2303	Aerodynamics

Introduction to the aerodynamics of the subsonic airplane (dynamic lift and resistance). Simple calculations of lift and drag. The unsteady subsonic three dimensional flow of an inviscid flow: a) Flow around the fuselage, b) Flow around the wing (lifting line theory, monoplane equation, calculation of aerodynamic coefficients, compressibility effects), c) Flow around the propeller (momentum theory, blade element theory, lifting line theory, design and performance of the airplane propeller). d) Flow around the airplane (panel theory). Static theory flight and stability. Modern numerical methods for aerodynamic problems and their applications. To attend this course, sufficient knowledge of the material of the following courses is strongly recommended: Mathematics B, Fluid Mechanics I.