

NAGALAND UNIVERSITY

(A Central University Estd. By the Act of Parliament No. 35 of 1989)

Headquarters: Lumami – 798 627



2-Year M.Sc. (PHYSICS) PROGRAMME

(COURSE WORK + RESEARCH)

COURSE STRUCTURE AND DETAILS

(As per NEP Guidelines for PG Programmes)

**(Approved by the 43rd Meeting of the
Academic Council)**

2025-27 Batch

DEPARTMENT OF PHYSICS

SCHOOL OF SCIENCES

MAY 2026

The Department adopts the option (Course work + Research), prescribed by the NEP guidelines for the PG programmes.

Semester I

Total No. of Credits: 20

Course No.	Name of the Course	Contact Hours and Credits		
		Classroom Lectures	Experiments in Laboratories	Total Credits
PHY401	Classical Mechanics	4	--	4
PHY402	Mathematical Methods – I	4	--	4
PHY403	Electromagnetic Theory – I	4	--	4
PHY404	Analog and Digital Electronics	4	--	4
PHY405	Computational Methods Laboratory	2	4	4

Semester II

Total No. of Credits: 20

Course No.	Name of the Course	Contact Hours and Credits		
		Classroom Lectures	Experiments in Laboratories	Total Credits
PHY451	Quantum Mechanics - I	4	--	4
PHY452	Mathematical Methods – II	4	--	4
PHY453	Electromagnetic Theory – II	4	--	4
PHY454	Statistical Mechanics	4	--	4
PHY455	Electronics Laboratory	2	4	4

Semester III

Total No. of Credits: 24

Course No.	Name of the Course	Contact Hours and Credits		
		Classroom Lectures	Experiments in Laboratories	Total Credits
PHY501	Quantum Mechanics – II	4	--	4
PHY502	Solid State Physics - I	4	--	4
PHY503	Spectroscopy	4	--	4
PHY504	Nuclear and particle Physics	4	--	4
PHY505	General Physics Laboratory - I	2	4	4
PHY506	Application of Python in Artificial Intelligence	2	--	2
PHY507	Internship	0	--	2

Semester IV**Total No. of Credits: 24**

Course No.	Name of the Course	Contact Hours and Credits		
		Classroom Lectures	Experiments in Laboratories	Total Credits
	ELECTIVE PAPERS			
PHY551	Advanced Quantum Mechanics			
PHY552	Magnetism	4	--	4
PHY553	Solid State Physics – II	4	--	4
PHY554	Superconductivity	4	--	4
PHY555	Modern Optics			
PHY556	Dielectric and Luminescence Properties of Solids			
PHY557	Dissertation	12	--	12

A student of 2-year M.Sc. (Physics of 2025 – 27 batch) must go for an internship during summer break/ winter vacation, submit a scientific report of the visit and valid documents for proof.

A student in the 2-year M.Sc. (Physics) of 2025 – 27 batch must take must take a MOOCs/SWAYAM course and submit a pass certificate of evidence.

A student in the 3rd semester of 2-year M.Sc. (Physics) of 2025 – 27 batch must choose a topic of dissertation and present a literature review in the form of a presentation at the end of the 3rd semester.

A student in the 4th semester of 2-year M.Sc. (Physics) of 2025 – 27 batch must take any three of the elective papers.