MASTER OF SCIENCE IN THE FIELD OF PHYSICS (STEM)

The Department of Physics is part of the natural, mathematical, and biomedical sciences discipline in the Columbian College of Arts and Sciences. Graduate students in physics gain knowledge of advanced physics concepts, including advanced mechanics, electromagnetic theory, advanced quantum mechanics, and statistical mechanics, along with mathematical methods in physics and computational physics.

Additional courses in quantum field theory, solid-state physics, nuclear physics, astrophysics, and biophysics are offered. An integral part of the program involves students in active and frontier research. For students interested in experimental, observational, and applied physics, our association with national and international laboratories allows hands-on training and original research.

The department maintains research affiliations and collaborations with researchers at the National Institute of Standards and Technology, U.S. Naval Research Laboratory, Thomas Jefferson National Accelerator Facility, and NASA. It also has ties with international research institutions. Concentrations include nuclear physics and astrophysics and condensed-matter physics as well as interdisciplinary studies in materials science and biophysics.

Please note that normally only partial tuition awards are awarded for the MS Physics program.

This is a STEM designated degree program.

Visit the program website (https://physics.columbian.gwu.edu/ms-physics/) for additional information.

ADMISSIONS

Visit the Columbian College of Arts and Sciences website for application requirements (https://columbian.gwu.edu/application-requirements/).

Supporting documents not submitted online should be mailed to:

> Columbian College of Arts and Sciences, Office of Graduate Studies
> The George Washington University
> 801 22nd Street NW, Phillips Hall 107
> Washington DC 20052

For additional information about the admissions process visit the Columbian College of Arts and Sciences Frequently Asked Questions (https://columbian.gwu.edu/graduate-admissions-faq/) page.

Contact for questions:

askccas@gwu.edu
202-994-6210 (phone)
Hours: 9:00 am to 5:00 pm, Monday through Friday

REQUIREMENTS

36 credits. For non-thesis option—24 credits in required courses and 12 credits in elective courses. For thesis option—24 credits in required courses, including 6 credits in thesis, and 6 credits in elective courses.

Code	Title	Credits
Required		
PHYS 6110	Mathematical Methods of Theoretical Physics	
PHYS 6120	Advanced Mechanics	
PHYS 6130	Computational Physics I	
PHYS 6210	Electrodynamics and Classical Field Theory	
PHYS 6220	Quantum Mechanics I	
PHYS 6230	Computational Physics II	
PHYS 6310	Statistical Mechanics	
PHYS 6330	Computational Physics III	
PHYS 6590	Seminar	
For thesis option:		
PHYS 6999	Thesis Research	
Electives		
Non-thesis students select 12 credits and thesis students select 6 credits in the following elective courses:		
PHYS 6320	Quantum Mechanics II	
PHYS 6510	Communications in Physics	
PHYS 6599	Advanced Study	
PHYS 6610	Nuclear and Particle Physics I	
PHYS 6620	Biophysics I	
PHYS 6630	Radiative Processes in Astrophysics	
PHYS 6710	Nuclear and Particle Physics II	
PHYS 6720	Biophysics II	
PHYS 6730	High-Energy Astrophysics	
PHYS 6810	Applied Statistics and Data Analysis in Physics	
DATS 6202	Machine Learning I: Algorithm Analysis	