California State University
SAN MARCOS

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CSUSM User Guide: Unmanned Aircraft Systems (Drones)

At California State University San Marcos (CSUSM) and across the CSU System, Unmanned Aircraft Systems (UAS), more commonly known as "drones", are being used for a variety of applications. UAS has important positive impacts on research, education and training, campus management, and student life. This ranges from geographical, economic, environmental, engineering, or agricultural research and education, to recording and sharing campus events with the world, our community, and our stakeholders. The following guide is provided to ensure that University-associated UAS operations comply with federal, state, regional, and CSU regulations, and address health and safety, privacy, and environmental risks.

Any individual or group wanting to operate a UAS on the property of CSUSM or intending to operate a UAS on behalf of the University off-campus (e.g. research) must:

- Comply with any applicable laws, government regulation and University policies
- Have prior written approval from Integrated Risk Management (IRM) and the University Police Department (UPD)
- Operate in a manner that ensures legal and ethical responsibilities related to public safety and privacy rights
- Include appropriate steps to manage and mitigate associated risks
- Serve the mission of the University
- Maintain adequate liability insurance coverage as required. Under the CSURMA Aviation (Drone) Program, liability coverage is extended to CSUSM student and staff pilots/operators who are approved and authorized by IRM and UPD, and who operate under current FAA regulations.

Drone Process: Summary Snapshot

- Register your drone with the FAA
- Obtain an FAA Drone License (or confirm if exempt)
- Complete the CSUSM Flight Request Form
- Receive approval to fly from Integrated Risk Management (IRM)
- Before flying, review this drone guide and local regulations

UAS Rules and Regulations:

While UAS represent important contributors to the university's mission and function, their operation requires adherence to **Federal Aviation Administration (FAA)** regulations, as this agency controls all navigable airspace within the United States. All aircraft, whether manned or unmanned, is subject to FAA rules and regulations, and violations carry severe federal penalties. As the regulations governing UAS operations continue to develop, it is incumbent upon the requestor/operator to become familiar with the latest FAA regulations. Adherence to the most current FAA regulations shall be a primary factor in determining authorization by IRM and UPD for small UAS operations. It is the operator's responsibility

to comply with all current CSU, local, state and federal regulations when operating a UAS. UAS operators must have copies of their approval and any documentation the law may require during the UAS deployment. The University Police may review materials at any time.

Drones for Education: Recreational Flight and Part 107

Part 107:	**Recreational Exception**
• Drone license required • Can fly for any purpose • Special permissions: can request special permissions for operations in controlled airspace, over people, Beyond Visual Line of Sight (BVLOS), and flying more than one drone at a time • Any drone requiring registration, must operate in accordance with the rule on Remote ID. Most drones manufactured after December 2022 have remote ID already built-in	• TRUST certificate required for all flyers. • Can fly for recreation or approved academic activities* • **Registration exception** for drones that weigh .55 pounds or less (less than 250 grams) • Restrictions: No allowances for advanced operations. Must adhere to basic flight operation rules • May not fly over person/moving vehicle and no closer than 25ft to any individuals • Must stay within visual line of sight • Allowable for academic staff, students, or academic support staff
***Approved academic activities: coursework, instruction of students, academic or research related uses of unmanned aircraft systems that have been approved by the institution, activities undertaken by the institution as part of research projects, other academic activities approved by the institution.**	

Drones flown for educational purposes are regulated under the Exception for Limited Recreational Operations of Unmanned Aircraft or under the Small Unmanned Aircraft Systems Rule. The Exception for Limited Recreational Operations of Unmanned Aircraft Rule (49 U.S.C. § 44809) allows flying drones without complying with part 107. Flying under this rule requires flying only for recreational purposes and compliance with **all** limitations stated in § 44809(a), listed below. Part 107 (14 CFR Part 107) is the primary regulation for flying drones weighing less than 55 pounds. Part 107, the Small Unmanned Aircraft Systems Rule, permits drones to be flown for many reasons, including work or business, recreation, education, or for public safety missions. By default, UAS operations fall under Part 107 Small UAS regulations, unless the requirements for the exception for recreational use are met.

- **Examples of non-recreational drone flying include** activities like taking photos to help sell a property or service, roof inspections, or taking pictures of a sporting event game for the campus website. Goodwill can also be considered non-recreational. This would include things like volunteering to use your drone to survey coastlines on behalf of a non-profit organization.

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The statutory provision in P.L. 116-283, Section 10002 clarifies that drones flown for educational and research purposes may be operated under § 44809 for qualifying educational organizations. Qualifying educational organizations include institutions of higher education (e.g., CSUSM).

Class G/E4 Airspace (CSUSM campus and surrounding area):

- Class G is uncontrolled airspace. It is the portion of airspace that air traffic controllers are not directing air traffic. This is the only airspace that drones are allowed to fly in without getting prior permission.
- Pilots should remember there are visual flight rules (VFR) minimums that apply to Class G airspace.
- Our campus is considered, Class E4 which begins at 700 feet above ground level to offer support for commercial/private approaches into Palomar Airport. E4 is also referred to as a transition area. On sectional charts, you can find Class E starting at 700 feet in areas located inside a faded magenta shape.
- To maintain safety and follow best practices all flights on CSUSM campus may not fly higher than 400 ft above ground level.

General Operating Rules for All:

1. Conduct a preflight inspection to ensure the drone is safe to operate
2. Carry proof of Drone License or Trust Certificate.
3. Carry proof of Drone Registration, if applicable.
4. Keep your drone within the visual line of sight or use a visual observer who is physically next to and in direct communication with you.
5. Give way to and do not interfere with other aircraft.
6. Drone may not be operated in inclement weather which may affect the UAS's ability to function or handle properly.
7. Speed may not exceed 100 miles per hour.
8. The altitude cannot be higher than 400 feet above ground level (uncontrolled airspace)
9. No flying when the horizon visibility drops below 3 miles
10. The minimum distance from clouds must be no less than:
    a. 500 feet below the cloud; and
    b. 2,000 feet horizontally from the cloud.
11. Drones may not drop or release hazardous material
12. Any load that is attached to the drone must be securely attached and may not adversely affect the controllability of the drone or exceed 55lbs
13. Weapons are not allowed to be attached or used on drones
14. Tethered drones are not exempt from drone regulations
15. No person may operate a drone or act as any direct participant in the operation of a drone under the influence of recreational or illegal drugs.
16. No person may operate a small, unmanned aircraft if he or she knows or has reason to know of any personal condition that would interfere with the safe operation of a small UAS.

17. UAS may not be operated for the unauthorized recording/videoing of individuals, performances, or University events, or for any unlawful purpose

Safety Reminder:
Persons witnessing suspected misuse of UAS in association with CSU San Marcos should contact University Police at 760-750-4567. Any incidents that result in property damage or injury must also be reported as soon as reasonably possible to University Police.

Operations over People:

In addition to the above operating rules, operator must adhere to FAA Regulation 14 CFR § 107.39. No person may operate a small unmanned aircraft over a human being unless:

- The human being is directly participating in the operation of the small unmanned aircraft;
- The human being is located under a covered structure or inside a stationary vehicle that can provide reasonable protection from a falling small unmanned aircraft; or
- The operation meets the requirements of at least one of the operational categories specified below. For more details, review: Operations over People General Overview and Find your aircraft Declaration of Compliance

Category 1	Category 2	Category 3	Category 4
Drones under .55lbs (250 grams) with propeller guards. Additionally, there may be no sustained flight over open-air assemblies unless the operation is compliant with Remote ID.	Drones certified by the FAA to not cause injury to a human being that is equivalent to or greater than the severity of injury caused by a transfer of 11 foot-pounds of kinetic energy upon impact from a rigid object.	Drones certified by the FAA to not cause injury to a human being that is equivalent to or greater than the severity of injury caused by a transfer of 25 foot-pounds of kinetic energy upon impact from a rigid object.	Drones certified by the FAA under a Special Airworthiness Certificate
NOTE: Drones that do not qualify under any of these four categories are not permitted to operate over people. Additionally, no drones may be operated over or near emergency or rescue operations, including public safety personnel during emergencies or when responding to calls, hurricanes, or wildfires.			

UAS Operations

CSUSM Drone Purchases:

All drone purchases must be approved by Integrated Risk Management. Requests for purchase are routed to IRM, via CSUBUY P2P.

- **Purchasing Restrictions:** Congress passed a law in December 2023 (the National Defense Authorization Act (NDAA) of 2024) that bans the use of certain drones, including those made by DJI, from all Federal agencies and those entities that receive Federal Grants and/or awards.
- Prior to purchasing any new drones, please review the following: Resources and Information, DJI Drones Use.

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Licensing/Certification:

When flying a drone in the US, an operator can choose between two regulatory options: Part 107 Small UAS regulations or the Exception for Limited Recreational Use. Under Part 107, all pilots must possess a Drone License. For recreational use, a TRUST certificate is required.

Remote Pilot Certificate (Drone License)

- License Fee is $150
- Eligibility requirements
- Obtain FAA Tracking Number
- Examination required – Unmanned Aircraft General – Small (UAG) (airman knowledge test) is a 120 minute, 60 question exam that goes over a wide range of topics
- Renewal every two years

TRUST Certificate

- Required for recreational flying in place of a Drone License
- No associated fee for certificate
- Requires online safety training and exam (20-30 minutes) - operators can obtain their certificate by completing the drone training at any of websites listed on the FAA's website: https://www.faa.gov/uas/recreational_fliers/knowledge_test_updates/
- Upon successful completion of exam, it is recommended that operators download their certificate and system generated "Authentication Token"
- Certificates never expire; however, lost certificates will require new training and exam
- Operators must obtain a certificate before they fly

Drone Registration:

Registration Exception: Drones that weigh .55 pounds or less (less than 250 grams) and are flown exclusively under the Exception for Recreational Flyers.

1. Operator is responsible for registering with the Federal Aviation Administration (FAA) to its legal owner through FAA Drone Zone
    a. All drones that weigh between 0.55 lbs (250 grams) and 55 lbs must be registered with the FAA
    b. Registration costs $5 and is valid for 3 years
    c. Drones that weigh more than 55 lbs require special FAA authorization
2. Label your drone; mark all aircraft with your registration number. Once registered operators may find their registration number at: Find your registration number at: www.faadronezone.faa.gov
3. Drones which are required to be registered or are registered, including those flown for recreation, business, or public safety, must operate in accordance with the rule on Remote ID.

a. There are three ways drone pilots can meet the identification requirements of the Remote ID rule: operate a Standard Remote ID Drone, operate a drone with a Remote ID broadcast module or operate without Remote ID at an FAA Recognized Identification Area (FRIA). A FRIA is a defined geographic area. Drones without Remote ID must operate within visual line of sight and within the FRIA.

Compliance Tip:
To determine if your drone or broadcast module is on an FAA-accepted Remote ID Declaration of Compliance, check the UAS Declaration of Compliance System website. If your drone or broadcast module is not listed on an FAA-accepted Remote ID Declaration of Compliance, see Remote Identification of Drones.

Flying off-Campus:

Campus drone processes apply when flying a drone off campus, on behalf of CSUSM. Anyone flying a drone is responsible for flying within FAA guidelines and regulations. It is up to the drone pilot to know the rules of the sky, and where it is and is not safe to fly. When conducting offsite or field research, remote pilots must ensure they fly at or below FAA-authorized altitudes in controlled airspace (Class B, C, D, and surface Class E designated for an airport) only with prior FAA authorization by using LAANC or DroneZone. The above is not applicable if flying at or below 400 feet in uncontrolled airspace.

If taking a drone international, please refer to Campus Export Control for review and compliance: https://www.csusm.edu/research/compliance/export/index.html

Where Can I Fly?: https://www.faa.gov/uas/getting_started/where_can_i_fly

1. For airspace information, utilize:
    a. B4UFLY (available via web and app for iOS and Android)
    b. Visual Flight Rules Charts
    c. FAA UAS Data Map
    d. NOTAM Search

Document Retention:

All Flight Operation Proposals, approved Flight Operations Plan, and related documents will be maintained by IRM for three years.

Sources and Resources:

Federal Aviation Administration Unmanned Aircraft Systems: http://www.faa.gov/uas/
Certificated Remote Pilots including Commercial Operators: https://www.faa.gov/uas/commercial_operators
Recreational Flyers and Community Based Organizations: https://www.faa.gov/uas/recreational_flyers
The Recreational UAS Safety Test (TRUST): https://www.faa.gov/uas/recreational_flyers/knowledge_test_updates
Pilot's Handbook of Aeronautical Knowledge:
https://www.faa.gov/sites/faa.gov/files/uas/recreational_fliers/where_can_i_fly/airspace_101/pilot_handbook.pdf
Part 107 Summary: https://www.faa.gov/sites/faa.gov/files/uas/resources/policy_library/Part_107_Summary.pdf