PHYS 5557G Quantum Mechanics
5 Credit Hours. 5 Lecture Hours. 0 Lab Hours.
A study of the basic postulates of quantum mechanics with solutions to Schrödinger's wave equation for simple applications: the techniques of calculating position, energy and momentum with operators and the elements of perturbation theory with application to atomic spectra. Graduate students will be given an extra assignment determined by the instructor that undergraduates will not be required to do.
Prerequisite(s): PHYS 3536, PHYS 3537, and MATH 3230.
Cross Listing(s): PHYS 5557.
PHYS 7330 Principles and Practice of Pre-clinical Drug Development
3 Credit Hours. 3 Lecture Hours. 0 Lab Hours.
This course introduces key issues and aspects of developing a new small molecule or biological drug, with focus on the guidelines from regulatory agencies on the data required for the Investigational New Drug (IND) application. Major issues in Pharmacology, Toxicology, Safety Pharmacology, Pharmacokinetics and Chemistry, Manufacturing and Control (CMC) sections of the IND submission process are described. Practices of laboratory animal efficacy models, pharmacokinetics models, toxicology study protocols, master batch record generation and the concepts of Good Laboratory Practice (GLP)/Good Manufacturing Practices (GMP) will be covered, with particular emphasis on the Code of Federal Regulations Title 21 part 58, 210 and 211.
Prerequisite(s): CHEM 5333 with a minimum grade of “C”.

PHYS 7630 Graduate Seminar
3 Credit Hours. 3 Lecture Hours. 0 Lab Hours.
This course will consist of formal seminars and informal sessions on current topics of interest to the program as presented by visiting lecturers, local researchers, and students. All MS-APS students must attend a set number of seminars each term they are enrolled in the program. Thesis track students in their final semester will prepare a comprehensive presentation on their thesis research as well as submit a report reviewing the topics covered during the seminar series.

PHYS 7999 Thesis
1-3 Credit Hours. 0 Lecture Hours. 0 Lab Hours.
Results of an individual, independent research project will be presented as a thesis in partial fulfillment of the Master of Science in Physical Science degree. The thesis requires defense of the design, execution, analysis, and interpretation of the research project.