Post-Baccalaureate Certificate in Vertical Lift/ Rotorcraft

About This Program

The Post-Baccalaureate Certificate in Vertical Lift/Rotorcraft is offered by the Mechanical and Aerospace Engineering Department to provide formal recognition to students who acquire knowledge and understanding required for the analysis, design, development, and operations of vertical lift air vehicles via 15 credit hours of focused, specialized coursework selected from a curriculum that emphasizes core aspects of vertical lift such as rotor aerodynamics, rotor dynamics, flying qualities, simulation and control law development, structures, structural dynamics, materials (i.e. composites), transmission and drive systems design, and most importantly the conceptual and preliminary design and synthesis of advanced concepts. The Certificate in Vertical Lift/Rotorcraft prepares students for careers in the rotorcraft industry.

Competencies

1. Upon completion, students will be able to analyze and design vertical lift air vehicles, applying principles of rotor aerodynamics, dynamics, and structural integrity.
2. Upon completion, students will be able to develop and apply simulation models and control systems to improve rotorcraft performance and flying qualities.
3. Upon completion, students will be able to design rotorcraft systems that integrates materials, transmission, and structural dynamics.

Admissions Criteria

1. A Bachelor's degree in an engineering discipline with a minimum GPA of 3.0, or current enrollment in an engineering graduate program at UTA with a minimum GPA of 3.0
2. Two recommendation letters describing the applicant’s abilities as relevant and applicable to the Vertical Lift/Rotorcraft program of study

Those who desire to complete the certificate program without enrolling in graduate degree program must be admitted to UTA as a non-degree seeking student.

Curriculum

Foundations		
Select 1 of the following:		3
AE 5363	INTRODUCTION TO ROTORCRAFT ANALYSIS	
ME 5363	INTRODUCTION TO ROTORCRAFT ANALYSIS	
Specialization		
Select 12 hours from the following:		12
AE 5322	AEROELASTICITY	
AE 5364	INTRODUCTION TO AERODYNAMICS OF ROTORCRAFT	
ME 5364	INTRODUCTION TO AERODYNAMICS OF ROTORCRAFT	
AE 5365	INTRODUCTION TO HELICOPTER AND TILTROTOR SIMULATION	
ME 5365	INTRODUCTION TO HELICOPTER AND TILTROTOR SIMULATION	
AE 5301	ADVANCED TOPICS IN AEROSPACE ENGINEERING (with prior approval of certificate director when topic is relevant)	
ME 5390	SPECIAL TOPICS IN MECHANICAL ENGINEERING (with prior approval of certificate director when topic is relevant)	
Total Hours		**15**

Program Completion

Coursework must be completed with a grade of C or higher in each course and a minimum 3.0 grade point average. All courses must be taken and completed within a time window of 6 consecutive years. With advisor approval, students may transfer up to nine hours toward a master’s program. An overall 3.0 GPA is required to earn the certificate.

Advising Resources

Advising can be conducted in person or remotely via Teams. Please email your advisor to schedule an appointment. The advising form can be downloaded from the MAE Grad Advising Canvas page. First consult with your advisor if you are planning a Leave of Absence, Grade Forgiveness, or Change of Program.

Location:

306 Woolf Hall

Email:

MAEGradAdvising@uta.edu

Phone:

817-272-2500

Web:

Graduate Advising Webpage (https://www.uta.edu/academics/schools-colleges/engineering/academics/departments/mechanical-aerospace/students/gradadvising/)