WILLIAM RAINEY HARPER COLLEGE
BUSINESS AND SOCIAL SCIENCE DIVISION
GENERAL COURSE OUTLINE

GEG	161	Introduction to Small Unmanned Aerial Systems (sUAS)	(1- 2)	2
Course Prefix	Course Number	Course Title	Lec-Lab	Semester Hours

COURSE DESCRIPTION

Introduces Small Unmanned Aerial Systems (sUAS) safety procedures, mission planning best practices, maintenance protocols, flight proficiency, and the fundamentals of sUAS image processing.

Prerequisite: GEG 160 or valid Federal Aviation Administration Remote Airman Certificate (Part 107)

TOPICAL OUTLINE

I. Types of sUAS
- A. Multi-rotor
- B. Fixed-wing

II. sUAS Operations
- A. Mission planning
- B. Pre and post flight checklists
- C. Emergency procedures
- D. Crew resource management planning
- E. Maintenance protocols
- F. Practical radio communications

III. Flight Proficiency
- A. Preflight checks
- B. Takeoff and landing
- C. Airborne maneuvers
- D. Post flight checks
- C. Aviation weather reports and forecasts

IV. Data Acquisition
- A. Site survey
- B. Flight planning software
- C. Data storage and backup
- D. Drone imagery fundamentals

METHODS OF PRESENTATION

1. Lecture
2. Computer-based learning
3. Lab and field-based exercises

STUDENT OUTCOMES: *(The student should…)*

1. distinguish between multi-rotor and fixed-wing sUAS
2. apply sUAS operational best practices to mission planning, conducting pre and post flight checks, emergency procedures, and crew resource management

3. understand sUAS maintenance program development
4. demonstrate radio communication procedures for communicating with towered and non-towered airports
5. demonsttate flight proficiency and the use of pre and post flight checklists
6. utlize software tools to create basic drone imagery products

METHODS OF EVALUATION

Grades are based on demonstrated proficiency in subject matter. Proficiency is determined from:
1. Laboratory exercises
2. Exams
3. Homework
4. Final project

TEXTBOOK & INSTRUCTIONAL MATERIALS

Pix4D. (2019). Pix4D Mapper – Laboratory Manual. https://www.pix4d.com/education

Prepared by: Mukila Maitha
Spring, 2020