

### **ISCI 151 Multiple Perspectives in Science (4)**

This introductory research-based course will introduce scientific concepts and research methodologies from multiple disciplines in the context of interdisciplinary themes. Each theme is based on a current problem that is best solved using an interdisciplinary scientific approach. Examples include how a cheetah catches a gazelle, alcohol as a fuel, and why kangaroos only exist in Australia. Throughout the course, students will actively discuss, analyze, and create a series of research questions based on the identified scientific problem. The students then conduct, analyze, and present experiments that utilize skills and concepts from multiple scientific disciplines. Concepts from the following natural science disciplines will be introduced: mathematics, biology, geology, chemistry, physics. Prerequisites: three years of college preparatory mathematics, and satisfactory performance on the university administered Quantitative skills inventory test. Students who have an ACT – math score of 21 or greater or SAT – Math score of 530 or greater will be granted satisfactory performance status without taking the exam. Otherwise, the examination will be administered by appointment with the Mathematics Skills Center.

### **ISCI 201 Integrative Science I (2)**

Students will have the opportunity to construct a written analysis of an integrative scientific question or issue of their choice. They will demonstrate their quantitative and information literacy to investigate this scientific issue and effectively synthesize concepts, scientific processes and/or theories from at least two scientific disciplines to help understand and/or solve the scientific question or issue. Students should be prepared for active discussion and research using primary literature. This is a required course for those pursuing an Integrative Science (unless an alternative to the First Integration Point 1 has been identified and approved). Prerequisites: at least 16 credits from the Natural Science division in at least two different disciplines or permission of the instructor. Offered for A-F grading only.

### **ISCI 301 Integrative Science II (2)**

Students will have an opportunity to continue development of their integrative research interests. With an integrative scientific topic of their choice, they will continue to demonstrate and work to understand the role that multiple disciplines play in understanding a research question. They will begin to synthesize concepts, scientific processes, and/or theories from at least two scientific disciplines to help understand a scientific question or problem. Students should be prepared for active discussion and research using primary literature. From the literature they will be expected to evaluate original data and effectively describe the results as it relates to a scientific hypothesis and draw conclusions as a logical extrapolation of the original data collected within the context of the disciplinary theories and/or scholarly literature. Prerequisites: ISCI 201, an accepted First Integration Point 1 Course, or permission of the instructor. Offered for A-F grading only.

### **ISCI 378 Integrative Science III (4)**

Students will have the opportunity to further investigate an integrative science question or issue. They will use their information literacy skills to research and analyze the primary literature. They should be able to effectively synthesize concepts, scientific processes, and/or theories from at least two scientific disciplines to help understand and/or solve a scientific question or problem. They will propose a possible hypothesis and/or set of experiments that use at least two scientific disciplines to help resolve the question or problem. Prerequisites: ISCI 201 and ISCI 301. Offered for A-F grading only.