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### *Master of Science in Aerospace Engineering (MSAE)* *Master of Aerospace Engineering (MAE)*

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Master of Science in Aerospace Engineering

Master of Aerospace Engineering

### Introduction

The Master of Science in Aerospace Engineering (MSAE) and the Master of Aerospace Engineering (MAE) provide formal advanced study, preparing students for careers in the aerospace industry and in research and development. Both degree programs are planned to augment the individual student's engineering and science background with adequate depth in areas of aeroacoustics, nondestructive testing, aerodynamics, design

and optimization, propulsion, aerospace structures, composites, computational fluid dynamics, or other areas of aerospace engineering. Candidates for both degree programs can select courses that prepare them for the aerospace engineering profession or that prepare them to continue on to doctoral studies.

Both degree programs require a minimum of 30 credit hours of graduate-level work.

### Degree Requirements

#### MSAE (Thesis option)

3 hours	MA 502 or Equivalent
6 hours	Core courses
12 hours	Electives
9 hours	Thesis
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30 hours	

#### MAE (Nonthesis option)

3 hours	MA 502 or equivalent
6 hours	Core courses
21 hours	Electives
(at least six hours should be 600-level)	
30 hours	

# Academic Programs at the Daytona Beach Campus

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## Areas of Concentration

### Aerospace Structures

This area includes Structural Analysis, Vibration, Nondestructive Testing, Composite Materials, Elasticity, Flight Dynamics, Controls, and Design Optimization.

#### Core Courses for Structures Concentration

Course Title	Credits
AE 502 Strength and Fatigue of Materials . . . . .	3
AE 504 Advanced Compressible Flow . . . . .	3

#### Electives for Structures Concentration

AE 506 Airplane Dynamic Stability . . . . .	3
AE 510 Aircraft Structural Dynamics . . . . .	3
AE 514 Introduction to the Finite Element Method . . . . .	3
AE 518 Acoustic Emission Nondestructive Testing . . . . .	3
AE 520 Perturbation Methods in Engineering . . . . .	3
AE 522 Analysis of Aircraft Composite Materials . . . . .	3
AE 526 Engineering Optimization . . . . .	3
AE 606 Finite Element Aerospace Applications . . . . .	3
AE 612 Analysis of Aircraft Plate and Shell Structures . . . . .	3
AE 616 Advanced Aircraft Structural Dynamics . . . . .	3
AE 646 Nonlinear Dynamical Systems and Chaos . . . . .	3
AE 648 Thermal Stresses in Aerospace Engineering . . . . .	3
AE 699 Special Topics in Aerospace Engineering* . . . . .	3

\* No more than 3 hours of AE 699 should be taken.

### Aerodynamics and Propulsion

This area includes Aerodynamics, Propulsion, Computational Aero and Fluid Dynamics, Transition and Turbulence, Aeroacoustics, Heat Transfer, and Combustion.

#### Core Courses for Aerodynamic and Propulsion Concentration

Course Title	Credits
AE 502 Strength and Fatigue of Materials . . . . .	3
AE 504 Advanced Compressible Flow . . . . .	3

#### Electives for Aerodynamics and Propulsion Concentration

AE 508 Heat Transfer	3
AE 512 Combustion	3
AE 516 Computational Aeronautical Fluid Dynamics	3
AE 524 Rocket Engine Propulsion Systems	3
AE 528 Advanced Incompressible Aerodynamics	3
AE 530 Aeroacoustics	3
AE 610 Advanced Computational Fluid Dynamics	3
AE 620 Boundary Layer Theory	3
AE 640 Turbine Engine Propulsion Systems	3
AE 652 Turbulent Flows	3
AE 699 Special Topics in Aerospace Engineering* . . . . .	3

\* No more than 3 hours of AE 699 should be taken.

A 3 credit hour graduate internship, AE 695, may be taken as an elective course.