

Drone Applications for Emergency Management



Aeryon SkyRanger



DJI Inspire



DJI Phantom 4 Pro 1



Splash Drone SAR Package



Yuneec H520

Portland Community College Remote Pilot Training Program

Course Description

Unmanned Aircraft Systems (UAS) are rapidly becoming an essential tool for emergency management from aerial reconnaissance to emergency payload delivery. Technological innovation and changing governmental regulations are creating opportunities to integrate UAS with advanced emergency management programs. This course will examine various applications for drones and how these can support and enhance emergency management programs. The focus will be on multicopters, drones with multiple rotors (propellers). These have the most versatility and potential for emergency management applications. Students will also receive flight training and preparation for the FAA Remote Pilot exam.

Class Format

Class sessions will involve the presentation of material by the instructor; class discussion; guest speakers and with international experts. Class sessions include individual flight training with a quadcopter that has state-of-the-art aerodynamics, navigation and reconnaissance capabilities. Students will be trained to pilot the quadcopter, use the first-person-view (FPV), take high-definition photos/video, and other applications. Students will also conduct research to identify UAS applications for their specific field of interest. There will also be opportunities for inter-departmental collaborations with Geography and Aviation Sciences.

Required Reading

There are several required reading materials which will be available on MyPCC including, but not limited to:

- FAA *Aircraft Circular 107-2*
- FAA *Airman Certification Standards*
- *Drone Dictionary*
- *Drones for Disaster Response and Relief Operations*
- *Remote Pilot Study Guide*
- Other materials to be provided including videos and drone manuals

Course Website

In addition to the MyPCC website, students are invited to join the Portland Community College Drones Facebook Website at <https://www.facebook.com/groups/PCCDrones/>

Drone Applications for Emergency Management



Ric Stephens, Instructor
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Ric Stephens has been an aerial photographer since soloing in a Cessna in 1979. He and his wife, June, have been using drones for education and municipal services since 2013. Ric has taught college courses including "Drones: Multidisciplinary Uses" at Portland State University, multiple courses at the University of Oregon, and "Drone Pilot Basics" at Portland Community College. He has been a speaker / flight demonstrator for numerous public programs. Ric has written numerous articles for professional organizations, and other publications such as the *Drone Dictionary* and *Drone Database*. Ric and June are Community Emergency Response Team (CERT) members and have conducted numerous drone flights in conjunction with training exercises. Ric was a certified Emergency Medical Technician (EMT) in Southern California and an urban planning advisor for post-disaster recovery in Croatia, Haiti and Mexico. Ric passed the FAA Remote Pilot exam the first day it was offered.

Emergency Management Applications

- monitoring natural disasters
- communication relays
- monitoring landslides
- searching for missing persons
- fire scene examination
- monitoring floods
- post disaster inspection and relief
- infrastructure inspection
- traffic surveillance and many more

**Planning
Mitigation
Response
Recovery**

Emergency Unmanned Aerial Systems Data Collection

live footage
GIS mapping
FLIR thermal camera imaging
aerial surveys
sonar pulse
image sensors
chemical sensors

Course: #199 / Drone Applications for Emergency Management

Tuesdays / 10 sessions

3 Credits

August 28, 2017- December 16, 2017

4:00 - 7:30 pm

Cascade Campus

Students will complete an assigned project which matches their EM interests. These will include various emergency management disciplines and presentation formats. Learn the state and national Federal Aviation Association laws, common community misconceptions, and embrace drones with the core knowledge you will learn in this class.

Cost: \$104 per credit (as of 6/1/17) Additional Fee: \$80.00 (personal training drone)

Flight Training

Each student will receive one hour (1 + hr) of flight training, and a personal drone to learn basic flight maneuvers and emergency management applications.

Interested in more courses on Drones in Emergency Management?
contact: jane.ellis@pcc.edu for information
971-722-5608

www.pcc.edu/programs/emergency-mgmt/