WELDING TECHNOLOGY PROGRAM

Pathway Description

From skyscrapers to cars, bridges to boats – welding shapes lives and communities every day. In fact, most people are surprised to learn that half of our nation's total gross national product includes welding work, products, and services of some kind. From manufacturing to construction, the demand for welders is strong. Specifically, in the state of New Jersey, hundreds of welding jobs are expected to become available at the brand new Holtec Center being built in Camden. The Center is being configured to foster a synergistic environment for developing innovative designs for the power industry and for the manufacturing of complex weldments in a 21st century world.

Over the course of four years, the CCTEC Welding Technology program will help to develop student skills in the following areas: shielded metal arc welding, gas metal arc welding, gas tungsten arc welding, plasma arc welding, and oxyfuel gas cutting. Students will also be able to prepare parts from simple sketches or blueprints, prepare welded joints from welding symbol information, and make minor external repairs to equipment and accessories.

Prior to program completion, students will take the American Welding Society Entry Level Welding Certification Workmanship Qualification Test. CCTEC has also established partnerships with Holtec to bring job opportunities to students in our welding program.

WELDING TECHNOLOGY PROGRAM

Course Sequence

CORE	GRADE 9	GRADE 10	GRADE 11	GRADE 12
ENGLISH	ENGLISH I	ENGLISH II	ENGLISH III OR AP LANGUAGE/COMP	ENGLISH IV OR AP LITERATURE/COMP
SOCIAL STUDIES	WORLD HISTORY	US HISTORY I OR PRE AP US HISTORY I	US HISTORY II OR AP US HISTORY II	AP HISTORY OR SS ELECTIVE OR INTERNSHIP
MATHEMATICS	ALGEBRA I OR GEOMETRY	GEOMETRY OR ALGEBRA II	ALGEBRA II OR PRECALCULUS	PRECALCULUS OR AP CALCULUS AB/BC OR MATH ELECTIVE OR INTERNSHIP
SCIENCE	BIOLOGY	CHEMISTRY	PHYSICS OR AP PHYSICS I	AP SCIENCE OR SCIENCE ELECTIVE OR INTERNSHIP
HEALTH/PHYSICAL EDUCATION	FITNESS AND HEALTH I	FITNESS AND HEALTH II	FITNESS AND HEALTH III	FITNESS AND HEALTH IV
CTE MAJOR	CTE SEMINAR/FINANCIAL LITERACY	WELDING I	WELDING II	WELDING III
INTERDISCIPLINARY STUDIES	APPLICATIONS IN ART	WELDING I	WELDING II	WELDING III
WORLD LANGUAGE/ELECTIVES	SPANISH I	SPANISH II	SPANISH III OR ELECTIVE	AP SPANISH OR ELECTIVE

Welding Technology Program

Course Credits

Freshman

English I	5 credits
World History	5 credits
Algebra I or Geometry	5 credits
Biology	5 credits
Spanish I	5 credits
Fitness and Health I	5 credits
Applications in Art	5 credits
CTE Seminar/Financial Literacy	5 credits

Sophomore

English II	5 credits
US History I or Pre-AP US History I	5 credits
Geometry or Algebra II	5 credits
Chemistry	5 credits
Spanish II	5 credits
Fitness and Health II	5 credits
Welding I	10 credits

Junior

English III or AP Language/Comp	5 credits
US History II or AP US History II	5 credits
Algebra II or Pre-calculus	5 credits
Physics or AP Physics I	5 credits
Spanish III or Elective	5 credits
Fitness and Health III	5 credits
Welding II	10 credits

Senior

English IV or AP Literature/Comp	5 credits
AP History or SS Elective or Internship	5 credits
Pre-calculus or AP Calculus AB/BC or Math Elective or Internship	5 credits
AP Science or Science Elective or Internship	5 credits
AP Spanish or Elective	5 credits
Fitness and Health IV	5 credits
Welding III	10 credits

Welding Technology Program
Course Descriptions

Course Title: Career and Technical Education Seminar
Grade Level: 9 **Credits: 5**

This course was designed to assist in the transition of students from middle school to high school and to introduce them to the multiple career pathways in their chosen CTE program. The course will serve as an introduction to CCTEC and will provide academic, social, and emotional support to our incoming freshmen. The primary focus of the course will be the development of critical skills pertaining to: studying, personal finance, career exploration, and the exploration of character traits that are vital for academic success. Students will actively participate in projects that promote cooperative learning, community involvement, problem solving, and character education. Students will also be introduced to their CTE program and complete projects in their chosen CTE field.

Course Title: Welding I
Grade Level: 10 **Credits: 10**

This course will provide students with an introduction to the welding field. Students will spend time in class studying terminology, safety, set-up and shut-down of all welding equipment and related tools of the trade. Time will also be spent in the welding shop so students will get hands-on experiences with oxy-acetylene cutting, welding and brazing along with arc welding.

Course Title: Welding II
Grade Level: 11 **Credits: 10**

This course will build on skills learned in Welding I. A higher percentage of time will be spent in the shop reviewing the basic skills along with learning Gas Tungsten Arc Welding (GTAW) and Gas Metal Arc Welding (GMAW). These welding skills will be developed by progressing from flat, horizontal, vertical and overhead positions. In addition to this, pipe welding in the horizontal rolled, horizontal fixed and vertical fixed position are taught.

Course Title: Welding III
Grade Level: 12 **Credits: 10**

This course will provide students with the opportunity to apply and develop skills learned in Welding I and II by laying out and fabricating school projects and doing job cards for the community. Students will also be able to prepare parts from simple sketches or blueprints, prepare welded joints from welding symbol information, and make minor external repairs to equipment and accessories. Prior to program completion, students will take the American Welding Society Entry Level Welding Certification Workmanship Qualification Test.