



ARCHITECTURE & CONSTRUCTION

A GUIDE TO PURSUING YOUR CAREER PATH

HVACR ELECTRICAL >>>

HVACR stands for heating, ventilation, air-conditioning, and refrigeration systems. These systems control the temperature, humidity, and total air quality of indoor environments and permit the storage and transport of food, medicine, and other perishable items. People who work in the HVACR industry install, maintain, and repair such systems. HVACR technicians are highly skilled workers because the systems on which they work consist of mechanical, electrical, and electronic parts, such as motors, compressors, pumps, fans, ducts, pipes, thermostats, and switches.

Technicians must be proficient in reading and interpreting blueprints and manufacturers' specification manuals.

HIGH SCHOOL PATHWAY CLASSES >>>

1 **INDUSTRY FUNDAMENTALS & OCC SAFETY** is designed as the foundational course in the Carpentry, Plumbing, Electrical, Masonry, Machining, Welding, Sheet Metal, Heating, Ventilation, Air Conditioning and Refrigeration, and HVACR Electrical pathways to prepare students for pursuit of any career in construction. Students obtain the basic knowledge to function safely on or around a construction site and in the industry in general and will provide the trainee with the option for an Industry Certification in the Construction Core.

2 **INTRODUCTION TO HVACR SYSTEMS** is the second step in gaining a Level One Industry Certification in one of two craft areas and the goal of the course is to introduce students to the basic building blocks of the HVACR and Low Voltage Electrical craft trades. Students will explore how the crafts affect the mechanical systems in a building and will learn and apply knowledge of the electrical, electronic, and mechanical components related to each trade. In addition, students will be introduced to, and develop skills to differentiate between tools used in each individual craft area.

3 **LOW VOLTAGE ELECTRICAL** teaches students about installation of hardware and systems used by an HVACR technician/electrician and acquire general knowledge of electrical systems, including series, parallel, and series-parallel circuits. The course provides basic skills and knowledge to navigate and use the National Electrical Code, as well as an introduction to conduit bending and installation.



CAPSTONE: WBL INTERNSHIP >>>

WBL (WORK-BASED LEARNING) connects skilled, knowledgeable and driven students to local businesses every year. Students who participate in the Architecture & Construction program and have been selected to participate in WBL will leave school early to work with our fantastic business partners. Benefits to students include a chance to put skills learned in the classroom to use in an authentic setting, getting a competitive advantage on their career and networking with industry leading professionals all while still in high school. www.hallcowbl.org



CAREER TECH STUDENT ORGANIZATIONS >>>>

SKILLSUSA is a partnership of students, teachers and industry working together to ensure America has a skilled workforce. We help each student excel.

SkillsUSA's mission is to empower its members to become world-class workers, leaders and responsible American citizens. We improve the quality of our nation's future skilled workforce through the development of SkillsUSA Framework skills that include personal, workplace and technical skills grounded in academics. Our vision is to produce the most highly skilled workforce in the world, providing every member the opportunity for career success.



POTENTIAL CAREERS >>>>

- General Contractor
- HVAC Installer
- Project Inspector
- Subcontractor
- Construction Engineer
- Construction Manager
- Construction Foreman
- Materials Manager
- Pipelayers
- Safety Director
- Field Supervisor
- Sales & Marketing
- Superintendent
- Equipment Manager
- Estimator
- Sheet Metal Worker
- Pipe Fitter

HVACR ELECTRICAL

CAREER PATHWAY - PLAN OF STUDY



GRADUATION REQUIREMENTS >>>

ENGLISH/LANGUAGE ARTS

4 Units *Must Include:*

9th Grade Literature & American Literature

SOCIAL STUDIES

3 Units *Must Include:*

World History, US History, Government & Economics

MATHEMATICS

4 Units *Must Include:*

GSE Algebra I, GSE Geometry & GSE Algebra II

+

one additional GSE/AP/IB/DE Math course

OR

GSE Accelerated Algebra I/Analytic Geometry A,

GSE Accelerated Geometry B/Algebra II, GSE Precalculus

+

one additional GSE/AP/IB/DE Math course

SCIENCE

4 Units *Must Include:*

Physical Science or Physics; Biology;

Chemistry, Earth Systems, Environmental Science or AP/IB course

+

one additional Science course

HEALTH & PERSONAL FITNESS

1 Unit *Must Include:*

1/2 unit of each

CAREER, TECHNICAL & AGRICULTURE EDUCATION (CTAE)

3 Units *Must include:*

Industry Fundamentals & Occ. Safety, Introduction to HVACR Systems, Low Voltage Electrical

ELECTIVES

4 Units

*Students planning to attend most post-secondary institutions must take 2 units of the same modern language.

TOTAL UNITS REQUIRED

23 Units

PERSONAL APTITUDES >>>

ACTIVITIES THAT DESCRIBE WHAT I LIKE TO DO:

- Read & follow blueprints and/or instructions.
- Picture in my mind what a finished product looks like.
- Work with my hands.
- Perform work that requires precise results.
- Solve technical problems.
- Visit & learn from historic or interesting buildings.



PERSONAL QUALITIES THAT DESCRIBE ME:

- Curious
- Good at following directions
- Pay attention to detail
- Good at visualizing possibilities
- Patient
- Persistent

WANT MORE INFORMATION ON YOU?

YouScience is the science of YOU – how your mind is wired, what makes you tick, the skills and knowledge that set you apart. You have talent and there's a path that's right for you – we can help you find it.



Login to Infinite Campus and locate the SLDS Portal link on the left. Once logged in, click on "My Career Plan" then choose "Go to YouScience".

WHAT YOU LEARN IN SCHOOL MATTERS

You're learning skills and knowledge that can make you a qualified candidate for in-demand careers. Industry-recognized certifications, available to all pathway students, are great signals to employers that you have the skills they're looking for. Certifications help validate what you know, so other people know, that you know it.

QUESTIONS?

Contact your CTAE teacher, WBL Coordinator or School Counselor

PATHWAY TO FUTURE CAREER OPTIONS >>>

HIGH SCHOOL

Pathway Courses

Industry Fundamentals & Occ. Safety
Introduction to HVACR Systems
Low Voltage Electrical

Capstone

WBL Internship
Dual Enrollment

POST-SECONDARY

Technical College

Certificate
Diploma Program
Degree Program

4 Year College/University

Bachelor Degree
Masters Degree
Graduate Studies