

**Course Code:** AVI 112

**Course Title:** Introduction to Drone Flight

**Department:** Aviation

**Effective Date:** Summer 2026

**PCS Code:** 1.2 - Occupational/Technical Instruction

**CIP Code:** 49.0199

**Repeatability:** 0

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## Credit Hours

**Catalog Notation:** 2-2-3

**Credit Hour Distribution:**

Lecture: 2

Lab: 2

Clinical: 0

**Total: 3**

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## General Course Information

### Catalog Description

Introduces basic skills necessary to fly both fixed wing and quadcopter drones. Covers flight controls, payloads, checklist development and usage, mission planning, and emergency procedures. Students learn basic flight maneuvers and use simulator software.

### General Course Objectives

The student will obtain the skills to manually operate a UAS. They will learn how to use a checklist, follow procedures, and mitigate risks in a UAS operation. They will consider legal and ethical concerns when flying their missions.

### Minimum Placement Levels

English	Reading	Math
None	None	None

### Prerequisites

None

### Methods of Evaluation

2-4 exams, final examination.

### Instructional Materials and Additional Supplies

Instructor packet (handout)

Additional course fees (estimated at \$100) will cover the cost of equipment, maintenance, and software.

## Course Content

### General Learning Outcomes (GLOs)

- Reasoning and Inquiry: Students will demonstrate the ability to solve problems using deductive reasoning and logic, quantitative reasoning, or the scientific method.
- Technology: Students will demonstrate the ability to evaluate, select, and appropriately use current and emerging tools.

### Course Segments and Student Learning Outcomes

Course Segment	Learning Outcomes	Lecture Hours	Lab Hours	Clinical Hours
Overview of UAS	<ol style="list-style-type: none"> <li>Review the history of UAS and their evolution as well as their current state.</li> <li>Classify the different types of UAS, applications, and career outlooks.</li> </ol>	5	0	0
Regulations	<ol style="list-style-type: none"> <li>Differentiate between recreational and commercial operations and requirements.</li> <li>Understand the different regulations and determine their relevance.</li> </ol>	2	0	0
Ethical Considerations	<ol style="list-style-type: none"> <li>Identify areas of ethical concerns including privacy issues and data collection.</li> <li>Discuss opinions and examine legal perspectives.</li> </ol>	3	0	0
sUAS Types and Components	<ol style="list-style-type: none"> <li>Review the different types of sUAS and how to select the proper one for a given mission.</li> <li>Identify the different flight controls and how they operate.</li> <li>Discuss the different types of flight controllers, their operation, and proper selection.</li> </ol>	4	0	0
Risk Assessment	<ol style="list-style-type: none"> <li>Utilize FAA developed methods for risk assessment for a UAS mission.</li> <li>Determine factors that affect flight plans including obstacles, weather, and airspace restrictions.</li> </ol>	2	0	0
Operations	<ol style="list-style-type: none"> <li>Identify and access pilot responsibilities, qualifications, and modes of operations.</li> <li>Describe the basic theory of flight and its applications.</li> </ol>	2	0	0
Performance	<ol style="list-style-type: none"> <li>Identify and analyze the effects of different atmospheric conditions on UAS flight and performance characteristics.</li> <li>Utilize aircraft performance data in the UAS Flight Manual or operating handbook.</li> </ol>	3	0	0
Aeromedical and Human Factors	<ol style="list-style-type: none"> <li>Evaluate and interpret how aeromedical, crew resource management, aeronautical decision making, and other human factors impact the safety of flight.</li> <li>Safely operate a UAS independently and as part of a crew.</li> </ol>	2	0	0
Maintenance	<ol style="list-style-type: none"> <li>Establish basic maintenance criteria and troubleshooting skills.</li> </ol>	2	0	0
Emergencies	<ol style="list-style-type: none"> <li>Demonstrate how to anticipate and recognize various UAS emergency situations.</li> <li>Explain emergency procedures and how to minimize risks.</li> </ol>	2	0	0
Mission Planning	<ol style="list-style-type: none"> <li>Demonstrate safely planning a UAS flight from start to finish including preflight, checklists, regulatory requirements, and post flight operations.</li> </ol>	3	0	0
Operating Instructions and Safety Considerations	<ol style="list-style-type: none"> <li>Demonstrate how to safely operate a UAS in a classroom environment including safety protocols, checklist usage, and emergency procedures.</li> </ol>	0	2	0

<b>Course Segment</b>	<b>Learning Outcomes</b>	<b>Lecture Hours</b>	<b>Lab Hours</b>	<b>Clinical Hours</b>
UAS Operating Instructions	1. Demonstrate how to preflight a UAS, safely turn a UAS on and off, and features and functions of the controller and UAS.	0	2	0
Flight Skills	1. Demonstrate competency in basic flight maneuvers including takeoff, landing, and hovering.	0	4	0
Maneuvering Flight Skills	1. Demonstrate competency in maneuvering during flight by utilizing an obstacle course. 2. Climb, descend, and turn in a controlled manner.	0	10	0
Simulator Software and Flight Skills	1. Summarize how the software system operates and will be utilized. 2. Demonstrate competency in basic flight maneuvers including takeoff, landing, hovering, climbs, turns, and descents.	0	6	0
Crew Resource Management	1. Explain how to operate safely as part of a crew.	0	3	0
Mission Planning	1. Demonstrate use of payload planning, mission planning, and checklist usage.	0	3	0

**Total Contact Hours**

<b>Lecture Hours</b>	<b>Lab Hours</b>	<b>Clinical Hours</b>
30	30	0