

Introduction to Aerodynamics

Career Exploration

The Introduction to Aerodynamics certification provides a foundational understanding of the principles that govern the movement of air over objects, with a particular emphasis on aeronautics and wind tunnel applications. Participants will explore key aerodynamic concepts, including forces such as lift, drag, thrust, and weight, and how they influence the behavior of aircraft and other objects in motion. The course covers the design of airfoils, streamlined structures, and aircraft control principles, with practical lab activities utilizing wind tunnels to simulate and measure aerodynamic forces. By the end of the course, participants will be equipped with the skills to analyze, design, and optimize objects for aerodynamic efficiency. This certification focuses on both theoretical knowledge and hands-on lab activities, giving participants the ability to apply aerodynamic concepts in real-world scenarios through wind tunnel experimentation and design optimization.

Industry Recognized Certification Topics

- Safety in Wind Tunnel Operations
- Basic Aerodynamic Concepts
- Airfoil Design and Principles of Lift
- Streamlined Design and Drag Reduction
- Wind Tunnel Testing and Measurement
- Aircraft Control Principles
- Experimental Validation Using Wind Tunnel

Industry Recognized Certification Competencies

- Understand and Apply Basic Aerodynamic Principles
- Design and Analyze Airfoils
- Streamlining and Drag Reduction
- Operate and Analyze Wind Tunnel Experiments
- Aircraft Control and Stability
- Troubleshoot and Optimize Aerodynamic Systems

Units - 4 / Labs - 4

