



Manufacturing

Principles of Manufacturing

TSDS PEIMS Code: 13032200 (PRINMAN)

Grade Placement: 9–12

Credit: 1

Prerequisite: None

Recommended Prerequisites: Algebra I or Geometry.

In Principles of Manufacturing, students are introduced to knowledge and skills used in the proper application of principles of manufacturing. The study of manufacturing technology allows students to reinforce, apply, and transfer academic knowledge and skills to a variety of interesting and relevant activities. Students will gain an understanding of what employers require to gain and maintain employment in manufacturing careers.

Precision Metal Manufacturing I

TSDS PEIMS Code: 13032500 (PREMMAN1)

Grade Placement: 10–12

Credit: 2

Prerequisite: None.

Recommended Prerequisites: Principles of Manufacturing and completion of or concurrent enrollment in Algebra I or Geometry.

Precision Metal Manufacturing I will provide the knowledge, skills, and technologies required for employment in precision machining. While the course is designed to provide necessary skills in machining, it also provides a real-world foundation for any engineering discipline. This course may address a variety of materials such as plastics, ceramics, and wood in addition to metal. Students will develop knowledge of the concepts and skills related to precision metal manufacturing to apply them to personal and career development. This course supports integration of 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. Knowledge about career opportunities, requirements, and expectations and the development of workplace skills prepare students for success. This course is designed to provide entry-level employment for the student or articulated credit integration into a community college and dual credit with a community college with completion of the advanced course.

Precision Metal Manufacturing II

TSDS PEIMS Code: 13032600 (PREMMAN2)

Grade Placement: 11–12

Credit: 2

Prerequisite: Precision Metal Manufacturing I.

Recommended Prerequisite: Precision Manufacturing II Lab.

Precision Metal Manufacturing II will provide students the knowledge, skills, and technologies required for employment in precision machining. While this course is designed to provide necessary skills in machining, it also provides a real-world foundation for any engineering discipline. This course addresses a variety of materials such as plastics, ceramics, and wood in addition to metal. Students will develop knowledge of the concepts and skills related to these systems to apply them to personal and career development. This course supports integration of 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. Knowledge about career opportunities, requirements, and expectations and the development of workplace skills prepare students for success. This course is designed to provide entry-level employment for the student or articulated credit integration into a community college and dual credit with a community college with completion of the advanced course.

Introduction to Welding CC

TSDS PEIMS Code: 13032250 (INTRWELD)

Grade Placement: 9–12

Credit: 1

Prerequisite: None.

Recommended Prerequisite or Corequisite: Algebra I.

Introduction to Welding will introduce 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. 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.

Note: *This course is only offered as a dual credit course with STC.*

Welding I CC

TSDS PEIMS Code: 13032300 (WELD1)

Grade Placement: 10–12

Credit: 2

Prerequisite: None.

Recommended Prerequisites: Algebra I, Principles of Manufacturing, Introduction to Precision Metal Manufacturing, or Introduction to Welding.

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.

Note: *This course is only offered as a dual credit course with STC.*

Welding II CC

TSDS PEIMS Code: 13032400 (WELD2)

Grade Placement: 11–12

Credit: 2

Prerequisites: Welding I.

Recommended Prerequisites: Algebra I or Geometry. Recommended Corequisite: Welding II Lab. 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.

Welding II Lab CC

TSDS PEIMS Code: 13032410 (WELDLAB2)

Grade Placement: 11–12

Credit: 3

Prerequisites: Welding I.

Corequisites: Welding II.

Welding II Lab introduces welding technology with an emphasis on basic welding laboratory principles and operating procedures. 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. This course provides knowledge, skills, and technologies required for employment in welding industries. 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.

Note: *This course is only offered as a dual credit course with STC.*

Practicum in Manufacturing CC

TSDS PEIMS Code: 13033000 (First Time Taken) (PRACMAN1)

13033010 (Second Time Taken) (PRACMAN2)

Grade Placement: 12

Credit: 2

Prerequisite: None.

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.

Note: *This course is only offered as a dual credit course with STC.*