Fundamental Ag Structures Technology

Career Cluster	Agriculture, Food & Natural Resources
Course Code	18403
Prerequisite(s)	Recommended: Introduction to AFNR
Credit	.5
Program of Study and Sequence	Cluster Course – **Fundamental Ag Structures Technology** – Advanced Ag Structures Technology
Student Organization	National FFA Organization
Coordinating Work-Based Learning	Job shadowing, mentoring, internships, entrepreneurships, service learning, workplace tours, apprenticeship, school-based enterprises, Supervised Agricultural Experience (SAE)
Industry Certifications	OSHA 10 Hour Safety Certification (Construction Industry or General Industry), National Career Readiness Certificate (NCRC)
Dual Credit or Dual Enrollment	None
Teacher Certification	Agriculture Food and Natural Resources Cluster Endorsement; Power Structural & Technical Systems Pathway Endorsement; *Agriculture Education
Resources	

Course Description:

Fundamental Ag Structures Technology offers basic skills needed to be successful in the agricultural structures industry, such as the safe use of hand tools and power tools, drafting of structural plans, concrete and electrical fundamentals. The course will also incorporate soft skills necessary for careers in the Agriculture, Food and Natural Resources sector. South Dakota continues to face a shortage of certified electricians, plumbers and contractors, leaving these careers in high demand. Classroom and laboratory content may be enhanced by utilizing appropriate equipment and technology. Algebra, geometry, trigonometry, English and human relations skills will be reinforced in the course. Work-based learning strategies appropriate for this course are school-based enterprises and field trips. This class is reinforced through the FFA and Supervised Agricultural Experience (SAE) programs, the Ag Mechanics Career Development Event, and related Proficiency Experience or Internship Project. Each student will be expected to maintain a SAE.

Program of Study Application

Fundamental Ag Structures Technology is a first pathway course in the Agriculture, Food and Natural Resources Program of Study, Power Systems pathway. Fundamental Ag Structures Technology is preceded by a Cluster course and is recommended to be taken prior to participation in Advanced Ag Structures Technology.

Career Cluster: Agriculture, Food & Natural Resources

Course: Fundamental Ag Structures Technology

Course Standards

AgS 1 Use safe practices associated with agriculture structures.

Webb Level	*Sub-indicator*	*Integrated Content*
Two Skill/Concept	AgS 1.1 Demonstrate safe use of tools and equipment while constructing agriculture structures.	

Notes

AgS 2 Develop plans for an agriculture structure project.

Webb Level	*Sub-indicator*	*Integrated Content*
Three Strategic Thinking	AgS 2.1 Use computer skills or drafting tools to develop sketches and plans for an ag structure.	

Notes

AgS 3 Examine various materials required for an agricultural structure.

Webb Level	*Sub-indicator*	*Integrated Content*
Two Skill/Concept	AgS 3.1 Investigate the differences in materials needed to assemble an ag structure.	
Three Strategic Thinking	AgS 3.2 Demonstrate knowledge of structural materials by developing a supply list, along with cost estimates for a given project.	

Notes

AgS 4 Construct an agriculture structure.

Webb Level	*Sub-indicator*	*Integrated Content*
Four Extended Thinking	AgS 4.1 Assemble components of a structure.	
Four Extended Thinking	AgS 4.2 Create a complete agriculture structure by combining individually constructed components.	

Notes

AgS 5 Demonstrate electrical principles.

Webb Level	*Sub-indicator*	*Integrated Content*
Two Skill/Concept	AgS 5.1 Explain basic electrical terms and principles.	
Three Strategic Thinking	AgS 5.2 Use applicable instruments to demonstrate knowledge of basic electricity.	
Three Strategic Thinking	AgS 5.3 Demonstrate wiring and electrical applications.	

Notes

AgS 6 Analyze properties and conditions of building site prior to construction.

Webb Level	*Sub-indicator*	*Integrated Content*
Two Skill/Concept	AgS 6.1 Explain legal land descriptions and plat maps.	
Three Strategic Thinking	AgS 6.2 Examine geographical characteristics of building site.	Water tables, utilities, flood hazards
Three Strategic Thinking	AgS 6.3 Operate surveying equipment.	New or old technology

Notes

AgS 7 Analyze various concrete and masonry concepts.

Webb Level	*Sub-indicator*	*Integrated Content*
One Recall	AgS 7.1 - Identify tools and materials used in concrete and masonry projects.	

Notes

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AgS 8 Explore career opportunities in agricultural structures and mechanics.

Webb Level	*Sub-indicator*	*Integrated Content*
Two Skill/Concept	AgS 8.1 Investigate career opportunities that pertain to agricultural structures.	
Two Skill/Concept	AgS 8.2 Develop soft skills to enhance employability.	

Notes