

Physics Major Requirements

A minimum of 102.5 hours (35 upper-division hours)

► **Required Core Courses (92.5 hours):**

ASTR 115	Astronomy	5
CHEM 111+L	General Chemistry I+Lab	4+1
CHEM 112+L	General Chemistry II+Lab	4+1
CHEM 113+L	General Chemistry III+Lab	4+1
PHYS 216	Circuit Analysis	4
INFS 115	Introduction to Programming	4
MATH 131+132	Calculus I,II	4+4
MATH 265	Elementary Linear Algebra	4
MATH 267	Multivariable Calculus	5
MATH 269	Elementary Differential Equations	4
PHYS 290	Sophomore Seminar	0.5
PHYS 314	Elementary Modern Physics	4
PHYS 341+342	Classical Dynamics I,II	3+3
PHYS 361+362+363	Electromagnetic Theory I,II,III	3+3+3
PHYS 389L	Experimental Physics	1
PHYS 445	Thermal Physics	4
PHYS 461+462	Quantum Physics I,II	3+3
PHYS 489L	Advanced Experimental Physics	1

One of the following options: 12-16

PHYS 211+212+213 Physics with Calculus I,II,III (4+4+4)
or

PHYS 111+112+113 General Physics (4+4+4)
and PHYS 265 Calculus Applications for Physics (4)

Required Core Electives (10 hours)

At least 4 hours from the following: 4
Additional upper-division PHYS courses laboratory, project and/or independent research

At least 6 hours from the following: 6
Additional non-service PHYS courses

Recommened Proficiency:

Modern-language proficiency comparable to a one-year college course in French or German.

PUC Campus Requirements

Religion (9 hours)

PUC is a Seventh-day Adventist Christian institution and religion coursework is a foundational part of the curriculum. ADT students must complete 3 religion courses at PUC as follows:

- RELG 105 Biblical Foundations (3 hours)
Note: Students who demonstrate biblical knowledge (by passing a waiver exam or presenting religion coursework from high school) may substitute an elective religion course in place of RELG 105.
- One approved “Studying Scripture” course that explores and critically analyzes biblical texts and themes. (3 hours)
- One approved “Exploring SDA Life and Thought” course that explores and critically analyzes Seventh-day Adventist beliefs and values. (3 hours)

Health & Fitness, Practical & Applied Arts (6 hours)

PUC expects graduates to demonstrate the knowledge, skills, and inclination necessary to sustain a healthy, well-balanced life. Therefore all baccalaureate graduates must complete the following requirements. These courses may be taken at PUC or may be transferred.

- One theory course in the area of nutrition or health education. Minimum 2 quarter hours total.
- Two exercise science activity courses. One must include a significant aerobic activity component. Minimum 2 quarter hours total.
- Two practical and applied arts courses, each from a different area. Minimum 2 quarter hours total. Areas include:
A. Interpersonal Skills
B. Management of Information & Finance
C. Outdoor & Survival Skills
D. Visual and Performing Arts

Physics at PUC

The Pacific Union College Department of Mathematics and Physics provides students with a quality undergraduate education enhanced by research opportunities. For more than a decade, PUC students have participated in world-class physics research, most of which has been funded through NASA’s APRA contracts and National Science Foundation grants. As a result, students have traveled to many national laboratories and international conferences; some have published their research in peer-reviewed journals.

The department provides a warm and friendly environment; students benefit from small classes and personalized attention from their professors. Students receive excellent instruction in a Christian environment. Although modern science limits itself to a naturalistic view of reality and to experimental ways of obtaining knowledge, this department takes the view that physical phenomena are consistent with the concept of an intelligent Designer and divine Creator.

Graduation Requirements

- A total of 192 quarter hours
- A total of 60 UD quarter hours
- Minimum GPA of 2.0

Taken at Community College

- AS-T in Physics
- Lower-division GE requirements (met by the AS-T)

May be taken at Community College or at PUC

- Health requirement (1 course)
- Fitness requirement (2 courses)
- Practical & Applied Arts requirement (2 courses)

Taken at PUC

- All remaining requirements for the Physics major
- Religion requirement (9 hours)
- GNST 401: Senior Assessment Seminar (0.2 quarter hours)
- Electives as needed for 192 hours/60 UD hours total

Note: Students are STRONGLY recommended to complete Elementary Linear Algebra and Elementary Differential Equations prior to transfer to PUC. These courses are prerequisite to most PUC upper-division Physics courses. Students who enter PUC without these courses will find it difficult to complete their degree in two years.

How to Construct Your Own Program

1. Counsel with your advisor.
2. Consider your aptitudes, interests, and available courses.
3. Schedule major courses and cognates first.
4. Fill the rest of your schedule with G.E. requirements and electives.
5. Choose a variety of upper-division coursework (300-level and 400-level courses) to achieve 60 total units.

About PUC

Pacific Union College is a fully accredited Christian liberal arts college located in California's Napa Valley. Affiliated with the Seventh-day Adventist Church, PUC offers a broad range of academic programs in a caring Christian environment. PUC is noted for excellence in education, incredible beauty, and student diversity.

PUC Enrollment

Enrollment Services
 Phone: 1-800-862-7080
 Email: enroll@puc.edu
 Website: <http://www.puc.edu/admissions>

Physics Department

Phone: 707-965-7269
 Website: www.puc.edu/physics

Sample Program

This program is designed for students who have completed an AS-T in Physics at a California Community College prior to transfer to PUC.

AS-T Physics Major Coursework

A minimum of 36 units of major coursework is completed as part of the AS-T in Physics. These transfer courses apply to meet the following PUC major requirements.

- ~ Calculus I, II and Multivariable Calculus (4, 4, 5)
- ~ Lower-Division Math Elective Credit (5)
- ~ Physics with Calculus (4, 4, 4)
- ~ Lower-Division Physics Elective Credit (6)

A minimum grade of C- is required for any course that is applied to the major.

PUC Coursework

This sample curriculum is designed to show you how a two-year program may be constructed in order to complete the BS in Physics at PUC. The order of the courses may vary, and your list of required courses may be adjusted depending on the transfer courses you completed. Your advisor will help you design a personalized program of studies.

Prior to Start of Junior Year

Elementary Linear Algebra (4)
 Elementary Differential Equations (4)

Junior Year

	F	W	S
General Chemistry I,II,III	5	5	5
Elementary Modern Physics	4	-	-
Sophomore Seminar	-	0.5	-
Classical Dynamics I,II (even)*	3	3	-
Thermal Physics (even)	-	-	4
Upper-Division Electives	4	4	4
General Education/Electives	1	5	4
	17	17.5	17

Senior Year

	F	W	S
Experimental Physics	1	-	-
Introduction to Programming	4	-	-
Electromagnetic Theory I,II,III (odd)*	3	3	3
Quantum Physics I,II (odd)	-	3	3
Astronomy	-	5	-
Circuit Analysis	-	-	4
Advanced Experimental Physics	-	-	1
Senior Assessment Seminar	-	-	.2
Upper-Division Physics Electives	1	1	2
Upper-Division Electives	4	4	4
General Education/Electives	5	1	-
	17	17	17.2

* Courses marked (even) or (odd) are taught in alternate years only. 2018-2019 is odd, 2019-2020 is even.