

## **Intellectual Inquiry – Natural/Physical/Mathematical Sciences**

An understanding of the natural world is essential for well-educated citizens who work and live in a world strongly influenced by science and technology. At the heart of this General Education Science Inquiry course is this fundamental idea: Scientists advance knowledge through experimentation. Because this course is designed to convey a general understanding of science and the processes of scientific thinking, it will be taught using strategies that reflect the ways scientists work; students likewise will do basic science, engage its methods, with the goal of attaining some understanding of the way science works in and with the natural and social worlds.

### **Learning Outcomes**

By the end of the course, students should be able to:

1. Describe methods of inquiry that lead to scientific knowledge and distinguish scientific fact from pseudoscience.
2. Explain fundamental principles in a branch of science.
3. Apply fundamental principles to interpret and make predictions in a branch of science.
4. Demonstrate an understanding of at least one scientific discovery that changed the way scientists understand the world.
5. Give examples of how science interacts with society.
6. Conduct a hands-on project using scientific methods to include design, data collection, analysis, summary of the results, conclusions, alternative approaches, and future studies.
7. Recognize when information is needed and demonstrate the ability to find, evaluate and use effectively sources of scientific information.

### **Guidelines for Course Designers**

Each learning outcome is essential to meeting the requirements of a science inquiry course.

While providing for as much flexibility as possible within science disciplines, the syllabus will include the following:

- A demonstrated focus on the processes of science and scientific thinking;
- A required student product (paper, laboratory report, presentation, etc) based on the hands-on project. This requirement is the curriculum-embedded performance-based assessable product and must be a component of the course grade, weighting at discretion of instructor.
- Information literacy should be integrated into the course.