

# Physics B.A./B.S. with Emphasis in Engineering

## Core Curriculum Courses

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

### Required Courses:

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 *	
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

### Emphasis Courses

PHYS 119	Introduction to Python Computer Programming for the Physical Sciences	1
PHYS 319	Computational Physics with Python	3
PHYS 332	Electronics for Scientists and Engineers	4
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

PHYS or ASTR or MATH (Adv) 9

Choose 18-23 semester hours from: 18-23

PHYS 421	Semiconductor Physics and Engineering	
PHYS 430	Optics	
CHEM 351	Physical Chemistry	
CHEM 352	Physical Chemistry	
ENGR 2303	Engineering Mechanics- Statics and Dynamics	
ENGR 2304	Computing for Engineers	
ENGR 2308	Engineering Economic Analysis	
ENGR 213	Engineering Probability and Statistics	
ENGR 110	Introduction to Engineering and Technology	
ENGR 1304	Computer-Aided Design (CAD)	
CONE 331	Mechanics of Materials	
CONE 332	Structural Analysis and Design	
EE 210	Digital Circuits	
EE 220	Circuit Theory I	
EE 309	Circuit Theory II	
EE 320	Electronics I	
EE 321	Electronics II	
IE 314	Statistical Quality Control	

IE 403	Human Factors Engineering	
Total Hours		120-125

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

First Year		
Fall	Hours	
Delete This Text		
Total Hours: 0		0