

# Physics Degree - Applied Physics

Bachelor of Science Degree

Stephen F. Austin State University



Fall Semester				Spring Semester			
Year 1	PHYS 1308/1008	Intro to Physics/Engineering (recommended) *	3	PHYS 2325/2125	Technical Physics I	4	
	MATH 2211/2011	Precalculus A (8 week)*	2	MATH 2313/2113	Calculus I	4	
	MATH 2212/2012	Precalculus B (8 week)*	2				
	ENGL 1301	Rhetoric and Composition	3	ENGL 1302	Research and Argument	3	
	HIST 1301	U.S. History I	3	HIST 1302	U.S. History I	3	
	GOVT 2305	Federal Government	3	GOVT 2306	Texas Government	3	
		<b>Hours</b>	<b>16</b>			<b>Hours</b>	<b>17</b>
Fall Semester				Spring Semester			
Year 2	PHYS 2326/2126	Technical Physics II	4	PHYS 2305/2105	Linear Circuit Analysis I ***	4	
	MATH 2314/2114	Calculus II	4	MATH 3315/3115	Calculus III	4	
	CHEM 1311/1111	General Chemistry I	4	CHEM 1312/1112	General Chemistry II	4	
	Core <sup>3</sup>	ECON/PSYC/SOCI <sup>3</sup>	3	SPCH 1315	Public Speaking <sup>4</sup>	3	
		<b>Hours</b>	<b>15</b>			<b>Hours</b>	<b>15</b>
Fall Semester				Spring Semester			
Year 3	PHYS 3333/3133	Modern Physics	4	PHYS 3421/3021	Engineering Dynamics	4	
	PHYS 3347	Math Applications in Physics	3	MATH 3330	Differential Equations	3	
	MATH 3325	Computational Linear Algebra **	3	<b>ENGR 3343/3043</b>	<b>Digital Systems</b>	<b>3</b>	
	Core <sup>1</sup>	ARTS/MUSI/DRAM/DANC <sup>1</sup>	3	Core <sup>2</sup>	Language, Philosophy, & Culture <sup>2</sup>	3	
	****	Elective ****	3	****	Elective ****	3	
		<b>Hours</b>	<b>16</b>			<b>Hours</b>	<b>16</b>
Fall Semester				Spring Semester			
Year 4	<b>PHYS 4372</b>	<b>Computational Physics</b>	<b>3</b>	<b>PHYS 4373/4073</b>	<b>Applied Optics</b>	<b>3</b>	
	PHYS 4175	Research	1	<b>PHYS 4471/4071</b>	<b>Microanalytical Lab Techniques</b>	<b>4</b>	
	ENGL 2311	Technical Writing or Equivalent <sup>5</sup>	3	PHYS 4170	Seminar	1	
	CSCI 1302	Computer Science Principles	3	****	Elective ****	2	
	****	Elective ****	3	****	Elective ****	2	
		<b>Hours</b>	<b>13</b>			<b>Hours</b>	<b>12</b>

Several of the courses above have required labs with a separate course number. For example, the lab PHYS 2125 is a co-requisite for PHYS 2325. Students will be required to repeat pre-requisite courses when the grade is below a C. A minimum of 42 semester hours of work must be completed at SFA, of which at least 36 hours must be advanced. A maximum of 66 academic hours plus 4 hours of kinesiology activity from junior/community colleges may apply towards a bachelor's degree. Students can make up for the difference in the number of hours by taking independent study courses at SFA. Contact your SFA advisor for alternative courses to the core courses listed.

\* There are several ways to meet the pre-requisite requirements for Calculus I:

- Take Pre-Calculus A & B during 1 or 2 semesters depending on ACT or SAT scores. (MATH 2211 & 2212)
- Take Algebra, Trigonometry, and Analytical Geometry. (MATH 1314,1316,1318)
- Received AP credit or take a CLEP exam in the SFA Testing Services center.

Students that are qualified to take calculus their first semester at SFA can choose to replace MATH 2211, MATH 2212, and PHYS 1308 with other courses to bring the degree total to 120 credit hours. Students are encouraged to take math and chemistry courses during the summer to reduce fall and spring semester loads and to decrease the time required for a degree.

\*\* There are several alternative math courses that may meet a math minor requirement in the general bulletin.

\*\*\* Alternatives to PHYS 2305 include PHYS 2401, 3343, 4176; ASTR 3305, 3335.

\*\*\*\* Recommended electives include: ASTR 3305, 3335, PHYS 2450, 3343, 4176; ENGR 1301, 1302, 1304, etc.

(1) Options include ARTS 1301, 1303, 1304; MUSI 1306; DRAM 1310; MUMH 1307; DANC 2303

(2) Options include ENGL 2309,2322-2341; HIST 2311-2322; PHIL 1301,2306

(3) Options include ECON 2301,2302; GEOG 1303; PSYC 2301; SOCI 1301; ANTH 2351

(4) Options include SPCH 1315, SPCH 1318, or SPCH 2333

(5) Options include ENGL 2311; BUSI 2304; SPAN 1301,1302; FREN 1301,1302; GERM 1301,1302; PORT 1301,1302; SNGL 1301,2302