

Course Description					
Name	Code	Semester	T+A Hour	Credit	ECTS
THEORY of FLIGHT and FUNDAMENTAL AIRCRAFT KNOWLEDGE	HVY1212131	Spring Semester	3+0	3	4
Prerequisites Courses					
Recommended Elective Courses					
Language of Instruction	Turkish				
Course Level	First Cycle (Bachelor's Degree)				
Course Type	Required				
Course Coordinator	Assist.Prof. Özlem İLDAY				
Name of Lecturer(s)	Assist.Prof. Özlem İLDAY				
Assistant(s)					
Aim	Students should learn basic knowledge of air vehicles and especially of aircraft, aircraft components and physical principles of flight.				
Course Content	This course contains; Basic concepts and principles of airplane theory, Atmospheric physics and standard atmosphere, Basic Concepts and Principles - Aerodynamic Hovering, Aerofoil, Drag Force and Stall, Aircraft Components - Basic Concepts, Stresses, Loads, Structural Classification, Aircraft Components - Design Approaches, Materials Used in Aircraft, Wing and Fuselage, Landing Gear, Aircraft Engines - Piston Engines, Aircraft Engines - Jet Engines, High Lift Devices, Aircraft Balance and Stability, Flight Control Surfaces, Systems and Control Methods, High Speed Flight.				
Course Learning Outcomes			Teaching Methods	Assessment Methods	
1 - Will be able to explain the basic concepts about flying.			16, 9	A	
1.1 - Defines the concept of flight, the physical properties of the atmosphere and the concept of International Standard Atmosphere.			16, 9	A	
1.2 - Expresses the basic principles of aerodynamics.			16, 9	A	
1.3 - Defines the features of the airfoil and the angular features of the wing.			16, 9	A	
1.4 - Defines the aerodynamic force and its components on the airfoil, explains stall.			16, 9	A	
2 - Will be able to explain the components and structural elements of the aircraft.			16, 9	A	
2.1 - Defines and classifies the loads and stresses on structural elements.			16, 9	A	
2.2 - Explains design approaches and materials used in aircraft.			16, 9	A	
3 - Will be able to explain the functions of the wing, fuselage, landing gear and engines.			16, 9	A	
3.1 - Explains the functions of the wing and wing-body connections.			16, 9	A	
3.2 - Defines the structural elements used in the wing structure.			16, 9	A	
3.3 - Expresses the functions of the fuselage and the fuselage structures in aircraft.			16, 9	A	
3.4 - Defines the structural elements used in the aircraft fuselage structure.			16, 9	A	
3.5 - Explains the functions, types, structural features, steering and brake systems of landing gear.			16, 9	A	
3.6 - Explains the working principles of piston engines and jet engines.			16, 9	A	
4 - Will be able to express the high lift devices and their purposes.			16, 9	A	
4.1 - Defines the functions of flight control surfaces and their location on the aircraft.			16, 9	A	
4.2 - Defines the functions and properties of flaps and slats.			16, 9	A	
5 - Will be able to define balance and stability of aircraft.			16, 9	A	
5.1 - Defines the axes of the aircraft and its movements around the axes.			16, 9	A	
5.2 - Classifies flight control surfaces and explains movement and control methods.			16, 9	A	
6 - Will be able to define the characteristics of high speed flight.			16, 9	A	
6.1 - Explains the concepts of speed of sound, Mach number and critical Mach number.			16, 9	A	
6.2 - Refers to subsonic, transonic, supersonic flight characteristics.			16, 9	A	
6.3 - Defines shock wave and wave drag.			16, 9	A	
Teaching Methods	16: Question - Answer Technique, 9: Lecture Method				
Assessment Methods	A: Traditional Written Exam				
Lecture Schedule					
Sequence	Topics	Preliminary Preparation			
1	Basic concepts and principles of airplane theory				
2	Atmospheric physics and standard atmosphere				
3	Basic Concepts and Principles - Aerodynamic Hovering, Aerofoil, Drag Force and Stall				
4	Aircraft Components - Basic Concepts, Stresses, Loads, Structural Classification				
5	Aircraft Components - Design Approaches, Materials Used in Aircraft				
6	Wing and Fuselage				
7	Landing Gear				
8	Aircraft Engines - Piston Engines				
9	Aircraft Engines - Jet Engines				
10	High Lift Devices				
11	Aircraft Balance and Stability				
12	Flight Control Surfaces				
13	Systems and Control Methods				
14	High Speed Flight				
Evaluation Methods		Weight(%)			
Midterm Exam		40			

School of Business and Management Sciences / Aviation Management
2024 - 2025 Academic Year
THEORY of FLIGHT and FUNDAMENTAL AIRCRAFT KNOWLEDGE
Syllabus

General Exam

60

Resources

Uçak Bilgisi ve Uçuş İlkeleri (Aircraft Knowledge and Flight Principles), Doç.Dr.Dilek TURAN, Anadolu Üniversitesi Yayınları, 2016, ISBN: 9789750619236

- Uçuşa Başlangıç (Introduction to Flight), John D. Anderson, Translation from 7.th edition, Prof.Dr. Adil YÜKSELEN, Nobel Akademik Yayıncılık, 2020, ISBN:9786053203803

-Wright Kardeşler (The Wright Brothers), David McCullough, Lemur Yayınevi, 2016, Çeviri: Ceylan Uşaki ERALİ, ISBN:9786059861045