Options in Physics and Astronomy

There are several different physics and astronomy courses that are available for new students, depending on their background, academic interests and prospective majors.

Physics Courses

PHYS 101 (Fall) and 102 (Spring)

These courses cover mechanics, electricity and magnetism for students intending to major in one of the physical science or engineering disciplines. They use calculus, so previous or concurrent enrollment in MATH 101 and 102, or their equivalents, is assumed. Laboratory work is included in the course, on a schedule to be arranged during the first week of classes.

PHYS 111 (Fall) and 112 (Spring)

These are enriched versions of PHYS 101/102, intended for students who are particularly well-prepared and well-motivated. They cover the same material in somewhat greater depth, with a few brief excursions into more advanced topics. Laboratory work is part of the course.

Students who already have AP credit (C tests) for PHYS 101 and 102, and who decide not to go straight to PHYS 201, should consider taking PHYS 111. Students without AP credit, but with a very strong high-school background in physics and mathematics, also should consider taking PHYS 111 in place of PHYS 101, especially if they intend to pursue a major in physics or a closely related field. However, it is not in any way obligatory for prospective physics majors to take 111 rather than 101. Indeed, prospective physics majors whose high-school preparation is not strong may be better advised to take 101. Anyone interested should consult the instructor, Douglas Natelson, to verify that their background and preparation is adequate to succeed in the course.

PHYS 125 (Fall) and PHYS 126 (Spring)

These are survey courses primarily intended for students in the biosciences and bioengineering. They are also the recommended physics courses for pre-medical students, regardless of major. They use calculus, so previous or concurrent enrollment in MATH 101 and 102, or their equivalents, is assumed. Laboratory work is included in the course, on a schedule to be arranged during the first week of classes.

PHYS 201 (Fall)

Students who have AP credit (C tests) for both PHYS 101 and 102 are permitted to enroll in PHYS 201. Before doing so they should contact the instructor, Jason Hafner, to verify that their background and preparation is adequate to succeed in the course.

PHYS 143 (Spring)

Physics for Citizenship will cover several interesting and important topics in physics, with applications to current events. It is primarily intended to fulfill Group III distribution requirements.
Astronomy Courses

ASTR 100 (Fall)
Exploring the Cosmos is an introduction to concepts and methods used in astronomy and astrophysics, with a theme to be chosen from the frontier topics of modern astrophysics. It is designed for first-year students who are interested in science or engineering, but others are welcome.

ASTR 201 (Fall and Spring)
Stars, Galaxies and the Universe is an introductory course for students in academic programs. It will consider the formation, evolution, and death of stars; the composition and evolution of galaxies; the structure and evolution of the universe. Very little mathematics is assumed.

ASTR 202 (Spring)
Exploration of the Solar System is an introductory course for students in academic programs, surveying the sun, planetary motions, interplanetary fields and plasmas, the planets, their satellites and rings, and comets. The purposes and methods of manned and unmanned solar system exploration are also discussed. Very little mathematics is required.

ASTR 221 (Fall)
Observing the Night Sky is a laboratory course for non-scientists. Students will use small telescopes and binoculars to study constellations, bright stars, planets and the sun at the campus observatory and at dark-sky sites. Modern analog and digital techniques will be used along with direct visual observation.