Minor in Space Systems

About This Program

The 18-credit Minor in Space Systems at the University of Texas at Arlington provides students from a variety of disciplines with the opportunity to build a range of skills related to Astronautics and Spacecraft Systems Engineering. Areas of study include orbital mechanics, spacecraft propulsion, spacecraft dynamics and control, spacecraft design, entrepreneurship, and space exploration. The curriculum is designed to prepare students for higher-level certification, graduate studies, and entry-level space industry positions. Students have access to design, build, test, and research opportunities through the Space Systems Laboratory.

Students interested in this minor should consult their major advisor as well as the Mechanical and Aerospace Engineering Department advisor. All majors must complete the Application for Space Systems Minor form.

Competencies

1. Upon completion, students will be able to understand and apply principles of mathematics, physics, engineering, space science, computer science, and technology to complex space systems and subsystems.
2. Upon completion, students will be able to integrate knowledge from several fields to solve complex space-related problems.
3. Upon completion, students will be able to develop innovative solutions for challenges in space systems planning, design, operation, and management.
4. Upon completion, students will be able to use software such as Satellite Toolkit, GMAT etc. for modeling, simulation and analysis of space systems.

Admissions Criteria

Students must have C or better in PHYS 1443, PHYS 1444, and MATH 2326.

Students must be in good academic standing with UTA and their major.

Students must be majoring in math, science or engineering at UTA.

Curriculum

Foundations		
MAE 3304	ASTRONAUTICS I	3
MAE 3307	SPACECRAFT DYNAMICS AND CONTROL	3
MAE 3308	SPACE ENVIRONMENT	3
Select 1 from the following:		3
MATH 3330	INTRODUCTION TO LINEAR ALGEBRA AND VECTOR SPACES	
MATH 3319	DIFFERENTIAL EQUATIONS & LINEAR ALGEBRA	
Electives		
Select 2 from the following: [1]		6
MAE 3305	SPACECRAFT SYSTEMS ENGINEERING	
MAE 4304	ASTRONAUTICS II	
MAE 4308	SPACE MISSION CONCEPTUAL DESIGN	
MAE 4392	RESEARCH IN SPACE SYSTEMS	
MAE 4322	ROCKET PROPULSION	
PHYS 2315	INTRODUCTORY ASTROPHYSICS [2]	
or PHYS 3315	ASTROPHYSICS AND COSMOLOGY	
PHYS 3316	ASTROBIOLOGY I	
Total Hours		**18**

[1] Other courses may be used as electives with the approval of the MAE advisor.
[2] Only one of PHYS 2315 and PHYS 3315 may be applied to the Space Systems Minor.

Program Completion

To receive a Minor in Space Systems, a student must do the following.

1. Complete all prerequisites for courses used to satisfy the Space Systems Minor.
2. Complete all courses used to satisfy Space Systems Minor requirements with a grade of C or better.
3. Complete at least 12 hours of the Space Systems Minor course requirements in residence at UTA with approval in advance by the MAE Undergraduate Advisor.
4. Complete all courses used for the minor with a minimum 2.5 GPA.

Advising Resources

First time in college students meet with engineering advisors in the UAEC (UAECengineering@uta.edu). Transfer students are advised prior to New Maverick Orientation by the department. Students, please read all student emails carefully and consult the department advising webpage for additional contact information and answers to common questions.

Location:

204 Woolf Hall

Email:

maeundergrad@uta.edu

Phone:

817-272-2561

Web:

Additional Advising Information (https://www.uta.edu/academics/schools-colleges/engineering/academics/departments/mechanical-aerospace/students/ugadvising/)