

Bachelor of Science

Physics (BS)

Degree Program Guide

The Degree Program Guide is a suggested curriculum to complete this degree program in four years. It is just one of several plans that will work and is presented only as broad guidance to students. Each student is strongly encouraged to develop a customized plan in consultation with their academic advisor. Additional information can also be found in Degree Works.

| Course | Title | Credit Hours |
|--|--|--------------|
| Freshman | | |
| Fall | | |
| ENGL 110C | English Composition (Grade of C or better required) | 3 |
| MATH 211 | Calculus I | 4 |
| CHEM 121N and CHEM 122N | | 4 |
| Oral Communication | | 3 |
| Language & Culture I (May be waived; See requirement details) | | 0-3 |
| Credit Hours | | 14-17 |
| Spring | | |
| MATH 212 | Calculus II | 4 |
| Select one of the following: | | 4 |
| PHYS 261N | Advanced University Physics I | |
| PHYS 231N | University Physics I | |
| PHYS 226N | Honors: University Physics I | |
| CHEM 123N and CHEM 124N | | 4 |
| Philosophy and Ethics | | 3 |
| Language & Culture II (May be waived; See requirement details) | | 0-3 |
| Credit Hours | | 15-18 |
| Sophomore | | |
| Fall | | |
| MATH 312 or MATH 285 | | 4 |
| Select one of the following: | | 4 |
| PHYS 262N | Advanced University Physics II | |
| PHYS 232N | University Physics II | |
| PHYS 227N | Honors: University Physics II | |
| ENGL 211C or ENGL 231C (Grade of C or better required) | | 3 |
| Impact of Technology | | 3 |
| Select one of the following: | | 3 |
| CS 120G | Introduction to Information Literacy and Research | |
| CS 121G | Introduction to Information Literacy and Research for Scientists | |
| OEAS 130G | Research Skills and Information Literacy for the Natural Sciences | |
| Credit Hours | | 17 |
| Spring | | |
| PHYS 319 | Analytical Mechanics | 3 |
| CS 151 or CS 153 | Introduction to Programming with Java or Introduction to Programming with Python | 4 |

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| MATH 307 or MATH 280 | | 3 |
| Select one of the following: | | 1-2 |
| PHYS 120 | Physics in the 21st Century * | |
| PHYS 309 | Physics on the Back of an Envelope * | |
| ECE 111 | Information Literacy and Research for Electrical and Computer Engineering | |
| Human Creativity | | 3 |
| Credit Hours | | 14-15 |
| Junior | | |
| Fall | | |
| PHYS 355 | Mathematical Methods of Physics | 3 |
| PHYS 303 | Intermediate Experimental Physics | 3 |
| PHYS 323 | Modern Physics | 3 |
| PHYS 425 | Electromagnetism I | 3 |
| Literature | | 3 |
| Credit Hours | | 15 |
| Spring | | |
| PHYS 413 | Methods of Experimental Physics | 3 |
| PHYS 453 | Electromagnetism II * | 3 |
| Select one of the following: | | 3 |
| ASTP 313 | Elements of Astrophysics * | |
| PHYS 411 | Introduction to Atomic Physics | |
| PHYS 415 | Introduction to Nuclear and Particle Physics | |
| PHYS 416 | Introduction to Solid State Physics | |
| PHYS 417 | Introduction to Particle Accelerator Physics | |
| Select one of the following: | | 3 |
| MATH 316 | Introductory Linear Algebra | |
| MATH 401 | Partial Differential Equations | |
| MATH 421 | Applied Mathematics II: Mathematical Modeling | |
| MATH 422 | Applied Complex Variables | |
| Human Behavior | | 3 |
| Credit Hours | | 15 |
| Senior | | |
| Fall | | |
| PHYS 420 | Introductory Computational Physics | 3 |
| PHYS 452 | Introduction to Quantum Mechanics | 3 |
| PHYS 489W or PHYS 499W | | 1-3 |
| Interpreting the Past | | 3 |
| Upper-Division General Education Course (Option D) | | 3 |
| Elective (if needed) | | 3 |
| Credit Hours | | 16-18 |
| Spring | | |
| PHYS 456 | Intermediate Quantum Mechanics * | 3 |

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| PHYS 454 | Thermal and Statistical Physics | 3 |
| Select one of the following: | | 3 |
| ASTP 414 | Relativity and Cosmology | |
| PHYS 411 | Introduction to Atomic Physics | |
| PHYS 415 | Introduction to Nuclear and Particle Physics | |
| PHYS 416 | Introduction to Solid State Physics | |
| PHYS 417 | Introduction to Particle Accelerator Physics | |
| PHYS 490W or PHYS 499W | | 2-3 |
| Upper-Division General Education Course (Option D) | | 3 |
| Credit Hours | | 14-15 |
| Total Credit Hours | | 120-130 |

*PHYS 120 and PHYS 420 are offered fall semester only. ASTP 313, PHYS 309, PHYS 453, and PHYS 456 are offered spring semester only.