

PHYSICS (B.A.)

Bachelor of Arts Program

Program Code: BA-AS

Major Code: PHY

Physics Department

SAMC 162

(716) 878-6726

physics.buffalostate.edu/ (<https://physics.buffalostate.edu/>)

The physics B.A. program provides a good concentration in physics courses and a broad distribution in the liberal arts. It prepares students for technical or technically related graduate school studies or employment.

Admission Requirements

Mathematics preparation through precalculus is required.

Program Requirements

Code	Title	Credit Hours
General Education 23 Requirements (http://ecatalog.buffalostate.edu/undergraduate/collegewide-degree-requirements-baccalaureate-degrees/#IF_Courses)		
		33 credit hours

Physics Major Requirements (35 credit hours)

Required Core Courses (26 credit hours)

PHY 111	UNIVERSITY PHYSICS I	5
PHY 112	UNIVERSITY PHYSICS II	5
PHY 213	UNIVERSITY PHYSICS III	3
PHY 214	OPTICS AND HEAT LABORATORY	1
PHY 305	MODERN PHYSICS I	3
PHY 306	MODERN PHYSICS II	3
PHY 310	COMPUTATIONAL PHYSICS LABORATORY	3
PHY 320	INTRODUCTION TO THEORETICAL PHYSICS	3

Electives in Physics (9 credit hours)

Select from the following:		
PHY 308	OPTICS	
PHY 315	HEAT AND THERMODYNAMICS	
PHY 323	STATICS	
PHY 324	ELECTRIC CIRCUIT ANALYSIS	
PHY 340	NONLINEAR DYNAMICS AND CHAOS	
PHY 410	ADVANCED PHYSICS LABORATORY	

PHY 425	CLASSICAL MECHANICS	
PHY 435	INTRODUCTION TO QUANTUM MECHANICS	
PHY 440	ELECTRICITY AND MAGNETISM I	
PHY 441	ELECTRICITY AND MAGNETISM II	
Required Credit Hours Outside the Major (23 credit hours)		
CHE 111	FUNDAMENTALS OF CHEMISTRY I	3
CHE 112	FUNDAMENTALS OF CHEMISTRY II	3
CHE 113	LABORATORY FOR FUNDAMENTALS OF CHEMISTRY I	1
CHE 114	LABORATORY FOR FUNDAMENTALS OF CHEMISTRY II	1
MAT 161	CALCULUS I	4
MAT 162	CALCULUS II	4
MAT 163	USING TECHNOLOGY TO EXPLORE CALCULUS I	1
MAT 164	USING TECHNOLOGY TO EXPLORE CALCULUS II	1
MAT 263	CALCULUS III	4
MAT 264	USING TECHNOLOGY TO EXPLORE CALCULUS III	1
All College Electives		
29 credit hours		29
Total Credit Hours		120

Students will demonstrate:

1. ability to communicate clearly using the vocabulary and concepts of physics.
2. ability to solve conceptual and quantitative problems in physics at an undergraduate level.
3. understanding of laboratory skills used in physics laboratory exercises.
4. ability to write algorithms in a computational language using common software.
5. an understanding of keeping an accurate and legible laboratory notebook.
6. to analyze and evaluate experimental data.
7. mastery of the subject matter in Classical Mechanics, Electricity & Magnetism, and Quantum Mechanics.

8. adequate technical report writing skills.
9. adequate oral presentation skills.