



REVISED SYLLABUS ACCORDING TO CBCS NEP2020 SECOND-YEAR OF MASTER OF SCIENCE IN PHYSICS

**COURSE TITLE:- LAB COURSE – 02
SEMESTER - III
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.Sangmeshwar, Dist. Ratnagiri-415804, Maharashtra, India**

Academic Council Item No: **dated 19 April 2024**

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	:	Master of Science
Name of the Department	:	Physics
Name of the Class	:	Second Year
Semester	:	Third
No. of Credits	:	02
Title of the Course	:	Lab Course – 02
Course Code	:	S607PHP
Name of the Vertical in adherence to NEP 2020	:	Elective
Eligibility for Admission	:	Any student admitted to Second year of M.Sc, degree programme in adherence to Rules and Regulations of the University of Mumbai and Government of Maharashtra.
Passing Marks	:	100%
Mode of Assessment	:	Summative
Level	:	PG
Pattern of Marks Distribution	:	100% Semester End Examination
Status	:	NEP-CBCS
To be implemented from Academic Year	:	2024 - 2025

Syllabus for First Year of Master of Science in Physics

(With effect from the academic year 2024 - 2025)

SEMESTER - III

Paper No–Physics Paper–VII

Course Title: Lab Course – 02

No. of Credits - 02

Type of Vertical: Elective

COURSE CODE: S607PHP

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	Understand	Use the Keil / SDCC for 8051 development
CLO-02	Apply	Implement stack, ISR and time/counter in 8051
CLO-03	Apply	Interface various devices with the 8051
CLO-04	Apply	Interface various devices with the arduino

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SEMESTER - III

Paper No–Physics Paper–VII

Course Title: Lab Course – 02

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Type of Vertical: Elective

COURSE CODE: S607PHP

COURSE CONTENT

Practicals – Embedded Systems

1. Demo of using Keil / SDCC
2. 8051 programming in C using SDCC – Stack, ISR, Timer/counter
3. 8051 Interfacing experiments - LEDs, Switches, Keypads
4. 8051 Interfacing experiments - Stepper Motor, Relays
5. 8051 Interfacing experiments - ADC and DAC (using SDCC)
6. Arduino Interfacing – I
7. Arduino Interfacing - II
8. Arduino Interfacing – III

Access to the Course

The course is available for all the students admitted for Master of Science in Physics.

Methods of Assessment

The assessment pattern would be 100% Semester End Examination (SEE). The structure of the SEE 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.