CS 176.12 Course Outline as of Spring 2022

CATALOG INFORMATION

Dept and Nbr: CS 176.12 Title: APPLIED DRONE PROJECTS Full Title: Applied Drone Projects Last Reviewed: 8/27/2018

Units		Course Hours per Week		Nbr of Weeks	Course Hours Total	
Maximum	3.00	Lecture Scheduled	2.50	17.5	Lecture Scheduled	43.75
Minimum	3.00	Lab Scheduled	1.50	8	Lab Scheduled	26.25
		Contact DHR	0		Contact DHR	0
		Contact Total	4.00		Contact Total	70.00
		Non-contact DHR	0		Non-contact DHR	0

Total Out of Class Hours: 87.50

Total Student Learning Hours: 157.50

Title 5 Category:	AA Degree Applicable
Grading:	Grade or P/NP
Repeatability:	00 - Two Repeats if Grade was D, F, NC, or NP
Also Listed As:	
Formerly:	

Catalog Description:

Use of drone technology to complete real-world projects including photography/videography and basic mapping.

Prerequisites/Corequisites: Course Completion of CS 76.11

Recommended Preparation:

Limits on Enrollment:

Schedule of Classes Information:

Description: Use of drone technology to complete real-world projects including photography/videography and basic mapping. (Grade or P/NP) Prerequisites/Corequisites: Course Completion of CS 76.11 Recommended: Limits on Enrollment: Transfer Credit: Repeatability: Two Repeats if Grade was D, F, NC, or NP

ARTICULATION, MAJOR, and CERTIFICATION INFORMATION:

AS Degree: CSU GE:	Area Transfer Area	Effective: Effective:	Inactive: Inactive:
IGETC:	Transfer Area	Effective:	Inactive:
CSU Transfer	: Effective:	Inactive:	
UC Transfer:	Effective:	Inactive:	

CID:

Certificate/Major Applicable:

Certificate Applicable Course

COURSE CONTENT

Student Learning Outcomes:

At the conclusion of this course, the student should be able to:

- 1. Determine correct drone equipment to complete the requirements of a given project
- 2. Manage drone-related projects, including working in teams

Objectives:

At the conclusion of this course, the student should be able to:

- 1. Choose appropriate drone-related equipment for a given situation
- 2. Work in a team setting
- 3. Develop project parameters and plans
- 4. Provide deliverables which meet project needs
- 5. Assess project results in order to improve workflow

Topics and Scope:

- I. Different Types of Drones
 - A. Consumer-level toys
 - B. Consumer-level
 - C. Professional-level
- II. Drone Payloads
 - A. Cameras
 - 1. Visible light
 - 2. Infrared (thermal)
 - 3. Near-infrared
 - B. Other sensors and equipment

III. Example Drone Projects

- A. Photography/videography
 - 1. Capturing images and video
 - 2. Editing images and video
- B. 2D and 3D mapping
- C. Conducting research

- 1. Sampling
- 2. Gathering visual data
- 3. Using other sensors
- IV. Completing Projects
 - A. Project planning
 - 1. Defining project parameters
 - 2. Developing requirements
 - 3. Creating teams
 - B. Teamwork
 - 1. Team member selection
 - 2. Team roles and responsibilities
 - 3. Post-project assessment
 - C. Project completion
 - 1. Meeting deadlines
 - 2. Preparing deliverables
 - 3. Assessing results

All areas to be addressed in both lecture and lab

Assignment:

Lecture-Related Assignments:

- 1. Reading of 10-20 pages per week
- 2. Team project requirement plans (1 3)
- 3. Team project timelines (1 3)
- 4. Project assessments (1 3)
- 5. Quizzes (2 4)
- 6. Final exam

Lecture- and Lab-Related Assignments: 1. Completed project deliverables (1 - 3)

Methods of Evaluation/Basis of Grade:

Writing: Assessment tools that demonstrate writing skills and/or require students to select, organize and explain ideas in writing.

Project plans, timelines, deliverables, and assessments

Problem Solving: Assessment tools, other than exams, that demonstrate competence in computational or non-computational problem solving skills.

Project plans, timelines, deliverables, and assessments

Skill Demonstrations: All skill-based and physical demonstrations used for assessment purposes including skill performance exams.

Project deliverables

Problem solving 20 - 50%

Skill Demonstrations
20 - 30%

Quizzes and final exam

Other: Includes any assessment tools that do not logically fit into the above categories.

Attendance and participation

Representative Textbooks and Materials: Instructor prepared materials

Exams 10 - 20%

Other Category 10 - 15%