

University of Arkansas - Fort Smith
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General Syllabus

UAS 1213 Computer Hardware

Credit Hours: 3

Lecture Hours: 2

Laboratory Hours: 2

Prerequisite: UAS 1003 Introduction to Unmanned Systems

Prerequisite or corequisite: None

Effective Catalog: Fall 2020

I. Course Information

A. Catalog Description

Introduction to the physical components of a UAS Ground Control System (GCS), including component concepts; interaction of components; how components respond to software instructions; and basic computer maintenance and troubleshooting.

B. Additional Information

This is a foundation course which will provide the student with the knowledge and skills necessary to understand, troubleshoot, and repair basic computer and networking problems associated with unmanned aerial systems. Students will assemble and configure a student-owned ground control system (GCS) and autopilot to be used in UAS class progression.

II. Student Learning Outcomes

A. Subject Matter

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

1. Demonstrate the roles that the various physical parts of a computer play and how these parts work.
2. Troubleshoot PC computer hardware problems.
3. Compare components that comprise a ground control station and how they work together.
4. Select and install ground control station computer parts.
5. Configure a local private network.
6. Set up a ground control system.

B. University Learning Outcomes

This course enhances student abilities in the following areas:

Analytical Skills

Critical Thinking: Students will identify a hardware problem, break the problem down into its component parts and develop a solution

III. Major Course Topics

- A. Computer components
- B. Power supplies
- C. Mother boards
- D. Processors
- E. Memory
- F. Storage Devices
- G. Input/output devices
- H. Network and interconnectivity essentials (Ethernet, RS-232, RS-485, RS-422, I2C)
- I. Maintenance and Troubleshooting