UTAH SYSTEM OF HIGHER EDUCATION

Utah System of Higher Education
Unmanned Aircraft Systems
FY2027 / 31 Credits (930 Clock-Hours)

Foundational Courses

TEAV 1130 Flight Principles **3 Credits / 90 Clock-Hours**

This course provides an introduction to the fundamentals of flight theory and the physics that govern flight. It covers the operation of aircraft control systems essential to flight and teaches the techniques for ground handling and servicing of aircraft.

Objectives:
• Explain Fundamental Flight Theory and Physics, including the aerodynamics and physics that govern how aircraft fly and operate.
• Identify Aircraft Control System Operations, including the essential systems crucial for flight, and explain how each component functions and interacts within the system.
• Demonstrate Ground Handling and Servicing Techniques by performing practical skills related to safe and efficient operations.

TEUA 1011 Unmanned Aircraft Systems Remote Pilot **3 Credits / 90 Clock-Hours**

This course covers the rapidly expanding technology of small Unmanned Aircraft Systems (sUAS) and the legalities of flying drones. Topics include aviation safety, rules and regulations, Federal Aviation Administration (FAA) commercial certification preparation, and a flight lab component.

Objectives:
• Discuss the rapidly expanding Unmanned Aircraft System (UAS) industry and prepare to enter this competitive market.
• Describe the current regulations outlined in FAA Part 107.
• Demonstrate proficiency related to the concepts and required information essential to pass the FAA ground exam and register as Remote Pilot Operators.
• Demonstrate basic flight skills.

TEUA 1021 Unmanned Aircraft Systems Part 107 Test **1 Credit / 30 Clock-Hours**

This is the FAA Certification Class in which students submit their Part 107 exam sheet and recurrent training certificate.

Objectives:
• Complete the FAA Part 107 Certification test.
• Verify completion of the FAA Part 107 Certification test by uploading their score sheet.

TEUA 1201 Unmanned Aircraft Systems Introduction to Fixed-Wings **3 Credits / 90 Clock-Hours**

Students learn the basics of small Unmanned Aircraft Systems (sUAS) fixed-wing design and construction to include flight characteristics of new or modified builds. They build, program, fly, and modify their own fixed-wing drone.

Objectives:
• Build fixed-wing drones using appropriate construction and design methods, flight principles, and programming techniques.
• Demonstrate use of proper tools and components for fixed-wing construction and repair.

TEUA 1301 Unmanned Aircraft Systems Introduction to Multirotor **3 Credits / 90 Clock-Hours**

Students learn the basics of small Unmanned Aircraft Systems (sUAS) multirotor design and construction, which includes building a multirotor from a kit, programming a flight controller, and tuning motors appropriately. Students will document and conduct test flights with their drones.

Objectives:
• Explain the documentation process and how it applies to industry standards.
• Identify sUAS components.
• Use industry best practices in documentation, tool and equipment logs, supply upkeep, and communication processes.
• Create and design a multi-rotor build complete with appropriate documentation.

TEUA 1501 Introduction to Unmanned Aircraft Systems Maintenance and Components **3 Credits / 90 Clock-Hours**

Students will be introduced to various tools and techniques for sUAS and UAS maintenance. Throughout the course, students utilize maintenance records and equipment logs. Students will also gain factual knowledge of sUAS components, checklists, tools, tuning techniques, and building techniques.

Objectives:
• Explain drone components and use cases.
• Apply documentation styles to maintenance and equipment logs.
• Use proper tools and techniques for given scenarios.
• Identify industry tools and techniques related to the maintenance of sUAS.

TEUA 2041 Aviation Meteorology **3 Credits / 90 Clock-Hours**

This course will cover the basics of weather for modern aircraft pilots, whether manned or unmanned. It instructs the basics of weather patterns, key points to watch before you fly, and weather reporting methods and techniques.

Objectives:
• Identify terminology, classification, methods, and trends as gained through readings, lectures, research, case studies, and classroom discussions.
• Develop skills related to weather observation, predication, and effect on flight in relation to points of view needed by professionals in the field most closely related to this course through research, case studies, assignments, guest speakers, and reflections.
• Analyze and critically evaluate ideas, arguments, and points of view through research, case studies, assignments, and peer reviews.

TEUA 2051 Unmanned Aircraft Systems Pilot In Command **3 Credits / 90 Clock-Hours**

This course explores the methods and applications for becoming a Pilot in Command (PIC) in sUAS operations. It focuses on technical writing, expanding the rules of drones, and creating and maintaining a crew concept in drone operations.

Objectives:
• Control and oversee a drone operation.
• Apply the rules and regulations for using sUAS in the industry.
• Demonstrate technical writing and other soft skills related to industry expectations.
• Communicate on a large business scale to complete a commercial project.

TEUA 2101 Unmanned Aircraft Systems Flight Patterns and Maneuvers **3 Credits / 90 Clock-Hours**

In this course, students develop their flying skills with manual flight in both fixed-wing and multirotor drones. Emphasis is placed on logging additional flying hours through traffic patterns, maneuvers, and practice search and rescue flight paths.

Objectives:
• Comfortably maneuver a variety of drones and a variety of flight modes.
• Fly a fixed-wing drone manually and log those hours.
• Explain maintenance techniques and checklists for multirotor and fixed-wing type drones.

TEUA 2651 Drones for Hire **3 Credits / 90 Clock-Hours**

This course is an internship-intensive class that helps students prepare for sUAS work in industry. Students learn how to write a drone-focused resume, interview for, and complete real-life or scenario-based projects using sUAS skills.

Objectives:
• Complete a community project by applying technical knowledge, applicable skills, and various soft skills such as time management and communication.
• Complete a reflection paper and professional presentation applicable to portfolio development.
• Demonstrate writing techniques to create a resume and LinkedIn account and begin a portfolio.
• Explain various deliverables related to industry development.

TEUA 2701 Unmanned Aircraft Systems Introduction to Aerial Photography **3 Credits / 90 Clock-Hours**

Students will be introduced to various multirotor flight techniques and maneuvers as they apply to aerial photography and videography. Students will also be introduced to basic photo and video editing and demonstrate an understanding of basic critique skills and purpose.

Objectives:
• Use aerial photo and video techniques according to audience and purpose.
• Apply flight practice to aerial photo and video creation.
• Critique and analyze a project according to audience and purpose.
• Demonstrate safe and efficient in-flight operation of a rotary sUAS.