESTER-IV **Paper No.– 1**

Course Title: Physics Practical-I **No. of Credits - 02**

Type of Vertical: Major and Minor **COURSE CODE: S209PHP**

COURSE CONTENT			
Module No.	**Content**	**Credits**	**No. of Hours**
I	**Group A** 1. Problem solving −Product Rules and Integral Theorems 2. Brewster's Law 3. Wavelength of Hg lines using Diffraction Grating 4. J by electrical method 5. Thermistor characteristics 6. Stefan's law 7. Calculations from XRD data −1 8. Wavelength of Na source by Newton's Rings 9. Constant volume air thermometer	**01**	**30**
II	**Group B** 1. Mod 2, 5, 10 counter 2. Problem Solving −2nd order Differential Equations and applications 3. Number conversion practice and 2's complement arithmetic 4. 4−bit Adder−Subtractor. 5. Study of Sinusoidal Oscillators 6. OPAMP −Difference Amplifier 7. OPAMP −Integrator 8. OPAMP −Differentiator 9. Calculations from XRD data −2	**01**	**30**
	Total	**02**	**60**

Access to the Course

The course is available for all the students admitted for Second Year Bachelor of Science.

Methods of Assessment

Practical courses, Vocational Skill Courses, Skill Enhancement Courses and the courses having laboratory sessions shall be assessed at the end of each semester.

References:

1. Advanced course in Practical Physics: D. Chattopadhya, PC. Rakshit & B. Saha (8th Edition) Book & Allied Pvt. Ltd.
2. BSc Practical Physics: Harnam Singh. S. Chand & Co. Ltd. – 2001.
3. A Text book of Practical Physics: Samir Kumar Ghosh New Central Book Agency (4th edition).
4. B Sc. Practical Physics: C. L. Arora (1st Edition) – 2001 S. Chand & Co. Ltd.
5. Practical Physics: C. L. Squires – (3rd Edition) Cambridge University Press.
6. University Practical Physics: D C Tayal. Himalaya Publication.
7. Advanced Practical Physics: Worsnop & Flint.