

DOCTOR OF PHILOSOPHY IN PHYSICS

Curriculum

Written qualifying examination
Comprehensive examination
Dissertation and oral defense

The requirements for the degree consist of a program of 72 credit hours approved by the faculty adviser, passing the Ph.D. qualifying and comprehensive examinations, and the completion of a research thesis supervised by a faculty member and approved by a thesis committee. Students should consult the Transfer Credit section of this bulletin for rules on how many credit hours may be transferred from another institution.

Code	Title	Credit Hours
Required Courses		(27)
PHYS 501	Methods of Theoretical Physics I	3
PHYS 505	Electromagnetic Theory	3
PHYS 508	Analytical Dynamics	3
PHYS 509	Quantum Theory I ¹	3
PHYS 510	Quantum Theory II	3
PHYS 515	Statistical Mechanics	3
Select a minimum of three courses from the following:		9
PHYS 502	Methods of Theoretical Physics II	3
PHYS 518	General Relativity	3
PHYS 520	Bio-Nanotechnology	3
PHYS 537	Solid State Physics I	3
PHYS 538	Solid State Physics II	3
PHYS 539	Physical Methods of Characterization	3
PHYS 545	Particle Physics I	3
PHYS 546	Particle Physics II	3
PHYS 553	Quantum Field Theory	3
PHYS 561	Radiation Biophysics	3
PHYS 570	Introduction to Synchrotron Radiation	3
PHYS 571	Radiation Physics	3
Colloquium Requirement		(0-4)
Four semesters of colloquium coursework is required.		0-4
PHYS 585	Physics Colloquium (may be taken multiple times)	1
PHYS 685	Physics Colloquium (may be taken multiple times)	0
Elective Courses		(2-21)
Select 2-21 credit hours ²		2-21
Ph.D. Research		(24-36)
PHYS 691	Research and Thesis Ph.D.	24-36

Minimum degree credits required: 72

¹ The six-credit hour course sequence PHYS 405 and PHYS 406 may be substituted for PHYS 509 with adviser and departmental approval.

² The remaining course requirements may be satisfied by additional graduate or advanced undergraduate electives.

Students are encouraged to participate in faculty research programs and seminars early in their graduate careers. Thesis work may follow from these activities. All research for the dissertation must be carried out under the direct supervision of a faculty research adviser.