

BACHELOR OF SCIENCE IN PHYSICS

| COURSE | TITLE | S.H. |
|--|---|------|
| FIRST YEAR REQUIREMENT -STUDENT SUCCESS | | |
| YSU 1500 or YSU 1500S or HONR 1500 | Success Seminar Youngstown State University Success Seminar Intro to Honors | 1-2 |
| General Education Requirements | | |
| ENGL 1550 or ENGL 1549 | Writing 1 Writing 1 with Support | 3-4 |
| ENGL 1551 | Writing 2 | 3 |
| Mathematics Requirement (met with MATH requirements in the major) | | |
| Arts and Humanities (6 s.h. Select two courses) | | 6 |
| Natural Sciences (2 courses, 1 with lab) (6-7 s.h. met with courses in the major) | | 6 |
| Social Science (6 s.h. Select two courses) | | 6 |
| Gen Ed Electives 9 s.h. | | |
| CMST 1545 | Communication Foundations | |
| Select two additional courses for 6 s.h. | | 6 |
| Major Requirements | | |
| PHYS 2610 | General Physics 1 | 4 |
| PHYS 2610L | General Physics Laboratory 1 | 1 |
| PHYS 2611 | General Physics 2 | 4 |
| PHYS 2611L | General Physics laboratory 2 | 1 |
| PHYS 3703 | Classical Mechanics and Dynamics | 4 |
| PHYS 3704 | Modern Physics | 4 |
| PHYS 3704L | Modern Physics Laboratory | 1 |
| PHYS 3705 | Thermodynamics and Classical Statistical Dynamics | 3 |
| PHYS 3705L | Thermodynamics and Classical Statistical Mechanics Laboratory | 1 |
| PHYS 3741 | Electromagnetic Field Theory 1 | 3 |
| PHYS 3742 | Electromagnetic Field Theory 2 | 3 |
| PHYS 3750 | Mathematical Physics | 3 |
| PHYS 4805 | Undergraduate Physics Research | 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 if desired. | | 3 |
| Other Courses: | | |
| CHEM 1515 | General Chemistry 1 | 3 |
| CHEM 1515L | General Chemistry 1 Laboratory | 1 |
| CHEM 1516 | General Chemistry 2 | 3 |
| CHEM 1516L | General Chemistry 2 Laboratory | 1 |
| CSIS 2610 | Programming and Problem-Solving | 3 |
| CSIS 2610L | Programming and Problem-Solving Lab | 1 |

Electives: Strongly suggested to take STEM 4890 through an internship or REU Program and additional hours to get to 120 total. 24

Total Semester Hours 120-122

Year 1

| Fall | | S.H. |
|--|---|------|
| YSU 1500 or YSU 1500S or HONR 1500 | Success Seminar or Youngstown State University Success Seminar or Intro to Honors | 1-2 |
| PHYS 2610 & 2610L | General Physics 1 and General Physics Laboratory 1 (P, NS) | 5 |
| ENGL 1550 or ENGL 1549 | Writing 1 or Writing 1 with Support | 3-4 |
| CHEM 1515 & 1515L | General Chemistry 1 and General Chemistry 1 Laboratory (NS) | 4 |
| MATH 1571 | Calculus 1 | 4 |

Semester Hours 17-19

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 |
| MATH 1572 | Calculus 2 (P) | 4 |

Semester Hours 13

Year 2

| Fall | | S.H. |
|-------------------|--|------|
| PHYS 3704 & 3704L | Modern Physics and Modern Physics Laboratory (P) | 5 |
| MATH 2673 | Calculus 3 (P) | 4 |
| CSIS 2610 | Programming and Problem-Solving | 3 |
| CSIS 2610L | Programming and Problem-Solving Lab | 1 |
| ENGL 1551 | Writing 2 | 3 |

Semester Hours 16

Spring

| | | |
|------------------------------|---|---|
| PHYS 3705 & 3705L | Thermodynamics and Classical Statistical Dynamics and Thermodynamics and Classical Statistical Mechanics Laboratory (P) | 4 |
| MATH 3705 | Differential Equations (P) | 3 |
| Elective | | 3 |
| Arts & Humanities GER Domain | | 3 |
| CMST 1545 | Communication Foundations | 3 |

Semester Hours 16

Year 3

| Fall | | S.H. |
|----------------------------|--------------------------------------|------|
| 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 | | 3 |

Semester Hours 16

Spring

| | | |
|--------------------------------|------------------------------------|---|
| PHYS 3742 | Electromagnetic Field Theory 2 (P) | 3 |
| Math Elective (Upper Division) | | 3 |
| Social Sciences GER Domain | | 3 |
| Elective | | 4 |

Semester Hours 13

Year 4

Fall

| | | |
|-----------------------|---|-----------|
| PHYS 5810 | Quantum Mechanics and Quantum Statistical Mechanics 1 (P) | 3 |
| Electives | | 12 |
| Semester Hours | | 15 |

Spring

| | | |
|-----------------------------|---|----------------|
| PHYS 5811 | Quantum Mechanics and Quantum Statistical Mechanics 2 (P) | 3 |
| PHYS 4805 | Undergraduate Physics Research | 3 |
| Elective (any) | | 2 |
| Gen Ed Electives | | 6 |
| Semester Hours | | 14 |
| Total Semester Hours | | 120-122 |