DRONE AND AUTONOMOUS SYSTEMS ASSOCIATE IN SCIENCE DEGREE

Division: Technology and Engineering

PROGRAM CODE: 2S44110

The **Drone and Autonomous Systems Associate in Science Degree** is designed to develop the skills necessary to facilitate transfer to a university and provide a comprehensive understanding of operations and development work with uncrewed aircraft systems across a wide range of industries, such as inspection, mapping, public safety, agriculture, and others. It also prepares students for upper division curriculum at a university in technical fields. Students complete a set of core requirements and a set of electives in their chosen area of emphasis. This degree requires a total of 22-26 units, in addition to other graduation requirements.

Code	Title	Units
Required courses (13 units):		
TECH 140 F	Basic Drone Maintenance and Repair	3
TECH 151 F	Applied Drone Piloting	3
TECH 158 F	Advanced Drone Piloting Skills	2
TECH 160 F	Infrared Thermography	2
TECH 165 F	Aerial Mapping and Photogrammetry	3
Restricted Electives (9-13 units) Select one area of emphasis listed below.		**9-13**
Mapping and Geographic Analysis Emphasis Electives (9 units):		
GEOG 102 F	Physical Geography	3
or GEOG 102HF	Honors Physical Geography	
GEOG 120 F	Global Environmental Problems	3
GEOG 230 F	Introduction to Geographic Information Systems (formerly GEOG 281AF)	3
GEOG 231 F	Spatial Analysis: Mapping for Solutions and Decision-Making	3
GEOG 237 F	Intermediate and Advanced GIS Applications	3
GEOG 238 F	Principles of Map-Making and Cartographic Design	3
Photography/Cinematography Emphasis Electives (9 units):		
CRTV 157 F	Digital Production and Non-Linear Editing for Video and Film	3
CRTV 164 F	Advanced Digital Production and Non-Linear Editing for Video	3
CRTV 175 F	Documentary Filmmaking	3
JOUR 215 F	UAV and Drone Reporting	3
PHOT 101 F	Introduction to Photography	3
PHOT 103 F	Intermediate Photography	3
PHOT 216 F	Advanced Digital Photography	3
Construction and Inspection Emphasis Electives (9-13 units):		
ARCH 111 F	Introduction to Architecture	3
ARCH 124 F	Architectural CAD I	3
CSTR 041 F	International Residential Code	3
CSTR 108 F	Surveying for Builders	2
CSTR 110 F	Residential Estimating	3
DRAF 101 F	Blueprint Reading for Manufacturing (formerly DRAF 070 F)	2
DRAF 140 F	AutoCAD for Industry	3
ENGR 101AF	Surveying I	4
WELD 096 F	Welding Inspection Technology	5
Public Safety Emphasis Electives (9-11 units):		
AJ 050 F	Accident Reconstruction by Drone	2
AJ 051 F	Night Operations by Drone	1
AJ 052 F	Search and Rescue by Drone	1
AJ 053 F	Tactical Operations by Drone	1
AJ 223 F	Criminal Investigation	3
AJ 230 F	Crime Scene Techniques	3
AJ 252 F	Police Patrol	3
AJ 279 F	Contemporary Issues in Law Enforcement	3
Agriculture Emphasis Electives (9-12 units):		
HORT 001 F	Principles of Horticulture I	4
HORT 045 F	Pest Control Certification and Safety	3
HORT 156 F	Plant Nutrition	2
HORT 207 F	Plant Pathology	3
HORT 215 F	Diseases/Pests Ornament Plants	4
HORT 219 F	CAD Applications in Horticulture	3
TECH 260 F	Multispectral and Hyperspectral Sensing with Drones	3
Environmental Science Emphasis Elective (9-11 Units):		
ENVS 105 F	Environmental Biology	3
ENVS 141 F	Desert Natural History	1
ENVS 142 F	Geology and Marine Biology of the Channel Islands	2
ESC 101 F	Earth Science Survey	3
ESC 105 F	Introduction to Weather and Climate	3
ESC 106 F	Geology of Orange County Area	2
ESC 110 F	Introduction to Climate Science	3
ESC 120 F	Geology of California	3
ESC 142 F	Geology of Mojave Desert Area	1
ESC 144 F	Geology of Southern California Mountain Areas	1
ESC 230 F	Coastal Oceanography	3
Total Units		**22-26**

Program Level Student Learning Outcomes

OUTCOME 1: Execute a safe and proper takeoff and landing of a drone.

OUTCOME 2: Identify the five different types of airspace defined by the FAA

OUTCOME 3: Create a simple 3D scan or map from data collected by a drone.

OUTCOME 4: Define the basic laws established by the Federal Aviation Administration regarding drones.

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