

sUAS Applications for Public Safety Operations Syllabus

Course Description:

Fundamentals in the use of sUAS in support of Public Safety operations. The course consists of three topics: Law Enforcement, Fire Operations and Search & Rescue. Each topic is facilitated by recorded lectures, quizzes, and practical assignments. The students will be taught to understand the practical application within each topic.

Intended Outcomes:

Upon completion of this course, students will be able to:

1. Understand the Fundamentals of Public Safety and sUAS
2. Understand a Search & Rescue Matrix.
3. Understand a Fire Operation sUAS support method.
4. Understand a Law Enforcement data acquisition operation.

Outcome Assessment Strategies:

The student will demonstrate competencies related to the following (via Written Test): effective mission planning, sUAS (Drone) Data Acquisition, Large Data/image management, analytical skills and effective use and understanding flight management practices..

Text & Materials

1. "UAS for Emergency Response Services", Christopher Schloe, 2017, ISBN: 978-1548493653
2. "Search & Rescue with Drones", Bart Massey, 2018, ISBN: 978-1-9804655-0-8

Course Content

1. Introduction to Public Safety Applications
 - a. History
 - b. Idea and Main Task
 - c. Principles
 - d. Definitions
 - e. Applications
2. Fundamentals of Public Safety and sUAS
 - a. Definitions and critical Components of UAS aviation unit

- b. Cost and Benefits of UAS for a Public Entity
 - c. Federal Laws
 - d. Community acceptance and integration
 - e. Qualifications
 - f. Standard Operating Procedures
- 3. sUAS for Emergency Response
 - a. Public Relations
 - b. Promotional Benefits
 - c. UAS Equipment
 - d. Command Center & Flight Team
 - e. Training, Emergencies, Weather, Airspace, FAR 107 review
- 4. sUAS for Search & Rescue
 - a. Software and Apps
 - b. Mission Planning
 - c. Search & Rescue Patterns
 - d. Missing Person
 - e. Disaster Relief
 - f. Locating your target, Mission outcome, Probability

Learning Objectives:

1. Understand the relationship between sUAS and Public Safety
 - a. Define what a public safety entity is and its critical components of a UAS aviation unit
 - b. List all possible incidents that UAS can be utilized for any Public entity
 - c. Identify the cost/benefit of utilizing UAS for certain incidents
 - d. Identify and discuss all federal laws pertaining to UAS
 - e. Review and discuss FAR Part 107, Review COA's and its purpose.
 - f. Identify how the community could help the UAS unit
 - g. Define the concept of transparency and its importance with a UAS aviation unit.
 - h. Identify major components of a standard operating procedure (SOP)
2. Understand the effective operation method for Search & Rescue
 - a. Demonstrate the understanding of effective UAS Patterns
 - b. Understand the Signs, outcomes and variables
 - c. Understand the Type of Search mission for different needs
 - d. Demonstrate what to do when the target is located.
3. Demonstrate the understanding on how apply Drones to emergency response.
 - a. Demonstrate the effective use of equipment
 - b. Understand the basics of the Command Center
 - c. Demonstrate the complete processing steps and provide accurate maps and/or images.
 - d. Discuss the Consideration of the Flight Crew and how to minimize Risk.
4. Successfully Pass the TOP Level 3 Exam