

## **Agriculture, Food & Natural Resources Cluster**

### **Agricultural Power, Structures & Technology Pathway –**

**Agricultural Power Train Specialist** – This major prepares students as agricultural power train specialists who diagnose, service, and repair components of power trains systems on agricultural equipment. Students will be trained in safe practices, tools, and equipment used in maintaining agricultural equipment. Curriculum includes diagnosis, service, and repair of subsystems such as clutches, gears, hydrostatic drives, and transmissions found in agricultural power trains. Included are opportunities for personal development and leadership skills with SkillsUSA being an integral component in this major.

**Ag Power, Structures & Technology** – This major gives students an overview of agricultural power, structures, and technology and the careers available. Students are given an introduction at the ninth grade level to agriculture, natural resources, animal/plant science, and agribusiness principles and careers. Curriculum includes fundamentals of managing and operating agricultural businesses, economic systems and business methods, entrepreneurship, legal regulations, and records and financial analysis as well as agricultural commodity and international marketing, promotion/advertising, and technology in sales and marketing. Leadership and personal development, supervised experiences, and FFA are integral components in this major.

**Agricultural & Machinery Repair Technician (T&I)** – This major prepares students as agricultural and machinery repair technicians, who diagnose, inspect, repair, and service a variety of farm- and ranch-related equipment. Students will be trained in safe practices, tools and equipment, and welding processes as well as basic operating principles of internal combustion engines, power trains, hydraulics, electrical systems, and air conditioning systems. Curriculum includes the design, application, operation, and maintenance of harvesting equipment, hay and forage equipment, tillage and plant equipment, irrigation systems, and agricultural tire and track systems.

**Agricultural Fluid Power Technician** – This major prepares students as agricultural fluid power technicians who diagnose, service, and repair hydraulic systems on agricultural equipment. Students will be trained in safe practices, tools, and equipment used in maintaining agricultural equipment. Curriculum includes design, application, operation and maintenance of agricultural hydraulic systems. Included are opportunities for personal development and leadership skills with SkillsUSA being an integral component in this major.

**Agricultural Welding Technician** – This major prepares students as agricultural welding technicians who use a variety of welding processes to repair agricultural equipment. Students will be trained in safe practices, tools, and equipment used in maintaining agricultural equipment. Curriculum includes theory and technical practices of the various welding processes used in the agricultural fields. Included are opportunities for personal development and leadership skills with SkillsUSA being an integral component in this major.

**Agricultural Engine Technician** – This major prepares students as agricultural engine technicians who diagnose, service, and repair engine systems on agricultural equipment. Students will be trained in safe practices, tools, and equipment used in maintaining agricultural equipment. Curriculum includes design, application, operation, and maintenance of the agricultural internal combustion engine and its supporting systems. Included are opportunities for personal development and leadership skills with SkillsUSA being an integral component in this major.

**Harvesting Equipment Technician** – This major prepares students as harvesting equipment technicians who diagnose, service, repair, and adjust harvesting equipment such as combines, balers, windrowers, and mowers. Students will be trained in the safe practices, tools, and equipment used in maintaining agricultural equipment. Curriculum includes design, application, operation and maintenance of agricultural harvesting equipment. Included are opportunities for personal development and leadership skills with SkillsUSA being an integral component in this major.

**Agricultural Air Conditioning Technician** – This major prepares students as agricultural air conditioning technicians who diagnose, service, and repair air conditioning systems on agricultural equipment. Students will be trained in safe practices and rules and attitude required in this field. Curriculum includes design, application, operation, and maintenance of electrical and air conditioning systems found in agricultural equipment. Included are opportunities for personal development and leadership skills with SkillsUSA being an integral component in this major.

**Agricultural Tires & Track Specialist** – This major prepares students as agricultural tires and track specialists who sell and service tires and/or diagnose, service, and repair track systems found on agricultural equipment. Students will be trained in safe practices, tools, and equipment used in maintaining agricultural equipment. Curriculum includes an overview of various tires and track systems found on agricultural equipment as well as diagnosis, repair, and service applications. Included are opportunities for personal development and leadership skills with SkillsUSA being an integral component in this major.

**Hay & Forage Equipment Specialist** – This major prepares students as hay and forage equipment specialists who diagnose, service, repair, and adjust hay and forage equipment. Students will be trained in safe practices, tools, and equipment used in maintaining agricultural equipment. Curriculum includes fundamentals and operating principles of mechanical and hydraulic operations with an emphasis on equipment commonly used in this geographical area. Included are opportunities for personal development and leadership skills with SkillsUSA being an integral component in this major.