

# AEROSPACE ENGINEERING (AE-UY)

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## **AE-UY 4603 Compressible Flow (3 Credits)**

*Typically offered Fall*

This course covers conservation equations for inviscid flows, one-dimensional flows, normal shock waves, one-dimensional flow with friction, one-dimensional flow with heat addition, oblique shock waves and Prandtl-Meyer expansion waves. | Prerequisite: ME 3333 and ME 3313.

**Grading:** Ugrd Tandon Graded

**Repeatable for additional credit:** No

**Prerequisites:** (ME-UY 3333 with a Minimum Grade of D OR ME-UY 2313 with a Minimum Grade of D) AND ME-UY 3313 with a Minimum Grade of D.

## **AE-UY 4613 Aerodynamics (3 Credits)**

*Typically offered Spring*

The course explores incompressible inviscid flow, rotational and irrotational flow, elementary flows and their superposition, airfoil and wing geometry, aerodynamic forces and moments, thin airfoil theory, camber effects, incompressible laminar and turbulent boundary layer, vortex system, incompressible flow about wings, wing/body configurations, compressible flows past airfoils and wings and high-lift devices. | Prerequisite for Brooklyn Students: ME-UY 3313 | Prerequisite for Abu Dhabi Students: ENGR-UH 2212

**Grading:** Ugrd Tandon Graded

**Repeatable for additional credit:** No

**Prerequisites:** Prerequisite for Brooklyn Students: ME-UY 3313 | Prerequisite for Abu Dhabi Students: ENGR-UH 2212.

## **AE-UY 4633 Aerospace Propulsion (3 Credits)**

*Typically offered Spring*

This course looks at operation, performance and design methods for flight-vehicle propulsion, air-breathing engines, ramjets, turbojets, turbofans and their components, elements of solid and liquid rocket-propulsion systems. | Prerequisite: AE 4603.

**Grading:** Ugrd Tandon Graded

**Repeatable for additional credit:** No

**Prerequisites:** AE-UY 4603 with a Minimum Grade of D.

## **AE-UY 4653 Aircraft Flight Mechanics (3 Credits)**

*Typically offered Fall*

The course examines development of equations of motion. Topics: Characteristics of aircraft-propulsion systems; Level flight performance of turbojet and propeller-driven aircraft; Un-accelerated climbing flight and aircraft ceiling; Takeoff and landing performance; Longitudinal and lateral static stability; Linearized equations of motion; Longitudinal and lateral modes of motion. | Prerequisite: ME 3223.

**Grading:** Ugrd Tandon Graded

**Repeatable for additional credit:** No

**Prerequisites:** ME-UY 2223 with a Minimum Grade of D.