

Texas A&M Ph.D. in Applied Physics (APHY) curriculum summary:

Applied Physics curriculum required course list:

- (1) PHYS 601 Classical Mechanics (Q = qual course*) 3 hours
- (2) PHYS 603 Electromagnetic Theory I (Q*) 3 hours
- (3) PHYS 606 Quantum Mechanics I (Q*) 3 hours
- (4) PHYS 607 Statistical Mechanics (Q*) 3 hours
- (5) PHYS 615 Methods of Theoretical Physics I (Q*) 3 hours
- (6) One course in “Classical or Quantum Physics” (a list of specific courses, see below**)
- (7–10) Four elective courses, in consultation with committee.

* Qualifier courses: to become qualified for PhD studies, a student must complete the 5 qualifier courses and achieve an A or B in each course. There are some exceptions for advanced students; see the Graduate Student Policies for details.

**List of “Courses in Classical or Quantum Physics,” referred to in item (6) above:

PHYS 611 (EM II)
PHYS 617 (Solid State Phys.)
PHYS 624 (QM II)
PHYS 625 (Nucl. Phys.)
PHYS 648 (Quantum Optics and Laser Phys.)
PHYS 619 (Modern Comp. Phys.)
AERO 602 (Theory of Fluid Dynamics)
ATMO 601 (Fundamentals of Atmospheric Dynamics)
CHEM 633 (Principles of Inorganic Chem.)
CHEM 649 (Molecular Quantum Mechanics)
CHEM 673 (Symmetry/Group Theory in Chem.)
ELEN 635 (EM)
ELEN 657 (Quantum Electronics)
GEOP 611 (Geomechanics)
MATH 605 (Mathematical Fluid Mechanics)
MATH 614 (Dynamical Systems and Chaos)
MEMA 604/MATH 604 (Math. Foundations of Continuum Mech.)
MEMA 601 (Theory of Elasticity)
MEMA 612 (Wave Propagation in Isotropic and Anisotropic Solids)
NUEN 607 (Plasma and Thermonuclear Eng.)
OCNG 618 (Acoustical Oceanography)

Notes:

- The Degree Plan must have the total number of hours specified by the TAMU catalog, e.g. 96 hours for Ph.D. after the B.S. Aside from the minimum requirements above, the degree plan could contain a large number of research hours (PHYS 691), or other coursework taken as electives or perhaps required by your research committee.
- TAMU courses that might have already appeared on an M.S. degree plan should not be listed twice. Thus in the case of the Ph.D. after M.S. the degree plan often contains a shorter list of courses, heavily concentrated in research hours.
- For comparison, the required courses for the regular Ph.D. in Physics curriculum include: PHYS 601, PHYS 603, PHYS 606, PHYS 607, PHYS 615, PHYS 624, PHYS 611, One graduate-level course in either Particle Physics or Nuclear Physics, and One graduate-level course in either Atomic Physics/Quantum Optics or Solid State Physics. The APHY curriculum allows more flexibility for interdisciplinary courses while still maintaining a fundamental core of physics courses.