

# Physics B.A./B.S. Emphasis in Biophysics

The Physics with Emphasis in Biophysics is an interdisciplinary program for students who love physics and math and who want to work on the complex problems related to biology and medicine. Biophysics involves the frontiers of both physics and biology, where the toolbox of physics and math is applied to quantitative problems in biology. This program provides excellent undergraduate preparation for graduate work in biophysics, bioengineering, biology, physics, chemistry, biochemistry, computational biology, medical physics, and neurobiology. The chemistry courses comprise a minor in chemistry. Students considering the MCAT should consult with the JAMP faculty advisor early in and throughout their course of studies.

## Core Curriculum Courses

See the Core Curriculum Requirements (<https://coursecatalog.tamuc.edu/undergrad/core-curriculum-requirements/>) 42

## Required courses in the major

PHYS 101	Physics and Astronomy Seminar	1
PHYS 2425	University Physics I *	
PHYS 2426	University Physics II	4
PHYS 317	Mathematical Methods for Physics and Engineering	3
PHYS 321	Modern Physics	3
PHYS 333	Wave Motion, Acoustics, and Optics	4
PHYS 335	Advanced Physics Laboratory	3
Choose two from the following:		6
PHYS 411	Classical Mechanics	
PHYS 412	Electricity and Magnetism	
PHYS 414	Thermodynamics and Kinetic Theory	
PHYS 420	Quantum Mechanics	

## Support courses

MATH 2413	Calculus I *	
MATH 2414	Calculus II	4
MATH 2415	Calculus III	4

## Emphasis Courses

PHYS 119	Introduction to Python Computer Programming for the Physical Sciences	1
PHYS 319	Computational Physics with Python	3
PHYS 401	Current Topics in Physics and Astronomy (1 sh, must be repeated for total of 2 sh)	2
6 SCH additional PHYS 400-level courses		6
BSC 1406	Introductory Biology I	4
BSC 1407	Introductory Biology II	4
BSC 303	Cell Biology	4
BSC 304	Genetics	4
BSC 401	Research Literature and Seminar	3
CHEM 1311	General and Quantitative Chemistry I *	
CHEM 1111	General and Quantitative Chemistry Laboratory I *	
CHEM 1112	General and Quantitative Chemistry Laboratory II	1
CHEM 1312	General and Quantitative Chemistry II	3
CHEM 2323	Organic Chemistry I	3
CHEM 351	Physical Chemistry	4
CHEM 2123	Organic Chemistry Laboratory I	1

**Electives: Choose 8 credit hours from the following** 8

CHEM 2325	Organic Chemistry II **	
CHEM 2125	Organic Chemistry Laboratory II **	
CHEM 352	Physical Chemistry	
BSC 306	Applied Microbiology	
PHYS 332	Electronics for Scientists and Engineers	

**Total Hours**

**125**

\* This course should be taken to fulfill Core Curriculum Requirements.

\*\*    Students considering taking the MCAT are encouraged to take this elective.  
A grade of "C" or higher must be earned in all courses in this Major.

**First Year**

**Fall**

**Hours**

Delete This Text

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**0**

**Total Hours: 0**