Goals and Learning Objectives

The official mission of the ACE Mentor Program is to:

> Enlighten and increase the awareness of high school students to career opportunities in architecture, construction and engineering and related areas of the design/construct industry through mentoring; and
>
> Provide scholarship opportunities for students in an inclusive manner reflective of the diverse school population.

The ultimate goal of the ACE Mentor Program is to motivate more high school students to pursue careers in the design and construction industry. It achieves this goal in three ways:

1. offering a stimulating educational program that introduces students to some of the basic skills and processes needed to design and build a structure;

2. informing students about different career paths in the design and construction industry through presentations by mentors and others; and

3. providing scholarships to students to encourage and facilitate their pursuit of post-secondary education related to the building industry.

Learning Objectives

The ACE Mentor Program is a form of informal education that is conducted outside the normal classroom and that is led by volunteers (mentors) who are highly skilled in their own fields but who are not necessarily trained teachers. The program exposes participants to real-life work situations through programmatic activities, tours, regular interchanges with active professionals, and development of final projects that mimic the process of designing and building a structure of some sort.

The following learning objectives describe the facts, ideas, understandings, and skills that students should learn through their active involvement in the ACE Mentor Program. After completing the ACE Mentor Program, students will:

1. Know about the various forms of infrastructure that make up and support the built environment, and the factors that have led and still lead to their creation or change.

2. Identify and differentiate between the skills, roles, responsibilities, and tools of each project team member, and how the members interact with one another.

3. Understand career opportunities and requirements for several different professions in the design and building industry, including architecture and landscape architecture, the primary engineering fields, construction management, the major skilled trades, and urban planning.

4. Develop methods for evaluating problems and planning and coordinating solutions while communicating constructively with team members.
5. Communicate their solutions and rationales to a group in an effective manner.

6. Understand fundamental concepts of architectural, structural, mechanical, electrical, and "green" design.

7. Identify the differences between a plan, section, elevation, and perspective, and demonstrate how each is used.

8. Understand that lines and symbols represent real spaces and elements, and demonstrate an ability to read drawings by identifying spaces and interpreting symbols using keys and legends.

9. Use a scale to measure dimensions from a drawing and draw objects to scale.

10. Identify the differences between architectural, structural, mechanical, and electrical drawings.

11. Understand fundamental concepts of construction management and develop a simple schedule and cost estimate for a defined event.

12. Create the basic design of a project, and prepare presentation boards with drawings, numbers, text, photos, and a model to explain the project and the process they explored as the project developed to its final state.