BACHELOR OF SCIENCE, MAJOR IN PHYSICS/ENGINEERING DUAL DEGREE

Code	Title	Hours
Bachelor of Science, Major in Physics/Engineering Dual Degree		
Core Curriculum (http://catalog.shsu.edu/undergraduate/academic-policies-procedures/degree-requirements-academic-guidelines/core-curriculum/)		
Component Area I (Communication)		6
Component Area II (Mathematics)		3
Component Area III (Life and Physical Science)		8
Component Area IV (Language, Philosophy, and Culture)		3
Component Area V (Creative Arts)		3
Component Area VI (U.S. History)		6
Component Area VII (Political Science/Government)		6
Component Area VIII (Social and Behavioral Sciences)		3
Component Area IX (Component Area Option)		4
Degree Specific Requirements		
CHEM 1411	General Chemistry I [1]	4
CHEM 1412	General Chemistry II [1]	4
COSC 1436	Programming Fundamentals I	4
ENGL 3330	Intro to Technical Writing	3
ETDD 1361	Engineering Graphics	3
Advanced Elective		3
Major Core		
PHYS 1401	Physics Boot Camp	4
PHYS 1411	Introduction To Physics I	4
PHYS 1422	Introduction To Physics II	4
PHYS 3370 & PHYS 4110	Intro To Theoretical Physics and Adv Undergrad Laboratory I	4
PHYS 3395 & PHYS 3115	Electronics & Circuit Analysis and Electronic & Circuit Anlys Lab	4
PHYS 3391 & PHYS 3111	Modern Physics I and Modern Physics Laboratory I	4
Major		
PHYS (Advanced) (see list below)		6-8
MATH 1420	Calculus I [1]	4
MATH 1430	Calculus II	4
MATH 2440	Calculus III	4
MATH 3376	Differential Equations	3
MATH 3377	Intro to Linear Alg & Matrics	3
Total Hours		99-101

[1] CHEM 1411 and CHEM 1412 satisfy the Core Curriculum requirement for Component Area III (Life and Physical Science, and MATH 1420 satisfies the Core Currciulum requirement for Component Area II (Mathematics), one semester credit hour of Component Area IX (Component Area Option), and the Degree Specific requirement. Fourth Year at university with recognized accredited degree program.

Code	Title	Hours
Advanced PHYS Electives		
PHYS 4333 & PHYS 4113	Light And Optics and Light And Optics	4
PHYS 3360	Statics And Dynamics	3
PHYS 4366	Intro Quantum Mechanics	3
PHYS 4368	Electricity And Magnetism	3

PHYS 4371	Thermodynamcs & Statistcl Mech	3
PHYS 4370	Classical Mechanics	3

For the Dual Degree Plan the student completes three years in Physics at Sam Houston State University and the curriculum in an engineering field at a university with a recognized accredited degree program in the chosen engineering field.

After successfully completing this program, the student receives two Bachelor of Science degrees:

- one in Physics from Sam Houston State University
- one in an engineering specialty from the university with the recognized accredited engineering degree program.

The applicable engineering specialties are:

- aerospace
- agriculture
- chemical
- civil
- electrical
- industrial
- mechanical
- nuclear
- petroleum
- radiation protection engineering

For the chemical engineering option, a Bachelor of Science in Chemistry would be received from Sam Houston State University.

For more information on this program contact:

Dual Degree Plan Coordinator
Department of Physics
Sam Houston State University
Huntsville, Texas 77341-2267

Students in either of these programs should consult with the Physics/Engineering advisor to adjust the recommended programs to meet the requirements of the particular field of engineering at the terminal university.

To contact the Department of Physics, call (936) 294-1601; FAX: (936) 294-1585; or visit Department of Physics (http://www.shsu.edu/academics/physics/).

First Year

Fall	Hours	Spring	Hours
CHEM 1411[1]	4	CHEM 1412[1]	4
ENGL 1301[2]	3	ENGL 1302[2]	3
HIST 1301[3]	3	HIST 1302[3]	3
MATH 1420[4]	4	MATH 1430[4]	4
PHYS 1401	4	PHYS 1411	4
	18		18

Second Year

Fall	Hours	Spring	Hours
Component Area IV (http://catalog.shsu.edu/undergraduate/academic-policies-procedures/degree-requirements-academic-guidelines/core-curriculum/#componentareaiv)	3	Component Area IX (http://catalog.shsu.edu/undergraduate/academic-policies-procedures/degree-requirements-academic-guidelines/core-curriculum/#componentareaix)	3
ETDD 1361	3	COSC 1436	4
MATH 2440	4	ENGL 3330	3
PHYS 1422	4	PHYS 3370 & PHYS 4110	4
POLS 2305[5]	3	POLS 2306[5]	3
	17		17

Third Year

Fall	Hours	Spring	Hours
Component Area VIII (http://catalog.shsu.edu/undergraduate/academic-policies-procedures/degree-requirements-academic-guidelines/core-curriculum/#componentareaviii)	3	Component Area V (http://catalog.shsu.edu/undergraduate/academic-policies-procedures/degree-requirements-academic-guidelines/core-curriculum/#componentareav)	3
Elective Advanced	3	MATH 3377	3
PHYS 3391	3	PHYS 3395	3
PHYS 3111	1	PHYS 3115	1
PHYS Advanced (see, list below)	3-4	PHYS Advanced (see, list below)	3-4
MATH 3376	3		
	16-17		13-14

Fourth Year

Fall	Hours	Spring	Hours
University with Accredited Degree Program	0	University with Accredited Degree Program	0
	0		0

Total Hours: 99-101

1 Satisfies Core Curriculum requirement for Component Area III (Life and Physical Science).

2 Satisfies Core Curriculum requirement for Component Area I (Communications).

3 Satisfies Core Curriculum requirement for Component Area VI (U.S. History).

4 Satisfies Core Curriculum requirement for Component Area II (Mathematics) and one hour of Component Area IX (Component Area Option).

5 Satisfies Core Curriculum requirement for Component Area VII (Political Science/Government).

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Advanced PHYS Electives		
PHYS 4333 & PHYS 4113	Light And Optics and Light And Optics	4
PHYS 3360	Statics And Dynamics	3
PHYS 4366	Intro Quantum Mechanics	3
PHYS 4368	Electricity And Magnetism	3
PHYS 4370	Classical Mechanics	3
PHYS 4371	Thermodynamcs & Statistcl Mech	3

The Texas Higher Education Coordinating Board (THECB) marketable skills initiative is part of the state's **60x30TX plan** and was designed to help students articulate their skills to employers. Marketable skills are those skills valued by employers and/or graduate programs that can be applied in a variety of work or education settings and may include interpersonal, cognitive, and applied skill areas.

The BS in Physics/Engineering Dual Degree is designed to provide graduates with the following marketable skills:

- Ability to creatively solve real-world problems.
- Sophisticated understanding of applied mathematics.
- Capacity to analyze and interpret complex data.
- Quantitative understanding of mechanical, electrical, and thermal systems.
- Model complex interactions with computer programming and technology.