Physics Breadth Subject Requirement

(As of Fall 2026)

To enrich knowledge about physics outside of one's own research field, students must complete two breadth requirement subjects. At least one of these must be from the list below. Both must be passed with a grade of B- or better.

There are four categories of courses:

- At least one course marked by 1 (true breadth) must be taken; no exceptions granted.
- One of the courses marked by 2 (technique) should be taken; in legitimate circumstances a substitution can be requested. (This is similar to the current substitution procedure.)
- Courses marked by X are not acceptable as breadth for students in the area; no exceptions granted.
- Courses marked by X*, not normally accepted for breadth in a particular area, can be appealed to as substitution in rare circumstances.

Only one course from any row can be taken.
The following table is a first attempt at designating the courses, but should be further refined by relevant faculty in each area:

Subject Number	Subject Title	AMO	Bio	CMX	CMT	Plasma	Astro	NUPAX	NUPAT	QI
8.316	Data Science in Physics	2	2	2	2	2	2	2	2	2
8.323	Relativistic Quantum Field Theory I	1	1	1	X	1	1	1	X	2
8.324	Relativistic Quantum Field Theory II (Or Harvard Equivalent)	2	2	2	X	2	2	2	X	2
8.325	Relativistic Quantum Field Theory III (Or Harvard Equivalent)	2	2	2	X	2	2	2	X	2
8.334	Statistical Mechanics II	2	2	2	X	2	2	2	X	2
8.370	Quantum Computation	2	1	1	1	1	1	1	1	X
8.371	Quantum Information Science	2	2	2	2	2	2	2	2	X
8.372	Quantum Information Science III	2	2	2	2	2	2	2	2	X
8.421	Atomic and Optical Physics I	X	2	2	2	2	1	1	1	X*
8.422	Atomic and Optical Physics II	X	2	2	2	2	1	1	1	X*
8.511	Theory of Solids I	2	2	X	X	2	1	1	1	1
8.512	Theory of Solids II	2	2	X	X	2	2	2	2	2
8.513	Many Body Theory for Condensed Matter Systems	2	2	X	X	2	2	2	2	2
8.514	Strongly Correlated Systems in Condensed Matter Physics	2	2	X	X	2	2	2	2	2
8.591	Systems Biology	1	X	1	1	1	1	1	1	1
8.592	Statistical Physics in Biology	1	X	1	1	1	1	1	1	1
8.613	Introduction to Plasma Physics I	1	1	1	1	X	1	1	1	1
8.614	Introduction to Plasma Physics II	2	2	2	2	X	2	2	2	2
8.701	Introduction to Nuclear and Particle Physics	1	1	1	1	1	1	X	2	1
8.711	Nuclear Physics	1	1	1	1	1	1	X	2	2
8.712	Advanced Topics in Nuclear Physics	2	2	2	2	2	2	X	2	2
8.750J	Symmetry and its Applications to Machine Learning	2	2	2	2	2	2	2	2	2
8.811	Particle Physics	1	1	1	1	1	1	X	2	2
8.821	String Theory	1	1	1	1	1	1	1	X	1
8.851	Effective Field Theory	2	2	2	X	2	2	2	X	2
8.901	Astrophysics I	1	1	1	1	1	X	1	1	1
8.902	Astrophysics II	2	2	2	2	2	X	2	2	2
8.942	Cosmology	1	1	1	1	1	X	1	1	1
8.962	General Relativity	2	2	2	2	2	X*	2	X	2