



## Fundamental Ag Structures Technology

Career Cluster	Agriculture, Food and Natural Resources
Course Code	18403
Prerequisite(s)	Recommended: Introduction to AFNR
Credit	0.5 credit
Program of Study and Sequence	Cluster Course – Fundamental Ag Structures Technology – Advanced Ag Structures Technology- Capstone Course
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	<a href="https://sdmylife.com/images/Approved-CTE-Dual-Credit.pdf">https://sdmylife.com/images/Approved-CTE-Dual-Credit.pdf</a>
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, industry speakers, job shadowing 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.

## Course Standards

### AgS 1: Use safe practices associated with agriculture structures.

<i>Webb Level</i>	<i>Sub-indicator</i>
Two Skill/Concept	AgS 1.1 Demonstrate safe use and knowledge of tools and equipment when constructing agricultural structures.
Two Skill/Concept	AgS 1.2 Demonstrate workplace/worksite safety procedures and protocols.

### AgS 2: Develop plans for an agriculture structure project.

<i>Webb Level</i>	<i>Sub-indicator</i>
Three Strategic Thinking	AgS 2.1 Use computer skills or drafting tools to develop sketches and plans for an ag structure.

### AgS 3: Examine various materials required for an agricultural structure.

<i>Webb Level</i>	<i>Sub-indicator</i>
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.

### AgS 4: Construct an agriculture structure.

<i>Webb Level</i>	<i>Sub-indicator</i>
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.

### AgS 5: Demonstrate electrical principles.

<i>Webb Level</i>	<i>Sub-indicator</i>
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.

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

<i>Webb Level</i>	<i>Sub-indicator</i>
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.
Two Skill/Concept	AgS 6.3 Understand and operate surveying equipment and/or GIS equipment.

**AgS 7: Analyze various concrete and masonry concepts.**

<i>Webb Level</i>	<i>Sub-indicator</i>
One Recall	AgS 7.1 Identify tools and materials used in concrete and masonry projects.
Two Skill/Concept	AgS 7.2 Accurately mix concrete.

**AgS 8: Explore career opportunities in agricultural structures and mechanics.**

<i>Webb Level</i>	<i>Sub-indicator</i>
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.

**AgS 9: Implement an individual project for career development through a Supervised Agriculture Experience/Work based Experience.**

<i>Webb Level</i>	<i>Sub-indicator</i>
Two Skill/Concept	AgS 9.1 Develop an individual project plan with goals and timeline.
Two Skill/Concept	AgS 9.2 Explore opportunities within AFNR industries.
Three Strategic Thinking	AgS 9.3 Apply concepts of financial management appropriate to agricultural projects and personal finances.
Three Strategic Thinking	AgS 9.4 Develop and document knowledge and skills to ensure workplace safety regarding personal health and environmental management.
Four Extended Thinking	AgS 9.5 Research and analyze how public policy, laws, and advocacy impact agricultural systems and agricultural literacy.