UAS 121 - UAS APPLICATIONS IN SURVEYING

Course Description

The objective of this class is to give the student the background necessary to operate drones for surveying applications. This course3 will cover the following topics: obtaining a FAA Commercial Drone License, operation of a drone system to include data collection for mapping, software training for creation of point clouds, mosaics, topographical maps, and more. Passing the FAA Remote Pilot written examination is a requirement of the class. FAA testing fee is not included in the course fee. Group 2 course.

Credit Hours

3

Contact Hours

4

Lecture Hours

2

Lab Hours

2

Course Learning Outcomes

Knowledge:

- Explain the requisite knowledge to become an FAA certificated Remote Pilot per the FAA Airmen Certification Standards (ACS).
- Identify basic UAS flight skills including safe operating practices, emergency procedures, and proper preflight planning procedures.
- Define UAS uses in land surveying including 3D model creation, contour line generation, volumetric survey, 2D orthomosaic creation, and creating point clouds.

Application:

- Analyze the latest drone technology including proper use of flight planning software, sensor technology, obtaining quality data, and post-flight data processing.
- Apply the latest drone technology to land survey scenarios.
- Create terrain models, topographical maps, and other land surveying products using drone technology.

Human Dimension:

- Critically reflect upon implications of unsafe UAS operations per the FAA Airmen Certification Standards (ACS).
- See oneself as an operator of technology that requires discipline and sound judgment in order to ensure safe UAS operations.

Caring - Civic Learning:

- Reflect on how new and emerging drone technology will play a role in the development of a future society.
- Recognize the value of ensuring a culture of aviation safety and the positive public perception of the unmanned aircraft industry.

Learning How to Learn:

- Self-monitor one's ability to adapt to a changing environment and make decisions in order to solve problems.
- Transfer knowledge of current UAS technology to future applications.