Choctawhatchee High School

Aviation Institute

The Aviation Institute is the newest curriculum option for our students and reflects the business needs of our community and students. Every student in the institute will enroll in the Aviation Track that consists of one class each year 11-12.

Optional tracks available to students include Flight and Aviation Maintenance Technology that may be taken concurrently with Aviation. This program will prepare students for advanced training in:

Air Traffic Management
Aviation Maintenance
Aeronautical Engineering
Flight
Meteorology/Weather
Unmanned Aerial Vehicles

Okaloosa County School District's Choctawhatchee High School has partnered with the number one aeronautical university in the world, Embry-Riddle Aeronautical University, in order to provide students with a concurrent enrollment model which **offers high school and college credit, and early admissions to ERAU.** Students who participate in this four-year program could save over $30,000.00 in tuition fees toward pursuing a collegiate degree in aviation.

Four-Year Progression

Subject	9th Grade	10th Grade	11th Grade	12th Grade
Aviation Institute Courses		January 2006 Unmanned Aerial Vehicles (UAV) 8600520 _____ On an exceptional basis, outstanding sophomores may register for Embry-Riddle classes.	REQUIRED TRACK: AVIATION	
			Principles of Aero Science (semester courses) History of Aviation in America 8600580	Flight Physiology (semester courses) Meteorology 8600680
			OPTIONAL TRACK: FLIGHT	
			Basic Aeronautics I (semester courses) Basic Aeronautics II 8601780	Human Factors (semester courses) Aircraft Accident Investigation 8601230
Aviation Maintenance Technology (Optional Track)	AMT 1 (semester courses) AMT 2 8600110	AMT 3 (semester courses) AMT 4 8601120	AMT 5 (semester courses) AMT 6 8601310	AMT 7 (semester courses) AMT 8 8601320
Requirements and Other Expectations	Requirements for admission include a 2.5 GPA or the Dean's permission and completion of the FCAT. Juniors and seniors in the flight track will be encouraged to pursue certified instrument training from local airfields.		Students will be admitted to the program contingent on a successful interview.	

INTRODUCTORY COURSE (Non-College Credit)

10th Grade: Unmanned Aerial Vehicles

A study of the past, present and future of drones, remotely piloted vehicles and unmanned aerial vehicles. This course reviews the evolution of this vehicle through its technical development, design analysis, and current military and commercial uses, including airspace issues and what the future portends for this growing segment of the aviation industry.

Core Area Specialization / Course Descriptions

REQUIRED TRACK: Aviation Track

- **11th Grade**

AS 120 Principles of Aeronautical Science

An introductory course in Aeronautical Science designed to provide the student with a broad-based aviation orientation in flight related areas appropriate to all aviation institute students. Subjects include historical developments in aviation, theory of flight, airport operations, aircraft systems, weather and navigation.

SS 130 History of Aviation in America

A survey of the history of America in the Twentieth Century, emphasizing the explosive growth of aviation as a major influence upon the economic, military and societal development of the United States and a look toward the future developments in aviation including UAVs.

- **12th Grade**

AS 357 Flight Physiology

This course will examine Aero-medical information: causes, symptoms, prevention and treatment of flight environment disorders. Altitude effects, spatial disorientation, body heat imbalance, visual anomalies and psychological factors are included as they relate to pilot performance and survival effectiveness.

WX 201 Meteorology I

A survey course in atmospheric science that includes applications to flight. Included is a systematic development of thermal patterns, atmospheric moisture, horizontal and vertical pressure patterns, clouds, atmospheric circulation, local winds, stability, air masses, fronts, fog, icing, thunderstorms, jet streams and turbulence.

OPTIONAL TRACK: Flight Track

- **11th Grade**

AS 132 Basic Aeronautics I

This course examines the basics of pilot certification, aircraft systems and instrumentation, aerodynamics, aircraft performance, VFR cross-country navigation techniques as it applies to single-engine operations and weather reports and forecasts. This course includes Federal Aviation Regulations, the NTSB and elements of resource management.

AS133 Basic Aeronautics II

This course includes the Federal Aviation Regulations, the NTSB, and elements of resource management, hazardous attitudes and aviation physiology. Multi-engine operations will be covered including aerodynamics, performance, certification and emergency considerations. At the completion of this course the student will have received the aeronautical knowledge necessary for certification as a private pilot with the single and the multi-engine land ratings. Prerequisite: AS 132 or Private Pilot Certificate.

- **12th Grade**

HF 300 Human Factors

This course is intended to provide the student with an understanding of the basic principles of Human Factors Psychology. We will study the research, principles, and methods that are beneficial (and essential) in optimizing the interaction between people and machine elements of a system, while taking the environment into account.

SF 330 Aircraft Accident Investigation

This course provides students with a detailed evaluation of methods and procedures involved in aircraft accident investigations. Students will explore procedures for determining accident causes through the use of techniques employed by the trained accident investigator and the role of a specialized aircraft crash laboratory.

OPTIONAL TRACK: Technology

Your Life. Your Career. Your Choice

These courses will provide students with the fundamental skills required to be successful in the aviation maintenance industry. Classroom instruction coupled with laboratory experiences will be the delivery method for these courses.

AMT 1/2

The fundamentals of mathematics and physics as applied to an aviation format that includes: technical math (fractions, decimals, ratio, geometry, formulae and proportions) and basic concepts of aviation applied physics (atmospheric properties, thermodynamics, fluid power, heat, power, work, machines, and sound). Also introduced is basic mechanical drawing and blueprint reading for the technician

AMT 3/4

Part 1: Theory of aerodynamics and corrosion control involving the physical properties necessary, as well as the types of structures and airplanes they are found in, is discussed along with the associated safety procedures and aircraft ground operations found in today's aviation profession.
Part 2 A presentation of the privileges and limitations of the Federal Aviation Administration Federal Aviation Regulations (FAR) Parts 43, 65, and 91 pertinent to aircraft maintenance and the associated documents, publications and records applicable to the maintenance technician. Also included is weight and balance for aircraft.

AMT 5/6

Part 1: An introductory course into basic DC theory, the use of electrical measuring devices, and the design and understanding of electrical circuits. Included in these areas will be the further understanding of voltage, current, and resistance relationships as it pertains to direct current electrical circuits.
Part 2: An introductory course into basic AC theory, with emphasis on theory and practical applications in the lab. Transformer action and solid-state theory, which leads to digital technology understanding, is also discussed and applied in the lab as well.

AMT 7/8

The development of skills in the use of basic mechanic's hand tools, hardware, safety methods, and the fabrication and installation of fluid lines and fittings through the introduction of tools, hardware and materials used in aircraft maintenance and repair. Also various methods of non-destructive testing (NDT) are studied and applied to various practical situations.