DRONE TECHNOLOGIES 1

**COURSE CODE: 57T1**

**STUDENT PROFILE**

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| **STUDENT’S NAME:** | | **TEACHER’S NAME:** | | | | |
| **School Year/Semester:** | | **Grade:** | | | | |
| **Begin Date:** | | **Date Completed:** | | | | |
| **Directions:** Document student’s progress using the applicable rating scales below: Enter date of completion under the appropriate column.   1. - Requires additional instruction and or **close supervision (60-69)** 2. **–** Has not received instruction in this area / **no experience or knowledge of this task (N/A)** 3. **–** Can perform the task completely with **limited supervision (70-79)** 4. – Can apply and perform **independently (80-100)** | | | | | | |
| 1. **THE FAA PART 107 LICENSE** | | | **0** | **1** | **2** | **3** |
| 1 | Describe the types of driver’s license and driver’s permits. | |  |  |  |  |
| 2 | Identify and analyze licensing requirements. | |  |  |  |  |
| 3 | Research and present required non-commercial license tests. | |  |  |  |  |
| 4 | Identify situations that may result in loss of driving privileges. | |  |  |  |  |
| 5 | Describe the types of driver’s license and driver’s permits. | |  |  |  |  |
| 6 | Identify and analyze licensing requirements. | |  |  |  |  |
| 7 | Research and present required non-commercial license tests. | |  |  |  |  |
| **STATE LAWS** | | | **0** | **1** | **2** | **3** |
| 1 | Research state laws regarding licensing and flying privileges. | |  |  |  |  |
| 2 | Compare and contrast State laws and Federal Laws. | |  |  |  |  |
| **PHYSICAL AND MENTAL THINKING WHILE PILOTING A DRONE** | | | **0** | **1** | **2** | **3** |
| 1 | Analyze key facts which can affect each of the following:   * 1. vision   2. fatigue   3. distraction   4. aggressive flying   5. emotions | |  |  |  |  |
| 2 | Research and explain the consequences of using alcohol and drugs while flying. | |  |  |  |  |
| 3 | Explain how physical and mental fitness affects flying performance. | |  |  |  |  |
| **FLYING PREPARATION (FAA Part 107 Training)** | | | **0** | **1** | **2** | **3** |
| 1 | Demonstrate the proper inspection procedure prior to operating a UAS. | |  |  |  |  |
| 2 | Demonstrate proper pilot staging area. | |  |  |  |  |
| 3 | Understand the need to regulate airspace. | |  |  |  |  |
| 4 | Analyze the safety guidelines for sUAS recreational users. | |  |  |  |  |
| 5 | Define the reason behind not needing a pilot’s license. | |  |  |  |  |
| 6 | Analyze drone usage within the commercial industry. | |  |  |  |  |
| 7 | Discuss the different types of UAVs. | |  |  |  |  |
| 8 | Define each component of a drone. | |  |  |  |  |
| 9 | Analyze how each drone component functions. | |  |  |  |  |
| 10 | Understand the importance of each drone component. | |  |  |  |  |
| 11 | Define aerodynamics. | |  |  |  |  |
| 12 | Analyze Newton’s Laws of Force and Motion. | |  |  |  |  |
| 13 | Understand Bernoulli’s Principle. | |  |  |  |  |
| 14 | Define an airfoil. | |  |  |  |  |
| 15 | Understand the four forces of flight. | |  |  |  |  |
| 16 | Analyze the mechanical design of an airplane. | |  |  |  |  |
| 17 | Define the three axes of flight. | |  |  |  |  |
| 18 | Analyze how multicopters fly. | |  |  |  |  |
| 19 | Define the pilot's alphabet. | |  |  |  |  |
| 20 | Assess knowledge regarding drone theory and Certification. | |  |  |  |  |
| 21 | Analyze various definitions pertaining to Part 107. | |  |  |  |  |
| 22 | Define the responsibilities of a remote PIC. | |  |  |  |  |
| 23 | Analyze the required documents for sUAS flight. | |  |  |  |  |
| 24 | Analyze the registration requirements for sUAS operations. | |  |  |  |  |
| 25 | Understand the purpose of a remote ID. | |  |  |  |  |
| 26 | Analyze the Part 107 daylight operation regulations. | |  |  |  |  |
| 27 | Understand visual-line-of-sight. | |  |  |  |  |
| 28 | Analyze requirements for visibility, cloud clearance, altitude and speed. | |  |  |  |  |
| 29 | Understand the yielding the right-of-way. | |  |  |  |  |
| 30 | Analyze requirements for operations over non- participants. | |  |  |  |  |
| 31 | Understand the regulations in place for flying a drone from a moving vehicle or a water-borne vehicle. | |  |  |  |  |
| 32 | Understand regulations for drone flights over stadiums and concert venues. | |  |  |  |  |
| 33 | Analyze hazardous operations. | |  |  |  |  |
| 34 | Analyze authorization and operation near airports. | |  |  |  |  |
| 35 | Understand waivers and authorizations. | |  |  |  |  |
| 36 | Understand airspace designations. | |  |  |  |  |
| 37 | Analyze airspace classifications. | |  |  |  |  |
| 38 | Analyze resources which are critical for remote PICs. | |  |  |  |  |
| 39 | Analyze Notices Airmen. | |  |  |  |  |
| 40 | Define temporary flight restrictions. | |  |  |  |  |
| 41 | Analyze aeronautical sectional charts. | |  |  |  |  |
| 42 | Define the difference in above ground level and mean sea level. | |  |  |  |  |
| 43 | Analyze military training routes. | |  |  |  |  |
| 44 | Analyze the influences of weather on flight. | |  |  |  |  |
| 45 | Define military and ZULU time. | |  |  |  |  |
| 46 | Define METARs and TAFs. | |  |  |  |  |
| 47 | Decode a METAR and a TAF. | |  |  |  |  |
| 48 | Analyze the information a METAR provides a pilot. | |  |  |  |  |
| 49 | Define the components of a weather brief. | |  |  |  |  |
| 50 | Define stable and unstable air. | |  |  |  |  |
| 51 | Analyze the components of wind and surface friction. | |  |  |  |  |
| 52 | Understand air masses and fronts. | |  |  |  |  |
| 53 | Define the four fog types. | |  |  |  |  |
| 54 | Understand how clouds are classified. | |  |  |  |  |
| 55 | Analyze cloud composition and appearance. | |  |  |  |  |
| 56 | Analyze the various types of thunder. | |  |  |  |  |
| 57 | Understand how visibility and clouds impact flight. | |  |  |  |  |
| 58 | Decode various METARs. | |  |  |  |  |
| 59 | Analyze the weather conditions which affect flight. | |  |  |  |  |
| 60 | Assess knowledge regarding aviation weather, effects and sources. | |  |  |  |  |
| 61 | Define aeronautical stability. | |  |  |  |  |
| 62 | Understand how to fly with a payload. | |  |  |  |  |
| 63 | Determine speed and altitude. | |  |  |  |  |
| 64 | Define weight and balance. | |  |  |  |  |
| 65 | Analyze uncontrollable performance facrs. | |  |  |  |  |
| 66 | Analyze load factors applied physics. | |  |  |  |  |
| 67 | Avoid superseding the critical Angle of Attack. | |  |  |  |  |
| 68 | Understand the basic Center of Gravity performance. | |  |  |  |  |
| 69 | Define launch considerations. | |  |  |  |  |
| 70 | Understand the effect of runway slopes. | |  |  |  |  |
| 71 | Assess knowledge regarding sUAS loading and performance. | |  |  |  |  |
| 72 | Understand lost link procedures. | |  |  |  |  |
| 73 | Understand fly-away procedures. | |  |  |  |  |
| 74 | Understand battery fire procedures. | |  |  |  |  |
| 75 | Analyze how to report accidents. | |  |  |  |  |
| 76 | Understand how to avoid collision. | |  |  |  |  |
| 77 | Assess knowledge regarding emergency flight procedures. | |  |  |  |  |
| 78 | Understand aeronautical decision-making a judgement. | |  |  |  |  |
| 79 | Analyze CRM effectiveness. | |  |  |  |  |
| 80 | Define the five hazardous attitudes. | |  |  |  |  |
| 81 | Understand contingency reactions. | |  |  |  |  |
| 82 | Assess knowledge regarding crew resources. | |  |  |  |  |
| 83 | Management (CRM). | |  |  |  |  |
| 84 | Understand proper radio procedures and analyze radio technique tips. | |  |  |  |  |
| 85 | Define several contact procedures. | |  |  |  |  |
| 86 | Analyze Chart Supplements U.S. | |  |  |  |  |
| 87 | Understand sectional frequencies. | |  |  |  |  |
| 88 | Analyze how to make position reports as a Remote PIC. | |  |  |  |  |
| 89 | Understand NOTAMs and TFRs. | |  |  |  |  |
| 90 | Analyze how to find NOTAMs and TFRs. | |  |  |  |  |
| 91 | Analyze mountains, towers and power lines. | |  |  |  |  |
| 92 | Define AGL and MSL. | |  |  |  |  |
| 93 | Understand airport traffic patterns. | |  |  |  |  |
| 94 | Analyze sUAS flight frequencies. | |  |  |  |  |
| 95 | Analyze various VFR sectional chart symbols. | |  |  |  |  |
| 96 | Understand longitude and latitude. | |  |  |  |  |
| 97 | Define statute and nautical miles. | |  |  |  |  |
| 98 | Assess knowledge regarding airport operations. | |  |  |  |  |