Learning Objectives

You’ll be able to:

Explore unmanned aircraft system (UAS), or drone, platforms.

Discuss the use of UAS for aerial photography, ortho-photos, terrain modeling, 3D models and LiDAR.

Examine UAS photogrammetry principles and procedures.

Review FAA UAS regulations and get a primer on the FAA Part 107 knowledge test.

Continuing Education Credits

This continuing education seminar provides 6.5 PDHs to professional land surveyors, engineers and geologists.

Presented by: Mark D. Jones, P.E.

Aerial Mapping Program Overview

UAS-Drone Platforms
Types of UAS/sUAS platforms
Uses of drone technology
Cameras
UAS costs

UAS Mapping Principles
General aerial photography
Ortho-photos
Photogrammetry
Terrain modeling
3D models
LiDAR point clouds and scanning
GIS dataset acquisition

History and Development of the UAS Platforms

UAS Photogrammetry – Principles and Procedures
Photogrammetry basics
GPS and coordinate systems
Data georeferencing
Survey control
Data acquisition
Post processing and adjustments

Post Processing – Software Applications
Basic data requirements
Computer hardware
Commercial software applications
Pix4D
DroneDeploy
AutoDesk
Others

Demonstration of Small Photogrammetry Project
Live demonstration of a small project using Pix4D

FAA Commercial UAS Regulations
Commercial use activities
FAA Part 107 licensing requirements
Flight regulations for UAS
Airspace restrictions

FAA Knowledge Test – General Overview
Primer on the FAA Part 107 knowledge test
Knowledge test areas of study
Do I need to be a pilot?
General do’s and don’ts of UAS operations
Commercial operator liability considerations

Discuss the use of unmanned aircraft systems (UAS), or drones, for general aerial photography, terrain modeling, 3D models, LiDAR and GIS dataset acquisition

Explore procedures for UAS use for photogrammetry

Review commercial software applications, including Pix4D, DroneDeploy and AutoDesk

Examine FAA commercial UAS regulations

See a demonstration of a small photogrammetry project

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Mark D. Jones, P.E., Principal, Hartech Engineering & Consulting, LLC

Mr. Jones, P.E. is president of Hartech Engineering, which was founded in 2007 as a multi-discipline civil engineering consulting firm providing infrastructure, development and municipal design services for the public and private sectors. Bringing over 50 years of engineering expertise along with specific state-of-the-art, computer-aided technology to achieve efficient, cost saving design solutions, he also provides hydrology and hydraulic studies and reports along with general civil engineering support for prime consultants to PennDOT or local municipality projects. Mr. Jones is a licensed pilot and studied Military Civil Engineering while serving in the USAF and continues his masters education locally through Penn State. Additionally, he is also a registered professional engineer in the states of Pennsylvania, Maryland, Arizona and Georgia.

Here’s what past attendees had to say about the program and presenter Mark Jones:

“Loved the seminar!” — CAD Designer

“Very informative & useful course for mapping with drones. Covers basics to mission accomplishment.” — Land Surveyor and Professional Engineer

“Mark is very knowledgeable of material he presented. He also had a very good delivery ability”

—Civil Engineering/Land Surveying/Architecture & Consulting, LLC

For more information and other online learning opportunities visit: www.halfmoonseminars.org/webinars/

Additional Learning

Webinar Series

National Electrical Code: Onsite Power Generation and Distribution

• National Electrical Code: Onsite Power Generation and Distribution Part 1 Weds., June 6, 2018, 11:00 AM - 2:15 PM PDT

• National Electrical Code: Onsite Power Generation and Distribution Part 2 Thurs., June 7, 2018, 11:00 AM - 2:15 PM PDT

HVAC Series

• Heating, Ventilation and Air Conditioning Principles Thurs., June 7, 2018, 11:00 AM - 1:00 PM PDT

• HVAC System Design Considerations Thurs., June 7, 2018, 1:30 - 2:10 PM PDT

• Evaluating HVAC Systems and Equipment Fri., June 8, 2018, 11:00 AM - 12:00 PM PDT

• HVAC System Controls and Techniques Fri., June 8, 2018, 12:30 - 2:05 PM PDT

Introduction to Vibrations

• Introduction to Vibrations Thurs., June 14, 2018, 11:00 AM - 1:00 PM PDT

• Eigenvalues, Eigenvectors and Motion Thurs., June 14, 2018, 1:30 - 5:00 PM PDT

• Analysis and Test Methods Fri., June 15, 2018, 11:00 AM - 12:50 PM PDT

• Designing for Vibration and Failure Analysis Fri., June 15, 2018, 1:00 - 2:30 PM PDT

Pedestrians and Bicycle Transport Planning

• Introduction to Current Conditions and Trends in Biking and Walking Thurs., June 21, 2018, 11:00 AM - 12:30 PM PDT

• Engineering and Infrastructure: Design for Walkability and Bikeability Thurs., June 21, 2018, 1:00 - 2:30 PM PDT

• Developing a Walking and Biking Plan, Part I Fri., June 22, 2018, 11:00 AM - 12:30 PM PDT

• Developing a Walking and Biking Plan, Part II Fri., June 22, 2018, 1:00 - 2:30 PM PDT

Continuing Education Credit Information

This seminar is open to the public and provides 6.5 PDHs to professional land surveyors, engineers, and geologists in most states, including Pennsylvania. Educators and courses are not subject to preapproval in Pennsylvania.

HalfMoon Education is an approved continuing education sponsor for engineers and land surveyors in Indiana, Maryland, New York (NXSED No. 35), North Carolina, and North Dakota. HalfMoon Education is an approved continuing education provider for engineers in Florida and New Jersey (Approval No. 26G000007007).

Attendance will be monitored and attendance certificates will be available after the seminar for most individuals who complete the entire event. Attendance certificates not available at the seminar will be mailed to participants within fifteen business days.

Can’t Attend? Order the CD/Manual Package:

An audio recording of this seminar is available for $289 (including shipping). Allow five weeks from the seminar date for delivery. Please refer to specific state licensing rules or certification requirements to determine if this learning method is eligible for continuing education credit.