Nichols Career Center
BUILDING TRADES
Course Syllabus

Revised 8/2016

Instructors: Bryan Wolf (Building Trades I), Mike Schaefer (Building Trades II)
Conference Times: 10:55-11:55 am or after 3:00 pm
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COURSE DESCRIPTION:

Building Trades I- This is an introductory course designed to teach the basics of carpentry. Areas of study include the following: Basic safety, orientation to the trade, intro to materials handling, fasteners & adhesives, intro to hand and power tools, construction drawings, specifications, and layout, floor and wall framing systems, ceiling joist and roof framing, roofing materials and methods, cabinetmaking, basic communication skills, basic employability skills, rigging, building envelope systems. Students have the opportunity to receive a 10-hour OSHA card. This class is designed for juniors who plan to enroll in the building trades as a senior.

Grades: 11-12 Credits: 4.0

Building Trades II – This course is designed for students wishing to enter one of the building trades such as carpentry, sheet rocking, formwork, concrete work, painting, or other related trades. The main class project is the construction of a five or six room residence done by the students in as much as building codes permit. Articulation agreement for seniors only with the Carpenter's Apprenticeship Union at 55%, 60%, or 65% level of journeyman wages, depending on the student's test score.

Grades: 11-12 Credits: 4.0

Building Trades I & II are accredited by the Associated General Contractors of America (AGC) as of January 2003, re-accredited as of January 2008, and 2013.

PROGRAM GOAL:
All students will have a positive placement. Each student will complete the program prepared to advance to an entry-level building trades position, enlist with the military, or attend a college or technical school.

TEXTBOOKS, RESOURCE MATERIALS, MEDIA SUPPORT, ETC:
Textbooks and workbooks: Modern Carpentry, Goodheart-Wilcox Company, Inc., Copyright
Text book/workbook: Carpentry Fourth Edition, 2004 by American Technical Publishers, Inc.

I. Model Carpentry Instruction Program
United Brotherhood of Carpenters Apprenticeship and Training
Fund of North America

II. Carpentry Fourth Edition
American Technical Publishers, Inc.
Homewood Illinois

III. Core Curriculum
Trainee Guide Fourth Edition
Copyright 2009 Pearson

IV Carpentry Level 1
Fifth Edition
Copyright 2013 Pearson

V. Carpentry & Building Construction
Glencoe/ McGraw Hill

VI. Carpentry Fourth Edition
ATP Publication Leonard Koel

III. Home & Landscape Design Software

IV. DeWalt Building Code Reference 2009 IRC

V. RS Means Estimating Software

Videos:

A. Making Kitchen Cabinets
With Paul Levin
Tauton Press 1988

B. Tools of the Trade:
Inside the Carpenters Toolbox
Shopware 2007

C. Essential Woodworking Techniques
Woodworkers Journal

D. Mastering Your Table Saw
With Kelly Mehler
Tauton Press 2003

E. Foundations
Shopware 2012

F. Framing Walls
With Larry Haun
Tauton Press 2003

G. Framing Floor & Stairs
With Larry Haun
Tauton Press 2003

H. Framing Walls
With Larry Haun
Tauton Press 2003

I. Framing Roofs
With Larry Haun
Tauton Press 2003

J. Laying Hardwood Floors
With Don Bollinger
Tauton Press 2003

K. Installing Trim
With Craig Savage
Tauton Press 2003

L. Making Mortise and Tenon Joints
With Frank Klausz
Tauton Press 1986

M. The Gateway Arch
Civil pictures 2006

N. Incorporating Leadership Skills
MODESE 2005

O.

Guest Speakers:

A. Robert Simmons Safety & Health Services
Builders Association of America
Jefferson City, MO

B. Mike Hooper Safety & Sales
Hilti
Hilti Center 1150 Camridge Circle Drive
Kansas City, KS

C. Matt Hurley
Carpenters Union Representative

D. Patrick Phillips

Milwaukee Safety & Territory Representative
St. Louis, MO

E. Jefferson City Code Enforcement
Building Code Inspector
City of Jefferson City, MO
320 E. McCarty

GRADING SYSTEM:

Categories:

- 10**%** Tech Math
- 5% Tech English
- 10% Formative Assessment (Practicing Standards and Job Readiness)
- 65% Summative Assessment – (Quizzes, Tests, Projects)
- 10% Term Exam

Grade reports will be sent to students and parent(s)/guardian/(s) of secondary students at the end of each nine-week period. The following grading scale is used.

93-100 A (Excellent Work)	80-82 B- (Superior Work)	67-69 D+ (Inferior Work)
90-92 A- (Excellent Work)	77-79 C+ (Average Work)	63-66 D (Inferior Work)
87-89 B+ (Superior Work)	73-76 C (Average Work)	60-62 D- (Inferior Work)
83-86 B (Superior Work)	70-72 C- (Average Work)	0-59 F (Failure)

IN …..….Incomplete work, no credit given until requirements are completed, which automatically becomes an "F" at the end of a semester, unless arrangements are made with the office.

W ……Withdrawn, passing work being done in a course dropped either by withdrawal from school or by permission of the director.

WF ……..Withdrawn failing, failing work being done at the time of withdrawal OR course is dropped after the deadline for schedule changes.

RETURN POLICY FOR SECOND SEMESTER:
Students who are performing below average, or who are failing the semester are subject to removal from the program at semester. A student/parent conference will be held prior to the end of the semester with the appropriate individuals present and alternatives will be discussed.

ACADEMIC INTEGRITY:
The integrity of the academic program and evaluation of each student's achievement are of primary concern to educational institutions. Cheating on an educational exercise not only reflects dishonesty on the part of the cheater, but also diminishes the value of the work done by his/her classmates. Students who cheat or plagiarize shall be subject to disciplinary action that will include a zero for the exercise.

CLASSROOM/LABORATORYEXPECTATIONS/GUIDELINES (Building Trades I):

- All students will be instructed and tested on proper safety procedures.
- Each student will understand how to read a Material Safety Data sheet and have these available at all times.
- Each student is required to purchase safety glasses and a 3" notebook for this class and 20 insertable tabs.
- Each student will come to class prepared to work and have all supplies at his/her desk.
- Students will follow jewelry, hair, and clothing rules in the lab area.
- No horseplay, cursing, or lack of consideration of others will be allowed.
- All homework is due at the beginning of class unless otherwise stated.

CLASSROOM/LABORATORY EXPECTATIONS/GUIDELINES (Building Trades II):

- Safety Glasses must be worn on the job site at all **TIMES.**
- Students must pass safety tests **100%** before he/she uses shop tools & equipment.
- Ask Permission to use machinery from instructor.
- Report any defective tools, machines, or other equipment to the instructor.
- Never remove guards or safety devices from saws or other equipment.
- Report all accidents to the instructor regardless of nature of severity.
- Operator must turn **OFF** power and make certain the machine has **STOPPED** running before leaving the machine.
- Disconnect the power from the machine before performing maintenance.
- Use correct tool for the job.
- Keep classroom and job sites area floor clean of scraps and litter.
- Clean up any spilled liquids immediately.
- Respect the property of other students.
- Clean the chips from a machine with a brush **NOT** with a rag or bare hands.
- **NO** horseplay of any kind is allowed **(AT ANY TIME).**
- Any **DAMAGE** to the Bus will be paid for by the student/students responsible.
- Confine long hair before operating any equipment.
- Always walk in shop **DO NOT RUN.**
- The stealing of tools will result in the **TERMINATION** from the class.
- Put up tools in it's proper places when finished with them. (Cordless tools in their cases).
- Clean up work area and tools when you are finished or before you are excused.

STUDENT SERVICES:

Student services are available to help students succeed in their classes. Students in technical programs are eligible for extra assistance by asking for help from their teachers or by having their teacher refer them to the Vocational Resource Educator. Career Planning is available to students who are looking for part-time or full-time jobs or need help with writing a resume. In addition, persons knowledgeable about financial aid for post high school training/education are available, as well as persons who can help students assess their vocational strengths and preferences in order to make more information career choices.

STUDENT YOUTH ORGANIZATIONS:

Student organizations are an important aspect of Career & Technical education. Students are encouraged to actively participate in Skills USA, an organization for Career and Technical students.

DISCRIMINATION POLICY:
The Jefferson City School District does not discriminate on the basic of race, color, religion, national origin, gender, age, or disability. This policy pertains to admission/access to, or treatment/employment in its programs and activities.

CERTIFICATION:
Building Trades I: CareerSafe's 10-Hour OSHA Construction Industry training program consists of 14 interactive modules discussing various safety tips and procedures one should follow while in the workplace. Each module contains a brief assessment, which must be successfully completed before the student can move on to the next module. Once all modules have been viewed and the corresponding assessments are passed there is a comprehensive final assessment.

Building Trades I is an Accredited Training/Assessment Center for NCCER (National Center for Construction Education and Research) as of July 2015. Students that take the National standardized testing and pass with 70% or better on each test and performance test may receive these credentials from NCCER.

Building Trades II: Hilti Powder-Activated Tool Certificate: Training and safe use of Hilti powder-activated tools. Must pass assessment at a mastery level of 100%.

COURSE OBJECTIVES:
- To ensure that each student has a working knowledge of residential construction.
- To develop safe work habits in the shop as well as at the building site.
- To develop the skills to use the portable and stationary power tools that is used in residential construction.
- To develop good workmanship, improve the ability to read and follow blue print reading skills.

ESSENTIAL SKILLS :
- Define safe work procedures to use around electrical hazards
- Use a variety of tools and methods to solve and design problems (i.e. standard/metric ruler, architect/engineer scale, T-square, venire caliper)
- Identify safety precautions associated with building materials
- Safely use hand tools
- Use power tools safely
- Identify the components used of a wall system
- Build a cabinet from a prescribed blueprint
- Identify proper use and care of power and hand tools
- Draw a house plan to scale
- Review the procedure for setting up transit-levels
- Preform volume estimate for concrete quantity requirements
- Layout and cut stringers, risers, and treads required for a stairway

- Describe the procedure for laying out a wood frame wall, including plates, corner posts, door and window openings, partition T's, bracing, and fire stops
- Use various methods to calculate the length of a rafter
- Install components consistent with industry and safety standards
- Install a variety of exterior wall materials including siding, brick, and finish systems
- Explain how Gypsum Board is finished

COURSE OUTLINE (First Semester – Building Trades I):

Week	Topic
1-2	Introduction/Measurements/Basic Safety
3	Orientation to the Trade
4	Introduction to Materials Handling, Fasteners & Adhesives, Career Safe online course
5-6	Introduction Hand Tool & Hand Tool Safety
7-8	Introduction to Power Tools
9	Review- Term 1 Final
10-12	Introduction to Construction Drawings, Specifications and Layout
13	Floor Framing System
14-17	Wall Framing System
18	Review- Semester Final/NCCERT Exam

COURSE OUTLINE (Second Semester – Building Trades I):

Week	Topic
1-2	Ceiling Joist and Roof Framing
3	Roofing Materials & Methods
4-10	Cabinetmaking
9	Review - Term 3 Final
11	Basic Communication Skills
12	Basic Employability/Employability Skills
13	Basic Rigging
14-15	Introduction to Building Envelope System
16-17	Basic Stair Layout
18	Review - Term 4 Exam

MASTER LIST OF COMPETENCIES: Available upon request.

COURSE OUTLINE (First Semester – Building Trades II):

Week	Topic
1-2	Job Site Safety
3-4	Building Design, Plans, and Specifications
4-6	Builder's Levels and Transits
7-9	Building Site and Layout, Term 1 Exam
10-11	Types of Foundations and Forming Methods
11-12	Scaffold Construction
13-14	Floor and Wall Framing
15-17	Roof Types and Theory
18	Roof Finish, Term 2 Exam

COURSE OUTLINE (Second Semester – Building Trades II):

Week	Topic
1-2	Exterior Door and Windows
3-4	Exterior Wall Finish
4-9	Interior Wall Finish, Term 3 Exam
10-12	Interior Trim
13-14	Stairway Construction
15-16	Intro to Welding
17	Job Placement
18	Term 4 Exam

MASTER LIST OF COMPETENCIES: Available upon request.

RESIDENTIAL TRAINING GOALS

The goal of the Nichols Career Center Building Trades Program is to prepare students for entry into the field of construction. At the completion of the two-year program students may elect to enter related employment, continue training through employer based apprenticeship opportunities.

To promote the goals of the program the importance of good work ethics, efficient time management, and safety habits are taught and stressed. Students receive instruction in all facets of the construction industry. The students learn the building process in sequential order beginning with site preparation and continuing with building layout, footing and foundation, floor framing, wall framing, roofing, setting windows and doors, and trimming exterior and interior finishes.

The Nichols Career Center Building Trades Program continues to evolve by incorporating the newest in building techniques and materials. Curriculum modification, additions, and suggestions from the Nichols Career Center Building Trades Advisory Committee are incorporated into the curriculum to keep the training program current with industry standards and expectations.

Specific Goals:

- Student will be proficient with entry-level skills required by all areas of residential construction.
- Students will develop the work ethic, attendance, safety, cooperation, and problem-solving skills required by employers.
- Students will have on-the-job work experience in all areas of residential construction.
- Students, when possible, will be employed in the building trades or enrolled in continuing education at the conclusion of training.

COMMERCIAL TRAINING GOALS

The Nichols Career Center Building Trades Program provides commercial related skill training to out graduates. The students are exposed to steel framing, commercial building codes and applications of products associated with commercial construction. However, The training goals (outcomes) for our students have remained the same, to prepare students for entry-level positions in the construction industry, entry into post-secondary college programs or for our students to continue their training through employer based apprenticeship opportunities.

The competencies taught to accomplish the stated goal include: site preparation, building layout, footing and foundation, floor framing, wall framing, roofing, setting of windows and doors, and trimming exterior and interior finishes. The Nichols Career Center Building Trades Advisory Committee works closely with the instructors to suggest curriculum modification, additions or deletions to keep the program current with industry standards and practices.

Specific Goals:

- Students will be acquainted with commercial construction and develop an understanding of the major differences between residential and commercial construction.
- Students will receive awareness and training about commercial construction through field trips, AGC orientation, and other appropriate presentations.
- The instructor will, when possible, incorporate commercial construction practice (Metal studs) into the building trades program.
- Students will develop the work ethic, attendance, safety, cooperation, and problem-solving skills required by employers.
- Students, when possible, will be employed in the building trades or enrolled in continuing education at the conclusion of training.