

M.A. (PHYSICS) PROGRAM

OBJECTIVES

The Program leading to the degree of Master of Arts, Major in Physics, aims to upgrade the student's competence in teaching college physics. This Program is specifically designed for college physics teachers who do not possess a B.S. Physics degree.

COOPERATING UNITS

The Institute of Physics, College of Science, shall administer the M.A. (Physics) Program and implement it with the cooperation of the College of Education's Department of Science Teaching as well as the U.P. Science Education Center. While the Institute of Physics shall handle the Program's physics-content courses, the other two academic units shall take care of the Program's physics-teaching-methods courses.

ADMISSION REQUIREMENTS

Admission to the M.A. (Physics) Program requires (1) the possession of a bachelor's degree from a recognized institution of higher learning; (2) completion of the equivalents of Physics 101, 102, 103, 111, 112, and Math. 121.1; and (3) recommendations from two [2] of the student's former professors in college physics and mathematics attesting to the student's intellectual capacity for graduate study in physics.

Applicants who possess a B.S. Physics degree will generally be discouraged from entering the M.A. (Physics) Program and encouraged instead to enter the M.S. (Physics) Program. In special cases, however, a B.S. Physics degree holder may also be admitted into the M.A. (Physics) Program.

All applications for admission to the M.A. (Physics) Program shall be screened and approved by the NIP's Graduate Committee.

GENERAL DEGREE REQUIREMENTS

To qualify for the M.A. (Physics) degree, a student must (a) successfully complete thirty nine [39] units of course work as specified below; (b) complete one [1] unit of seminar in modern physics; (c) pass Physics 196 (Physics and Society); (d) satisfactorily complete five [5] units of teaching practicum; and (e) pass the Comprehensive Examination.

COURSE REQUIREMENTS

Every student in the M.A. (Physics) Program will be required to complete the following thirty-nine [39] units of courses:

A. Core Courses in Physics

Physics 202.1 (Foundations of Mechanics I)	3
Physics 202.2 (Foundations of Mechanics II)	3
Physics 203.1 (Foundations of Electromagnetism I)	3
Physics 203.2 (Foundations of Electromagnetism II)	3
Physics 204.1 (Foundations of Modern Physics I)	4
Physics 204.5 (Foundations of Quantum Mechanics I)	3
Physics 205 (Foundations of Statistical Physics)	3
Physics 208 (Foundations of Physical Electronics)	4
Physics 209.1 (Foundations of Experimental Physics)	4
	<u>30 units</u>

B. Physics Electives

A selection of six [6] units from the following physics courses:

Physics 204.2 (Foundations of Modern Physics II)	4
Physics 204.6 (Foundations of Quantum Mechanics II)	3
Physics 206.2 (Foundations of Relativity)	3
Physics 206.5 (Foundations of Optics)	3
Physics 206.6 (Physics of Lasers)	3
Physics 206.7 (Physics of Condensed Matter)	3
Physics 206.8 (Physics of Nuclei and Particles)	3
Physics 209.2 (Foundations of Experimental Physics II)	3

C. Education Courses

EDSC 278 or some other graduate course in education	3
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SEMINAR REQUIREMENT

Every student in the Program will also be required to complete one [1] unit of Physics 207 (Seminar in Modern Physics) on a satisfactory-or-unsatisfactory basis.

PRACTICUM REQUIREMENT

In addition, every student in the Program shall have to complete Physics 210.1 (Physics Teaching Practicum I) and Physics 210.2 (Physics Teaching Practicum II) by satisfactorily undertaking supervised teaching in the Department's introductory physics courses. The satisfaction of this requirement shall be certified to the M.A. (Physics) Committee by the Department Chairman. The grade in this course shall be "Satisfactory" or "Unsatisfactory".

GRAD REQUIREMENT

To remain in good standing in the Program, a student must maintain a minimum cumulative weighted average of "2" which is to be computed after at least 12 units of required course work have been completed. Failure to maintain this scholastic standard will entail disqualification from the M.A. (Physics) Program unless for special reasons the student, upon the recommendation of his/her Program Adviser and the approval of the M.A. (Physics) Committee, is given another chance to improve his/her scholastic record through an additional semester of course work.

COMPREHENSIVE EXAMINATION

Every student shall be required to take the Comprehensive Examination after finishing all the course work provided, however, that the student has obtained a cumulative weighted average of 2.0. This Examination shall cover the topics in Physics 202.1-202.2 (Foundations of Mechanics I-II), Physics 203.1-203.2 (Foundations of Electromagnetism I-II), Physics 204.1 (Foundations of Modern Physics I), Physics 204.5 (Foundations of Quantum Mechanics I), and Physics 205 (Foundations of Statistical Physics).

The grade in the Comprehensive Examination shall be "High Pass", "Pass", or "Fail".

A minimum grade of "Pass" is required to obtain the M.A. (Physics) degree. If a student fails, he will be allowed to take the Examination a second time within one year after the first attempt. If he fails the second time, he will be disqualified from the M.A. (Physics) Program.

OTHER REQUIREMENTS

The other requirements relating to transfer of credits, residence, and time limit for completion shall conform to the rules of the Graduate School.

PROGRAM SCHEDULE

The normal schedule to be followed by a full-time student in the M.A. (Physics) Program shall be as follows:

FIRST YEAR/FIRST SEMESTER:

Physics 202.1 (Foundations of Mechanics I)	3
Physics 203.1 (Foundations of Electromagnetism I)	3
Physics 204.1 (Foundations of Modern Physics I)	4
DSC 278 or another Graduate Course in Education	<u>3</u>
	13

FIRST YEAR/SECOND SEMESTER:

Physics 202.2 (Foundations of Mechanics II)	3
Physics 203.2 (Foundations of Electromagnetism II)	3
Physics 204.5 (Foundations of Quantum Mechanics I)	3
Physics 208 (Foundations of Physical Electronics)	<u>4</u>
	13

SECOND YEAR/FIRST SEMESTER:

Physics 209.1 (Foundations of Experimental Physics I)	4
Physics 205 (Foundations of Statistical Physics)	3
Physics 210.1 (Physics Teaching Practicum I)	(2)
Physics Elective	<u>3</u>
	10

SECOND YEAR/SECOND SEMESTER:

Physics 207 (Seminar in Modern Physics)	(1)
Physics 196 (Physics and Society)	(3)
Physics 210.2 (Physics Teaching Practicum II)	(3)
Physics Elective	<u>3</u>
	3

SECOND YEAR/SUMMER:

M.A. Comprehensive Examination
Awarding of the M.A. (Physics) Degree