BEN C. RAIN HIGH SCHOOL

Academy Overview:
Aviation Technology

Grades 9-12 students are developing, and in many cases possess, a range of interests, aptitudes, and learning skills. Their interests, as well as their capacity and desire to learn, continue to be shaped by a myriad of environmental stimuli that include family, social, and other influences. Students who are successful in this cluster possess a variety of technical, problem-solving, and critical-thinking skills that are foundational to success in many career and life choices.

The Transportation, Distribution, and Logistics cluster learning environment utilizes a variety of physical space to stimulate development of effective cognitive and psychomotor skills. Students experience a wide range of hands-on activities based on authentic representations of expectations found in the workplace. Theory and concepts are taught in proportion to the need for strong application opportunities with emphasis on timely learning experiences that facilitate the transition to skills attainment. Safety, proper tool use, and adherence to procedures are integral components for all student learning experiences.

Course Sequence

10th Grade	11th Grade	12th Grade
Aircraft Theory of Flight and Operation	Aviation Instrument and Hydraulic Systems	Airframe Systems

Aircraft Theory of Flight and Operation

The purpose of this one-credit course is to provide students with knowledge related to the theory of flight and aircraft operation. Additionally, students are introduced to various tools, hardware, and materials used to maintain aircraft. Safety and proper tool use are emphasized throughout the course. As part of this course, students construct various aircraft models to aid in the transition from theory to application of concepts.

Career and technical student organizations are integral, co-curricular components of each career and technical education course. These organizations serve as a means to enhance classroom instruction while helping students develop leadership abilities, expand workplace-readiness skills, and broaden opportunities for personal and professional growth.

Aviation Instrument and Hydraulic Systems

This one-credit course provides students with a strong foundation of knowledge and skills related to aircraft instruments and hydraulic systems. Safety and proper tool use is emphasized throughout this course. Specific topics include computations skills, physical science principles, aircraft instrumentation theory and applications, the effect of atmosphere on instruments, theory and application of hydraulic systems, fixed and flexible hydraulic lines, wheel and tire maintenance, installation of aircraft hardware, and various materials and methods for maintaining instruments and hydraulic systems.

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Airframe Systems

This one-credit course provides students with basic knowledge and skills related to aircraft systems rigging and weight and balance. Safety is emphasized throughout this course. Students learn the proper use of tools required for performing activities associated with this course. At the conclusion of this course students are able to safely apply techniques to rig and balance aircraft for maintenance activities.

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