

# ENGINEERING PHYSICS, BS

| Code  | Title   | Credits    |
|---|---|------------|
| <b>Physics</b>  |   | <b>32</b>  |
| PHYS-103 & PHYL-103   | GENERAL PHYSICS I and GENERAL PHYSICS I LAB   |            |
| PHYS-104 & PHYL-104   | GENERAL PHYSICS II and GENERAL PHYSICS LAB II |            |
| PHYS-201  | THEORETICAL MECHANICS                         |            |
| PHYS-203  | MODERN PHYSICS                                |            |
| PHYS-301  | ELECTRICITY & MAGNETISM I                     |            |
| PHYS-302  | ELECTRICITY & MAGNETISM II                    |            |
| PHYS-304  | THERMODYNAMICS                                |            |
| PHYS-309  | EXPERIMENTAL PHYSICS I                        |            |
| PHYS Elective <sup>1</sup>  |   |            |
| PHYS-451  | APPLIED PROB.COMPUTATIONAL PHY                |            |
| PHYS-490  | SENIOR COMPREHENSIVES                         |            |
| <b>Mathematics</b>  |   | <b>18</b>  |
| MATH-151  | CALCULUS I                                    |            |
| MATH-152  | CALCULUS II                                   |            |
| MATH-251  | CALCULUS III                                  |            |
| MATH-252  | ORDINARY DIFFERENTIAL EQUATIONS               |            |
| Mathematics Elective <sup>3</sup>   |   |            |
| <b>Engineering Physics</b>  |   | <b>9</b>   |
| ENGR-220  | INTRODUCTION TO MATLAB                        |            |
| ENGR-252  | ENGINEERING MECHANICS                         |            |
| ENGR-262  | ELECTRONICS                                   |            |
| <b>Chemistry</b>  |   | <b>8</b>   |
| CHEM-101 & CHML-101   | GENERAL CHEMISTRY I and GEN CHEM I LAB        |            |
| CHEM-102 & CHML-102   | GENERAL CHEMISTRY II and GEN CHEM II LAB      |            |
| <b>Foreign Language 202<sup>4</sup></b>   |   | <b>3</b>   |
| <b>General Education Requirements (<a href="https://catalog.sbu.edu/undergraduate/degree-requirements/">https://catalog.sbu.edu/undergraduate/degree-requirements/</a>)<sup>2</sup></b> |   | <b>37</b>  |
| <b>General Electives</b>  |   | <b>13</b>  |
| <b>Total Credits</b>  |   | <b>120</b> |

<sup>1</sup> The Physics Elective is to be chosen from: PHYS-312, PHYS-404, PHYS-406 or PHYS-451.

<sup>2</sup> The Writing Intensive, Diversity Coded, and Quantitative Literacy course requirements may be met by any major, general education, or elective courses designated as such.

<sup>3</sup> The Mathematics Elective is to be chosen from the following: MATH-207, MATH-208, MATH-241, MATH-322, MATH-323, MATH-341, MATH-351, MATH-413, or MATH-453.

<sup>4</sup> The foreign language must be at the level of 202 or higher. Students not prepared to begin at this level will need to take additional courses in language.

- service as a teaching aide in one introductory physics lab section and
- passing an oral exam given at the end of a student's last semester of study.

| First Year  |         |                                     |           |
|---|---------|-------------------------------------|-----------|
| Fall  | Credits | Spring                              | Credits   |
| BONA-101  |         | 3 MATH-152                          | 4         |
| ENG-101   |         | 3 ENG-102                           | 3         |
| MATH-151  |         | 4 PHYL-104                          | 1         |
| PHYS-103  |         | 3 PHYS-104                          | 3         |
| PHYL-103  |         | 1 ENGR-220                          | 3         |
|   |         | <b>14</b>                           | <b>14</b> |
| Second Year   |         |                                     |           |
| Fall  | Credits | Spring                              | Credits   |
| MATH-251  |         | 4 PHYS-203                          | 3         |
| CHEM-101 & CHML-101                                 |         | 4 Foreign Language 202 <sup>1</sup> | 3         |
| Foreign Language 201 <sup>1</sup> /General Elective |         | 3 CHEM-102 & CHML-102               | 4         |
| PHYS-201  |         | 3 FS/THEO-101                       | 3         |
| General Education Requirement                       |         | 3 General Education Requirement     | 3         |
|   |         | <b>17</b>                           | <b>16</b> |
| Third Year  |         |                                     |           |
| Fall  | Credits | Spring                              | Credits   |
| PHYS-301  |         | 3 PHYS-302                          | 3         |
| PHYS-304  |         | 3 PHYS-309                          | 3         |
| ENGR-252  |         | 3 ENGR-262                          | 3         |
| General Education Requirement                       |         | 3 General Education Requirement     | 3         |
| MATH-252  |         | 3 Math Elective <sup>2</sup>        | 3         |
|   |         | <b>15</b>                           | <b>15</b> |
| Fourth Year   |         |                                     |           |
| Fall  | Credits | Spring                              | Credits   |
| PHYS-451  |         | 3 Physics Elective <sup>3</sup>     | 3         |
| General Electives                                   |         | 6 General Electives                 | 8         |
| General Education Requirement                       |         | 6 General Education Requirement     | 3         |
|   |         | PHYS-490                            | 0         |
|   |         | <b>15</b>                           | <b>14</b> |
| <b>Total Credits 120</b>                            |         |                                     |           |

<sup>1</sup> The foreign language must be at the level of 202 or higher. Students not prepared to begin at this level will need to take additional courses in language.

<sup>2</sup> The Mathematics Elective is to be chosen from the following: MATH-207, MATH-208, MATH-241, MATH-322, MATH-323, MATH-341, MATH-351, MATH-413, or MATH-453.

<sup>3</sup> The Physics Elective is to be chosen from: PHYS-312, PHYS-404, PHYS-406, or PHYS-451.

## Department Comprehensive Requirement (PHYS-490)

The comprehensive requirement for physics is satisfied by