

School of Business and Management Sciences / Aviation Management

2024 - 2025 Academic Year

METEOROLOGY

Syllabus

Course Description					
Name	Code	Semester	T+A Hour	Credit	ECTS
METEOROLOGY	HVY2112129	Fall Semester	3+0	3	5
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	To provide students with the knowledge of aviation meteorology that will be necessary in the field they will work and to raise awareness about the effects of weather conditions on flight operations.				
Course Content	This course contains; Introduction to Meteorology, Atmosphere, Structure, Layers, Standard Atmosphere in Aviation, Temperature, Heat, Measurement, Surface Temperature, Pressure Systems, Altimetry, Winds, Humidity, Phases of water, Humidity parameters, Humidity measurements, Adiabatics and Stability, Lapse Rate, Clouds, Cloud Formations and Precipitation, Visibility and Fog, Air Masses and Fronts, Turbulence, Thunderstorms, Severe Weather Conditions, Precipitation, Strong Winds, Icing, Meteorological Aerodrome Reports (METARs), Terminal Aerodrome Forecasts (TAFs), Significant Weather and Wind Charts, Warning Messages, Meteorological Information for Aircraft in Flight.				
Course Learning Outcomes			Teaching Methods	Assessment Methods	
1- Will be able to define the components and layers of the atmosphere and explain the ICAO Standard Atmosphere.			16, 9	A	
1.1 - Explains the components of the atmosphere.			16, 9	A	
1.2 - Expresses the changes of the components of the atmosphere with altitude.			16, 9	A	
1.3 - Explains the defining characteristics of the layers of the atmosphere.			16, 9	A	
1.4 - Explains the features of the ICAO Standard Atmosphere model.			16, 9	A	
2 - Will be able to explain meteorological phenomena such as wind, turbulence, air masses and fronts.			16, 9	A	
2.1 - Explains the concepts related to wind, its formation, types, local and global winds.			16, 9	A	
2.2 - Defines the types and characteristics of turbulence and the factors that cause turbulence.			16, 9	A	
2.3 - Classifies air masses and fronts, explains their properties, sources and formation conditions.			16, 9	A	
3 - Will be able to understand and explain meteorological phenomena such as clouds and icing.			16, 9	A	
3.1 - Expresses the factors affecting cloud formation, describes cloud types and properties.			16, 9	A	
3.2 - Describes what icing is, its types, formation mechanisms, and its effects on the aircraft.			16, 9	A	
4 - Will be able to define visibility and list the factors that limit visibility.			16, 9	A	
4.1 - Explains the definitions of visibility used in aviation.			16, 9	A	
4.2 - Describes meteorological events that cause restrictions in visibility.			16, 9	A	
5 - Will be able to explain meteorological reports, warning messages, publications, weather and wind charts used in aviation.			16, 9	A	
5.1 - Describes METAR, SPECI and TAF reports.			16, 9	A	
5.2 - Describes SIGMET, AIRMET and GAMET warning messages.			16, 9	A	
5.3 - Explains meteorological prognostic charts, pressure charts, defines VOLMET and ATIS services.			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	Introduction to Meteorology				
2	Atmosphere, Structure, Layers, Standard Atmosphere in Aviation				
3	Temperature, Heat, Measurement, Surface Temperature				
4	Pressure Systems				
5	Altimetry				
6	Winds				
7	Humidity, Phases of water, Humidity parameters, Humidity measurements				
8	Adiabatics and Stability, Lapse Rate				
9	Clouds, Cloud Formations and Precipitation				
10	Visibility and Fog				
11	Air Masses and Fronts				
12	Turbulence				
13	Thunderstorms, Severe Weather Conditions, Precipitation, Strong Winds, Icing				
14	Meteorological Aerodrome Reports (METARs), Terminal Aerodrome Forecasts (TAFs), Significant Weather and Wind Charts, Warning Messages, Meteorological Information for Aircraft in Flight				
Evaluation Methods		Weight(%)			
Midterm Exam		40			
General Exam		60			

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Resources

- 1 -"Havacılık Meteorolojisine Giriş" (Introduction to Aviation Meteorology), Mikdat Kadiođlu, Nobel Akademik Yayıncılık, 2021, ISBN: 9786254171185
 - 2- "Meteoroloji" (Meteorology), Prof.Dr. Öznur Usanmaz, Anadolu Üniversitesi Yayınları, 2021, ISBN:9789750641848
 - 3 -Ackerman, Steven A., Knox, John A. (2015) Meteorology - Understanding the Atmosphere, Translation: Nobel Akademik Yayıncılık ISBN : 978-6053202097
- "Meteorology-ATPL Ground Training Series", CAE Oxford Aviation Academy, 2014