The department offers the master of arts and master of science degrees in physics, and the doctor of philosophy degree with a major in physics.

The master of arts degree is a purely academic degree, requiring 30 credits of graduate work and passage of the qualifying examination at the master’s level. It is designed to strengthen the student’s physics background and enhance the opportunities for employment as a physicist or in physics education.

The master of science degree is a professional program that requires the completion of a directed master’s project and thesis in the student’s area of interest, 30 credits of graduate work, and passage of the qualifying examination at the master’s level. It is designed to strengthen the student’s background and experience in physics, and enhance the opportunities for employment as a physicist or in physics education.

The Ph.D. degree requires successful completion of advanced course work in physics, completion of a minor, and passage of the qualifying and preliminary examinations. However, the Ph.D. is primarily a research degree, awarded only upon completion of substantial original research in some subfield of physics. The program provides the background, experience, and credentials needed for employment as a professional physicist in research or education.

Research specialties include:

THEORETICAL PHYSICS
Astrophysics; atomic, molecular, and optical physics; condensed matter physics; cosmology; elementary particle physics; nuclear physics; particle physics theory; phenomenology; and plasma physics. This broad range of research opportunities makes the department especially attractive to beginning students who have not yet chosen a field of specialization.

EXPERIMENTAL PHYSICS
Astrophysics; atomic, molecular, and optical physics; biophysics; condensed matter physics; cosmology; elementary particle physics; nuclear physics; particle physics theory; neutrino physics; experimental studies of superconductors; medical physics; nuclear physics; plasma physics; quantum computing; spectroscopy.

The Department of Physics has a diverse group of graduate students who come from many countries around the world. There are typically 150–200 graduate students in the department. Virtually all students admitted receive financial support in the form of teaching or research assistantships and fellowships.

The information on courses and examinations provided in this catalog is only a brief summary of the procedures for graduate work in the department. Entering graduate candidates are supplied with additional details when they arrive. More complete information on the graduate program, the faculty, and research groups is available at the department website (http://www.physics.wisc.edu).

DEGREES/MAJORS, DOCTORAL MINORS, GRADUATE/PROFESSIONAL CERTIFICATES
• Physics, Doctoral Minor (http://guide.wisc.edu/graduate/physics/physics-doctoral-minor)
• Physics, M.A. (http://guide.wisc.edu/graduate/physics/physics-ma)
• Physics, M.S. (http://guide.wisc.edu/graduate/physics/physics-ms)
• Physics, Ph.D. (http://guide.wisc.edu/graduate/physics/physics-phd)

PEOPLE
Faculty: Professors Karle (chair), D. Anderson, Balantekin, Barger, Boldyrev, Carlsmith, Chung, Coppersmith, Dasu, Eom, Eriksson, Everett, Forest, Gilbert, Halzen, Hanson, Hashimoto, Hegna, Heinz, Herndon, Joynt, Lagally, Lawler, Lazarian, Lin, McCammon, McDermott, Onellion, Rzchowski, Saffman, Sarff, Shiu, W. Smith, Sovinec, Terry, Timbie, Vavilov, Walker, Westerhoff, Winokur, Wu, Yavuz, Zweibel; Associate Professors Egedal, Pan; Assistant Professors Arnold, Bai, Levchenko, Palladino, Vandenbroucke