Rochester Air Center
sUAS Flight Training Program Outline

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● Upon receipt of registration deposit, students may schedule the Redbird simulator and manned aircraft flight.

I. **Learning the Language**
- ➤ Aviation and Radio Control Acronyms
- ➤ Aviation and RC Terminology

II. **Platforms & Aircraft Hardware**
- ➤ Fixed wing, multirotor, hybrid
- ➤ Components, from aircraft batteries to Zener diodes
- ➤ Payloads, RGB Cameras, NDVI, Multi-Spectral, Infrared, LiDAR, Other…
- ➤ Payload Integration
- ➤ Maintenance

III. **Ground Control Station (GCS)**
- ➤ Communication Link and Binding
- ➤ Transmitter, Receiver, Transceiver, Head Tracking, VR Goggles, Monitors, and Mobile Devices
- ➤ Radio Frequencies (RF)
- ➤ Radio Frequency Interference (RFI)
- ➤ Electromagnetic Interference (EMI)

IV. **Software**
- ➤ Firmware
- ➤ Flight Apps and Features
- ➤ Settings and Calibration
- ➤ Autonomous Flight Programming
- ➤ The 3 "B's – Bleeding Edge, Beta, and Bugs

V. **Flight Operations**
- ➤ Safety First and Planning
- ➤ Site Location Considerations
- ➤ Developing Checklists
- ➤ Emergency Procedures
- ➤ Flight Controls
- ➤ Disoriented and Lost Procedures

VI. **Flight Modes, DJI**
- ➤ Position Hold (GPS Mode)
- ➤ Altitude Hold (ATTI Mode)
- ➤ Intelligent Orientation Control (IOC Modes)
- ➤ Course Lock
- ➤ Home Lock
- ➤ Active Track
- ➤ Tap and Fly
- ➤ Point of Interest (POI)
- ➤ Return To Home (RTH)
- ➤ Autonomous Flight Apps, Map Pilot, DroneDeploy, Commander, UgCS

VII. **Flight Modes, 3D Robotics**
- Stabilize
- Altitude Hold
- Position Hold
- Loiter
- Follow Me
- Region of Interest (ROI)
- Structure Scan
- Return to Launch (RTL)
- Simple and Super Simple Modes
- Mission Planner Software

VIII. **The FAA and Safety**
- Part 107 vs 333 Exempt vs Recreational
- National Airspace System (NAS)
- Notice to Airmen (NOTAM), Temporary Flight Restriction (TFR)
- No Fly Zones
- VFR Sectionals
- Privacy Considerations
- Weather, METAR, TAF

IX. **Business & The Industry**
- Hardware Manufactures
- Dealer and Distribution Channels
- Software Developers
- Value Added Reseller (VAR)
- Service Providers, Applications
- Internal UAV Departments
- Leaders and Followers
- Venture Capitalist (Follow the Money)
- Insurance
- Risk Management

X. **Redbird Flight Simulator**
- Develop pilot "scanning" techniques and "situational awareness" in an $80,000 full motion flight simulator with a CFI (certified flight instructor). These practices are transferrable to piloting UAVs.

XI. **Manned Aircraft Flight**
- Acquire "real world" understanding of the Class "C" airspace surrounding Rochester by piloting a Cessna 172 with a flight instructor. Identify runway approaches and their flight paths over the city for a better understanding of the relationship and proximity of the airport to the city of Rochester. Increase awareness of flight safety for "manned" aircraft.

XII. **Practical Training**
- ➤ Hands-On Flight Training
- ➤ DJI Products
- ➤ 3D Robotics Products
- ➤ Setting Up GCS (Ground Control Station)
- ➤ Flight Apps – DJI Go, Map Pilot, Litchi, Commander, Tower, DroidPlanner, DroneDeploy, and Mission Planner
- ➤ Scan Techniques
- ➤ Recovery Techniques for Lost Telemetry and/or Video Links
- ➤ Autonomous Flights