



**Engineering and Technology** is a program of study in the **Science, Technology, Engineering, and Mathematics (STEM) Career Cluster**. A Career Cluster is a grouping of occupations and broad industries based on commonalities. There are 16 Career Clusters.

Career clusters link what students learn in school with the knowledge and skills they need for success in college and careers. Learners who pursue one of the career areas in the STEM Career Cluster will be involved in planning, managing, and providing scientific research, professional, and technical services.

There are two programs of study in this cluster:

- Engineering and Technology
- Science and Math

### Employment Outlook

An example career is **Mechanical Engineering**. These individuals research, develop, design, manufacture, and test tools, engines, machines, and other mechanical devices. Mechanical engineering is one of the broadest engineering disciplines and is projected to have an average rate of employment growth through 2014. Although, employment of mechanical engineers in manufacturing should increase as the demand for improved machinery and machine tools grows and as industrial machinery and processes become increasingly complex. Nationally, salaries for mechanical engineers range from \$43,900 to \$97,850 (Occupational Outlook Handbook, 2006-2007).

### Using this brochure

Inside you will find a suggested **program of study** that has lots of helpful information for you and your parents. The model is an example of the types of courses and extended learning experiences that are important for the **Engineering and Technology Program of Study**. Use this model to plan your course schedule, educational experiences, and career choices.

At the top of the model, you will find **career goals** with the corresponding **O\*NET code**. The O\*NET code is an official classification of jobs and can be used to locate career-related information. Your teacher, counselor, or media center should be able to help you locate further information.

The upper left side of the model highlights the **core courses and career-related electives** in high school that will help prepare you for your career goal. This model is based upon the Recommended High School Graduation Plan and can easily be adapted for the Distinguished Achievement High School Graduation Plan.

The upper right side of the model highlights examples of **extended learning experiences** that can enhance your knowledge and skills for your career goal. You will find examples of curricular activities, such as participation in Career and Technical Student Organizations like Texas Technology Students Association, career learning experiences, service learning activities, and extracurricular activities.

The lower left side of the model indicates **industry licensures/certifications** and **on-the-job training experiences** that may be available while still in high school. This section also highlights the various levels of **postsecondary education** and examples of **career options** available to you once you have completed that level of education and training.

The lower right side of the model contains examples of **professional associations** available for engineering and technology professionals. Many organizations allow preprofessional membership while enrolled in a postsecondary program. Most organizations have websites which can be easily located by entering the organization name in available search engines.



## Thinking about a career in Engineering and Technology?

This program of study may be for you! Careers in Engineering and Technology involve problem solving in design and development of products and systems. These individuals evaluate problems to develop and test solutions and to provide advice and consultation. Look inside to see the suggested coursework and learning opportunities that will prepare you for an exciting and rewarding career.