

Adapted from.
Department of Physics, College of Natural and Social Sciences,
California State University, Los Angeles, California, USA.

Master of Science Degree in Physics

The Master of Science degree in Physics is designed to prepare students for community college teaching, employment in industry, or further graduate study toward the doctorate in Physics.

Admission to the Program

Applicants must meet University requirements for admission to graduate study. Before undertaking required graduate courses, students must complete the equivalent of an undergraduate major in physics, and must have specific competence in the subjects covered in [PHYS 306](#), [425A](#), [426A](#) and [432A](#).

New graduate students must consult with the departmental graduate adviser *before registration* for assistance in planning their programs. Students should achieve classified graduate standing as early as practicable in their graduate study because it is prerequisite to the completion for credit of any courses in the degree program.

Requirements for the Degree (45 units)

A total of 45 units is required, with at least 25 in 500-level courses. Advancement to candidacy is prerequisite to filing the thesis or taking the comprehensive examination. Students should apply for candidacy immediately upon completing 16 units of their official program with the required grade point average.

Required Courses (25 units)

PHYS	510AB	Mathematical Methods of Physics (4, 4)
PHYS	530AB	Classical Physics (4, 4)
PHYS	532AB	Quantum Mechanics (4, 4)
PHYS	542	Physics Research Conference (1)
		(Minimum of one quarter required.)

Options

Students select Option A or Option B for completion of their program. *Option A* emphasizes research and requires a thesis. *Option B* emphasizes advanced study, which may be taken in a variety of physics areas. Option B programs may include research and directed study; such programs culminate in a comprehensive examination rather than a thesis. For special professional objectives, students may include graduate level work in engineering, another science or mathematics area in Option A or B, with approval of adviser.

The Interdisciplinary Studies Master's permits the combination of physics courses with courses in biology and chemistry in a program suited to interdisciplinary professional careers.

A. Research Option (20 units)

Required Courses (9 units)

Select with advisor approval from the following:

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PHYS	597	Graduate Research (1–4)
PHYS	598	Graduate Directed Study (1-4)
PHYS	599	Thesis (1-4)

Electives (11 units)

Select with adviser approval.

B. Course Option (20 units)

Required Courses (9–12 units)

Select three from following:

PHYS	411	Introduction to Astrophysics (3)
PHYS	412	Laboratory Applications of Minicomputer and Micro-computers (4)
PHYS	428	Statistical Physics (3)
PHYS	431	Modern Optics (4)
PHYS	433–434	Solid State Physics I, II (4, 4)
PHYS	443AB	Biophysics (3, 2)
PHYS	444	Nuclear Physics (4)
PHYS	471	Advanced Physics Laboratory II (3)
PHYS	491	Topics in Contemporary Experimental Physics (3)
PHYS	492	Topics in Contemporary Theoretical Physics (3)
PHYS	512AB	Modern Physics (4, 4)
PHYS	531	Topics in Electrodynamics (4)
PHYS	533	Solid State Theory (4)
PHYS	542	Physics Research Conference (1)
		(Repeat to total of 2 units)
PHYS	544	Theoretical Nuclear Physics (4)
PHYS	592	Seminar: Contemporary Physics (1-4)

Electives (8–11 units)

Select with adviser approval.

A maximum of 4 units of [PHYS 598](#) may be included in the official program under this option. [PHYS 597](#) and [599](#) may not be included in this option.

Comprehensive Examination (0 units)

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All candidates must pass an examination administered by the department. For students who elect Option A (Research), this is an oral examination based on the thesis. For students who elect Option B (Course), this is a comprehensive examination ([PHYS 596](#)) about graduate level physics.

Normally, it will be a three-hour written examination, which may be supplemented by an oral examination at the discretion of the examining committee. The examination will be given at least twice a year as announced by the department.

Students should expect to take the comprehensive examination ([PHYS 596](#)) the quarter they complete all course work on their program and must comply with college and departmental requirements.