

Minor

Uncrewed Systems Design & Development Minor

The Frank Batten College of Engineering and Technology offers a minor program in Uncrewed Systems Design & Development that develops focused expertise in uncrewed vehicles and systems (aerial, surface and underwater). Autonomous and uncrewed systems (including "drones") are a rapidly emerging interdisciplinary technology area that merge many disciplines of engineering, science, and beyond. This 12-credit minor is open to students from any major, and is an especially appropriate minor for undergraduates in engineering and science fields.

Requirements

Prerequisites may be required for many courses in the minor. Please check the course description for each course for prerequisite information.

The basic course requirements are as follows:

Core Courses

ENGN 485	Introduction to Uncrewed Aerial Systems	3
or GEOG 409	Drone Applications Proseminar	
ENGN 486	Multicopter UAS Design and Construction	3

Elective Courses

Select two of the following:		6
ECE 346	Microcontrollers	
ECE 408	Fundamentals of Electric Vehicles	
ECE 445	Introduction to Computer Vision	
ECE 463	Design and Modeling of Autonomous Robotic Systems	
ENGN 487	Fixed Wing and VTOL UAS Design and Construction	
ENGN 488	Autonomous Mission Platforms Systems Integration	
GEOG 402	Geographic Information Systems	
MAE 403	Flight Mechanics	
MAE 406	Flight Vehicle Aerodynamics	
MAE 417	Propulsion Systems	
MAE 438	Applied Analog and Digital Control	

For completion of a minor, a student must have a minimum overall cumulative grade point average of 2.00 in all courses specified as a requirement for the minor exclusive of lower-level courses, prerequisites and corequisites and complete at least six hours of upper-level courses in the minor requirement through courses offered by Old Dominion University.

A maximum of six credits for disciplinary minors may share with other areas of the student's program. Approval of the department chair, chief departmental advisor, or designee may be required. Special attention should be paid to major/minor combinations where multiple courses overlap to ensure that the student is taking enough unique hours for the minor.