

BACHELOR OF SCIENCE, MAJOR IN PHYSICS/ENGINEERING DUAL DEGREE

| Code | Title | Hours |
|--|--|--------|
| Bachelor of Science, Major in Physics/Engineering Dual Degree | | |
| Core Curriculum (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 Curriculum 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 | Thermodynamics & Statistical 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 (catalog.shsu.edu/undergraduate/academic-policies-procedures/degree-requirements-academic-guidelines/core-curriculum/#componentareaiv) | 3 Component Area IX (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 (catalog.shsu.edu/undergraduate/academic-policies-procedures/degree-requirements-academic-guidelines/core-curriculum/#componentareaviii) | 3 Component Area V (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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| PHYS 4366 | Intro Quantum Mechanics | 3 |
| PHYS 4368 | Electricity And Magnetism | 3 |
| PHYS 4370 | Classical Mechanics | 3 |
| PHYS 4371 | Thermodynamcs & Statistcl Mech | 3 |