



THIRD YEAR OF BACHELOR OF SCIENCE MAJOR PHYSICS REVISED SYLLABUS ACCORDING TO CBCS NEP2020

COURSE TITLE: PHYSICS PRACTICAL-II
SEMESTER-V W.E.F. 2025-2026

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.Sangmeshwar, Dist. Ratnagiri-415804, Maharashtra, India

Academic Council Item No: 02/2025

Name of the Implementing Institute	:	Nya. Tatyasaheb Athalye Arts, Ved. S. R. Sapre Commerce, and Vid. Dadasaheb Pitre Science College (Autonomous), Devrukh. Tal. Sangmeshwar, 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	:	Third Year
Semester	:	Fifth
Paper	:	Practical lab-II
No. of Credits	:	02
Title of the Course	:	Physics Practical II
Course Code	:	S305PHP
Name of the Vertical in adherence to NEP 2020	:	Major
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	:	5.5
Pattern of Marks Distribution for TE and CIA	:	100 %
Status	:	NEP-CBCS
To be implemented from Academic Year	:	2025-2026
Ordinances /Regulations (if any)	:	

Nya. Tatyasaheb Athalye Arts, Ved. S. R. Sapre Commerce and Vid. Dadasaheb Pitre Science College, Devrukh (An Autonomous College Affiliated with University of Mumbai)

Syllabus for Third Year of Bachelor of Science in Physics
(With effect from the academic year 2025-2026)

Semester-V

Course Title: Physics Practical-II

Paper No – Physics lab-II

No. of Credits – 02

Type of Vertical: Major

Course Code: S305PHT

After completing the course, the learner will be able to

Course Outcome	Course Learning Outcome
CO-01	Understand practical skills while performing experiments
CO-02	Develop collaboration skills, maintain scientific integrity, and follow safety protocols while conducting experiments
CO-03	Correlate the physics theory concepts to practical application
CO-4	Enhance the ability to document experimental procedures, analyze results, and present findings effectively in lab reports and presentations.

1. The certified journal must contain a minimum of **12** experiments in semester-V.
2. A separate index and certificate in journal is must for each semester course.

Syllabus for Third Year of Bachelor of Science in Physics
(With effect from the academic year 2025-2026)

Semester-V

Course Title: Physics Practical-II

Paper No – Physics lab-II

No. of Credits – 02

Type of Vertical: Major

Course Code: S305PHT

Course Contents
1. Searle's Goniometer 2. Determination of 'g' by Kater's pendulum 3. Elastic constants of a rubber tube 4. Edser's 'A' pattern 5. Refractive Index by total internal reflection 6. Determination of Cauchy's Constants 7. Determination of Planck's constant 8. Resolving power of plane diffraction grating 9. To measure the Dielectric Constant of a dielectric Materials 10. Design and study of Wien bridge oscillator using OPAMP 11. Design and study of first order active low pass filter 12. Design and study of first order active high pass filter 13. Synchronous counter using IC 74193 14. Schmitt trigger using OPAMP 15. Photo-transistor characteristics 16. Photodiode characteristics

References:

1. Practical Physics: Gupta-Kumar, Pragati Publication
2. Advanced course in Practical Physics: D. Chattopadhyay, PC. Rakshit & B. Saha (8th Edition) Book & Allied Pvt. Ltd.
3. Practical Physics: C. L. Squires – (3rd Edition) Cambridge University Press
4. A text book of practical physics: Indu Prakash, Ram Krishna and A. K. Jha, Kitab mahal
5. B Sc. Practical Physics: C. L. Arora (1st Edition) – 2001 S. Chand & Co. Ltd

Access to the Course

The course is available for all the students admitted for third year of Bachelor of Science.

Methods of Assessment

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