

## Aviation II (Remote Pilot Certificate)

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Content	Skills	Learning Targets	Standards	Assessment	Resources & Technology
<p><b>CEQ: How may I obtain my “Remote Pilot Certificate” so I may legally fly and earn income from my drone?</b></p> <p>UEQ: <i>Can I fly anywhere and anytime?</i></p> <p><b>A: Airspace Classification</b>            A1: Controlled Airspace            A2: Uncontrolled Airspace            A3: Other Airspace            A4: ATC and the National Airspace system</p>	<p><b>A: Airspace Classification</b>            A1a: Identify B, C, D, and E airspace</p> <p>A1b: Identify dimensions of each airspace</p> <p>A1c: Identify flight rules of each airspace</p> <p>A2: Identify G airspace, its dimensions and flight rules</p> <p>A3: Identify other special use airspace and the specific rules for each kind.</p> <p>A4: List the various elements and responsibilities of the Air Traffic Control</p>	<p><b>A: Airspace Classification</b>            A1a: I can accurately interpret airspace on a sectional chart.            A1b: I can accurately describe the dimensions of B, C, D, and E airspace.            A1c: I can accurately describe the various flight rules for each controlled airspace.            A2: I can accurately describe G airspace and its flight rules            A3: I can describe the basic rules of Prohibited Areas, Restricted Areas, Warning Areas, Military Operation Areas, Alert Areas, and Controlled Firing Areas            A4: I can generally describe the 3 elements of air traffic control: Ground, Departure/Approach, and Enroute.</p>		<p><b>A: Airspace Classification</b>            CFA A1-2: Students sketch airspace overview on graph paper            CFA A1-3: Students research airspace dimensions and rules and deliver a report.            CFA A4: Students listen to 3 ATC conversations to determine which part of the ATC system was communicating.</p>	<p><b>A: Airspace Classification</b>  <a href="#">Internet access</a>            graph paper</p>

<p><i>UEQ:</i>  <i>•Is the weather safe to fly?</i>  <b>B: Aviation Weather</b></p> <p>B1. Sources of Aviation Weather Information</p> <p>B2: Effects of Weather on Aviation</p>	<p><b>B: Aviation Weather</b></p> <p>B1a. Identify Surface Aviation Weather Observations</p> <p>B1b: Identify Aviation Weather Reports</p> <p>B1c: Identify Aviation Weather Forecasts</p> <p>B2a: Relate density altitude to performance of aircraft.</p> <p>B2b: Measurement of atmospheric pressure</p> <p>B2c: Understand characteristics of wind.</p> <p>B2d: Explain the difference between ceilings and visibility.</p>	<p><b>B: Aviation Weather</b></p> <p>B1a: I can interpret a surface weather report issued by the national weather service.</p> <p>B1b: I can read a METAR</p> <p>B1c: I can find and read a Terminal Aerodrome Forecasts (TAF)</p> <p>B2a: I can understand how temperature, humidity and pressure density affect density altitude.</p> <p>B2b: I can explain standard atmospheric pressure.</p> <p>B2c: I can recognize how wind flowing around obstructions on the ground may create an unseen danger for aircraft.</p> <p>B2d: I can recognize how ceilings could affect visibility.</p>		<p><b>B: Aviation Weather</b></p> <p>CFA B1-2.</p> <p>CFA B1-2:</p>	<p><b>B: Aviation Weather</b></p>
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<p><i>UEQ:</i>                  •Can you apply model building knowledge to Drone construction?</p> <p><b>C: Construction</b></p> <p>C1. Frame                  C2. electronics                  C3. Program software</p>	<p><b>C: Construction</b></p> <p>C1. Assemble Frame                  C2. Solder electronics                  C3. Program flight controller using Betaflight</p>	<p><b>C: Construction</b></p> <p>C1: I can use lasered parts to assemble a Frame.                  C2: I can use a soldering iron to connect electronics.                  C3: I can program the flight computer using Betaflight.</p>	<p><b>C: Construction</b></p> <p>C1. Check framefor quality                  C2. Check electronics for quality                  C3. Oversee servo/transmitter/reciever useage.</p>	<p><b>C: Construction</b></p> <p>C1-3: solder, chrome book, drone parts</p>
	<p><b>D. Drone Build</b></p>		<p><b>D. Drone</b></p>	<p><b>D: Drone Build</b></p>

<p><i>UEQ:</i> •Can you assemble a drone?</p> <p><b>D: Drone Build</b></p> <p>D1. Motor tune-up D2. Servo positioning D3. Transmitter/Receiver Check-up</p>	<p>D1. soldering D2. brushless motors D3. speed controllers D4. Transmitter/Receiver D5 LiPo battery</p> <p><b>E. Flight</b></p> <p>E1. Utilize Flight simulator</p>	<p><b>D: Drone Build</b></p> <p>D1: I can solder connectors to wire D2: I can solder and place my motors on the drive frame. D3. I can install speed controllers to the motors and flight computer. D4: I can install a radio receiver to connect to a transmitter D5. I can safely use a LiPo battery.</p>	<p><b>Build</b></p> <p>D1-4. A drone is built with the proper components D1-4. Have students demonstrate fully functional model D5 Safely charge a LiPo battery</p>	<p>D1-5: brushless motors, Speed Controllers, RC transmitter/Receiver, flight computer, LiPo battery, drone frames, wire, solder, soldering irons</p>
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<p><i>UEQ:</i> •<i>Can you fly your plane?</i></p> <p><b>E: Flight</b></p> <p>E1. Flight Simulator E2. Droneflight.</p>	<p>software to practice flying drones E2. Fly Drone in safe environment</p>	<p><b>E: Flight</b></p> <p>E1: I can successfully complete a flight using the flight simulator software. E2: I can successfully complete a flight with my model.</p>		<p><b>E. Flight</b></p> <p>E1. Have students complete a flight plan E2. Demonstrate/observe RC flight</p>	<p><b>E. Flight</b></p> <p>E1. <i>"Real Flight Delux" RC Simulator, Drones</i></p>
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