University of Arkansas - Fort Smith
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General Syllabus

UAS 2113 UAS Maintenance

Credit Hours: 3 Lecture Hours: 2 Laboratory Hours: 2

Prerequisite: None
Prerequisite or corequisite: ELEC 1242 Introduction to Electronics Technology
Corequisite: None

Effective Catalog: Fall 2020

I. Course Information

A. Catalog Description

Coverage of the knowledge and skills necessary to repair and maintain both fixed- and rotary-wing aircraft during field operations and to ensure continued airworthiness throughout the service life of the aircraft.

B. Additional Information

Instruction emphasizes safe practices and provides a hands-on approach to tools and equipment used in maintaining UAS. Fundamental theory, troubleshooting, and repair skills for circuits, subsystems, and components typically found on UAS fixed- and multi-rotor aircraft will be discussed.

II. Student Learning Outcomes

A. Subject Matter

Upon successful completion of this course, the student will be able to:

1. Solder connectors – wire-to-wire and wire-to-board connections.
2. Troubleshoot, maintain, inspect, and repair multi-rotor aircraft.
3. Create inspection criteria and aircraft maintenance logbook records for multi-rotor UAS.

B. University Learning Outcomes

This course enhances student abilities in the following areas:

Analytical Skills
Critical Thinking: Students will identify a hardware problem, deconstruct the problem into its component parts and develop a solution.

III. Major Course Topics

A. System Safety – Electrical shock, burns, lasers, RF, chemical, dust, fumes, and physical.
B. Record-keeping
C. Maintenance Practices
D. Battery Fundamentals
E. Electric Propulsion
F. Internal Combustion Engines
G. Propellers
H. Servo Motors
I. R/C Transmitters and Receivers
J. Avionics
K. Airframes