



Architecture and Construction Career Cluster

The Architecture and Construction career cluster focuses on designing, planning, managing, building, and maintaining the built environment. This career cluster includes occupations ranging from architect, carpenter, and construction manager to electrician, plumber, and heating, air conditioning, and refrigeration technician.

Statewide Program of Study: Carpentry

The Carpentry program of study focuses on occupational and educational opportunities related to constructing, installing, and repairing structures and fixtures made of wood (including frameworks, partitions, joists, studding, rafters, and stairways). The program of study includes installing, dismantling, or moving machinery and heavy equipment according to layout plans, blueprints, or other drawings.

Offered to: LMHS and TCHS at the Industrial Trades Center



Secondary Courses for High School Credit

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| Level 1 | <ul style="list-style-type: none"> Principles of Construction |
| Level 2 | <ul style="list-style-type: none"> Construction Technology I |
| Level 3 | <ul style="list-style-type: none"> Construction Technology II (Required) Applied Mathematics for Technical Professionals (Recommended) |
| Level 4 | <ul style="list-style-type: none"> Practicum in Construction Technology |

Aligned Advanced Academic Courses

Dual Credit	Dual credit offerings will vary by local education agency.
<p><i>Students should be advised to consider these course opportunities to enrich their preparation. AP or IB courses not listed under the Secondary Courses for High School Credit section of this framework document do not count towards concentrator/completer status for this program of study.</i></p>	

Work-Based Learning and Expanded Learning Opportunities

Work-Based Learning Activities

- Intern with a carpenter to practice skills such as measuring materials and assembling structures
- Participate in a pre-apprenticeship that includes activities like installing cabinets, drywall, and siding

Expanded Learning Opportunities

- Shadow a construction manager to learn more about how construction teams work together to complete projects
- Participate in Design Build Contest

Aligned Industry-Based Certifications

- NCCER Carpentry Level I
- NCCER Carpentry Level II
- NCCER Core



Example Postsecondary Opportunities

Apprenticeships

- Carpenter

Associate Degrees

- Construction Management
- Construction Engineering Technology
- Building Construction Technology

Bachelor's Degrees

- Construction Engineering
- Construction Science
- Construction Site Management

Master's, Doctoral, and Professional Degrees

- Construction Engineering Technology
- Construction Engineering
- Construction Management
- Project Management



Example Aligned Occupations

Drywall and Ceiling Tile Installers

Median Wage: \$44,699
Annual Openings: 758
10-Year Growth: 14%

Carpenters

Median Wage: \$46,272
Annual Openings: 5,623
10-Year Growth: 15%

Construction Managers

Median Wage: \$95,072
Annual Openings: 6,325
10-Year Growth: 24%





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Statewide Program of Study: Carpentry

Course Information

Level 1

Course	Prerequisites Corequisites	Local Course #
Principles of Construction 13004220 (1 credit)	Prerequisites: None Corequisites: None Required: Drug testing is mandatory for this course	7841

Principles of Construction is intended to provide an introduction and lay a solid foundation for those students entering the construction or craft skilled areas. The course provides a strong knowledge of construction safety, construction mathematics, and common hand and power tools. This course also provides communication and occupation skills to assist the student in obtaining and maintaining employment. Students will need to purchase appropriate boots.

Level 2

Course	Prerequisites Corequisites	Local Course #
Construction Technology I 13005100 (2 credits)	Prerequisites: None Corequisites: None Required: Drug testing is mandatory for this course	7866

In Construction Technology I, students will gain knowledge and skills needed to enter the workforce as carpenters or building maintenance supervisors or to prepare for a postsecondary degree in construction management, architecture, or engineering. Students will acquire knowledge and skills in safety, tool usage, building materials, codes, and framing. Students will be required to purchase boots.

Level 3

Course	Prerequisites Corequisites	Local Course #
Construction Technology II 13005200 (2 credits)	Prerequisites: Construction Technology I Corequisites: None Recommended Corequisite: Applied Mathematics for Technical Professionals Required: Drug testing is mandatory for this course	7867

In Construction Technology II, students will gain advanced knowledge and skills needed to enter the workforce as carpenters, building maintenance technicians or supervisors, or to prepare for a postsecondary degree in construction management, architecture, or engineering. Students will build on the knowledge base from Construction Technology I and are introduced to exterior and interior finish out skills. Students will need to purchase appropriate boots.

Applied Mathematics for Technical Professionals 12701410 (1 credit)	Prerequisites: Construction Technology I Corequisites: None Recommended Corequisite: Construction Technology II	7925
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Applied Mathematics for Technical Professionals uses problem-solving situations, hands-on activities, and technology to extend mathematical thinking and engage student reasoning. Situations relating to technical applications provide students opportunities to make connections with mathematics and the workplace. In addition, students will learn the skills necessary to communicate using mathematics. Hands-on activities will allow students to model, explore, and develop abstract concepts applicable to technical careers.

Level 4

Course	Prerequisites Corequisites	Local Course #
Practicum in Construction Technology 13005250 (2 credits)	Prerequisites: Construction Technology II Corequisites: None Required: Drug testing is mandatory for this course	7846

Practicum in Construction Technology is an occupationally specific course designed to provide classroom technical instruction or on-the-job training experiences. Safety and career opportunities are included in addition to work ethics and job-related study in the classroom. Students will need to purchase appropriate boots.