Physics B.A./B.S. with Emphasis in Astrophysics

The emphasis in Astrophysics is designed for students interested in pursuing a career and advanced study in astronomy and astrophysics. The degree program contains a strong core of physics and mathematics courses which provides the desired breadth and academic rigor to prepare the student for entry into any of the many subfields of modern space-related careers (for example, space science and technology, planetary science, astrobiology, etc.).

The emphasis in Astrophysics is designed for students interested in pursuing a career and advanced study in astronomy and astrophysics. The degree program contains a strong core of physics and mathematics courses which provides the desired breadth and academic rigor to prepare the student for entry into any of the many subfields of modern space-related careers, including astronomy and astrophysics, space science and technology, planetary science, and astrobiology.

Core Curriculum Courses		**42**
See the Core Curriculum Requirements (https://coursecatalog.tamuc.edu/undergrad/core-curriculum-requirements/)		
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 2 from the following:		6
PHYS 411	Classical Mechanics (Choose two from the following:)	
PHYS 412	Electricity and Magnetism	
PHYS 414	Thermodynamics and Kinetic Theory	
PHYS 420	Quantum Mechanics	
Emphasis Courses		
ASTR 203	Stars and the Universe for STEM Majors	3
or ASTR 1303	Stars and the Universe	
(ASTR) 303 requires permission of faculty advisor)		
ASTR 310	Observational Astronomy	4
ASTR 410	Stellar Structure and Evolution	3
ASTR 420	Galaxies and Cosmology	3
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 of additional PHYS 400-level courses		6
PHYS or ASTR or MATH (Advanced)		3
Support Courses **		
MATH 2413	Calculus I (4 hours) *	
MATH 2414	Calculus II *	
MATH 2415	Calculus III	4
MATH 2320	Differential Equations	3
CHEM 1311	General and Quantitative Chemistry I *	
CHEM 1111	General and Quantitative Chemistry Laboratory I	1
Second Major or Minor or Electives		
18-24 semester hours required in second major or minor or electives		18-24
Total Hours		**120-126**

* This course should be taken to fulfill Core Curriculum Requirements

** These courses may apply to the second major or minor

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

Notes

- 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.

First Year

Fall	**Hours**
Delete This Text	
	0

Total Hours: 0