

Construction I & II Course Syllabus

Dubuque Alternative Learning Center

Construction I & II are taught during a block schedule and are offered in 4-5 terms for high school juniors and seniors. The class often meets onsite outside of the school campus. Students in the class learn some of the basic construction skills that are necessary for residential construction and carpentry.

Course (Juniors and Seniors)

Construction I: 1 Credit

Construction II: 1 Credit

The courses are sequential and are intended to be started with Construction I. The entire sequence covers one semester.

There are no prerequisites, however, courses in woodworking are very useful.

Course Description

In this course students participate in the construction of various projects. Projects have ranged from sheds to tiny houses on a non-school site. Training and actual construction experiences are offered in various areas of residential construction.

Course Objectives

1. To improve in each student, the ability to recognize and appreciate correct design and quality craftsmanship in the various facets of residential construction.
2. To develop habits of self-reliance, self-discipline, and resourcefulness through dealing with practical problem-solving situations, thereby establishing a positive self-image as a successful person.
3. To provide interested students the opportunity to explore the various construction trades through actual hands-on experiences, and thereby develop a desire for further guidance and/or training in a field which is compatible with a given student's interests and aptitudes.
4. To establish through class experiences, a skill and knowledge level sufficient for entry level into the various apprentice programs.
5. To enable the student, through the total class experience, to better make decisions on a practical basis, as to whether or not this is the type of work at which they would be happy and successful.

Instructional Delivery

During the first unit, "Introduction and Safety," the class will be taught in a classroom with a teacher lecture/demonstration format. Upon moving to the construction site student work teams will be given tasks and will be required to accomplish those tasks "on site". At the construction site the teacher will continue to instruct through lectures, demonstrations, small group instruction and one-on-one instruction.

Evaluation System

Students will be evaluated in four main areas: Career Readiness, Knowledge Based Experiences, Safety, & Skill Based Experiences.

Career Readiness (weight - 30%): Is the work the student completes of the proper caliber or nature for their skill and ability level? Are students actively engaged in the learning and concepts as it relates to careers in construction. Are students prepared to learn and have a willingness to engage in work on time while make the most out of the available time? Does the student accept directions from peers, contractors, teachers?

Knowledge Based Experiences (weight - 10%): Does the student engage in course-based content? Does the student actively seek information and engage in classroom/site information as it pertains to learning in construction related trades?

Skill Based Experiences (weight -30%): Does the student complete the appropriate amount of work for their skill and ability level? Will the student engage in new learning and demonstrate use of tools and procedures to accomplish the task at hand?

Safety (weight – 30%): Does the student adhere to safety rules that are both stated and implicit? Do they have a positive attitude towards their safety and the safety of their peers? Does the student demonstrate safety protocols at all times?

Each of the four areas are weighted based on significance in meeting the course learning objectives. However, it should be noted that poor attendance would affect all four of the areas.

Attendance Policy

Attendance in class is of critical importance. New experiences and opportunities take place each day. Most experiences cannot be recreated in a make-up situation. Any student with poor attendance habits may be dropped from the class.

Equipment and Tools

Students are provided safety glasses and tools that are regularly maintained and in good working order. All additional hand and power tools plus any other needed equipment will be provided by the school district.

Special Accommodations

Students with disabilities who need any assistance or accommodation should contact the instructor.

Course Sequence

Unit	Overarching Concept	Term Block Schedule
1	Occupational Orientation	1 Class Day
2	Safety	3-4 Class Days
3	Measurement	1 Class Day
4	Foundations & Framing	10-15 Class Days
5	Closing in	10-15 Class Days
6	Finish	2-5 Class Days
7	Subcontracting – Specialty Construction	2-5 Class Days
TOTAL		40 Days

Unit 1: Occupational Orientation

Unit Title:	Construction - Occupational Orientation: 1.5 Hours
Unit Description:	This course unit will serve as an introduction to the construction industry. Students will learn about career opportunities in construction through career exploration, hands-on activities, and field trips to construction sites. Pieces of this unit will be ongoing.
<u>Iowa CTE Standards (ICS)</u> (1-required; 2-suggested; or 3-optional)	
Course Standards:	Demonstrate workplace readiness skills. (1) Demonstrate an understanding of the construction industry in order to make career choices. (1) Final project – demonstrating competencies listed above – in the form of a project-based learning product (2) . (ISC7.1) Understand significant historical trends in the construction industry (2) . (ISC7.2) Understand the environmental regulations that influence residential and commercial.

Unit 2: Safety

Unit Title:	Construction – Safety: 4.5 - 6 Hours
Unit Description:	This course module will teach students safety related to construction, and carpentry. Students will learn to identify major safety and health hazards of construction, select appropriate PPE, and implement controls to prevent injuries while operating tools and establishing and maintaining a safe work environment.
<u>Iowa CTE Standards (ICS)</u> (1-required; 2-suggested; or 3-optional)	
Course Standards:	Understand basic safety and health procedures along with work attitudes that may be expected in an industrial work setting. Learn and apply safe set up and operation of equipment both in the construction laboratory and at the worksite.

	<p>Identify common hazards in construction and carpentry. (1)</p> <p>Identify and explain the use of proper personal protection used in construction and carpentry. (1)</p> <p>(ICS3.1) Use portable power tools, such as circular saws, table saws, saber saws, drills, planers, and sanders, safely and properly. (1)</p> <p>(ICS3.2) Use portable pneumatic tools, such as rough framing nail guns, interior finishing and brad nail guns, hammers, impact wrenches, drills, and compressors, safely and appropriately. (1)</p> <p>(ICS3.3) Maintain and care for portable power tools and portable pneumatic tools. (2)</p> <p>(ICS5.2) Know the safety procedures and practices in various work environment settings pertaining to residential and commercial construction. (1)</p>
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Unit 3: Measurement

Unit Title:	Construction - Measurement: 1.5 Hours
Unit Description:	This course is designed to provide students with skills & knowledge required for various layout and estimating processes for construction related trades. Students will learn to interpret drawings to layout and construct residential components.
	<u>Iowa CTE Standards (ICS)</u> (1-required; 2-suggested; or 3-optional)
Course Standards:	<p>Demonstrate proper measurement. (1)</p> <p>Understands basic print reading to achieve proper site/framing layout. (1).</p> <p>(ICS)1.3 Convert scaled blueprint drawing measurements to full dimensions for a given construction project. (2)</p> <p>(ICS)1.4 Apply conventional construction measurement processes accurately. (1)</p>

Unit 4: Foundations & Framing

Unit Title:	Construction - Foundations & Framing: 10 - 15 Hours
Unit Description:	This course is designed to provide students with skills & knowledge required interpret prints & specifications to select & manipulate materials to create foundations and framing components.
	<u>Iowa CTE Standards (ICS)</u> (1-required; 2-suggested; or 3-optional)
Course Standards:	<p>Demonstrate tool usage to manipulate raw materials into predetermined drawings and specifications. (1)</p> <p>(ICS)6.2 Understand the processes and materials (e.g., structural, electrical, mechanical, finish) appropriate to the architectural design and residential construction. (1)</p> <p>(ICS)6.4 Complete the phases of residential and commercial construction. (1)</p>

Unit 5: Closing In

Unit Title:	Construction – Closing in: 10 - 15 Hours
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Unit Description:	This course is designed to provide students with skills & knowledge required interpret prints & specifications to select & manipulate materials to cover and install external components in residential construction.
	<u>Iowa CTE Standards (ICS)</u> (1-required; 2-suggested; or 3-optional)
Course Standards:	Demonstrate tool usage to manipulate raw materials into predetermined drawings and specifications. (1) (ICS)6.2 Understand the processes and materials (e.g., structural, electrical, mechanical, finish) appropriate to the architectural design and residential construction. (1) (ICS)6.4 Complete the phases of residential and commercial construction. (1)

Unit 6: Finish

Unit Title:	Construction – Finish: 2 - 5 Hours
Unit Description:	This course is designed to provide students with skills & knowledge required interpret prints & specifications to select & manipulate materials to cover and install external components in residential construction.
	<u>Iowa CTE Standards (ICS)</u> (1-required; 2-suggested; or 3-optional)
Course Standards:	Demonstrate tool usage to manipulate raw materials into predetermined drawings and specifications. (1) (ICS)6.2 Understand the processes and materials (e.g., structural, electrical, mechanical, finish) appropriate to the architectural design and residential construction. (1) (ICS)6.4 Complete the phases of residential and commercial construction. (1)

Unit 7: Specialty Construction

Unit Title:	Construction – Specialty Construction: 2 - 5 Hours
Unit Description:	This course is designed to introduce students to a variety of highly specialized construction trades not implicitly taught in the construction course. Students will see firsthand a variety of subcontracted jobs that will aid in project completion. This will change each term depending on the project and the availability of subcontractors.
	<u>Iowa CTE Standards (ICS)</u> (1-required; 2-suggested; or 3-optional)
Course Standards:	(ICS)4.3 Understand the sequencing of events for specific construction projects. (ICS)6.4 Complete the phases of residential and commercial construction. (1)

Potential Class Instructional Resources

Reference Books

Career Connections Project Book 2
Career Connections Project Book 3 Residential Construction

Videos

Introduction to Construction (17 minutes)

Blue Prints (14 minutes)

Site Preparation (15 minutes)

Basic Carpentry (44 minutes)

Reading A Ruler - PowerPoint

Wood Shop Safety (10 minutes)

Ladder Safety (14 minutes)

The Foundation (12 minutes)

Floor & Wall Construction (13 minutes)

"Framing, Layout & Construction." Hometime "How-to" Video. ©1994 Hometime Video Publishing, Inc., Chaska, MN. Video Archive. (60 minutes)

"Finish Carpentry." Hometime "How-to" Video. ©Hometime Video Publishing, Inc., Chaska, MN. Video Archive.