

BACHELOR OF SCIENCE IN PHYSICS

Minimum requirements for the B.S. 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. (Met with NS courses in the major)		9
CMST 1545	Communication Foundations	
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.

Total Semester Hours 120-122

Year 1

		S.H.
Fall		
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

		S.H.
Fall		
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

		S.H.
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		3

Semester Hours 16

Spring

PHYS 3742	Electromagnetic Field Theory 2 (P)	3
Math Elective (Upper Division)		3
Social Sciences GER Domain		3
Elective (any)		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)		8
Semester Hours		14
Total Semester Hours		120-122