M.S. in Uncrewed Systems

This degree offering is for those students wishing to pursue higher education in the disciplines of autonomy and uncrewed systems. Program course offerings allow students with both limited and strong backgrounds in technology to embrace the evolution of uncrewed systems and better understand how they will shape modern society. Issues such as infrastructure development, policy procurement, systems design, operations, safety, and project management will be examined to provide candidates with a strong background in the overall industry.

Students who wish to pursue this program should have a strong interest in technology and how it will be integrated into modern society. A background in uncrewed systems is not required; however, the program is open to those who already have degrees in uncrewed technologies or engineering. This combination allows students to gain foundational knowledge while at the same time allowing a space for those with experience to contribute to active classroom discussion. The program also offers lateral transferability to Embry-Riddle's Worldwide campus in the case students wish to pursue distance education options.

Admissions Criteria

Students will:

- Discuss the origination and subsequent trending of uncrewed and autonomous systems capabilities, components, and technology.
- Describe the effects of legal and regulatory development on uncrewed system industry practices.
- Investigate uncrewed systems platform and payload selection based on mission oriented goals.
- Explain opportunities and threats associated with the use of uncrewed autonomous technologies across related industries.
- Analyze and interpret data, through use of appropriate statistical methods, to support uncrewed systems application and operations.
- Examine the viability of uncrewed and autonomous systems, based on current technologies, processes, and resources.
- Predict how uncrewed and autonomous technologies will affect future markets.
- Assess and synthesize data to address a evidenced knowledge gap or definable problem within the uncrewed systems industry.

Core

MSA 534	Application of Uncrewed Systems	3
or UNSY 501 Application of Uncrewed Systems		
MSA 535	Current Issues in Uncrewed Systems	3
or UNSY 502 Current Issues in Uncrewed Systems		
MSA 538	Legal and Regulatory Issues in Uncrewed Systems	3
or UNSY 503 Legal and Regulatory Issues in Uncrewed Systems		
MSA 625	Uncrewed Systems Interoperability and Control	3
or UNSY 606 Uncrewed Systems Interoperability and Control		
MSA 635	Uncrewed Systems Operational Configuration	3
or UNSY 603 Uncrewed Systems Operational Configuration		
Total Credits		**15**

Research Core

MSA 662	Statistical Analysis for Aviation/Aerospace	3
MSA 670	Research Methods in Aviation/Aerospace	3
Total Credits		**6**

Research Project

Option 1		
MSA 691	Graduate Capstone Research Project	3
Open Elective (See list below) *		3
Option 2		
MSA 700	Thesis	6
Total Credits		**6**

Open Elective

Open Elective *	
MSA 511	Earth Observation and Remote Sensing
MSA 512	Space Mission and Launch Operations
MSA 515	Aviation/Aerospace Simulation Systems
MSA 531	Robotics and Control
MSA 547	Leadership and Critical Decision Making in the Aviation Industry
MSA 552	Introduction to Research Methods and Statistical Analysis
MSA 609	Aircraft Maintenance Management
MSA 611	Aviation/Aerospace System Safety
MSA 619	Airport Certification and Operations Safety
MSA 696	Graduate Internship in Aeronautical Science

* Open elective may be satisfied through any 500-600 level course, as approved by the program coordinator.
These additional three credits could be filled with a UAS-related elective course (approved by program coordinator), an approved internship, a portion of credits from the master's thesis requirements, or an additional statistics course for students.

UAS Program Development Specialization

MSA 624	sUAS Operational Planning and Safety Management	3
or UNSY 620 sUAS Operational Planning and Safety Management		
MSA 554	Project Management in Aviation Aerospace	3
or ASCI 674 Project Management in Aviation/Aerospace		
Total Credits Required		**33**