APT A152: UNMANNED AIRCRAFT SYSTEMS ADVANCED LAB

Item	Value
Curriculum Committee Approval Date	12/09/2020
Top Code	302020 - Piloting
Units	1 Total Units
Hours	54 Total Hours (Lab Hours 54)
Total Outside of Class Hours	0
Course Credit Status	Credit: Degree Applicable (D)
Material Fee	No
Basic Skills	Not Basic Skills (N)
Repeatable	No
Grading Policy	Standard Letter (S)

Course Description

Hands-on flight activities, both simulation and actual, to develop, practice, and demonstrate advanced flying techniques of various Unmanned Aircraft Systems. This course will introduce various mission profiles and equipment planning. COREQUISITE: APT A131. Transfer Credit: CSU.

Course Level Student Learning Outcome(s)

1. Performs within the tolerances for each flight maneuver required by in the Federal Aviation Administration (FAA) Practical Test Standards for Unmanned Aircraft Systems.

Course Objectives

- 1. Demonstrate mastery of advanced maneuvers and procedures for UAS operations.
- 2. Demonstrate mastery of controller calibration techniques and processes.
- 3. Demonstrate mastery of approach, landing, and shut-down operations and procedures with varying payloads.

Lecture Content

Lab Only

Lab Content

General loading and performance: Effects of loading changes Balance, stability, and center of gravity The importance and use of performance data to predict the effect on the aircrafts performance of an sUAS Operating limitations for sUAS Maximum groundspeed Altitude and payload limitations Prepare sUAS for autonomous flight Information mapping and data mining

Method(s) of Instruction

- Lab (04)

Instructional Techniques

Equipment Proficiency Demonstrations

Reading Assignments

Read technical and operations manuals from each UAS (drone) manufacturer.

Writing Assignments

Completion of flight plans and flight logs, weight and balance exercises and aircraft performance problems.

Out-of-class Assignments

N/A

Demonstration of Critical Thinking

In flight problem solving exercises based on FAA Private Pilot Practical Test Standards

Required Writing, Problem Solving, Skills Demonstration

Completion of flight plans and flight logs, weight and balance exercises and aircraft performance problems.

Eligible Disciplines

Aviation (flight, navigation, ground school, air traffic control): Any bachelors degree and two years of professional experience, or any associate degree and six years of professional experience.

Other Resources

1. Technical and operations manuals from each UAS (drone) manufacturer.