

**GREAT PLAINS TECHNOLOGY CENTER
COURSE OF STUDY**

<u>Career Cluster:</u>	Architecture and Construction (AC)
<u>Career Pathway:</u>	Construction (AC003)
<u>Program:</u>	Carpentry Level I (AC0030117)
<u>Program Hours:</u>	Secondary Students: 1050 Hours Adult Students: 1050 Hours
<u>Instructor:</u>	Name: Clayton Snodgrass Office Number: (580) 250-5620 E-Mail Address: csnodgrass@greatplains.edu
<u>Academic Credit:</u>	Secondary Students: 3 high school credits per year Adult Students: Transcript
<u>Prerequisites:</u>	None

Program Description:

This program will introduce students to the theory and skills necessary to enter the high-demand field of carpentry. The construction industry is one of the largest employers in the country and carpenters make up the largest building trades occupation in the industry. Carpenters construct, erect, install, finish and repair structures and fixtures made from wood and other building materials. This program combines classroom instruction with hands-on training to enable graduates of the program to work in the residential construction field as framers, roofers, finish carpenters, trim carpenters or cabinet makers. As part of the hands-on training in this program, students will actually build a complete modular house that will be sold in an auction when completed. The proper use of construction equipment, selection of materials, estimating, measuring, blueprint reading, and building code interpretation will be stressed along with the employability skills needed to work well with a construction crew. Students will have the opportunity to compete in the Career Tech SkillsUSA student organization competition in either framing or cabinet making at the regional, state and national levels.

Program Goals:

Students enrolled in this program will be given the opportunity to develop the skills and attitudes needed to successfully enter the construction trades field according to their personal choice, ability, and resourcefulness

Upon achieving the goals of this program, students will:

- Become competent in the basic skills of the occupation.
- Become qualified for further related education and/or entry into the job market.
- Work as a team member.
- Pass at least one Tier 2 certification test.
- Become qualified for further related education and/or enter the job market.
- Demonstrate independence in using problem solving and critical thinking techniques in completing all work assignments.
- Develop the ability to work with limited supervision.

- Accept and abide by the rules and regulations established by the school and/or place of employment.

Related Career Opportunities:

- Residential Carpenter
- Drywall Installer and Finisher
- Cabinetmaker
- Frame Carpenter
- Finish Carpenter

Program Objectives:

After successful completion of this program, the student will be able to:

- Utilize hand tools, power tools, ladders, and scaffolding in a safe, efficient manner.
- Apply basic concepts of math and measurement to perform various construction-related tasks.
- Apply proper layout and construction procedures for building projects.
- Develop an acceptable level of speed and accuracy to perform helper-level skills of the trade.
- Apply proper layout, cutting, and construction procedures for building projects.

Program Course Sequence:

- HS Student and Part-time Adult (Year One): Course Sequence I
- HS Student and Part-time Adult (Year Two): Course Sequence II

**DESCRIPTION OF COURSES
SEQUENCE I**

<u>Course #</u>	<u>Course Name</u>	<u>Theory</u>	<u>Lab</u>	<u>Total</u>
TI00766	Construction Core	40	80	120
This is an introduction to basic safety, construction math, hand tools, power tools, blueprints, and communication skills and employability skills. Reviews the history of the trade and career opportunities available. Provides an overview of the building materials and the various fasteners and adhesives used in construction work, measurements, Hazcom, MSDS, and fire and electrical safety used in construction. Provides detailed descriptions of the hand tools and portable power tools used by carpenters. Emphasis is on safe and proper operation of tools, as well as care and maintenance.				
TI00923	Plan Reading and Elevations	20	40	60
Students will learn the techniques for reading and using blueprints and specifications with an emphasis placed on those drawings and types of information that are relevant to the carpentry trade. Introduces the subject of quality takeoffs.				
TI00921	Floor Systems	20	40	60
This course covers framing basics and the procedures for laying out and constructing a wood floor using common lumber as well as engineered building materials. The ingredients of concrete, the various types of concrete and the uses of concrete reinforcing materials is learned, as well as how to mix concrete. Also covered in this course is basic job-built footing, edge, and wall forms and ties.				
TI00408	Framing	40	80	120
The framing course describes the procedures for laying out and framing walls and ceilings, including roughing-in door and window openings, constructing corners and partition Ts, bracing walls and ceilings, and applying sheathing. Also included are various kinds of roofs and instructions for laying out rafters for				

gable roofs, hip roofs, and valley intersections. Coverage includes both stick-built and truss-built roofs. The various types of windows, skylights, weather-stripping, locksets and exterior doors and installation will be studied.

TI00224 Exterior Finishing 40 80 120

In this course the common materials used in residential and light commercial roofing, along with the safety practices and application methods for these materials will be learned. Included in this are shingles, roll roofing, shakes, tiles and metal and membrane roofs, as well as the selection and installation of roof vents. The selection and installation of various types of insulating materials in walls, floors, and attics is an important part of exterior finishing. Also covered in the course are the uses and installation practices for vapor barriers and waterproofing materials before the the various types of exterior siding used in residential construction and their installation procedures can begin.

TI00711 Introduction to Cabinet Making 15 30 45

This course provides an introduction to the materials, tools, and methods used in cabinetmaking. Practice projects help trainees learn the various joining techniques used by cabinetmakers, while providing practice on stationary power tools. Two complete cabinet projects used in past SkillsUSA national competitions are also provided.

Sequence I Subtotal Hours:	Theory	Lab	Total
High School Student:	175	350	525
Adult Student:	175	350	525

**DESCRIPTION OF COURSES
SEQUENCE II**

<u>Course #</u>	<u>Course Name</u>	<u>Theory</u>	<u>Lab</u>	<u>Total</u>
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TI00402 Drywall Installation and Finishing 40 80 120

Drywall Installation will describe the various types of gypsum drywall, their uses, and the fastening devices and methods used to install them. This course contains detailed instructions for installing drywall on walls and ceilings using nails, drywall screws, and adhesives. Also covered in the course are fire and sound-rated walls. Drywall Finishing covers the materials, tools, and methods used to finish and patch gypsum drywall. Included is the coverage of both automatic and manual taping and finishing tools.

TI01590 Finish Carpentry 40 80 120

Finish Carpentry covers the installation of metal doors and related hardware in steel-framed, wood-framed, and masonry walls, along with their related hardware. Included in this course is the installation of wooden doors, folding doors, and pocket doors. In addition, the different types of trim used in finish work is also learned. This course focuses on the proper methods for selecting, cutting, and fastening trim to provide a professional finished appearance. The course will also provide detailed instructions for the selection and installation of base and wall cabinets and countertops.

TI01920 Basic Coatings Techniques 40 80 120

This course is an introduction to safe handling of materials, bio-hazard disposal procedures, preparation (sanding, filling, priming), methods of application (brush, spray, etc.), types of finishes (stain, paints, laquer, varnish), clean up, and maintenance of equipment and stripping and refinishing. Surface prep, protecting adjacent surfaces and proper paint application will also be included.

TI001GP Basic Finishing Techniques**55 110 165**

This course is an introduction to designing counter-tops to function, constructing and installing counter-tops, choosing the correct laminate (function), estimating materials, preparing surfaces, applying laminates, and patching and repair. This course will also provide the student with the knowledge and skills necessary for the preparation, layout, and installation of tile projects. These skills will be used in the installation of tile on floors, walls, counter tops, back splashes, and wet areas such as showers and tub enclosures. Also included in this course is an introduction to structural and lightweight concrete floors, in-floor radiant heating, types of flooring finishes, hardwood flooring, vinyl tile, carpet and laminent flooring.

Sequence II Subtotal Hours:	Theory	Lab	Total
High School Student:	175	350	525
Adult Student:	175	350	525

Program Total:	Theory	Lab	Total
High School Student:	350	700	1050
Adult Student:	350	700	1050

Evaluation Policy:**Employability Grades (100 points per week; 40% of final grade)**

The employability skills grade is based on 20 points per day (which may include: attitude, attendance, safety, punctuality, cooperation, participation, clean-up, class preparation, school/classroom rules, and time management). Points will be deducted if these responsibilities are not met at the instructor's discretion. Students will be allowed to make up unearned employability points for **excused** absences only. Full credit will be given for assignments/tests that have been made up due to excused absences only (see Student Handbook).

Performance Grades (40% of final grade)

- Live projects
- Performance or skill tests
- Homework
- Written Assignments

Test Grades (20% of final grade)

- Test grades will be based on a 100-point scale.
- Test grades include written and/or skills tests.
- A test will be given for each unit of instruction.
- Tests are to be taken as a unit is completed.
- Tests must be completed within allotted time.

Final Grade (9 Weeks Period)

9-weeks grade will be calculated by averaging grades in each category and summing each category according to their assigned weight. Progress reports will be sent to home schools at six and twelve-week intervals each semester as required or requested. Grades are accessible on-line at <http://sonisweb.greatplains.edu/studsect.cfm>

Grading Scale:

The grading scale as adopted by the Board of Education is as follows:

- A = 90 – 100
- B = 80 – 89
- C = 70 – 79
- D = 60 – 69
- F = Below 60
- W = Withdrawn
- I = Incomplete
- N = No Grade (Refer to Student Handbook)

Make-Up Work Policy:

All Make-Up Work Is The Responsibility Of The Student. Make-up work will be handled as specified in the Student Handbook. Please be sure to read and understand all student policies, especially make-up of assignments, tests and employability due to absences. Students should always arrange for any make-up work with the instructor as per the Student Handbook. Students should keep track of his or her progress and grades.

Attendance Policy:

For specific information related to attendance and tardiness refer to the Student Handbook. Students should keep a written record of their absences and tardiness.

Course Requirements and Expectations:

The general course requirements and expectations include:

- Teaching methods consist of both lecture and “hands on” projects.
- The student must demonstrate the ability to apply safety to all aspects of the construction field.
- It is recommended that the student meet with the teacher and their parents at least once per semester.
- All students must adhere to the policies and procedures in the GPTC Student Handbook.
- SkillsUSA is the student organization for the residential construction carpentry field. This club offers an outstanding opportunity to develop leadership and social skills. Students are highly encouraged to participate. The dues, \$10.00 are paid by the student.
- It is highly recommended that the student have purchased or attained the required tools and equipment for employment as a carpenter. Possessing a valid driver’s license will also benefit the student and is recommended.
- The required class dress is a program t-shirt with jeans or shorts and work boots or shoes. T-shirts cost \$10.00 each and are paid for by the student.

Student Behavior Includes:

- Wear safety glasses at all times when in the shop area.
- Wear the designated program t-shirt, work boots or shoes at all times while in class.
- Wear the student name badge at all times.
- Follow the proper procedure if you are absent, tardy or have a school activity.
- Abide by the rules in the student handbook, as well as those established inside the classroom.
- Follow all rules and regulations of the Great Plains Technology Center.

NOTE: For additional information or questions regarding the GPTC School policies and procedures, please refer to the Student Handbook and/or the Instructor.

Industry Alignments:

- National Center for Construction Education and Research (NCCER)
- National Association of Home Builders (NAHB)
- Association of General Contractors (AGC)

Certification Outcomes:

Tier 2 – Certifications Endorsed by Industry Organizations

- ODCTE: Construction Trainee (3001)
- ODCTE: Finish Carpenter (3003)
- ODCTE: Frame Carpenter (3005)

Tier 6 – Certifications Administered/Proctored by Instructor

- OSHA 10-Hour General Industry Assessment

Tier 7 – National Career Readiness Certificate in Applied Mathematics, Locating Information and Reading for Information:

- Platinum Level – 6 or above in all three areas
- Gold Level – 5 or above in all three areas
- Silver Level – 4 or above in all three areas
- Bronze Level – 3 or above in all three areas

CIP Code and SOC Code Crosswalk:

- CIP Code – 46.0201
- SOC Code – 47-2031

OCAS program codes:

- 9053 – Carpentry (first year)
- 9078 – Carpentry (second year)

Instructional Materials: *Students are not required to purchase textbooks or supplemental materials.*

Textbooks:

National Center for Construction Education and Research (NCCER). Cabinetmaking. 0-13-103264-6. Saddle Hill: Pearson Prentice Hall, 2003.

National Center for Construction Education and Research (NCCER). Carpentry Level I: Carpentry Fundamentals Trainee Guide. 4th ed. 0-13-229268-8. Saddle Hill: Pearson Prentice Hall, 2006.

National Center for Construction Education and Research (NCCER). Carpentry Level II: Framing and Finishing Trainee Guide. 4th ed. 0-13-614410-1. Saddle Hill: Pearson Prentice Hall, 2007.

National Center for Construction Education and Research (NCCER). Core Curriculum: Introductory to Craft Skills. 4th ed. 0-13-608636-5. Saddle Hill: Pearson Prentice Hall, 2009.

Umstatted, William D., Charles W. Davis, and Patrick A. Molzahn. Modern Cabinetmaking. 5th ed. 978-1-63126-071-1. Tinley Park: Goodheart-Willcox, 2014.

Wagner, Willis H., and Howard Bud Smith. Modern Carpentry. 11th ed. 978-1-59070-648-0. Tinley Park: Goodheart-Willcox, 2007.