

## **Course Objectives**

The World of Energy courses, Physics 103 and 104, are a 10-credit hour, two-quarter sequence that fulfill the GEC physical science requirement for the Bachelor of Arts degree at The Ohio State University. These courses explore the basic principles of physics in the context of energy use. The courses include practical examples from everyday life to help you use energy safely and wisely. They help prepare you to make rational, informed decisions regarding energy policy, the environment, and your own place in the changing World of Energy.

As Physical Science GEC courses, the objectives of Physics 103 and 104 include fostering an understanding of the principles, theories and methods of modern science, the relationship between science and technology, and the effects of science and technology on the environment. These learning objectives are enhanced by the use of a hands-on approach to investigate physics concepts, energy use, and the effects of its use on our environment. Through class activities and demonstrations, the World of Energy gives students an opportunity to experience first hand the laws of physics. Physics concepts are conveyed by your instructor, the course textbook, activity sheets completed during class, and weekly lecture videos.

## **Class Activities**

During two 2-hour classes per week, your instructor will explain physics concepts, present demonstrations, and introduce hands-on activities to illustrate these concepts. To help organize, understand, and remember the information from the demonstrations and class activities, students complete and turn in activity sheets during each class. Activity sheets for Physics 103 are found in Part I of the *Physics 103 Activity Book*. There is a corresponding activity book for Physics 104

## **Lectures**

In addition to attending two 2-hour classes per week, students attend a 1-hour lecture. At most lectures, you will see a video discussing energy use. These videos explain physics principles and help relate these principles to the role of energy in everyday life. A list of questions for each lecture video is included in Part II of the Activity Book. These questions help students identify important concepts in the videos. Answers to these video questions are not handed in. Instead, students write and turn in a summary of at least two paragraphs of each lecture video.

## **Textbook**

The World of Energy textbooks for Physics 103 and 104 supplement the class activities and lecture videos. Each chapter of the textbook corresponds to one class period. To get the most benefit from class, students should read the text prior to each class. The textbook contains Concept Check questions to check your understanding of the material. Answers to the Concept Check questions are provided in the textbook appendices.

In the World of Energy, students learn physics concepts primarily by doing activities in class, observing instructor demonstrations, and participating in class discussions. While the textbook contains important information and should be read

before each class, it does not provide all the information students need – some physics concepts have been left for you to discover in your classroom activities. Therefore, class attendance and active participation are a very important for success in Physics 103 and 104.