
Master of Science in Engineering Physics (MSEP)

Master of Science

Department Chair - **John Olivero**
Program Coordinator - **Peter Erdman**

Introduction

The Master of Science in Engineering Physics degree program provides graduate-level education and training in space science and space systems engineering. The goal is to provide graduates with the skills that will allow them to make an immediate contribution to the space-related industries or to proceed to doctoral studies in a wide variety of disciplines. This program's objectives are:

- Fundamental understanding of scientific and engineering approaches to conceiving and designing complex spacecraft systems.
- Development of the diverse set of research skills required to evolve the state of the art in the areas of space science and engineering.

The program specifically emphasizes scientific instrumentation, applied optics, remote sensing, spacecraft subsystems (power, attitude, and thermal control), and a wide variety of topics in space science and engineering.

This program is heavily research oriented, with a majority of the faculty in the Department of Physical Sciences actively involved in scholarly activities in the space sciences and engineering. The research areas include experimental programs with satellite systems, sounding rockets, ground-based remote-sensing experiments, and a parallel program of theoretical studies in the areas of space systems engineering, upper atmospheric physics, space physics, and plasma and magnetospheric physics.

Degree Requirements

The curriculum consists of 15 credits of required coursework, with an additional 15 credits of electives and/or thesis research. The core courses emphasize the heavily technical nature of the space sciences and require an undergraduate degree in Physics, Engineering, or a related field (such as Mathematics or Chemistry) for preparation.

Academic Programs at the Daytona Beach Campus

Master of Science in Engineering Physics

Option	Core Courses	Electives	Thesis	Total
Thesis	15	6	9	30
Non-Thesis	15	15	0	30

Core Courses

Course	Title	Credits
EP 501	Numerical Methods for Engineers and Scientists.....	3
EP 505	Advanced Spacecraft Dynamics and Control.....	3
EP 509	Advanced Space Physics.....	3
EP 600	Experimental Methods in Space Science.....	3
EP 605	Spacecraft Power and Thermal Design.....	3

Electives

Course	Title	Credits
AE 508	Heat Transfer.....	3
AE 514	Introduction to the Finite Element Method.....	3
AE 520	Perturbation Methods in Engineering.....	3
AE 524	Rocket Engine Propulsion Systems.....	3
BA 511	Operations Research.....	3
EP 696	Graduate Internship in Eng. Physics... 1-3	
EP 699	Special Topics in Eng. Physics.....	1-3
EP 700	MSSPS Thesis.....	1-9
MA 502	Boundary Value Problems.....	3
MA 504	Potential Theory.....	3
MA 506	Probability for Engineers.....	3
MA 510	Fundamentals of Optimization.....	3
MSE 500	Software Engineering Concepts.....	3
MSE 545	Specification and Design of Real-Time Systems.....	3
MSE 585	Metrics and Statistical Methods for Software Engineering.....	3
MSE 610	Software Architecture and Design.....	3
MSE 655	Performance Analysis of Real-Time Systems.....	3