SCIENCE (SCIN)

SCIN1000 ENVIRONMENTAL SCIENCE
This introductory course provides students with an overview of the principles of environmental science, the human impact on the environment, and sustainability. Topics include biodiversity and natural resources; the Earth's climate system and global climate change; causes of environmental degradation and responses to them; energy sources and strategies for energy efficiency; and sustainable communities. (4 credits) spring

SCIN2000 SCIENTIFIC INSTRUMENTATION
This course is a lab-intensive course that focuses on instrumentation and experimental methods in the three scientific disciplines: biology, chemistry and physics. In addition, students receive training in experimental design, critical data analysis and scientific writing. The semester is divided into multi-week modules, where students apply standard techniques used in each discipline. The final module will be designated for the design and execution of a project that utilizes skills from at least two discipline-specific modules. ***Prerequisites:*** *BIOL1100, CHEM1100, and PHYS1250;* ***Corequisite:*** *MATH1850 or MATH1875 (4 credits) spring*

SCIN2500 SCIENTIFIC COMPUTING
This course teaches students to utilize computational methods & techniques to solve a variety of problems in biology, chemistry and physics. Students will implement mathematical models and numerical techniques using various software and programming languages such as Excel, MATLAB and Python. ***Prerequisites:*** *MATH2500 and BIOL2200; CHEM1600 or PHYS1750 (4 credits) summer*

SCIN3000 GEOLOGY - EARTH'S EVOLUTION
This course studies the geological processes that have made the Earth what it is today, including types of rocks and their origins, rock structures and component elements thus created, types and transportation of soils, groundwater occurrence and movement, and earthquake causes and ramifications. Laboratories will examine the different aspects of geological processes. ***Prerequisites:*** *CHEM1100 (4 credits) Spring*

SCIN5000 SENIOR CAPSTONE I
This course is a two semester capstone series for Applied Science students. Students work under the guidance of one or more faculty to design and conduct an interdisciplinary research project based on the sciences of biology, chemistry and physics. Students explore the history, background and scientific relevance of the chosen project by conducting literature searches. Students practice scientific writing by submitting an abstract describing the proposed project in addition to writing a scientific research proposal. Students are expected to obtain preliminary results of their proposed project either by conducting experiments or by applying theoretical/computational calculations. ***Prerequisite:*** *Senior standing Applied Science (4 credits) spring*

SCIN5500 SENIOR CAPSTONE II
This is the second course of a two semester capstone series for Applied Sciences students. Students continue working alone or in groups on the research projects established in SCIN5000. The work is conducted under the supervision of one or more science faculty instructors based on the previously arranged schedule from SCIN5000. Course requirements include regular verbal and written progress reports throughout the semester, a final technical research paper and a professional oral presentation of the project results. ***Prerequisite:*** *SCIN5000 (4 credits) summer*