M.S. in Airworthiness Engineering

The Master of Science in Airworthiness Engineering (MSAWE) degree program will educate participants in the foundational elements of airworthiness engineering as they apply to aerospace vehicle certification, comprehensively exploring relevant civil and military airworthiness requirements to provide an understanding of the implications and impact on manned, uncrewed, and other innovative vehicle systems.

Admissions Requirements:

Official transcript(s) from the accredited degree conferring institution(s) and transcripts reflecting graduate level coursework.

- Applicants must possess a Bachelor of Science degree in Physics, Math, OR an ABET accredited (EAC) Engineering degree; exceptions to this will be reviewed on a case-by-case basis.
- Applicants must demonstrate a cumulative grade point average (CGPA) of 3.0 or higher on a 4.0 scale, at the undergraduate and graduate levels.

EXCEPTIONS: Applicants who fail to satisfy the guidelines for full admission may be considered for conditional admission under circumstances determined by the Admissions Office or Program Chair. Applicants will be required to submit the following documentation in addition to official transcripts:

- *Three (3) letters of recommendation, including one (1) from a recent instructor or trainer*
  Download the ***Graduate Program Recommendation Form***
- *Resume outlining work experience, education, relevant activities and awards*
- *A type-written* Statement of Objectives*, demonstrating a strong capacity for written communication and addressing the following topic areas-*
  - *The applicant's understanding, in their own words, of what Airworthiness Engineering entails*
  - *The applicant's background and exposure to engineering to-date, in both their academic and professional career*
  - *A statement of the particular MSAWE electives the applicant intends to pursue (Structures, Systems, or Management) and a discussion of why this election was made.*
  - *An explanation of the applicant's overall academic and career objectives, including how the applicant believes that the MSAWE program will positively contribute to the achievement of stated goals*

Current students requesting to transfer into the MSAWE program will be required to meet the same program requirements stated above.

Estimated Cost of Attendance

Students will:

- Exhibit an understanding of how civil and military regulatory frameworks, National and International, apply to contemporary issues in air system certification.
- Perform engineering analysis using acceptable methods for substantiating airworthiness compliance to requirements.
- Effectively communicate information, both technical and procedural, in written and oral forms to audiences in the aviation and aerospace disciplines.
- Make use of investigative methods to derive innovative airworthiness compliance solutions over the life cycle.
- Demonstrate topic mastery of airworthiness engineering principles and processes for selected technical discipline areas in air system certification.
- Recognize the importance of honest and ethical behavior concerning airworthiness in all their work, their spoken statements, and their written artifacts.

DEGREE REQUIREMENTS

Core/Major

AWEN 502	Airworthiness Process and Procedures	3
SYSE 505	System Safety and Certification	3
UASE 501	Introduction to Uncrewed Aircraft Systems Design	3
AWEN 510	Aircraft Airworthiness Engineering Principles	3
MATH 546	Application-Based Advanced Engineering Mathematics	3
AWEN 552	Continued Airworthiness	3
AWEN 690	Graduate Research Project	3
or PMGT 652	Concepts and Practices of Project Management	
Total Credits		**21**

Electives

Electives: (9 credit hours) Choose one of the following concentrations.		9
Structures		
AENG 502	Strength and Fatigue of Materials	
AENG 510	Aircraft Structural Dynamics	
AENG 514	Introduction to the Finite Element Method	
Engineering Management		
LGMT 500	Introduction to Supply Chain Management and the Profession	
LGMT 525	Management Science for Operations	
FINE 610	Budgeting and Finance for R&D	
Systems Engineering		
SYSE 530	System Requirements Analysis and Modeling	
SYSE 610	System Architecture Design and Modeling	
SYSE 625	System Quality Assurance	
Total Degree Requirements		**30**

Plan of Study (MSAWE)

Year One

Term 1		**Credits**
AWEN 502	Airworthiness Process and Procedures	3
	Credits Subtotal	**3.0**
Term 2		
SYSE 505	System Safety and Certification	3
	Credits Subtotal	**3.0**
Term 3		
UASE 501	Introduction to Uncrewed Aircraft Systems Design	3
	Credits Subtotal	**3.0**
Term 4		
AWEN 510	Aircraft Airworthiness Engineering Principles	3
	Credits Subtotal	**3.0**
Term 5		

MATH 546	Application-Based Advanced Engineering Mathematics	3
	Credits Subtotal	**3.0**
	Credits Total:	**15.0**

Year Two

Term 1		**Credits**
AWEN 552	Continued Airworthiness	3
	Credits Subtotal	**3.0**
Term 2		
	Elective #1: Structures, Systems or Engineering Management	3
	Credits Subtotal	**3.0**
Term 3		
	Elective #2: Structures, Systems or Engineering Management	3
	Credits Subtotal	**3.0**
Term 4		
	Elective #3: Structures, Systems or Engineering Management	3
	Credits Subtotal	**3.0**
Term 5		
AWEN 690	Graduate Research Project	3
or PMGT 652	Concepts and Practices of Project Management	
	Credits Subtotal	**3.0**
	Credits Total:	**15.0**

Total Degree Requirements	**30**