Program of Study Course Sequence	9th Grade	10th Grade	11th Grade	12th Grade	Optional Electives
Welding	**Introduction to Welding** (1 credit)	**Welding I** (2 credits) *Prerequisite: Introduction to Welding*	**Welding II** (2 credits) *Prerequisite: Welding I*	**Practicum in Manufacturing** (2 credits) *Prerequisite: 3 credits in the Welding program, including Welding II*	**Construction Technology I** (2 credits), **Applied Math for Technical Professionals** (1 credit)

Optional electives **do not replace required pathway courses**

Certifications / Certificate Opportunities Based on Program of Study
AWS SENSE Welding Level 1 OSHA 30
Career and Technical Student Organization (CTSO)
SkillsUSA FFA

Additional Course Information

Credits: Applied Math for Technical Professionals can be used as a math credit.

Fees:
Career and Technical Student Organizations are co-curricular to the curriculum. Although membership is not required, it is highly encouraged for students to join their local CTSO chapter. Fees may apply.

Location:
Courses shaded in gray will be taught at the **Keller Center for Advanced Learning.**

Introduction to Welding

TEDS: 13032250 **KISD:** 8884
Credit: 1
Grade: 9-12

Introduction to Welding will provide an introduction to welding technology with an emphasis on basic welding laboratory principles and operating procedures. Students will be introduced to the three basic welding processes. Topics include: industrial safety and health practices, hand tool and power machine use, measurement, laboratory operating procedures, welding power sources, welding career potentials, and introduction to welding codes and standards. Introduction to Welding will provide students with the knowledge, skills, and technologies required for employment in welding industries. Students will develop knowledge and skills related to welding and apply them to personal career development. This course supports integration of academic and technical knowledge and skills. Students will reinforce, apply, and transfer knowledge and skills to a variety of settings and problems. Knowledge about career opportunities, requirements, and expectations and the development of workplace skills will prepare students for future success.

Welding I

TEDS: 13032300 **KISD:** 88830
Credits: 2
Grade: 10-12

Welding I provide the knowledge, skills, and technologies required for employment in metal technology systems. Students will develop knowledge and skills related to this system and apply them to personal career development. This course supports integration of academic and technical knowledge and skills. Students will reinforce, apply, and transfer knowledge and skills to a variety of settings and problems. Knowledge about career opportunities, requirements, and expectations and the development of workplace skills prepare students for future success.

Welding II

TEDS: 13032400 **KISD:** 88831
Credits: 2
Grade: 11-12
Required prerequisite: Welding I

Welding II builds on the knowledge and skills developed in Welding I. Students will develop advanced welding concepts and skills as related to personal and career development. Students will integrate academic and technical knowledge and skills. Students will have opportunities to reinforce, apply, and transfer knowledge and skills to a variety of settings and problems.

Practicum in Manufacturing

TEDS: 13033000 **KISD:** 88801
Credits: 2
Grade: 12

The Practicum in Manufacturing course is designed to give students supervised practical application of previously studied knowledge and skills. Practicum experiences can occur in a variety of locations appropriate to the nature and level of experience.

Construction Technology I

TEDS: 13005100 **KISD:** 8825
Credits: 2
Grade: 10-12

In Construction Technology I, students gain knowledge and skills specific to those needed to enter the work force as carpenters or building maintenance supervisors, or prepare for a postsecondary degree in construction management, architecture, or engineering. Students acquire knowledge and skills in safety, tool usage, building materials, codes, and framing.

Applied Mathematics for Technical Professionals

TEDS: 12701410 **KISD:** 84013
Credit: 1
Grade: 11-12

When possible, students will apply mathematics to problems arising in everyday life, society, and the workplace. Students will use a problem-solving model that incorporates analyzing given information, formulating a plan or strategy, determining a solution, justifying the solution, and evaluating the problem-solving process and the reasonableness of the solution. Students will select appropriate tools such as real objects, manipulatives, paper and pencil, and technology and techniques such as mental math, estimation, and number sense to solve problems. Students will effectively communicate mathematical ideas, reasoning, and their implications using multiple representations such as symbols, diagrams, graphs, and language. Students will use mathematical relationships to generate solutions and make connections and predictions. Students will analyze mathematical relationships to connect and communicate mathematical ideas. Students will display, explain, or justify mathematical ideas and arguments using precise mathematical language in written or oral communication. This course counts for a math credit.