THIRD YEAR BACHLOR OF SCIENCE MAJOR PHYSICS REVISED SYLLABUS ACCORDING TO CBCS NEP 2020

COUERSE TITLE: **Electronics Lab**

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	:	Sixth
Paper	:	I
No. of Credits	:	02
Title of the Course	:	Electronics Lab
Course Code	:	S316PHP
Name of the Vertical in adherence to NEP 2020	:	Major
Eligibility for Admission	:	Any student admitted to Third 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	:	Formative and Summative
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)		

Syllabus for Third Year of Bachelor of Science in Physics

(With effect from the academic year 2025-2026)

Semester -VI **Paper No.– 1**

Course Title: Electronics Lab **No. of Credits - 02**

Type of Vertical: Elective I **Course Code: S316PHP**

After completing the course, the learner will be able to……

Course Outcome	Course Learning Outcome
CO-01	Understand the concept JFET,SCR,UJT
CO-02	Understand the Modulation concept using of 555 timer
CO-03	Analyse the transistor multivibrator
CO-04	Design the circuit using Op-Amp

1. The certified journal must contain a minimum of **12** experiments in semester–VI.
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 -VI **Paper No.– 1**

Course Title: Electronics Lab **No. of Credits - 02**

Type of Vertical: Elective I **Course Code: S316PHP**

Elective I Practical

1. Study of JFET characteristics (Drain Curve)
2. Study of JFET characteristics (Transconductance Curve)
3. JFET as switch (series and shunt)
4. UJT characteristics
5. UJT as relaxation oscillator
6. Study of Pulse width modulation (BB)
7. Study of Pulse position modulation (BB)
8. Astable Multivibrator using 555 timer
9. Application of IC 555 as voltage to frequency converter
10. First Order Active Band pass filter
11. Study of transistor Astable multivibrator
12. Study of transistor Monostable multivibrator
13. Study of transistor Bistable multivibrator
14. First Order Active Notch pass filter
15. Op-Amp Square wave generator

References:

1. Advanced course in Practical Physics: D. Chattopadhya, PC. Rakshit & B. Saha (8th Edition) Book & Allied Pvt. Ltd.
2. BSc Physics: Harnam Practical 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.
8. Practical Physics: Indu Prakash , Ram Krishna, A.K.Jha Kitab Mahal Publication

Access to the Course

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

Methods of Assessment

The assessment pattern would be 100 %, for Semester End Examination (SEE) and for Continuous Internal Assessment (CIA). The structure of the SEE and CIA would be as recommended by the Board of Studies and approved by the Board of Examination and the Academic Council of the college.

Pattern of Evaluation

The Examination/Evaluation pattern shall be framed by the Board of Examination with its final approval from the Academic Council of the College.