



**2023-2024**  
**NWKTC Catalog and Student Handbook**

Carpentry

**Description:** Carpentry is a practical technical program that provides training in the necessary job skills and related technical information used in the construction and cabinet-making trades. The program introduces all phases of residential carpentry.

Each phase of construction work is preceded with classroom information to prepare the student for actual work experience. Job skills are honed through projects such as the construction of a complete residential home, remodeling work, on/off-campus jobs, and shop projects.

Courses include floors, walls, ceilings, framing, roof framing, windows, doors, stairs, concrete/masonry, flooring and exterior finishes, interior finishes and stains, drywall and insulation, building codes, cabinets, countertops, and commercial applications. Successful students will be poised to advance to the journeyman and master tradesman levels after entering the profession.

**Degree/Certificates awarded:**

AAS

Tech Cert B, Tech Cert C

**Accreditation/Certification: NCCER**

**Program Learning Outcomes:**

Upon successful completion of the program, students are able to:

- Demonstrate knowledge of safety involved with the building construction industry.
- Demonstrate knowledge and skills to properly operate manual and power tools used in residential construction.
- Possess knowledge to perform tasks of entry-level building construction employment.
- Demonstrate proficiency of layout and assembly of framing.
- Demonstrate mathematical and reasoning skills.
- Demonstrate effective reading, writing, speaking, listening, and time management skills.

**Program Schedule:**

Students attend class from 7:00 a.m. to 3:30 p.m., Monday through Friday.

**PROGRAM GUIDE**

**YEAR I: FIRST SEMESTER**

Course #	Course Name	Credits
GC 100	OSHA 10	1
GC 105	Introductory Craft Skills	3
GC 110	Carpentry Basics	4
GC 120	Floors, Walls, & Ceiling Framing	4
GC 125	Roof Framing	3
HUM 102	Workplace Ethics (or Gen Ed Elective)	3
SO 100	Student Success Seminar (Required)	1

**YEAR I: SECOND SEMESTER**

Course #	Course Name	Credits
AE 205	Forklift Operator Training*	1
ENGL 105	Technical Writing (or Communications Elective)	3
GC 135	Windows, Doors, & Stairs	3
GC 155	Roofing & Exterior Finishes	3
GC 175	Interior Finishes	3
GC 177	Drywall & Insulation	3
MATH 105 or 107	Technical Math (or Math Elective)	3

**YEAR II: FIRST SEMESTER**

Course #	Course Name	Credits
BA 215	Personal Finance (Required)	3
CF 101	Computer Fundamentals (or Natural & Applied Science Elective)	3
EL 105B	Basics of Electricity	1
EN 184	Applications of CAD/CAM in Construction Technology	2
GC 150	Residential Concrete/Masonry	2
WD 210	Metal Fabrication	2

**YEAR II: SECOND SEMESTER**

Course #	Course Name	Credits
GC 215	Building Codes	3
GC 220	Interior Stain and Finishes	3
GC 225	Commercial Applications	3
GC 235	Cabinets/Countertops	3
GC 280	Carpentry Specialization	2

**COURSE DESCRIPTIONS**

**GC 100 SAFETY & ORIENTATION (OSHA 10)**

1 CR

Through this course, students are introduced to the construction industry. Personal safety is emphasized through the student learning OSHA laws. Additionally, each student will be required to successfully pass the OSHA 10 safety test.

## GC 105 INTRODUCTORY CRAFT SKILLS

3 CR

Students will utilize the NCCER curriculum modules for: Basic Safety, Introduction to Construction Math, Introduction to Hand and Power Tools, Introduction to Blue Prints, Basic Rigging, Basic Communication Skills, and Basic Employability Skills.

## GC 110 CARPENTRY BASICS

4 CR

This course follows the NCCER modules for: Orientation to the Trade, Building Materials, Fasteners, and Adhesives, Hand and Power Tools, and Reading Plans and Elevations.

## GC 120 FLOORS, WALLS & CEILING FRAMING

4 CR

Utilizing the NCCER curriculum modules students will learn framing basics as well as the procedures for laying out and construction of floors, framing walls and ceilings. Also included in the course is: roughing-in door and window openings, constructing corners and partitions Ts, bracing walls and ceilings, and applying sheathing.

## GC 125 ROOF FRAMING

3 CR

Following the NCCER module, students will be learning the various kinds of roofs and instructed on how to lay out rafters for gable roofs, hip roofs, and valley intersections. Coverage also includes both stick-built and truss-built roofs.

## GC 135 WINDOWS, DOORS & STAIRS

3 CR

Utilizing the NCCER curriculum module, students will learn the various types of windows, skylights, exterior doors, weather-stripping and locksets. Also included in the modules are the techniques for measuring and calculating rise, run and stairwell openings, laying out stringers and fabricating basic stairways.

## GC 150 RESIDENTIAL CONCRETE/MASONRY

2 CR

This course is the study of concrete mixtures, footing forms, wall forms, flat works, concrete stairs and slump tests. Students will also learn brick/lock laying foundations, walls and wall finishes and exterior stucco.

## GC 155 ROOFING & EXTERIOR FINISHES

3 CR

The use of common materials used in residential and light commercial roofing, along with safety practices and application of material is covered. In addition, students will learn uses and benefits of various types of exterior siding and perform installation of exterior finishes.

## GC 175 INTERIOR FINISHES

3 CR

This unit covers various types of gypsum drywall, their uses, fastening devices and methods used to install them. Students will learn different drywall finishing, painting and tile installation.

## GC 177 DRYWALL & INSULATION

3 CR

Various types of gypsum drywall, their uses, fastening devices, and methods used for installation are covered in this course along with installation of various types of insulating materials, vapor barriers and waterproofing materials. In addition, instruction of various tools and methods of finishing drywall are also included in the course.

## GC 215 BUILDING CODES

3CR

This course is an overview of the regulations that govern the safety of residential construction. The course also includes the design, construction, use, occupancy and location of residential dwellings.

## GC 220 INTERIOR STAIN AND FINISHES

3 CR

This course focuses on the various materials used for coatings that cover all types of finishes, including wood and other materials such as metals and drywall. The course will provide instruction and experience in paints, stains, varnishes, and various synthetic materials both clear and colored.

## GC 225 COMMERCIAL APPLICATIONS

3 CR

This course will introduce students to light commercial structures. Topics to be covered include metal stud framing, commercial doorframes, hardware, and suspended ceilings.

## GC 235 CABINETS/COUNTERTOPS

3 CR

Utilizing materials, tools and methods used in cabinet making, students will complete layout designs, construct and install cabinetry. Students will also learn how to install various countertop materials.

## GC 280 CARPENTRY SPECIALIZATION

2 CR

Students will get on-the-job experience by working with qualified personnel in a construction field. The instructor/advisor, the construction supervisor/coordinator and the student will agree upon work hours and objectives. Student progress will be gauged by meeting objectives and by a written report from the supervisor/coordinator.

## EL 105B BASICS OF ELECTRICITY

1 CR

This introductory course will provide students the basic principles of electricity including sources of voltage and direct currents.

Pre-requisite: open only to Carpentry students

## EN 180A COMPUTER AIDED DRAFTING (CAD) I

2 CR

This course instructs on the application of computer-aided design (CAD) and computer-aided manufacturing (CAM) in the field of carpentry. Students will learn the basics of 3D CAD, CNC router programming, and operations. By the end of this course, students will have the knowledge and skills needed to design and build custom woodworking items using CNC machines.

Pre-requisite: open only to Carpentry students

## WD 210 METAL FABRICATION

2 CR

This course details the safety requirements for welding and oxyfuel cutting. It identifies equipment and provides instruction for setting up, lighting, and using the equipment.