
Construction Trades Technology

The goal of the Construction Trades Technology course at the Alaska Technical Center is to provide vocational training for those interested in career opportunities within the construction industry. The course is designed for the beginning student, regardless of age, who may have some high school wood shop experience, or who may have assisted someone on a building project and found that they enjoy the work and wish to learn more, or someone without any prior woodworking experience who simply wants to explore possible career choices. Instruction is balanced between classroom textbook theory and direct hands-on demonstrations and group project performance using the standard construction tools, safety, materials, hardware and techniques. The course uses the NCCER Core Curriculum textbook, for an introduction to the general skills needed to enter the industrial workforce and the NCCER Carpentry Level 1 textbook for specific trade skills training. At the heart of this program is training in the traditional crafts and skills needed to become a residential carpenter.

From this basis, those students who successfully complete the course would have the knowledge and skills to enter the construction workforce as a construction laborer, carpenter's helper or carpenter apprentice. The overall aim is to equip the student with a broad understanding of the construction language, safety, tools, material, hardware and processes necessary to acquire an entry level construction position with knowledge and confidence. While some students might find immediate satisfactory employment within a construction crew, others might want to continue their training by entering a formal carpentry apprenticeship program or possibly pursue a university degree in the related field of Construction Management. Whatever eventual path the individual chooses, the Construction Trades Technology training at the Alaska Technical Center could be a solid first step toward achieving a rewarding career within the construction field.

While the Alaska Technical Center does not require an entry exam, as all students are welcomed, it is expected that those individuals entering the Construction Trades Technology program will have adequate reading and math skills to meet the demands of the course and the profession. In addition, good physical condition, manual dexterity, hand and eye coordination, the ability to lift 50 pounds, climb ladders, work at heights, work in confined spaces and work well with others is essential.

The Alaska Technical Center will equip each student with a standard carpenter's tool belt and the appropriate hand tools that every carpenter is expected to have, as well as common basic personal protective equipment. Work clothing and footwear, as well as appropriate outdoor clothing is the responsibility of the student.

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LENGTH OF PROGRAM

18 weeks for
540 clock hours

ENROLLMENT

August - December or:
January - May

TRAINING HOURS

9:00 a.m. to 3:30 p.m.,
Monday through Friday

PROGRAM CERTIFICATES

NCCER Core Curriculum
NCCER Carpentry Level 1

PROGRAM REQUIREMENTS

NCCER Core Curriculum

108 Contact Hours

Basic Industrial Safety

Contact Hours: 18

Identifies causes of accidents & job site hazards, explains safety culture, examines OSHA regulations, states employer & individual responsibilities, identifies personal protective equipment, demonstrates fall arrest systems & defines safe work procedures.

Construction Math

Contact Hours: 24

Review basic math functions, defines whole numbers, fractions & decimals explains various measuring devices, explains decimal-fraction conversion, reviews basic geometric rules, emphasizes practical use

Hand Tools

Contact Hours: 12

Introduces basic hand tools, use and maintenance

Power Tools

Contact Hours: 12

Provides detailed description of common power tools, use and maintenance, emphasizes proper safe function, illustrates common on-the-job usage.

Construction Drawings

Contact Hours: 10

Explains basic construction drawing terms, components and symbols, describes the different types of drawings, explains the process of interpreting drawings,

Basic Rigging

Contact Hours: 12

Identifies information related to rigging and rigging hardware, emphasizes safe working habits for rigging, reviews standard rigging hand signals

Basic Communication Skills

Contact Hours: 6

Explains the techniques for effective communication with co-workers, emphasizes the importance of verbal and written information, discusses proper telephone and e-mail use in a business settings

Basic Employability Skills

Contact Hours: 10

Introduces critical thinking skills, reviews effective relationship skills, discusses workplace sexual harassment, examines the effects of substance abuse on the job, explains the process of solving personal conflicts, identifies effective self-presentation.

Materials Handling

Contact Hours: 6

Recognizes material handling hazards, explains proper lifting techniques, introduces material handling equipment, identifies common job-site tasks

PROGRAM REQUIREMENTS

NCCER Carpentry Level 1

432 Contact Hours

Orientation to the Trade

Contact Hours: 12

Review history of the trade, describes apprenticeship programs, identifies career opportunities, discusses characteristics of successful carpenters, emphasizes the importance of safety.

Building Materials, Fasteners & Adhesives

Contact Hours: 40

Introduces common wood based building materials including engineered wood products and sheet materials, structural steel and concrete, describes fasteners and adhesives, explains methods of squaring a building

Hand and Power Tools

Contact Hours: 42

Provides descriptions of hand and power tools, emphasizes safe & proper use, discusses maintenance & care

Construction Drawings, Specifications, & Layout

Contact Hours: 28

Covers the techniques for reading and using construction drawings, discusses legal importance of specifications, introduces adherence to building codes, explains process of writing material lists,

Floor Systems

Contact Hours: 70

Describes the terminology of floor framing components, explains process of building floor system, describes layout procedures, emphasizes importance of squaring building

Wall Systems

Contact Hours: 76

Describes procedures for laying out and framing walls, identifies framing sizing for doors and windows, explains process of lining walls, introduces procedure for estimating materials

Ceiling Joist & Roof Framing

Contact Hours: 70

Describes types of roofs, covers stick-built and truss roofs, provides instructions for layout rafters for gable roofs, hip roofs and valley intersections, explains sheathing methods, emphasizes roof safety

Building Envelope Systems

Contact Hours: 58

Introduces the concept of building envelope & explains components, examines materials used for thermal protection, identifies windows, skylights and exterior doors, provides instruction for installation of exterior siding, doors & windows.

Basic Stair Building

Contact Hours: 36

Introduces types of stairs and common building code requirements related to stairs, explains techniques for measuring and calculating rise & run, examines the mathematical relationship for safe stair design, explains process of laying out and building stairs