


Agriscience-Construction


This course provides students with the basic skills needed in the construction of buildings commonly used in agricultural occupations. Emphasis is placed on skill development in blueprint reading, carpentry, plumbing, concrete work, and electrical wiring. Mathematical and communication skills are reinforced in this course. Work-based learning strategies appropriate for this course are team projects, school-based enterprises, home-based enterprises, internship, job shadowing, and cooperative education. Supervised agricultural experience programs and the FFA leadership activities are integral components of the course and provide many opportunities for practical application of instructional competencies.

Prerequisite: Agriscience II

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Agriscience-Construction	Content Guideline													
<p>Louisiana Agricultural Education Related Content Standards</p>  <p>*All benchmarks are not marked for all Agricultural courses.</p>	Introduction to Agricultural Construction	Mathematics in Agricultural Construction	Construction Tools	Basic Construction Skills	Basic Foundation Construction	Framing Construction	Basic Plumbing Skills	Basic Electrical Skills	Exterior Completion	Interior Completion				
STRAND: Agricultural Literacy K-12														
Standard: All students will become aware of the characteristics and components of the food and fiber systems.														
a. Agricultural awareness grades K-4														
b. Agricultural literacy grades 5-8														
c. Agricultural literacy grades 9-12	•	•	•	•	•	•	•	•	•	•				
STRAND: Personal Development														
Standard: AgEd/FFA students will develop the necessary interpersonal and communication skills to obtain a job and work effectively and safely in an interactive work environment.														
a. Agricultural communication	•	•	•	•	•	•	•	•	•	•				
b. Team work in agriculture	•	•	•	•	•	•	•	•	•	•				
c. Careers in agriculture	•	•	•	•	•	•	•	•	•	•				
STRAND: Agribusiness														
Standard: AgEd/FFA students will understand the concept of agricultural marketing, management, finance, and entrepreneurship.														
a. Production systems														
b. Selections from various choices														
c. Factors that make employees successful	•													
d. Agricultural marketing sales and services	•	•	•	•	•	•	•	•	•					
e. Economics of production		•												
f. Develop a business plan														

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<p>STRAND: Environmental Management</p>														
<p>Standard: AgEd/FFA students will develop an understanding of the interrelationship between people, agriculture, and the environment.</p>														
a. Universal impact of forestry	•		•			•			•					
b. Wildlife management and conservation	•													
c. Environmental quality	•						•							
<p>STRAND: Agriscience Technology</p>														
<p>Standard: AgEd/FFA students will demonstrate technical skills that reflect successful business and industry practices.</p>														
a. Agriculture power and energy														
b. Energy sources in agriculture														
c. Mathematics in agriscience technology		•	•	•	•	•	•	•	•	•				
d. Agriscience welding technology		•	•	•	•	•	•	•	•	•				
e. Agricultural structures and facilities	•	•	•	•	•	•	•	•	•	•				

Agriscience-Construction Content Guideline

(The student will be able to. . .)

Unit One

Introduction to Agricultural Construction

1. Explore career opportunities available in agricultural construction.
2. Establish the need for agricultural construction skills in the home and business.
3. Demonstrate a safe work attitude.
4. Justify safety precautions in agricultural construction.
5. Describe unsafe practices and their consequences in agricultural construction.
6. Analyze legal requirements for construction including building codes and restrictions.
7. Explore FFA awards programs that recognize achievement in the construction area.

Unit Two

Mathematics in Agricultural Construction

1. Correctly use the common measuring devices.
2. Manipulate fractions in measurement.
3. Derive volume from measured distance.
4. Determine percentages in construction applications.
5. Apply algebraic equations for determining unknowns.
6. Apply ratios and proportions for determining unknowns.
7. Apply principles of triangles, polygons, and circles.

Unit Three

Construction Tools

1. Demonstrate safe use of common hand tools.
2. Demonstrate safe use of common power tools.

Unit Four

Basic Construction Skills

1. Locate structural parts of a building.
2. Read a blueprint.
3. Determine materials needed for construction.
4. Determine the process and time needed for construction.

Unit Five

Basic Foundation Construction

1. Analyze types of foundations and materials needed.
2. Build concrete forms and install proper reinforcement.
3. Determine amounts of concrete needed for a project.
4. Pour and finish concrete.

Unit Six

Framing Construction

1. Differentiate among the various types of framing systems.
2. Classify the types of sill construction.
3. Explain how a center beam and post support system is constructed.
4. Explain how sills, joists, center beams, and posts are laid out and constructed.
5. Differentiate among the various types of framing.
6. Construct sills, exterior and interior walls, corner posts, window and door openings, partition T's, bracing, and fire stops.
7. Design, layout, cut, and install a rafter.

Unit Seven

Basic Plumbing Skills

1. Differentiate between requirements for water supply and wastewater systems.
2. Select, cut, and layout piping and fittings to complete the water supply needs.
3. Complete a water supply layout for an agricultural structure.

Unit Eight

Basic Electrical Skills

1. Read and interpret wiring plans.
2. Estimate wiring supplies and costs.
3. Follow safety procedures for wiring and using electricity.
4. Install wiring.
5. Connect wiring circuits.
6. Install service entrance equipment.
7. Install metallic conduit for wiring.
8. Test and troubleshoot circuits.

Unit Nine

Exterior Completion

1. Select and install trim for doors, fascia, and windows.
2. Analyze strengths and weaknesses for exterior finishes.
3. Select appropriate finish for building exterior.
4. Use proper tools for applying exterior finish.

5. Determine appropriate techniques for applying exterior finishes.
6. Determine proper care for maintaining exterior finish tools.

Unit Ten

Interior Completion

1. Estimate drywall or paneling supplies for interior finish.
2. Determine proper method of installation for paneling and dry wall.
3. Float, tape, texture, and paint dry wall.
4. Install interior lights and switches.
5. Complete interior trim work.

Resources

- Feirer, John L., Hutchings, Gilbert R., and Feirer, Mark D. (2004). *Carpentry and Building Construction*. Blacklick, Ohio: Glencoe McGraw-Hill.
- Heren, Ray V. and Cooper, Elmer L. (2002). *Agricultural Mechanics: Fundamentals and Applications*. Clifton Park, New York: Delmar Publishers.

Internet Sites

www.careerclusters.org (2003). Career Clusters.