

Drone Technology: One Year Scope & Sequence

Year 1, Semester 1

DT101 sUAS-Drones I

(90 days) (Classroom 45 Days/Lab 45 Days)

District Pre-Assessment

Unit 1 (45 Days) - (23 Classroom Days/22 Lab Days)

Drone Theory & Design I:

- Introduction to Electronics
- Design & Documentation
- Safety Considerations
- Introduction to Drones
- Fundamentals of Flight
- Airframes
- Electric Motors
- Propellers
- Electronic Speed Controllers

CTSO Integration (Leadership Skills): Business Letters, Cover Letter, First draft resume/CTSO meetings weekly

Professional Skills: 1.D, 1.B, 4.B, 5.D, 6.A, 2.C

Academic Standards: ELA.11-12.W.4, 5.NF.B.3, 6.EE.A.2, 5.NF.B.6, 6.RP.A.3, ELA.11-12.W.5 5.NF.B.7

Work-based Learning: Guest Speaker, Business Letters, Conducting a meeting

Technical Standard: 1.0 - 7.0

Unit 2 (45 Days) (23 Classroom Days/22 Lab Days)

Drone Theory and Design II:

- Flight Controllers
- Batteries, Chargers, & Connectors
- Transmitters & Receivers
- Cameras, Gimbals, & Other Payloads
- Ground Control Stations & FPV
- Regulations and the FAA
- Drone Maintenance & Battery Care
- Efficiency vs Performance

CTSO Integration (Leadership Skills): CTSO Meeting, SkillsUSA Fall Conference, Community Service

Professional Skills: 2.C, 3.B, 7.C

Academic Standards: 7.RP.A.3, ELA.11-12.SL.4, ELA.11-12.RI.10, ELA.11-12.W.4-5

Work-based Learning: Emails/Forms AerSale Industry Tour, Delivering Speeches, Multimedia Presentations

Technical Standard: 8.0 - 14.0

Semester Exam

Year 1, Semester 2

DT102 sUAS-Drones II

(90 days) (Classroom 45 Days/Lab 45 Days)

Unit 3 (20 Days) - (10 Classroom Days/10 Lab Days)

Learn to Fly:

- Basics of Flight
- Beginning Flight Skills
- Advanced Flight Skills
- Common Sense Flying

CTSO Integration (Leadership Skills): CTSO Meeting, Mentoring/Job Shadow, Internship/Externship

Professional Skills: 1.D, 3.B, 8.D, 9.C, 8.B, 9.A 7.C

Academic Standards: ELA.11-12.SI.3, ELA.11-12.RI.2,10, ELA.11-12.SL.3, 11-12.W.9

Work-Based Learning: Instructions Reports, Interviewing Clients/Quality Control, SOPs, Workplace Visit

Technical Standard: 15.0 - 18.0

Unit 4 (70 Days) (35 Classroom Days/35 Lab Days)

UAS Remote Pilot Certification:

- Pathway to Certification
- Drone Theory
- Regulations and Operating Rules
- Airspace Classifications & Operating Requirements
- Aviation Weather, Effects, & Sources
- sUAS Loading & Performance
- Emergency Flight Procedures
- Crew Resource Management
- Radio Communications
- Airport Operations
- Maintenance & Inspection Procedures

CTSO Integration (Leadership Skills): SkillsUSA Regional Conference SkillsUSA National Conference

Professional Skills: 8.C, 8.D 1.D, 2.A

Academic Standards: ELA.11-12.SL.3, ELA 11-12.SI.4, ELA.11-12.L.6

Work-Based Learning: Field Trip

Technical Standard: 19.0 - 28.0

Certifications: UAS Operator Certificate/ FAA Part 107 Certificate, Snap on Meter NC3

District Post Assessment

Common AZCCR Math Standards (CAMs)

English Language Art Standards (ELAS)

Federal Aviation Administration (FAA)