Construction Production (Grades 10-12)

Course Description:

The curriculum for this course is developed from the Wisconsin Standards for Technology and Engineering. In this course students will experience a blend of classroom theory and hands-on activities and experience many parts of the building trades and to prepare them for advanced technology education classes. Students will become adept at using hand tools, and other equipment common in the building trades. In addition, blueprint reading, math applications, surveying, and estimating components will be studied and reviewed.

Essential Understandings:

1. Knowledge of equipment and safety procedures are essential to responsible use of equipment and tools. (AC1.c, AC1.d, AC1.e, AC1.f, MNF1.a)
2. Understanding and knowledge of tools and materials is requisite for analyzing sound choices in methods and materials. (BB1.b)
3. Quality design, engineering, and construction require accurate knowledge and application of measuring systems. (AC1.a, AC1.b)
4. Executing and receiving evaluations and feedback on projects is vital to learning and improving skills. (ENG4.c, ENG5.a)
5. Specific tasks require experience and knowledge to correctly identify, select, and safely use appropriate tools, machines, products, systems, and techniques. (MNF1.a, MNF1.b, MNF1.c, MNF1.d, MNF1.e, MNF1.f, MNF1.g, MNF1.h)

Unit	Description of Unit and Learning Targets
Safety • How do you incorporate safety knowledge into construction work?	Students learn and review safety procedures before working with tools. Learning Targets: • I can demonstrate and use the hand tools of the trade properly and safely. • I can demonstrate the safety procedures and practices in various work environment settings pertaining to residential and commercial construction. • I can identify safety and health protections and procedures that are critical to worker well being.
Measurement • How do you apply measurement skills and knowledge when building?	Students review and apply measurement skills in project work. Learning Targets: • I can calculate required materials for residential construction projects. • I can apply conventional construction measurement processes accurately. • I can use conventional construction formulas to determine production requirements. • I can select and apply the appropriate units and scales for situations involving measurement.
Reading Blueprints	Students are introduced to and work with blueprints as they prepare for building a shed.

• How are blueprints used in construction projects?	Learning Targets: • I can interpret and use residential construction blueprints and specifications. • I can estimate materials from blueprints and specifications. • I can select appropriate resources and explain how trade offs between competing values, such as availability, cost, desirability and waste influenced their decision. • I can convert scaled blueprint drawing measurements to full dimensions for a given construction project.
Floor Layout • How can you build the flooring of a structure while learning about construction systems and requirements?	Students are introduced to flooring structure and build a flooring system for a shed. Learning Targets: • I can assess how infrastructure is the underlying base or basic framework of a system. • I can recognize that the design of structures includes a number of requirements. • I can explain how structures can include prefabricated materials.
Wall Systems • What are the tools and skills that are needed to construct wall systems for a structure?	Students build wall systems for a shed using necessary power tools. Learning Targets: • I can demonstrate the use of portable power tools, such as circular saws, table saws, saber saws, drills, planers and sanders, safely and properly. • I can demonstrate the use of portable pneumatic tools, such as rough framing nail guns, interior finishing and brad nail guns, hammers, impact wrenches, drills and compressors, safely and appropriately. • I can identify criteria and constraints and determine how these will affect the design process.
Parts of a House • What are the tools and skills that are needed to construct a roof and other parts of a house?	Students build a roof for a shed. Learning Targets: • I can demonstrate the use of portable power tools, such as circular saws, table saws, saber saws, drills, planers and sanders, safely and properly. • I can demonstrate the use of portable pneumatic tools, such as rough framing nail guns, interior finishing and brad nail guns, hammers, impact wrenches, drills and compressors, safely and appropriately. • I can identify criteria and constraints and determine how these will affect the design process.