

The Physics Major

Foundational

- ___ PHYS-141 *Physics I: Mechanics and Heat*
- ___ PHYS-231 *Physics II: Elec & Magnetism and Waves*
- ___ PHYS-232 *Physics III: Optics and Modern Physics*

Prerequisite

- MATH-131 (concurrent) or Math-126
- MATH-132 / 142 (concurrent)
- PHYS-231L & MATH-132, concurrent MATH-231 recommended

Math & Experimental Methods

- ___ PHYS-300 *Mathematical Methods of Physics*
- ___ PHYS-320 *Modern Physical Measurements*

Prerequisite

- PHYS-231L & MATH-231
- PHYS-231L & PHYS-232L *Fulfills Writing II requirement*

Three additional upper-level courses, at least two of which must be core courses

- ___ PHYS-301 *Classical Mechanics* CORE PHYS-231L & either MATH-231 or MATH-234
- ___ PHYS-302 *Electrodynamics* CORE PHYS-231L & MATH-231, concurrent MATH-234 recommended
- ___ PHYS-313 *Quantum Mechanics* CORE PHYS-232L

- ___ PHYS-304 *Statistical & Thermal Physics* ELECTIVE PHYS-141 & MATH-132
- ___ PHYS-315 *Contemporary Optics* ELECTIVE PHYS-231L & PHYS-232L
- ___ PHYS-316 *Experimental Laser Optics* ELECTIVE PHYS-231L & PHYS-232L *Fulfills Writing II requirement*
- ___ PHYS-317 *Relativity & Fundamental Particles* ELECTIVE PHYS-231L & PHYS-232L
- ___ PHYS-325 *Condensed Matter Physics* ELECTIVE PHYS-231L & PHYS-232L

Senior project

- ___ PHYS-405 *Senior Exercise* [½ CREDIT]

Outside the department (required)

- ___ MATH-231 *Calculus III: Multivariable Calculus*
- ___ MATH-234 *Differential Equations*
- ___ CHEM-111L *Introductory Chemistry I*

Prerequisite

- Math-132 or 142
- Math-132 or 142

Research & Independent Study (available, not required)

- ___ PHYS-399 *Independent Study*
- ___ PHYS-490 *Research Assistantship*

Course Planner

	Fall	Spring
FY	Phys-141L	Phys-231L
	Math-131	Math-132
	FYSM	

	Fall	Spring
Junior	Phys-3xx	Phys-3xx

	Fall	Spring
Sophomore	Phys-232L	Phys-300
	Math-231	Math-234
	Chem-111	

	Fall	Spring
Senior	Phys-3xx	Phys-405
		Phys-3xx

Physics Courses

Foundational courses: The three-semester calculus-based introductory sequence in physics forms the basis on which upper-level courses build. If you are interested in majoring or double-majoring in physics it is strongly recommended that you take Phys-141 *Physics I* and Math-131 *Calculus I* in the fall term of your first year.

Physics I and *III* are offered every fall, and *Physics II* is offered every spring. Exceptionally well-prepared students who are exempt from Phys-141 (through high test scores on the AP-B or A-Level physics exams for instance) and from both Math-131 and Math-132/142 may be eligible to start out in the fall course Physics-232 *Physics III* before taking Phys-231 *Physics II* in the spring. Talk to the department chair if you would like to do this. All foundational courses are worth 1.25 credits.

Upper-level courses: A total of five 300-level courses are required, plus PHYS-405, the Senior Exercise. The mathematical techniques developed in PHYS-300 will help you with other upper-level courses, so it's recommended that you take this in the spring semester of your sophomore year. PHYS-300 is offered every year; all other 300-level courses in physics are offered biennially.

If you intend to go on to pursue graduate study in physics it is strongly recommended that you take at least eight courses in physics at the 300+ level including all three core courses, take at least one year of 300+ level mathematics courses, and participate in physics research.

Minimum grade requirement: C- or better in all courses required for the major.

Double majoring

The requirements for the major are flexible enough to accommodate double majors and students who plan to use physics as a springboard into other careers. It is not uncommon for physics students to double major in fields such as engineering, mathematics, or chemistry, where there is considerable overlap in foundational course requirements. We've also had double-majors in computer science, biology, economics, and even classics. Completing the introductory physics and calculus courses in the first two years is particularly important for double majors. The department chair can help you plan your schedule if you're thinking of double-majoring.

Study abroad

Physics students are encouraged to take advantage of opportunities to study abroad. Because upper-level courses are offered on an every-other-year basis, it is especially important to plan well in advance if you are interested in studying away for a semester.

Honors in physics at graduation

To be eligible for honors in physics at graduation you must complete at least one additional physics course beyond the minimum required for the major. This course may be a semester of independent research (PHYS-399 or 490). Honors candidates must have an average of at least a B+ in all physics courses.

Sigma Pi Sigma honors society

Sigma Pi Sigma is the national physics honor society. Students with an overall GPA of at least 3.5 who have completed at least four courses towards the physics major and have an A- average in physics courses taken at Trinity are eligible for membership.