

## DESIGN, PRODUCTION & REPAIR – CONSTRUCTION AND DESIGN PATHWAY –

This pathway focuses on using design, engineering, and construction techniques to plan, build, and maintain structures that support modern communities and industries. It includes topics like architectural design, construction technology, engineering principles, project planning, building materials, safety regulations, and the ethical and environmental aspects of the field. Students learn how to read blueprints, use design software, manage construction projects, and apply technical skills to create safe and efficient structures.

**CAREERS INCLUDE** Architect, Civil Engineer, Construction Manager, Architectural Drafter, Carpenter, Electrician, Plumber, Mason, Building Inspector, Structural Engineer, Surveyor, Interior Designer, Landscape Architect, General Contractor, Estimator, Project Manager, HVAC Technician, Construction Equipment Operator, Safety Coordinator, Urban Planner

### SAMPLE PLAN OF STUDY\*

\*This course has a co/prerequisite. †This course counts as a STEM Elective.

<p><b>FRESHMAN YEAR</b></p> <p>(1.0) English                  (1.0) Math (based on math course progression)                  (1.0) Science                  (1.0) Social Studies                  (1.0) Physical Education                  (1.0) Performing/Fine Arts Credit                  (0.5) <b>Introduction to Skilled Trades</b>                  (1.5) Elective</p>	<p><b>SOPHOMORE YEAR</b></p> <p>(1.0) English                  (1.0) Math (based on math course progression)                  (1.0) Science                  (1.0) Social Studies                  (0.5) Health                  (0.5) Communications Credit                  (1.0) <b>Drafting/CAD</b>                  (1.0) <b>General Carpentry I</b> †*                  (1.0) Electives</p>
<p><b>JUNIOR YEAR</b></p> <p>(1.0) English 11/AP Lang &amp; Comp                  (1.0) Math (based on math course progression)                  (1.0) Science                  (1.0) Social Studies                  (0.5) Communications Credit                  (1.0) <b>General Carpentry II</b> †*                  (1.0) <b>Drafting/Architecture</b> †                  (1.0) Elective</p>	<p><b>SENIOR YEAR</b></p> <p>(1.0) English 12 or AP Lit &amp; Comp or AP Lang &amp; Comp                  (1.0) Math (based on math course progression)                  (1.0) Science                  (0.5) Political Participation or Con. Law/AP Government                  (0.5) Financial Literacy                  (1.0) <b>R &amp; D in Building Trades or Preconstruction</b> †                  (1.0) <b>Workplace Experience in Arch. and Construction</b> †                  (2.0) Electives</p>

#### BOLDED COURSES LEAD TO PATHWAY COMPLETION

**PATHWAY COURSES:** Pathway completion requires students to complete three (3) credits in the pathway, with at least two (2) of those credits being a combination of technical and application-level courses. Additionally, a student must earn one of the following: an industry-recognized certification (IRC), nine (9) + college hours aligned to the pathway, or complete a high-quality work-based learning experience - Entrepreneurial Experience (EntX), Client Connect Project (CCP), or Internship.

INTRODUCTORY LEVEL	TECHNICAL LEVEL	APPLICATION LEVEL
Introduction to Skilled Trades	Drafting/CAD Interior Design General Carpentry I †* Drafting/Architecture † Woodworking Principles †*	General Carpentry II †* Research and Design in Building Trades †* Research and Design in Preconstruction †* Workplace Experience in Architecture and Construction †*

**Other Recommended Courses:**  
 Drawing  
 Graphic Design I

**Opportunities for Pathway Completion:**  
 Intro to Skilled Trades – IRC, OSHA10  
 Carpentry I – IRC, NCCR  
 Carpentry II - CCP  
 Workplace Exp. in Arch & Construction -Internship

**Graduation Requirements:**  
 English – 4 credits  
 Math - 4 credits  
 Science – 3 credits  
 Social Studies – 3.5 credits  
 STEM Elective – 1 credit  
 Fine Arts – 1 credit  
 Communication – 0.5 credit  
 Financial Literacy – 0.5 credit  
 Physical Education/Health – 1.5 credits  
 Postsecondary Assets – 2 required

\*This sample plan of study offers an example of what a student's individual plan of study in this pathway might look like. Please note that some courses may not be offered on an annual basis and participation in classes may be subject to space