

PHYSICS (B.S.)

Required course work includes the university requirements (see regulation J-3 (<https://catalog.uidaho.edu/general-requirements-academic-procedures/j-general-requirements-baccalaureate-degrees/#j3>)) and:

| Code | Title | Hours |
|---------------------------------------|----------------------------------|--------------|
| CHEM 1111 | General Chemistry I | 3 |
| CHEM 1111L | General Chemistry I Laboratory | 1 |
| CHEM 1120 | General Chemistry II | 4 |
| CHEM 1120L | General Chemistry II Laboratory | 1 |
| CS 1120 | Computer Science I | 3-4 |
| or ENGR 2120 | Python Programming Essentials | |
| MATH 1170 | Calculus I | 4 |
| MATH 1750 | Calculus II | 4 |
| MATH 2750 | Calculus III | 3 |
| MATH 3100 | Ordinary Differential Equations | 3 |
| MATH 3300 | Linear Algebra | 3 |
| PHYS 2000 | Welcome to the Physics Major | 1 |
| PHYS 2110 | Engineering Physics I | 3 |
| PHYS 2110L | Laboratory Physics I | 1 |
| PHYS 2120 | Engineering Physics II | 3 |
| PHYS 2120L | Laboratory Physics II | 1 |
| PHYS 2130 | Engineering Physics III | 3 |
| PHYS 3050 | Modern Physics | 3 |
| PHYS 3210 | Analytical Mechanics | 3 |
| PHYS 3410 | Electromagnetic Fields I | 3 |
| PHYS 3510 | Introductory Quantum Mechanics I | 3 |
| PHYS 4000 | Seminar | 2 |
| Emphases | | |
| Select one of the following emphases: | | 24-35 |
| General Physics (p. 1) | | |
| Applied Physics (p. 1) | | |
| Total Hours | | 79-91 |

A. General Physics Emphasis

| Code | Title | Hours |
|--|----------------------------|-----------|
| PHYS 3330 | Statistical Thermodynamics | 3 |
| PHYS 3420 | Electromagnetic Fields II | 3 |
| PHYS 3710 | Mathematical Physics | 3 |
| PHYS 4110 | Advanced Physics Lab | 4 |
| Select 11 credits of physics electives numbered 4000 or above, including at least 9 credits of non-lab courses | | 11 |
| Total Hours | | 24 |

Courses to total 120 credits for this degree

B. Applied Physics Emphasis

| Code | Title | Hours |
|--------------------------------------|----------------------|-------|
| PHYS 4110 | Advanced Physics Lab | 4 |
| Select 4 credits from the following: | | 4 |
| PHYS 4900 | Research | |

PHYS 4920 Senior Research

In addition to the specific Applied Physics requirements, select six 3-18 credit courses numbered 3000 or above from the following subject prefixes:¹

BE

BIOL

CE

CHE

CHEM

CS

ECE

ENGR

GEOE

GEOG

GEOL

HYDR

MATH

ME

NE

PHYS

STAT

In addition to the specific Applied Physics requirements and electives 9 chosen above, select three 3-credit courses numbered 4000 or above from the following subject prefixes:¹

BE

BIOL

CE

CHE

CHEM

CS

ECE

ENGR

GEOE

GEOG

GEOL

HYDR

MATH

ME

NE

PHYS

STAT

Total Hours **35**

¹ These cannot be PHYS 4900 or other research courses. They should be standard 3-credit lecture courses.

Courses to total 120 credits for this degree

General Physics Emphasis

| Fall Term 1 | Hours |
|--|-------|
| ENGL 1101 Writing and Rhetoric I | 3 |
| MATH 1143 Precalculus I: Algebra | 3 |
| PHYS 2000 Welcome to the Physics Major | 1 |
| MATH 1144 Precalculus II: Trigonometry | 1 |

| | |
|--|--|
| Humanistic and Artistic Ways of Knowing Course | 3 |
| Oral Communication Course | 3 |
| Elective Course (ENGR 2120 optional) | 1 |
| Hours | 15 |
| Spring Term 1 | |
| CS 1120 or ENGR 2120 | Computer Science I or Python Programming Essentials 3-4 |
| ENGL 1102 | Writing and Rhetoric II 3 |
| MATH 1170 | Calculus I 4 |
| PHYS 2110 | Engineering Physics I 3 |
| PHYS 2110L | Laboratory Physics I 1 |
| Hours | 14-15 |
| Fall Term 2 | |
| CHEM 1111 | General Chemistry I 3 |
| CHEM 1111L | General Chemistry I Laboratory 1 |
| MATH 1750 | Calculus II 4 |
| PHYS 2120 | Engineering Physics II 3 |
| PHYS 2120L | Laboratory Physics II 1 |
| Social and Behavioral Ways of Knowing Course | 3 |
| Hours | 15 |
| Spring Term 2 | |
| CHEM 1120 | General Chemistry II 4 |
| CHEM 1120L | General Chemistry II Laboratory 1 |
| MATH 2750 | Calculus III 3 |
| PHYS 2130 | Engineering Physics III 3 |
| PHYS 3050 | Modern Physics 3 |
| Elective Course | 1 |
| Hours | 15 |
| Fall Term 3 | |
| MATH 3100 | Ordinary Differential Equations 3 |
| PHYS 3210 | Analytical Mechanics 3 |
| PHYS 3410 | Electromagnetic Fields I 3 |
| PHYS 3710 | Mathematical Physics 3 |
| American Experience Course | 3 |
| Hours | 15 |
| Spring Term 3 | |
| MATH 3300 | Linear Algebra 3 |
| PHYS 3420 | Electromagnetic Fields II 3 |
| PHYS 3510 | Introductory Quantum Mechanics I 3 |
| Humanistic and Artistic Ways of Knowing Course | 3 |
| International Course | 3 |
| Hours | 15 |
| Fall Term 4 | |
| PHYS 3330 | Statistical Thermodynamics 3 |
| PHYS 4000 | Seminar 1 |
| 4000-level Physics, Major Elective Course | 3 |
| 4000-level Physics, Major Elective Course | 3 |
| Social and Behavioral Ways of Knowing Course | 3 |
| Elective Course | 2 |
| Hours | 15 |
| Spring Term 4 | |
| PHYS 4000 | Seminar 1 |
| PHYS 4110 | Advanced Physics Lab 4 |
| 4000-level Physics, Major Elective Course | 3 |
| 4000-level Physics, Major Elective Course | 2 |
| Senior Experience Course | 3 |
| Elective Course | 2 |
| Hours | 15 |
| Total Hours | 119-120 |

Applied Physics Emphasis

| | | |
|--|--|--------------|
| Fall Term 1 | | Hours |
| ENGL 1101 | Writing and Rhetoric I | 3 |
| MATH 1143 | Precalculus I: Algebra | 3 |
| MATH 1144 | Precalculus II: Trigonometry | 1 |
| PHYS 2000 | Welcome to the Physics Major | 1 |
| Humanistic and Artistic Ways of Knowing Course | | 3 |
| Oral Communication Course | | 3 |
| Humanistic and Artistic Ways of Knowing Course | | 3 |
| Hours | | 17 |
| Spring Term 1 | | |
| CS 1120 or ENGR 2120 | Computer Science I or Python Programming Essentials | 3-4 |
| ENGL 1102 | Writing and Rhetoric II | 3 |
| MATH 1170 | Calculus I | 4 |
| PHYS 2110 | Engineering Physics I | 3 |
| PHYS 2110L | Laboratory Physics I | 1 |
| Hours | | 14-15 |
| Fall Term 2 | | |
| CHEM 1111 | General Chemistry I | 3 |
| CHEM 1111L | General Chemistry I Laboratory | 1 |
| MATH 1750 | Calculus II | 4 |
| PHYS 2120 | Engineering Physics II | 3 |
| PHYS 2120L | Laboratory Physics II | 1 |
| Social and Behavioral Ways of Knowing Course | | 3 |
| Hours | | 15 |
| Spring Term 2 | | |
| CHEM 1120 | General Chemistry II | 4 |
| CHEM 1120L | General Chemistry II Laboratory | 1 |
| MATH 2750 | Calculus III | 3 |
| PHYS 2130 | Engineering Physics III | 3 |
| PHYS 3050 | Modern Physics | 3 |
| Hours | | 14 |
| Fall Term 3 | | |
| MATH 3100 | Ordinary Differential Equations | 3 |
| PHYS 3210 | Analytical Mechanics | 3 |
| PHYS 3410 | Electromagnetic Fields I | 3 |
| American Experience Course | | 3 |
| Elective Course | | 1 |
| Hours | | 13 |
| Spring Term 3 | | |
| MATH 3300 | Linear Algebra | 3 |
| PHYS 3510 | Introductory Quantum Mechanics I | 3 |
| 3000-level Subject Elective, Major Elective Course | | 3 |
| 3000-level Subject Elective, Major Elective Course | | 3 |
| International Course | | 3 |
| Hours | | 15 |
| Fall Term 4 | | |
| PHYS 4000 | Seminar | 1 |
| PHYS 4900 | Research | 3 |
| 3000-level Subject Elective, Major Elective Course | | 3 |
| 3000-level Subject Elective, Major Elective Course | | 3 |
| 4000-level Subject Elective, Major Elective Course | | 3 |
| Social and Behavioral Ways of Knowing Course | | 3 |
| Hours | | 16 |
| Spring Term 4 | | |
| PHYS 4000 | Seminar | 1 |
| PHYS 4110 | Advanced Physics Lab | 4 |
| PHYS 4920 | Senior Research | 1 |
| 3000-level Subject Elective, Major Elective Course | | 3 |
| 4000-level Subject Elective, Major Elective Course | | 3 |

| | |
|--|----------------|
| 4000-level Subject Elective, Major Elective Course | 3 |
| Hours | 15 |
| Total Hours | 119-120 |

The degree map is a guide for the timely completion of your curricular requirements. Your academic advisor or department may be contacted for assistance in interpreting this map. This map is not reflective of your academic history or transcript and it is not official notification of completion of degree or certificate requirements. Please contact the Registrar's Office regarding your official degree/certificate completion status.

General Emphasis

1. Students are thoroughly trained in the various sub-disciplines of physics. They have mastered the principles of mechanics, quantum mechanics, electromagnetic fields, thermal statics, and some advanced topics in physics, such as astrophysics and computational physics.
2. Students can communicate effectively, both orally and in writing, their scientific observations and their interpretations of physical laws.
3. Students are intellectually prepared to partake in physics research in a meaningful way.

Applied Emphasis

1. Students are trained in the various sub-disciplines of physics relevant to their interests and have explored advanced topics in physics and engineering.
2. Students can communicate effectively, both orally and in writing, their scientific observations and their interpretations of physical laws.
3. Students are intellectually prepared to participate in applied physics research in a meaningful way.