The Master of Science In Applied Physics (MSAP) provides for maximum flexibility in designing a personal program of study immediately related to a student's career objectives. It is essentially an interdisciplinary vehicle for study and research with physics as the core and a strong companion course of studies in applied physics or a related area of science or engineering. Guidance is provided to the student by a committee comprised of resident faculty as well as adjunct faculty whose full-time employment is in technical industries and government laboratories. Close cooperation between the Department of Physics and representatives from the student's specialty area will assure an interdisciplinary climate for study and research. Among the specialty areas are Computer Science, Geophysics, Biological Sciences, Applied Mathematics, Chemistry, Engineering, and Applied Physics. In general, appropriate courses are offered in late afternoon and evening hours, and selected courses are also offered at off-campus locations. After the student has been accepted by the Graduate School, admission to graduate status in the Applied Physics program will be determined on the basis of completion of a satisfactory undergraduate major, general chemistry, and mathematics through differential equations. Graduate Record Examination scores (verbal, quantitative, and analytical) must be submitted. The student should have proficiency at the intermediate undergraduate level in mechanics, electricity and magnetism, and thermodynamics, or remedy any deficiencies once in graduate school.

The Department offers both thesis and non-thesis options in the MSAP. In the thesis option, the minimum requirements are 24 credit hours of course work plus at least six hours of thesis credit (PHYS 7000), for a total of 30 semester hours. In the non-thesis option, the minimum requirement is 33 semester hours of course work. In both options the graduate work must include at least 18 hours of physics (including the thesis in the thesis option) and 9 hours in a specialty area (which may be physics). At least 18 credit hours must be taken in courses numbered above 6000. Each graduate student is expected to participate in the weekly seminar, PHYS 6198. A maximum of one credit hour in PHYS 6198 can be used to satisfy program requirements. Each MSAP student must demonstrate a proficiency in classical mechanics, electrodynamics, and thermodynamics at or above the levels of PHYS 4302, 4503, and 4601, respectively.

The thesis work may be in a related area. It is possible for students who hold a full-time professional job to elect a thesis topic related to problems of current interest at their place of employment. The student's Faculty Committee acting for the Graduate Faculty of the Department of Physics makes a determination of the suitability of such work-related thesis problems. After the course work is substantially completed, the student is required to pass a comprehensive examination. In the case of students who elect to do a thesis, the examination will be an oral one in which questions will be primarily on the thesis and related matters.

The average time required to complete a Master's program in the Department of Physics is four full-time semesters. Work during the summer sessions may shorten this, while part-time pursuit of the degree will of course extend the period of study. Full-time students are encouraged to apply to the Department of Physics for graduate assistantships.

Some examples of possible concentrations and sample courses include: 1) Computational physics: PHYS 4201-2, 4205, 4211, 6205, 6206, 6207, 6208, and selected Computer Science courses; 2) Physical electronics: PHYS 4205, 6205, 4503, 4510, and selected Electrical Engineering courses; 3) Geophysics: PHYS 4205, 4507, 6205, 6206, 4322, and selected Geology and Geophysics courses; 4) Acoustics: PHYS 4322, 6302, 6321-2,6325; and 5) Optics: PHYS 4521, 6501-2, and selected Electrical Engineering courses. All electives are subject to the approval of the Department of Physics. If you desire a specific area of concentration, you are invited to discuss the various program possibilities with the Graduate Coordinator, who may be reached at (504) 280-6341.