



# ADVANCED CONSTRUCTION METHODS

## Advanced Construction Methods Certification

Read blueprints, estimate, frame drywall, operate tools, and other relevant duties

Curriculum includes on site work experience through construction of a student-built house. This program will help students learn a variety of skills used in the industry, including the following:

- Read blueprints and estimate costs
- Frame buildings and roofing
- Safe operation of tools and equipment
- Finish interiors and exteriors

### Suggested educational levels:

- English literacy (reading, writing, speaking, and listening)
- Understanding of basic algebra

### Suggested physical abilities:

- Capable of lifting 30 pounds
- Capable of sustained activity for 5 hours at a time

### Class Hours:

- Morning: 7:50am - 10:40am Mon.- Fri.
- Afternoon: 12:05pm - 2:55pm Mon.- Fri.
- Program is 4 semesters in length, with start dates in Fall.

## Tuition and Credit Hour Calculation

### Semester 1

\$1,950.00 (Tuition)  
 + \$200.00 (Credit Hour Fee)  
 \$2,150.00

### Semester 2

\$1,690.00 (Tuition)  
 + \$180.00 (Credit Hour Fee)  
 \$1,870.00

### Semester 3

\$1,820.00 (Tuition)  
 + \$190.00 (Credit Hour Fee)  
 \$2,010.00

### Semester 4

\$1,690.00 (Tuition)  
 + \$180.00 (Credit Hour Fee)  
 \$1,870.00

*Based on Colorado Resident In-State Tuition*

## Estimated Program Costs (to be paid at Picken's payment office)

### Tuition and Credit Hour Fees:

**Semester 1:** \$2,150.00  
**Semester 2:** \$1,870.00  
**Semester 3:** \$2,010.00  
**Semester 4:** \$1,870.00

### Required On Campus Costs:

**Program Charges:** \$500.00 (each semester)  
**Student ID:** \$10.00 (each year)  
**CTSO Charge:** \$20.00 (each year)

### Estimated Total:

**Advanced Construction Methods Certificate:** \$9,960.00 (+tax)

## Additional Relevant Costs (estimated)

### Required Off Campus Costs:

**Books:** \$102.00 (+tax)  
**Safety Glasses:** \$5.00 (+ tax)  
**Tools and additional supplies:** \$175.00 (+ tax)

### Optional Costs:

**SkillsUSA Work Force Ready Assessment for Construction:** \$20.00

**Credits:**  
55

**Length:**  
2 years

**Cost:**  
\$9,960



Cost and information revised **November 2022**  
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# ADVANCED CONSTRUCTION METHODS

## Courses required for this certificate:

### CAR 1003 Carpentry Basics

Provides a basic introduction to construction work for all crafts, safety concerns and procedures, and the safety and use of hand and power tools. This course specifically applies to construction work.

### CAR 1004 Floor And Wall Construction

Covers framing basics as well as the procedures for laying out and constructing a wood floor, and wall framing using common lumber as well as engineered building material. Includes instructions for selecting and installing metal framing for interior walls, exterior non-load bearing walls, and partitions.

### CAR 1006 Construction and Roof Design

Covers basic stair terminology and layout, also basic understanding of roof design and installation.

### CON 1006 Site Prep Through Foundation

Introduces blue-print reading and how they apply to the construction site. Includes in-depth introduction to site layout (materials and methods). It also covers materials and methods for concrete forms and foundations. Includes various reinforcement methods such as re-bar and welded-wire fabric.

### CON 1009 Flooring, Tile and Wood

Covers installation and finishing of hardwood floors, laminate/engineered floors, and tile. Includes discussion on advantages and disadvantages of various choices available.

### CON 1013 Jobsite Planning through Foundation

Expands upon (CON 106 Site Prep Through Foundation) and gives students a chance to explore more complex plot plans and multi-unit site layouts. Includes a more in-depth look at the blueprints and how they apply to the job-site. Builds on course (CON 106 Site Prep Through Foundation) and expands on theories and concepts from the first year class. Offers opportunities to explore more complex systems and form requirements.

### CON 1028 Cost Estimation

Provides an overview of the estimation process. Bid requirements, and package are discussed along with an introduction to the CSI divisions.

### CON 1030 Blueprint Reading

Focuses on the techniques for reading and using blueprints and specifications with an emphasis placed on those drawing and types of information that are relevant to the carpentry craft.

### CAR 1034 Exterior Finishes and Trim

Utilizes hands-on techniques to illustrate exterior moisture, trim, and exterior door and window installation. Student will explore various residential materials and methods. Estimation of time and material will be discussed as well as general business practices.

### CAR 1035 Thermal and Moisture Methods and Materials

Focuses on selection and installation of various types of insulating materials in walls, floors, and attics. Covers the uses and installation practices for vapor barriers and waterproofing materials.

### CAR 1046 Interior Finishes/Drywall Construction

Covers the use of gypsum wall board and the techniques of concealing joints and fasteners, construction methods, estimation and a variety of texture finishes.

### CAR 1047 Interior Carpentry

Covers material choices and installation techniques of various interior trim, including interior doors, baseboard, and casement. Includes an overview of additional interior trim choices. Covers interior doors and trim with focus on material choices, methods of work, and estimation.

### CAR 2006 Advanced Floor and Wall Construction

Expands upon those skills and knowledge learned in (CAR 104 Floor And Wall Framing) Covers complex floor, and wall framing issues and leadership/ foreman responsibilities. Allows students to hone skills previously learned. Utilizes a hands-on approach to allow students to study floor, and wall framing.

### CAR 2007 Advanced Construction and Roof Design

Expands upon the first year course emphasizing construction of residential and commercial stairs. Covers complex stairs, including curved and multi-level stair construction. Includes alternatives to stringers, and finish Emphasizes methods and materials for balusters and rails.

### CAR 2008 Advanced Exterior Finishes and Trim

Expands upon those skills and knowledge learned in CAR134. An opportunity to hone their skills as an exterior carpenter as well as building their skills in a leadership roll.

### CAR 2009 Advanced Interior Carpentry

Expands upon the material covered in (CAR 147 Interior Carpentry) and includes more advanced techniques and in-depth discussion of various material choices. Covers estimating and efficiency studies. Includes in-depth study of premium interior doors and trim..Explores the craftsmanship and fine woodworking involved in many fine homes. Includes mantel and various fireplace designs, custom shelves and closets, and custom moulding.

### CON 2010 Advanced Flooring, Tile and Wood

Expands upon skills and knowledge learned in (CON 109 Flooring Tile and Wood). Focuses on estimation and ordering of flooring and tile products. Provides an opportunity to use more advanced layout and designs of various flooring and tile.

## ADVANCED CONSTRUCTION METHODS CERTIFICATE

**Certificate Total:** Clock Hours: 1072.5 Credit Hours: 55

**Certificate Length:** 4 semesters