

WARREN COUNTY SCHOOL DISTRICT
PLANNED INSTRUCTION

COURSE DESCRIPTION

Course Title: Building Construction Technology (Construction Trades, Other CIP 46.9999)

Course Number: 00903 AM and 00953 PM

CIP # 46.9999 Construction Trades

Course Prerequisites: Students may enroll as a sophomore having earned a minimum of 6 credits or as a junior having earned a minimum of 13 credits.

Course Description:

An instructional program that prepares individuals to apply technical knowledge and skills in the erection and installation of buildings and other structures using assorted materials such as metal, wood, stone, brick, glass, concrete and composition substances. Instruction is provided in the basic skills of carpentry, masonry, plumbing, heating, electrical, painting and decorating and a variety of activities associated with building construction. Some of these activities include but are not limited to blueprint reading, cost estimating and using a variety of hand and power tools; cutting, fitting, fastening and finishing various materials, and applying technical specifications and knowledge concerning the physical properties of materials. The Building Construction Occupations program also provides an opportunity for students to receive a PA Skills Certificate, an SP2 safety certificate and OSHA 10 certification.

Suggested Grade Level: Grades 10-12

Length of Course: One Semester X Two Semesters Other **Three**
periods per day (120 Min) – Five Days per week – Three years

Units of Credit: 3 / Year (Insert *NONE* if appropriate.)

PDE Certification and Staffing Policies and Guidelines (CSPG) Required Teacher Certification(s) (Insert certificate title and CSPG#) **Technology Education 6075 or Vocational Instruction 2600 – Building Construction Trades**

Certification verified by WCSD Human Resources Department:

 X Yes No

Board Approved Textbooks, Software, and Materials:

Textbook: Residential Construction Academy Series
Book Title: Carpentry
Publisher: Thompson Delmar Learning
ISBN #: 1-4180-0183-x
Copyright: 2008
Date of Adoption: September 2011

Textbook: Residential Construction Academy Series
Book Title: House Wiring
Publisher: Thompson Delmar Learning
ISBN #: 1-4180-1098-7
Copyright: 2008
Date of Adoption: September 2011

Textbook: Residential Construction Academy Series
Book Title: Masonry
Publisher: Thompson Delmar Learning
ISBN #: 1-4180-5284-1
Copyright: 2008
Date of Adoption: September 2011

Textbook: Residential Construction Academy Series
Book Title: Plumbing
Publisher: Thompson Delmar Learning
ISBN #: 1-4180-4891-5
Copyright: 2005
Date of Adoption: September 2011

Software: This software is directly related to the textbooks

e.resource™ Carpentry ISBN: 1-4018-0185-6

e.resource™ House Wiring ISBN: 1-4018-1100-2

e.resource™ Masonry ISBN: 1-4018-5286-8

e.resource™ Plumbing ISBN: 1-4018-4900-8

Other Software: SP2's (online safety program related to Building Construction Trades)
Follows OSHA Standards

Date of WCSD Board Approval:

BOARD APPROVAL:

Date Written: February 2011

Date Approved: _____

Implementation Year: 2011-2012

Suggested Supplemental Materials:

Journal of Light Construction (Trade Magazine)
Fine Homebuilding (Trade Magazine)
Work Bench (Trade Magazine)

Course Standards**PA Academic Standards:** (List by Number and Description)

Career Education and Work: 13.1.11. A,B,C,F; 13.2.11. A,C,D,E 13.3.11 A,G

Science and Technology: 3.1.10.B,D; 3.6.10.C; 3.7.10.A,B; 3.8.10.A,B,C.

Math: 2.1.11.A; 2.2.11.A,B,C,D,E; 2.3.11.A,B,C; 2.4.11.A,E; 2.5.11.A,B,C; 2.10.11.B.

Reading, Writing, Speaking, and Listening: 1.2.11, 1.4.11, 1.5.11,

WCSD Academic Standards: (List or None)

NONE

Industry or Other Standards: (List, Identify Source or None)

National Association of Home Builders Standards

Academic Standards for Career Education and Work:

13.1 Career Awareness and Preparation

13.2 Career Acquisition (Getting a Job)

13.3 Career Retention and Advancement

13.4 Entrepreneurship

SPECIAL EDUCATION AND GIFTED REQUIREMENTS

The teacher shall make appropriate modifications to instruction and assessment based on a student's Individual Education Plan (IEP) or Gifted Individual Education Plan (GIEP).

Program of Study/CIP competencies Integrated in the Standards

		Career Standards	Science & Technology	Math	Reading	Common Core Standards
100	FOLLOW SAFETY RULES AND REGULATIONS	13.1.11C 13.2.11E			1.2.11A	R1,2&7 W9
200	DEMONSTRATE PROPER USE OF HAND TOOLS	13.1.11A&B	3.7.10A 3.7.10B	2.3.11A&C		R7
300	OPERATE PORTABLE POWER TOOLS AND EQUIPMENT	13.1.11A&B 13.2.11E	3.7.10A 3.7.10B	2.3.11A&C		R7
400	READ PLANS AND BLUEPRINTS	13.1.11A&B	3.1.10B 3.1.10D 3.1.10B 3.7.10A 3.7.10B	2.3.11A&C 2.5.11A&B	R11.B.3.4	R1,2&7
500	PERFORM SITE AND BUILDING LAYOUT	13.1.11A&B 13.3.11A	3.7.10B 3.7.12A 3.5.10B	M11.B.2.1 2.3.11A&B 2.10.11B	1.1.11E&F 1.2.11A 1.6.11A&D	
600	DEMONSTRATE SKILL IN PLACING CONCRETE	13.1.11A 13.3.11A 13.2.11C	3.7.10A&B 3.4.7A	M11.B.2.2.2 M11.C.1.1.1	1.1.11E&F 1.2.11A 1.4.11B 1.6.11A&D	R1&7 W9
700	LAY BLOCK AND BRICK MASONRY UNITS	13.1.11A&B 13.3.11A	3.7.10A	2.3.11A&C		R1&7
800	FRAME FLOORS	13.1.11A&B 13.2.11E 13.2.11C	3.1.10B 3.6.10C 3.7.10A&B 4.8.12A	M11.B.2.2.3 2.3.11A&C	1.1.11E&F 1.2.11A 1.4.11B 1.6.11A&D R11.B.3.3.4	R1,2&7 W9
900	DEMONSTRATE SKILL IN WALL FRAMING	13.2.11C 13.3.11A	3.7.10B&A 3.6.10C	2.3.11A&C 2.10.11B M11.B.2.2.3 M11.A.1.1.1 M11.A.1.3.1 M11.B.2.1.1 M11.C.1.4.1	1.1.11E&F 1.2.11A 1.4.11B 1.6.11A&D R11.B.3.3.4 R11.A.1.4.1 R11.A.2.1.2	R1,2&7 W9
1000	DEMONSTRATE SKILL IN ROOF FRAMING	13.1.11A&B 13.2.11E 13.2.11C	3.1.10B 3.6.10C 3.7.10A&B 3.4.10C	M11.B.2.2.3 2.3.11A 2.3.11A&C	1.1.11E&F 1.2.11A 1.4.11B 1.6.11A&D R11.B.3.3.4 R11.A.1.4.1 R11.A.2.1.2	R1,2&7
1100	INSTALL ROOF COVERINGS	13.1.11A&B 13.2.11E 13.2.11C	3.1.10B 3.6.10C 3.7.10A&B	2.3.11A&C M11.B.2.2.3	1.1.11E&F 1.2.11.A 1.6.11A&D R11.B.3.3.4 R11.A.2.1.2	R1&7
1200	INSTALL INSULATION MATERIALS	13.1.11A&B 13.3.11A	3.1.10B 3.6.10C 3.7.10A&B 4.3.10A 4.3.12A 3.4.12B	2.3.11A&C M11.B.2.2.3	1.1.11E&F 1.2.11.A 1.4.11B 1.6.11A&D R11.A.2.4.1 R11.B.3.3.4	R1&7 W9

		Career Standards	Science & Technology	Math	Reading	Common Core Standards
1300	APPLY EXTERIOR FINISHES	13.1.11A&B 13.3.11A	3.1.10B 3.6.10C 3.7.10A&B	M11.B.2.2.3 2.3.11A&C	1.1.11E&F 1.2.11.A 1.4.11B 1.6.11A&D R11.B.3.3.4 R11.A.2.4.1 R11.A.1.4.1 R11.A.2.1.2	R1,2&7
1400	INSTALL BASIC PLUMBING	13.1.11A&B 13.2.11E 13.2.11C	3.7.10A 3.1.10B 3.4.10B	2.3.11A&C	R11.A.2.1.2	R1,2&7 W9
1500	INSTALL RESIDENTIAL ELECTRIC CIRCUITS AND COMPONENTS	13.1.11A&B 13.2.11E 13.2.11C	3.1.10B S11.A.3.3.3	2.3.11A&C	R11.A.2.1.2	R1,2&7 W9
1600	DEMONSTRATE KNOWLEDGE AND SKILL IN INTERIOR FINISHES	13.1.11A-C 13.2.11C&E	3.1.10B 3.6.10C 3.7.10A&B	2.3.11A&C M11.B.2.2.3	1.1.11E&F 1.2.11A 1.4.11B 1.6.11A&D R11.B.3.3.4 R11.A.2.1.2 R11.A.2.4.1 R11.B.3.3.4	R1,2&7
1700	APPLY PAINT, WALLPAPER, AND INSTALL CERAMIC TILE	13.1.11A&B 13.3.11A 13.2.11C	3.1.10D	M11.B.2.2.3 M11.B.2.3.1	R11.A.2.1.2	R1,2&7 W9
1800	BUILD STAIRS	13.1.11A&B 13.3.11A 13.2.11C	3.6.10C 3.7.10A&B	2.3.11A&C M11.D.3.1.2	1.1.11E&F 1.2.11A 1.4.11B 1.6.11A&D R11.B.3.3.4 R11.A.2.1.2	R1,2&7

ASSESSMENTS

PSSA Assessment Anchors Addressed: The teacher must be knowledgeable of the PDE Assessment Anchors and/or Eligible Content and incorporate them into this planned instruction. Current assessment anchors can be found at pde@state.pa.us.

Formative Assessments:

Teacher log on daily performance of lab work
The teacher will develop and use standards-based assessments throughout the course.

Summative Assessments:

- Teacher monitoring of student work and performance evaluation checklist.
- N.O.C.T.I. test
- Student Project – Community Projects

Portfolio Assessment:

 X Yes No

District-wide Final Examination Required:

 X Yes No

Course Challenge Assessment (Describe):

N/A

REQUIRED COURSE SEQUENCE AND TIMELINE

(Content must be tied to objectives)

Course Outline

The following content is addressed each year with more advanced skills expected and performed by 11th and 12th grade students. The content is aligned to the industry standards of the National Association of Home Builders.

Content Sequence

I. Safety (3-4 weeks-ongoing)

- A. General safety rules
- B. Shop safety
- C. Hand tool safety
- D. Portable power tool safety
- E. Power equipment safety
- F. Ladder and scaffolding safety
- G. OSHA and OSHA requirements

II. Carpentry (18 weeks)

- A. General safety
- B. Equipment used by the carpenter
- C. Wood, wood products, and fasteners
- D. Blueprints, codes, and building layout
- E. Concrete for construction

- F. Floor, wall and ceiling, and roof framing
- G. Roofing and siding
- H. Windows and doors
- I. Insulation and drywall
- J. Interior and exterior trim
- K. Stairs
- L. Cabinet making

III. Residential Wiring (5 weeks)

- A. General safety
- B. Tools and equipment for the electrician
- C. Hardware and material
- D. Reading mechanical blueprints
- E. Basic wiring skills and procedures
- F. Service entrance equipment and installation

IV. Residential Plumbing (5 weeks)

- General safety
- A. Tools and equipment for the plumber
- B. Hardware and material
- C. Reading mechanical blueprint
- D. Basic plumbing skills and procedures

V. Residential Masonry (5 weeks)

- A. General safety
- B. Tools and equipment for the mason
- C. Hardware and material
- D. Reading blueprints
- E. Basic masonry skills and procedures

Objectives:

The student completing the Building Construction Occupation program will be able to—

1. State and practice general safety rules for operating the tools and equipment utilized in building construction occupations.
2. Identify and avoid safety hazards.
3. Describe and explain the role of OSHA in building construction
4. Identify and use the tools used in the carpentry field.
5. Identify and use the materials in the carpentry field.
6. Read blueprints and identify codes.
7. Identify and use the skills essential to rough and finish carpentry.
8. Identify and use the tools of the electrician.
9. Identify and use the materials of the electrician.
10. Rough-in the electrical system of a residence.
11. Trim-out the electrical system of a residence.
12. Install and connect system to service panel.
13. Identify and use the tools of the plumber.
14. Identify and use the materials of the plumber.
15. Rough-in the plumbing system of a residence.

16. Trim-out the plumbing system of a residence.
17. Identify and use the tools of the mason.
18. identify and use the materials of the mason
19. Pour footer.
20. Lay block for a foundation wall.
21. Lay brick.

WRITING TEAM: Greg Waterman, WCSD Academic Teacher Coaches, OAC members.

WCSD STUDENT DATA SYSTEM INFORMATION

1. Is there a required final examination? X Yes No
2. Does this course issue a mark/grade for the report card? X Yes No
3. Does this course issue a Pass/Fail mark? Yes X No
4. Is the course mark/grade part of the GPA calculation? X Yes No
5. Is the course eligible for Honor Roll calculation? X Yes No
6. What is the academic weight of the course?
 No weight/Non credit X Standard weight
 Enhanced weight (Describe)