

DRONE APPLICATIONS FOR MARINE AND ENVIRONMENTAL RESEARCH CERTIFICATE

Division: Technology and Engineering

PROGRAM CODE: 2C46116

The Drone Applications for Marine and Environmental Research Certificate equips students with the knowledge and hands-on skills needed to utilize drones in marine and coastal environments effectively. This program explores the innovative use of drone technology in marine biology, coastal environmental monitoring, and ecological research. This certificate requires a total of 19-21 units. A grade of C or better is required in each course taken.

Code	Title	Units
Required Courses (15 units):		
BIOL 141 F	Marine Mammal Biology and Conservation	3
BIOL 222 F	Marine Biology	3
DRON 105 F	Applied Drone Piloting	3
DRON 145 F	Beginning ROV Piloting	3
ESC 130 F	Introduction to Oceanography	3
or ESC 130HF	Honors Introduction to Oceanography	
Restricted Electives (4-6 units):		4-6
DRON 120 F	Infrared Thermal Imaging Level 1	2
DRON 130 F	Aerial Mapping and Photogrammetry	3
DRON 170 F	Introduction to LiDAR Acquisition	3
ENVS 142 F	Geology and Marine Biology of the Channel Islands	2
ESC 110 F	Introduction to Climate Science	3
ESC 230 F	Coastal Oceanography	3
Total Units		19-21

Program Level Student Learning Outcomes

Outcome 1: Evaluate environmental data collected through drone operations to identify patterns and propose solutions for coastal ecosystem challenges.

Outcome 2: Employ drone systems to effectively capture and analyze data for use in marine biological or environmental research.

https://www.curricunet.com/fullerton/reports/program_report.cfm?programs_id=1561