

BACHELOR OF SCIENCE (B.S.) MAJOR IN PHYSICS (ASTRONOMY CONCENTRATION)

**Minimum required: 120
semester credit hours**

General Requirements

1. The general education core curriculum courses are listed in the degree plan below along with the statewide component code number. See the General Education Core Curriculum (<http://mycatalog.txstate.edu/undergraduate/general-education-core-curriculum/>) section of this catalog for the Texas State requirements and options in the core curriculum, including Honors courses.
2. Students must complete a minimum of 36 advanced hours (3000 or 4000 level courses).
3. Students entering Texas State with fewer than 16 credit hours completed after high school graduation will be required to take US 1100. All others will be exempt from taking this course. Students may be required to earn an additional elective to reach the 120 minimum total credit hour requirement for the awarding of a degree.
4. Students must select a minor from the approved list of Undergraduate Minors (<http://www.mycatalog.txstate.edu/undergraduate/minors/>). The recommended minor is Applied Mathematics. The minor should be chosen in consultation with the academic advisor.
5. Nine semester credit hours must be writing intensive (WI).
6. If two years of the same language are taken in high school, then no additional language hours will be required for the degree. In the absence of such high school language, two semesters of the same modern language must be taken at the college level.

Course Requirements

		Freshman	
		First Semester Hours	Second Semester Hours
MATH 2471 (Mathematics Component Code 020 [TCCN MATH 2413])	4	PHYS 2435 (TCCN PHYS 2427)	4
US 1100	1	MATH 2472 (Component Area Option Code 090/092 [TCCN MATH 2414])	4
ENG 1310 (Communication Component Code 010 [TCCN ENGL 1301])	3	ENG 1320 (Communication Component Code 010 [TCCN ENGL 1302])	3
PHYS 1430 (Life and Physical Sciences Component Code 030 [TCCN PHYS 2425])	4	American History Component Code 060	3
Social and Behavioral Sciences Component Code 080	3		
	15		14

		Sophomore	
		First Semester Hours	Second Semester Hours
CHEM 1135 (TCCN CHEM 1109)	1	POSI 2310 (Government/Political Science Component Code 070 [TCCN GOVT 2306])	3
CHEM 1335 (Life and Physical Sciences Component Code 030 [TCCN CHEM 1309]) ¹	3	MATH 3323	3
PHYS 2425 (Component Area Option Code 090/093 [TCCN PHYS 2426])	4	PHYS 2150	1
MATH 2393 (TCCN MATH 2315)	3	Electives/Minor	3
PHIL 1305 or 1320 (Language, Philosophy, and Culture Component Code 040 [TCCN PHIL 1301 or 2306])	3	PHYS 3320	3
PHYS 2230	2	PHYS 3311	3
	16		16

		Junior	
		First Semester Hours	Second Semester Hours
American History Component Code 060	3	PHYS 4305	3
PHYS 3312	3	Electives/Minor	6
ART 2313, DAN 2313, MU 2313, or TH 2313 (Creative Arts Component Code 050 [TCCN HUMA 1315])	3	PHYS 3418	4
Electives/Minor	3	POSI 2320 (Government/Political Science Component Code 070 [TCCN GOVT 2305])	3
PHYS Upper Division Lab ²	4		
	16		16

		Senior	
		First Semester Hours	Second Semester Hours
PHYS 4310	3	PHYS Electives	4
Electives/Minor	4	Astronomy Concentration Elective ³	3
PHYS 4312	3	Electives/Minor	7
Astronomy Concentration Elective ³	3		
	13		14

Total Hours: 120

¹ BIO 1330/BIO 1130 or BIO 1331/BIO 1131 may be taken instead of CHEM 1335/CHEM 1135.

² Upper Division Labs: PHYS 3411, PHYS 3416, PHYS 3417, PHYS 3418

Astronomy Concentration Electives: PHYS 3313, PHYS 3318, PHYS 4350B.

PHYS Electives

Code	Title	Hours
PHYS 3210	Physics Cognition and Pedagogy	2
PHYS 3313	Astrophysics	3
PHYS 3318	Galactic and Extragalactic Astrophysics	3
PHYS 3411	Advanced Physics Laboratory	4
PHYS 3416	Applied Electronics	4
PHYS 3417	Optics	4
PHYS 3418	Methods in Observational Astrophysics	4
PHYS 4121	Undergraduate Research	1
PHYS 4221	Undergraduate Research	2
PHYS 4311	Condensed Matter Physics	3
PHYS 4320	Selected Study in Physics	3
PHYS 4321	Undergraduate Research (see dept.)	3
PHYS 4350B	Relativity	3
PHYS 4350D	Biophysics	3
PHYS 4360	Physics Cognition and Pedagogy II	3
ENGR 3311	Mechanics of Materials	3
ENGR 3380	Fluid Mechanics	3
MATH 4306	Fourier Series and Boundary Value Problems	3

Or courses approved by the department advisor