

# 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.

## Core Curriculum Courses

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

## Required courses in the major

PHYS 101	Physics and Astronomy Seminar	1
PHYS 119	Introduction to Python Computer Programming for the Physical Sciences	1
PHYS 2425	University Physics I *	
PHYS 2426	University Physics II	4
PHYS 317	Mathematical Methods for Physics and Engineering	3
PHYS 319	Computational Physics with Python	3
PHYS 321	Modern Physics	3
PHYS 332	Electronics for Scientists and Engineers	4
PHYS 333	Wave Motion, Acoustics, and Optics	4
PHYS 335	Advanced Physics Laboratory	3
PHYS 401	Current Topics in Physics and Astronomy (1 sh, must be repeated for total of 2 sh)	2
PHYS 411	Classical Mechanics	3
PHYS 412	Electricity and Magnetism	3
PHYS 414	Thermodynamics and Kinetic Theory	3
PHYS 420	Quantum Mechanics	3
PHYS or ASTR or MATH (Adv)		9

## Required support courses

MATH 2413	Calculus I *	
MATH 2414	Calculus II *	
MATH 2415	Calculus III	4
MATH 2320	Differential Equations	3
MATH 2318	Linear Algebra	3
CHEM 1311	General and Quantitative Chemistry I *	
CHEM 1111	General and Quantitative Chemistry Laboratory I	1
Second Major or Minor or Electives Required		
18- 23 semester hours required in second major or minor or electives		18-23

## Total Hours

**120-125**

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This course should be taken to fulfill Core Curriculum Requirements.

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These courses may apply on the second major or minor.

A grade of "C" or higher must be earned in all courses in this Major.

- Suggested second majors include mathematics, chemistry, computer science, and biology. Other choices are possible.
- Planning for a second major should not be delayed beyond the middle of the sophomore year. A minor in a second subject may be chosen instead of a second major. The choice of mathematics as second major allows for four additional courses to be elective. Many students select minors in both mathematics and computer science.

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

A grade of "C" or higher must be earned in all courses in this Major.