

## PHYSICS MAJOR (PHYS.BS)

| Required Courses                                                                                                                                                                                                                                                                                                           |                                | Hrs. | Prereq.                                                               | Rec.Yr. |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------|------|-----------------------------------------------------------------------|---------|
| PHYS 151L                                                                                                                                                                                                                                                                                                                  | Gen Physics I Lab              | 1    | Coreq PHYS 151 or 161                                                 | Fr      |
| PHYS 152L                                                                                                                                                                                                                                                                                                                  | Gen Physics II Lab             | 1    | Coreq PHYS 152 or 162                                                 | Fr      |
| PHYS 161                                                                                                                                                                                                                                                                                                                   | General Physics I w/Calculus   | 3    | Pre or coreq MATH 161                                                 | Fr      |
| PHYS 162                                                                                                                                                                                                                                                                                                                   | General Physics II w/Calculus  | 3    | Pre or coreq MATH 161                                                 | Fr      |
| PHYS 210                                                                                                                                                                                                                                                                                                                   | Light & Atomic Physics         | 3    | MATH 161, PHYS 152 or 162;<br>Coreq PHYS 211L                         | Soph    |
| PHYS 211L                                                                                                                                                                                                                                                                                                                  | Light & Atomic Phys Lab        | 1    | Coreq PHYS 210                                                        | Soph    |
| PHYS 220                                                                                                                                                                                                                                                                                                                   | Nuclear Physics                | 3    | PHYS 210; Coreq PHYS 221L                                             | Soph    |
| PHYS 221L                                                                                                                                                                                                                                                                                                                  | Nuclear Physics Lab            | 1    | Coreq PHYS 220                                                        | Soph    |
| PHYS 305L                                                                                                                                                                                                                                                                                                                  | Electro-Optics Lab             | 1    | PHYS 210                                                              | Jr      |
| PHYS 310                                                                                                                                                                                                                                                                                                                   | Analytical Mechanics           | 3    | MATH 162, PHYS 151 or 161,<br>152 or 162                              | Jr      |
| PHYS 340                                                                                                                                                                                                                                                                                                                   | Engineering Thermodynamics     | 3    | MATH 161, PHYS 151 or 161                                             | Jr      |
| PHYS 342                                                                                                                                                                                                                                                                                                                   | Quantum Mechanics              | 3    | PHYS 151 or 161, 152 or 162,<br>MATH 162                              | Jr      |
| PHYS 360                                                                                                                                                                                                                                                                                                                   | Electromagnetic Theory         | 3    | PHYS 161, 162; Pre or coreq<br>MATH 230                               | Jr      |
| PHYS 401                                                                                                                                                                                                                                                                                                                   | Final Year Portfolio Showcase  | 1    | Coreq PHYS 498                                                        | Sr      |
| ^PHYS 497                                                                                                                                                                                                                                                                                                                  | Research Seminar I             | 1    | Physics Major                                                         | Sr      |
| ^PHYS 498                                                                                                                                                                                                                                                                                                                  | Research Seminar II            | 1    | PHYS 497                                                              | Sr      |
| <u>Take two of the following PHYS options plus labs</u>                                                                                                                                                                                                                                                                    |                                |      |                                                                       |         |
| PHYS 250                                                                                                                                                                                                                                                                                                                   | Analog Electronics +           | 3    | PHYS 152 or 162, MATH 161<br>Coreq PHYS 251L                          | Soph    |
| PHYS 251L                                                                                                                                                                                                                                                                                                                  | Analog Electronics Lab         | 1    | Coreq PHYS 250                                                        | Soph    |
| PHYS 260                                                                                                                                                                                                                                                                                                                   | Digital Electronics +          | 3    | PHYS 152 or 162; Coreq<br>PHYS 261L                                   | Soph    |
| PHYS 261L                                                                                                                                                                                                                                                                                                                  | Digital Electronics Lab        | 1    | Coreq PHYS 260                                                        | Soph    |
| PHYS 320                                                                                                                                                                                                                                                                                                                   | Materials Science +            | 3    | PHYS 152 or 162, MATH 161<br>Coreq PHYS 321L                          | Jr      |
| PHYS 321L                                                                                                                                                                                                                                                                                                                  | Materials Science Lab          | 1    | Coreq PHYS 320                                                        | Jr      |
| PHYS 330                                                                                                                                                                                                                                                                                                                   | Solid State Physics +          | 3    | PHYS 152 or 162, MATH 162<br>Coreq PHYS 331L                          | Jr      |
| PHYS 331L                                                                                                                                                                                                                                                                                                                  | Solid State Physics Lab        | 1    | Coreq PHYS 330                                                        | Jr      |
| CHEM 161                                                                                                                                                                                                                                                                                                                   | Accel Gen Chem for Sci Majors  | 3    | HS Chemistry and proficiency<br>or CHEM 105, 107L;<br>Coreq CHEM 163L | Fr      |
| CHEM 163L                                                                                                                                                                                                                                                                                                                  | Accel Gen Chem for Sci Maj Lab | 1    | Coreq CHEM 161                                                        | Fr      |
| <u>OR</u>                                                                                                                                                                                                                                                                                                                  |                                |      |                                                                       |         |
| CHEM 131                                                                                                                                                                                                                                                                                                                   | Gen Chemistry Sci Majors I     | 3    | Coreq CHEM 133L                                                       | Fr      |
| <i>*Prerequisite: Must have passed at least one year of high school chemistry or one semester of college chemistry equivalent to CHEM 105/107L or above AND at least one of the following: MATH ACT score of 20, MATH SAT score of 500, grade of C or better in one of the classes: MATH 103, 110, 112, 115, 130, 161.</i> |                                |      |                                                                       |         |
| CHEM 133L                                                                                                                                                                                                                                                                                                                  | Gen Chemistry Sci Maj I Lab    | 1    | Coreq CHEM 131                                                        | Fr      |
| <u>AND</u>                                                                                                                                                                                                                                                                                                                 |                                |      |                                                                       |         |
| CHEM 132                                                                                                                                                                                                                                                                                                                   | Gen Chemistry Sci Majors II3   |      | C- or better in CHEM 131, 133L;<br>Coreq CHEM 134L                    | Fr      |
| CHEM 134L                                                                                                                                                                                                                                                                                                                  | Gen Chemistry Sci Maj II Lab   | 1    | Coreq CHEM 132                                                        | Fr      |
| CSCI 230                                                                                                                                                                                                                                                                                                                   | Scientific Programming         | 3    | PHYS 152 or 162; MATH 162                                             | Soph    |
| MATH 161                                                                                                                                                                                                                                                                                                                   | Calculus I                     | 4    | C or better in MATH 130 or<br>equiv. or placement                     | Fr      |
| MATH 162                                                                                                                                                                                                                                                                                                                   | Calculus II                    | 4    | C (2.0) or better in MATH 161                                         | Fr      |
| MATH 223                                                                                                                                                                                                                                                                                                                   | Calculus III                   | 4    | C (2.0) or better in MATH 162                                         | Soph    |
| MATH 230                                                                                                                                                                                                                                                                                                                   | Differential Equations         | 4    | C (2.0) or better in MATH 162                                         | Soph    |
| MATH 311                                                                                                                                                                                                                                                                                                                   | Applied Linear Algebra         | 3    | Pre or coreq: MATH 223                                                | Jr      |

66-70 total hours

^Satisfies advanced writing requirement