

BACHELOR OF SCIENCE IN PHYSICS

Minimum requirements for the B.S. in Physics

| COURSE | TITLE | S.H. |
|---|---|------------|
| FIRST YEAR REQUIREMENT -STUDENT SUCCESS | | |
| YSU 1500 | Success Seminar | 1-2 |
| or SS 1500 | Strong Start Success Seminar | |
| or HONR 1500 | Intro to Honors | |
| General Education Requirements | | |
| ENGL 1550 | Writing 1 | 3-4 |
| or ENGL 1549 | Writing 1 with Support | |
| ENGL 1551 | Writing 2 | 3 |
| CMST 1545 | Communication Foundations | 3 |
| Mathematics Requirement (met with MATH in major) | | |
| Arts and Humanities (6 s.h.) | | 6 |
| Natural Sciences (2 courses, 1 with lab) (6-7 s.h.) | | |
| Requirement met through courses in the major | | |
| Social Science (6 s.h.) | | 6 |
| Social and Personal Awareness (6 s.h.) | | 6 |
| Major Requirements | | |
| Physics Courses: | | |
| PHYS 2610 & 2610L | General Physics 1 and General Physics Laboratory 1 | 5 |
| PHYS 2611 & 2611L | General Physics 2 and General Physics laboratory 2 | 5 |
| PHYS 3703 | Classical Mechanics and Dynamics | 4 |
| PHYS 3704 & 3704L | Modern Physics and Modern Physics Laboratory | 5 |
| PHYS 3705 & 3705L | Thermodynamics and Classical Statistical Dynamics and Thermodynamics and Classical Statistical Mechanics Laboratory | 4 |
| PHYS 3741 | Electromagnetic Field Theory 1 | 3 |
| PHYS 4805 | Undergraduate Physics Research | 3 |
| PHYS 3742 | Electromagnetic Field Theory 2 | 3 |
| PHYS 3750 | Mathematical Physics | 3 |
| PHYS 5810 | Quantum Mechanics and Quantum Statistical Mechanics 1 | 3 |
| PHYS 5811 | Quantum Mechanics and Quantum Statistical Mechanics 2 | 3 |
| Mathematics Courses: | | |
| MATH 1571 | Calculus 1 | 4 |
| MATH 1572 | Calculus 2 | 4 |
| MATH 2673 | Calculus 3 | 4 |
| MATH 3705 | Differential Equations | 3 |
| One additional 3 s.h. upper division elective in mathematics is required for the mathematics minor. | | 3 |
| Other Courses: | | |
| CHEM 1515 & 1515L | General Chemistry 1 and General Chemistry 1 Laboratory | 4 |
| CHEM 1516 & 1516L | General Chemistry 2 and General Chemistry 2 Laboratory | 4 |
| ECEN 2614 | Basics of Electrical Engineering | 3 |
| Select one of the following programming courses | | 3-4 |
| CIS 3735 | UNIX Environment | |

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| CSIS 2610 | Programming and Problem-Solving | |
| Electives: | | |
| If CIS 3735 is selected, 8 hours of upper division electives and 10 hours of 9-20 any level electives; OR if CSIS 2610 is selected, 11 hours of upper division electives and 6 hours of any level electives needed | | |
| Total Semester Hours | | 120-124 |
| Year 1 | | |
| Fall | | |
| YSU 1500 | Success Seminar | 1 |
| PHYS 2610 & 2610L | General Physics 1 and General Physics Laboratory 1 (P, NS) | 5 |
| ENGL 1550 | Writing 1 | 3-4 |
| or ENGL 1549 | or Writing 1 with Support | |
| CHEM 1515 & 1515L | General Chemistry 1 and General Chemistry 1 Laboratory (NS) | 4 |
| MATH 1571 | Calculus 1 (P) | 4 |
| Semester Hours | | 17-18 |
| Spring | | |
| PHYS 2611 & 2611L | General Physics 2 and General Physics laboratory 2 (P, NS) | 5 |
| CHEM 1516 & 1516L | General Chemistry 2 and General Chemistry 2 Laboratory (P, NS) | 4 |
| First-Year Experience Course | | 2 |
| MATH 1572 | Calculus 2 (P) | 4 |
| Semester Hours | | 15 |
| Year 2 | | |
| Fall | | |
| PHYS 3704 & 3704L | Modern Physics and Modern Physics Laboratory (P) | 5 |
| MATH 2673 | Calculus 3 (P) | 4 |
| CSIS 2610 | Programming and Problem-Solving | 4-3 |
| or CIS 3735 | or UNIX Environment | |
| ENGL 1551 | Writing 2 | 3 |
| Semester Hours | | 16-15 |
| Spring | | |
| PHYS 3705 & 3705L | Thermodynamics and Classical Statistical Dynamics and Thermodynamics and Classical Statistical Mechanics Laboratory (P) | 4 |
| MATH 3705 | Differential Equations (P) | 3 |
| Social & Personal Awareness GER Domain | | 3 |
| Arts & Humanities GER Domain | | 3 |
| CMST 1545 | Communication Foundations | 3 |
| Semester Hours | | 16 |
| Year 3 | | |
| Fall | | |
| PHYS 3703 | Classical Mechanics and Dynamics (P) | 4 |
| PHYS 3741 | Electromagnetic Field Theory 1 (P) | 3 |
| PHYS 3750 | Mathematical Physics | 3 |
| Social Sciences GER Domain | | 3 |
| Arts & Humanities GER Domain | | 3 |
| Semester Hours | | 16 |
| Spring | | |
| ECEN 2614 | Basics of Electrical Engineering | 3 |
| PHYS 3742 | Electromagnetic Field Theory 2 (P) | 3 |
| Math Elective (Upper Division) | | 3 |

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|---|---|----------------|
| Social Sciences GER Domain | | 3 |
| Semester Hours | | 12 |
| Year 4 | | |
| Fall | | |
| PHYS 4805 | Undergraduate Physics Research | 3 |
| PHYS 5810 | Quantum Mechanics and Quantum Statistical Mechanics 1 (P) | 3 |
| Electives (Upper Division) | | 8 |
| Semester Hours | | 14 |
| Spring | | |
| PHYS 5811 | Quantum Mechanics and Quantum Statistical Mechanics 2 (P) | 3 |
| Social & Personal Awareness GER Domain | | 3 |
| Elective (Upper Division if CSIS 2610; any level if CIS 3735) | | 3 |
| Electives at any level: 6 hours if CSIS 2610; 7 hours if CIS 3735 | | 6-7 |
| Semester Hours | | 15-16 |
| Total Semester Hours | | 121-122 |