

Fundamentals in the use of sUAS in support of Public Safety operations

The course consists of three topics: Thermography, Emergency Response (Law Enforcement and Fire Operations) and Search & Rescue.

Intended Outcomes:

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

1. Define Infrared technology
2. Understand the thermal science and measurement technique.
3. Understand the Fundamentals of Public Safety and sUAS
4. Apply knowledge and Demonstrate the understanding of Thermal Data.
5. Understand the Search & Rescue Matrix.
6. Understand a Fire Operation sUAS support method.
7. Understand a Law Enforcement data acquisition operation.

Outcome Assessment Strategies:

The student will demonstrate competencies related to the following (via Written Test): Explain Thermography Concepts and Data Workflow, understand effective mission planning, understand a sUAS (Drone) Data Acquisition, understand Thermal images.

Text & Materials:

1. "Basic Infrared Thermography", Robert Wayne Ruddock, 2013, ISBN: 978-1-939740-01-4
2. "Introduction to Thermographic Principles", Fluke Corporation, 2009, ISBN: 978-0-8269-1535-1
3. "UAS for Emergency Response Services", Christopher Schloe, 2017, ISBN: 978-1548493653
4. "Search & Rescue with Drones", Bart Massey, 2018, ISBN: 978-1-9804655-0-8

Course Content

Introduction to Thermography

- a. History
- b. Idea and Main Task
- c. Principles
- d. Definitions
- e. Applications

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

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

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

Discussion:

Students are expected to use the internet to stay up to date on news, seek assistance with lecture topics by asking questions to the instructor. Additionally, the instructor can be reached directly via e-mail. Be professional and courteous when posting topics to any forum.

Quizzes:

There is a few quizzes throughout this course. These quizzes are based on the subject matter and are designed to gauge your assimilation of that material.

Assignment Descriptions:

The quizzes will be comprised of multiple-choice, matching, ordering, multiple select, and true/false questions. You are given a certain time to complete the quizzes and all the questions are derived from the assigned reading. Each quiz must be completed in one sitting. Once you begin the quiz you will not be able to stop and start again later. After the quiz closes, you will not be able to access it.