

Course Title:	Agricultural Structures and Building Technology
Grade(s):	11th/12th

Course Description
Planning, construction, maintenance, and repair of buildings of wood, metal, and masonry will be covered in this course. Some of the topics studied and applied will include: shop and machine safety, proper tool purpose and use, site selection, building materials, foundations, building techniques, and planning. Actual building construction will be practiced.
Approved Curricular Materials/Textbook(s)

Unit Title	Unit Description (Include Unit Objectives)	Unit Pacing
Unit 1: Introduction to Building Structures and Technology	This unit provides an introduction to the course and industry. Students will: • Explore the construction industry and available careers • Explore types of construction used within the agricultural industry	2 weeks
Unit 2: Ag Mechanics Shop Safety	This unit covers specific safety protocols for equipment operated in this course. Students will: • Explain general shop safety and protocols • Identify the parts and their functions on miter, circular, and table saws • Demonstrate how to safely operate miter, circular, and table saws	3 weeks
Unit 3: Lumber Selection	This unit covers how to properly select lumber for various applications. Students will: • Compare and contrast hardwoods and softwoods	2 weeks

	• Explain the types of grading systems used in lumber • Identify lumber defects • Select lumber for projects	
Unit 4: Wood Fasteners	This unit covers types of fasteners utilized in construction and the tools used to install them. Students will: • Identify types of nails and their uses • Practice installation of various types of nails with a hammer, pneumatic finish nailer, and pneumatic framing nailer • Identify types of screw and their uses • Practice the installation of various types of screw with a screwdriver, electric screwdriver, drill, and impact driver	2 weeks
Unit 5: Floor Framing Techniques	This unit will cover how to frame floors according to codes and regulations. Students will: • Identify the components of a properly framed floor and their functions • Layout floor joists according to code • Apply fasteners properly to code regulations	2 weeks
Unit 6: Wall Framing Techniques	This unit will cover how to properly construct building walls according to codes and regulations. Students will: • Identify the components of a properly framed wall and their functions • Layout a wall 16" on center according to code • Apply fasteners properly to code regulations • Practice types of corner framing techniques	4 weeks
Unit 7: Roof Framing Techniques	This unit will cover framing techniques utilized in roof construction. Students will: • Compare and contrast trusses and rafters • Identify types of trusses utilized in construction and their characteristics	5 weeks

	• Use the roof pitch to calculate appropriate rafter measurements and angles • Utilize a Swanson Speed Square to properly layout rafters • Layout a rafter with proper ridge miter, rafter length, birdsmouth cut, soffit cut, and overhang	
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