# B.S. IN ENGINEERING TECHNOLOGY: BIOMEDICAL ENGINEERING TECHNOLOGY CONCENTRATION

**Additional information**: Reference the Program Landing Page (https://www.shsu.edu/programs/bachelor-of-science-in-engineering-technology/) for additional information, such as cost, delivery format, contact information, or to schedule a visit.

| Code | Title | Hours |
|---|---|---|
| **B.S. in Engineering Technology: Biomedical Engineering Technology Concentration** | | |
| **Core Curriculum** | | |
| Component Area I (Communications) | | 6 |
| Component Area II (Mathematics) [1] | | 3 |
| Component Area III (Life and Physical Science) [2] | | 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) [1] | | 4 |
| **Degree Specific Requirements** | | |
| ENGL 3330 | Introduction to Technical Writing | 3 |
| or MATH 3379 | Statistical Methods in Practice | |
| MATH 1410 | Elementary Functions [1] | 4 |
| PHYS 1301<br>& PHYS 1101 | General Physics-Mechanics and Heat<br>and General Physics Laboratory I | 4 |
| PHYS 1302<br>& PHYS 1102 | General Physics-Sound, Light, Electricity, and Magnetism<br>and General Physics Laboratory II | 4 |
| **Major: Foundation** | | |
| ETDD 1361 | Engineering Graphics | 3 |
| ETDD 3310 | Product Design & Development | 3 |
| or ETEE 3313 | Industrial Robotics | |
| ETDD 4388 | 3-Dimensional Parametric Design | 3 |
| ETEC 1010 | Engineering Foundations | 2 |
| ETEC 3367 | Engineering Materials Techniques | 3 |
| or ETEE 3376 | Microcontroller Applications | |
| ETEC 4099 | Engineering Innovation | 1 |
| ETEC 4340 | Alternative Energy Technology | 3 |
| or ETEE 4352 | Instrumentation & Interfacing | |
| ETEC 4384 | Supervisory Personnel Practice | 3 |
| or ETEE 4355 | Electronic & Digital Communication | |
| ETEC 4391 | Work Base Mentorship | 3 |
| ETEC 4399 | Senior Design II | 3 |
| ETEE 1340 | Introduction to Circuits | 3 |
| ETSM 3386 | Industrial Safety | 3 |
| **Major Concentration: Biomedical** | | |
| BIOL 1406 | General Biology I | 4 |
| BIOL 2403 | Human Anatomy & Physiology I [2] | 4 |
| BIOL 2404 | Human Anatomy & Physiology II [2] | 4 |
| CHEM 1407 | Introduction to Organic and Biochemistry | 4 |
| or CHEM 1411 | General Chemistry I | |
| COSC 1436 | Programming Fundamentals I | 4 |
| ETEE 2320 | Circuits and Systems | 3 |
| ETEE 3345 | Digital Electronics | 3 |

| | | |
|---|---|---|
| ETEE 3350 | Analog Electronics | 3 |
| MATH 1420 | Calculus I | 4 |
| Advanced Electives in Engineering Technology [3] | | 9 |
| **Minor: Not Required [4]** | | |
| **Total Hours** | | **120** |

1 MATH 1410 satisfies the Core Curriculum requirement for Component Area II (Mathematics) and the Degree Specific requirement as well as one semester credit hour of Core Curriculum Component Area IX (Component Area Option).

2 BIOL 2403 and BIOL 2404 satisfy the Core Curriculum requirement for Component Area III and **must** be taken for the BMET concentration.

3 Students must seek departmental approval (Program area coordinator or department chair) prior to registering for the Advanced Approved Electives in Engineering Technology.

4 A minor is not required for this degree program; however, a student has the option to add a minor, but to do so, additional semester credit hours will be needed above the degree program's stated total semester credit hours.

**Notes**

Students must earn a 2.0 minimum overall GPA in all coursework.

Students must meet a 2.0 minimum overall major GPA in all major coursework.

Students must earn a 2.0 minimum SHSU GPA in all coursework.

Students must meet a 2.0 minimum SHSU major GPA in all major coursework.

**First Year**

| Fall | Hours | Spring | Hours |
|---|---|---|---|
| Component Area I | 3 | Component Area I | 3 |
| Component Area IX | 3 | Component Area IV | 3 |
| ETDD 1361 | 3 | COSC 1436 | 4 |
| ETEC 1010 | 2 | ETEE 1340 | 3 |
| MATH 1410[1] | 4 | MATH 1420 | 4 |
| | **15** | | **17** |

**Second Year**

| Fall | Hours | Spring | Hours |
|---|---|---|---|
| Component Area VI | 3 | Component Area VII | 3 |
| CHEM 1407 or 1411 | 4 | Component Area VIII | 3 |
| ETEE 2320 | 3 | BIOL 1406 | 4 |
| PHYS 1301 & PHYS 1101 | 4 | ETEE 3350 | 3 |
| | | PHYS 1302 & PHYS 1102 | 4 |
| | **14** | | **17** |

**Third Year**

| Fall | Hours | Spring | Hours |
|---|---|---|---|
| BIOL 2403[2] | 4 | Component Area V | 3 |
| ENGL 3330 or MATH 3379 | 3 | Component Area VI | 3 |
| ETEE 3313 or ETDD 3310 | 3 | BIOL 2404[2] | 4 |
| ETEE 4352 or ETEC 4340 | 3 | ETDD 4388 | 3 |
| | | ETEE 3345 | 3 |
| | **13** | | **16** |

**Fourth Year**

| Fall | Hours | Spring | Hours | Summer | Hours |
|---|---|---|---|---|---|
| Component Area VII | | 3 Advanced Electives in Engineering Technology[3] | | 3 ETEC 4391 | 3 |
| Advanced Electives in Engineering Technology[3] | | 6 ETEC 4399 | | 3 | |
| ETEC 4099 | | 1 ETEE 4355 or ETEC 4384 | | 3 | |
| ETEE 3376 or ETEC 3367 | | 3 ETSM 3386 | | 3 | |
| | | **13** | | **12** | **3** |

**Total Hours: 120**

1 MATH 1410 satisfies the Core Curriculum requirement for Component Area II (Mathematics) and the Degree Specific requirement as well as one semester credit hour of Core Curriculum Component Area IX (Component Area Option).

2 BIOL 2403 and BIOL 2404 satisfy the Core Curriculum requirement for Component Area III and **must** be taken for the BMET concentration.

3 Students must seek departmental/Chair approval prior to registering for the Advanced Approved Electives in Engineering Technology.

**Notes**

Students must earn a 2.0 minimum overall GPA in all coursework.

Students must meet a 2.0 minimum overall major GPA in all major coursework.

Students must earn a 2.0 minimum SHSU GPA in all coursework.

Students must meet a 2.0 minimum SHSU major GPA in all major coursework.

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 Engineering Technology: Biomedical Concentration is designed to provide graduates with the following marketable skills:

- Employ effective and independent work habits and be a team player.
- Use effective oral and written communication skills.
- Solve and troubleshoot problems by thinking and analyzing critically.
- Identify and evaluate scientific literature and relevant databases to support theories/applications.
- Apply quality control to defend particular interpretations and conclusions of data.
- Demonstrate knowledge of medical device design and validation.