

Master of Aviation Cybersecurity

Aviation cybersecurity encompasses a very broad and specialized environment that includes risks to avionics, in-flight entertainment systems, air traffic management systems, aviation maintenance systems, aviation supply chains, airport operations, and aerospace operations.

Aviation cybersecurity threats include attacks to steal customer and proprietary data, disrupt airport operations and aircraft maintenance and potentially impact aircraft flight navigation and tracking. Over the past several years we have seen information on hundreds of millions of aviation customers stolen in cyber-attacks. In addition to data breaches, aviation systems have also been targeted in ransomware attacks where information and services are made unavailable until a ransom is paid. Aviation experts have also expressed concern over potential vulnerabilities in newer aviation technologies that communicate information between aircraft and with air traffic control and ground services without any authentication or encryption, which could allow injection of false messages and ghost aircraft.

In response to the tremendous need to protect the aviation ecosystem, Embry-Riddle, as an internationally recognized education leader in aviation and cybersecurity expertise offers the Master of Aviation Cybersecurity (MAC) program to both define and lead the field of aviation cybersecurity.

The MAC is an academically robust graduate aviation cybersecurity program that will benefit stakeholders both in industry and in the government.

Estimated Cost of Attendance

Students will:

- Evaluate the air transportation ecosystem impacts.
- Apply fundamentals of cybersecurity and information assurance.
- Examine the impact of operation technology on aviation/aerospace supply chains, maintenance, and operations.
- Evaluate cybersecurity risks within the aviation/aerospace ecosystem.
- Develop effective cybersecurity mitigation strategies specific to the aviation/aerospace ecosystem.
- Analyze cybersecurity risks and strategies.
- Communicate cybersecurity risks and strategies with both technical and non-technical stakeholders.

DEGREE REQUIREMENTS

Core/Major

ASCI 602	The Air Transportation System	3
MAVM 609	Aircraft Maintenance Management	3
MACY 515	Foundations of Aviation Cybersecurity	3
MACY 520	Aviation Cybersecurity Threats, Actors, Tools, and Techniques	3
MACY 525	Aviation Cybersecurity Risk Management and Resilience	3
MACY 510	Security Engineering and Management	3
MACY 516	Operational Technology Risks in Aviation - IoT, ICS, SCADA	3
MACY 517	Uncrewed and Autonomous Systems Cybersecurity	3
SPAC 515	Cybersecurity Applications in Space	3
MACY 526	Cybersecurity Standards, Laws, and Regulations	3

Total Credits **30**