UAS 100: INTRODUCTION TO UN-CREWED AERIAL SYSTEMS

Citrus College Course Outline of Record

Heading	Value
Effective Term:	Fall 2025
Credits:	3
Total Contact Hours:	54
Lecture Hours :	54
Lab Hours:	0
Hours Arranged:	0
Outside of Class Hours:	108
Total Student Learning Hours:	162
Transferable to CSU:	No
Transferable to UC:	No
Grading Method:	Standard Letter

Catalog Course Description

This course is an introduction to drones/sUAVs (Small unmanned aerial vehicle systems) and prepares students to take the Federal Aviation Administration's Part-107 drone pilot license exam to work as a commercial pilot in the United States. Students will learn flight theory and work hands-on to become familiar with basic drone systems. Students will develop an understanding of local, state and federal regulations, weather reports, proper radio communication terminology, NOTAMs (A notice to airmen), METARs (Aviation Routine Weather Report), airport sectional charts and demonstrate their knowledge/skills in drone piloting. The course will prepare students to succeed in the competitive job market of drone piloting and develop career opportunities in the UAV industry. 54 lecture hours.

Course Objectives

- Prepare students to successfully pass the FAA Part-107 exam for sUAS commercial drone piloting in the United States.
- Interpret possible hazards and development of checklists/logbooks for flight preparation, drone/battery maintenance,payload capabilities, use of visual observers and field data collection method best practices.
- Demonstrate skills in weather and aviation terminology, proper airport radio communication, UAS/UAV operations and airspace rules and regulations.

Major Course Content

1. Introduction to UAS/UAV drone systems
    a. Origins and brief history of remote sensing operations
    b. Drone system variation and basic UAV/UAS terminology
    c. Modern applications and commercial career opportunities
2. Preparing for the FAA Part-107 exam
    a. Introduction to drone piloting license exam and testing procedures
    b. Proper airport radio communication
    c. Knowledge of weather, NOTAMs, METARs and aviation terminology
    d. Familiarity with airport sectional charts
    e. Knowledge of U.S drone regulation, restrictions and laws
3. Developing knowledge of drone piloting
    a. UAS/UAV system industry best practices
    b. Methods of field data collection and procedures of aerial inspection
    c. Proper drone maintenance techniques
    d. Creation of pre-flight checks and maintenance logs
    e. Proper use of visual observers and parameter safety checks
    f. Proper handling of battery systems
    g. Night operations

Suggested Reading Other Than Required Textbook

Remote Pilot # Small Unmanned Aircraft Systems Airman Certification Standards https://www.faa.gov/training_testing/testing/acs Remote Pilot – Small Unmanned Aircraft Systems Study Guide https://www.faa.gov/sites/faa.gov/files/regulations_policies/handbooks_manuals/aviation/remote_pilot_study_guide.pdf Pilot's Handbook of Aeronautical Knowledge https://www.faa.gov/regulations_policies/handbooks_manuals/aviation/phak/ Summary of small unmanned aircraft rule (PART 107) https://www.faa.gov/sites/faa.gov/files/2021-08/Part_107_Summary.pdf Policy Document Library https://www.faa.gov/uas/resources/policy_library/#107

Examples of Required Writing Assignments

Commercial Drone Application Research Assignment
Students will be required to choose a commercial field of the drone industry to research and write a 3-5 page, double space, 12 font, MLA or APA formatted report that includes a 1-page bibliography with at least 10 sources one of which must be a phone/email interview with professionals in the field of study currently working with drones. Students will begin by choosing 3 companies in their chosen field and write a summary of what the companies use drones to do and their operations in the company. Next, interview someone working at one of the chosen companies to determine what the function of drones serve the company and what education in drones is necessary for hire. Next, students will write a report on what jobs are currently available based on job searches for at least five employment sites research the average salary of those in the chosen field, and discuss what the potential salary may be after further education in the field.
Included in the report: - A brief history of the commercial field or use of drones chosen - List of current companies or organizations that are hiring in the field - Description or map showing where the most openings in the field are located geographically both nationally and internationally - Discussion of typical duties and responsibilities for a chosen career in the field - Phone/E-mail interview with a person in the field: Example questions may include what is a typical day in your job? what education or training helped you get your job or helped you perform your duties? How did you first get interested in drones/UAVs?
Reports will be graded based on students meeting the required format for length, use of sources, use of detail and clear descriptions of the career path, job search results, interview questions/answers, and description of typical job duties

Examples of Outside Assignments

SOP (Standard Operating Procedures) Assignment Section 1 Create a customized Logbook that includes space to track flight hours and equipment maintenance and includes a missing planning guide specific to your industry. Consider equipment needs, documentation, client demands, battery storage, weather, travel considerations, and the use and training of personnel as parts of the mission planning guide. Section 2 Airspace Authorization checklist. Include steps on getting LAANC authorization, checking for TFRs, and NOTAMS, and how to obtain a waiver Section 3 Pre-Flight Checklist. Include how you will check for weather conditions, inspect the drone, and equipment, provide safety procedures, site assessment, risk assessment, start-up/take-off and landing procedures, and anything else that you will do before and during a flight to ensure safe operation. Section 4 Emergency Procedures Checklist. Include how you will handle in-flight emergencies such as Li-Po battery fires, loss of link, loss of GPS, loss of visual contact, collision, disorientation, and fly-away. Discuss how you will communicate before, during, and after flights with your team to ensure safe operation. Discuss when and how you would report accidents to the FAA. Section 5 Crew resource management checklist and use of Visual observers. Include a discussion of how you will train crew members, communicate expectations before flights, communicate with team members during flights, and de-brief team members after flights. Discuss where and how VOs should be used and what team members you'll need on your industry-specific job site to ensure safe operation.

Instruction Type(s)

Lecture, Online Education Lecture