

# AGRICULTURAL METEOROLOGY

1	Course Title:	AGRICULTURAL METEOROLOGY	
2	Course Code:	SBYZ111	
3	Type of Course:	Compulsory	
4	Level of Course:	Short Cycle	
5	Year of Study:	1	
6	Semester:	1	
7	ECTS Credits Allocated:	3.00	
8	Theoretical (hour/week):	2.00	
9	Practice (hour/week):	0.00	
10	Laboratory (hour/week):	0	
11	Prerequisites:	-	
12	Language:	Turkish	
13	Mode of Delivery:	Face to face	
14	Course Coordinator:	Öğr. Gör. Dr. YILMAZ DORUK	
15	Course Lecturers:	Öğr.Gör.Dr.Yilmaz DORUK	
16	Contact information of the Course Coordinator:	yzdoruk@uludag.edu.tr, 02242942374, U.Ü.Teknik Bilimler Meslek Yüksekokulu B Blok-Görükle Kampüsü/Bursa	
17	Website:		
18	Objective of the Course:	Understand all the details of the interactions between environment and agriculture, knowledge of the potential effects of agricultural production, meteorological phenomena, and accordingly informed about different types of measures should be taken.	
19	Contribution of the Course to Professional Development:		
20	Learning Outcomes:		
		1	An example of meteorological science and applied meteorology to explain the working areas of agricultural meteorology.
		2	Recognize and explain the atmosphere of atmospheric events. To analyze the relationship between atmospheric-agriculture.
		3	The importance of the agricultural aspects of light and temperature, and ornamental plant growing conditions for plants to evaluate the effects.
		4	Explain the importance of the air humidity in agricultural production.
		5	In addition to the concept of evaporation and meteorologic factors affecting plant water consumption which is one of the largest fields of study to explain the issue.
		6	Cooling in the atmosphere, condensation, condensation forms, to explain the concepts of clouds and cloud cover, precipitation types and expressions used in the determination, by the rains, and a thorough formation agriculture - to compare the relationship between rainfall.
		7	The importance of agriculture and the effects of air pressure and wind to explain the issue.
		8	To explain the issue of climate observations.
		9	
		10	
21	Course Content:		

Course Content:				
Week	Theoretical	Practice		
1	<ul style="list-style-type: none"> <li>Agricultural meteorology and basic meteorological concepts.</li> <li>Meteorological and agro-meteorological studies in the world and the beginning of our country, development and current status.</li> <li>Branches of the science of meteorology work.</li> <li>Meteorology sectors served and the services offered.</li> <li>Matters covered by agricultural meteorological advice and warnings.</li> </ul>			
2	<ul style="list-style-type: none"> <li>Position of the atmosphere around the earth, the density and height.</li> <li>Composition of the atmosphere, what are the gases in the troposphere layer and agricultural significance.</li> <li>Multiple layers of the atmosphere and its properties.</li> <li>The benefits of the atmosphere to living things.</li> <li>Served meteorological sectors. Services in the field of agriculture and agro-meteorological warnings and precautions. Meteorological Observations.</li> </ul>			
3	The sun, the earth, solar illumination			
Activites		Number	Duration (hour)	Total Work Load (hour)
Theoretical	Absorption. Reflection.	14	2.00	28.00
Practicals/Labs		0	0.00	0.00
Self study and preparation		14	2.00	28.00
4	<ul style="list-style-type: none"> <li>Effective in this case the phenomenon</li> </ul>			
Homeworks		0	0.00	0.00
Projects	<ul style="list-style-type: none"> <li>Phototropism, Photoperiodism and effects of plant growth-development</li> </ul>	0	0.00	0.00
Field Studies		0	0.00	0.00
Midterm exams	<ul style="list-style-type: none"> <li>alternative plants.</li> <li>The effect on plants than the</li> </ul>	2	12.00	24.00
Others		0	0.00	0.00
Final Exams	<ul style="list-style-type: none"> <li>meteorological and agricultural significance of the greenhouse effect.</li> </ul>	1	10.00	10.00
Total Work Load				90.00
Total work load/ 30 hr				3.00
ECTS Credit of the Course				3.00
	<ul style="list-style-type: none"> <li>Factors affecting the heating of the atmosphere.</li> <li>The mechanism of annual change in day temperature.</li> <li>The concept of horizontal distribution of temperature and isotherm.</li> <li>Vertical temperature changes (temperature variation gradient, adiabatic temperature change, inverziyon) and learns the characteristic features.</li> <li>Which instruments measured how the temperature, the average temperature calculation, units and conversion formulas between the units.</li> </ul>			

<b>6</b>	<ul style="list-style-type: none"> <li>• Soil heating, heat transfer and measurement of soil temperature.</li> <li>• The importance of crop production in terms of temperature, the effects of high and low temperature plants.</li> <li>• Water vapor, the identification and measurement of air humidity. Moistening of the greenhouse.</li> <li>• Don events, classification, critical agricultural point of frost dates.</li> <li>• Don incidents of agricultural land (open or under cover greenhouse or aquaculture), and methods for protecting products.</li> </ul>	
<b>7</b>	<ul style="list-style-type: none"> <li>• Change of state of the water.</li> <li>• And the states of water vapor in the atmosphere (dew, frost, fog, cloud ..)</li> <li>• Measurement of air humidity.</li> <li>• Absolute, relative, specific humidity and vapor pressure, the concepts and calculations.</li> <li>• Exchange mechanism for the air humidity during the day.</li> <li>• The importance of the air humidity in agricultural production.</li> </ul>	
<b>8</b>	Lesson repeat and Midterm	
<b>9</b>	<ul style="list-style-type: none"> <li>• Evaporation event, Evaporation.</li> <li>• Evaporation rate.</li> <li>• Measurement and calculation of evaporation.</li> <li>• What is transpiration.</li> <li>• Evapotranspirasy (plant water consumption) influencing factors.</li> <li>• Determination methods and calculations of evapotranspiration.</li> </ul>	
<b>10</b>	<ul style="list-style-type: none"> <li>• Cooling and condensation forms.</li> <li>• The formation of clouds.</li> <li>• Cloud types.</li> <li>• Properties of clouds.</li> <li>• Cloud.</li> </ul>	
<b>11</b>	<ul style="list-style-type: none"> <li>• What does what is covered by the theories of the formation of precipitation and precipitation.</li> <li>• Factors affecting the formation of precipitation.</li> <li>• By formation of the types of rainfall.</li> <li>• Specific definitions and expressions of interest with precipitation unit.</li> <li>• Precipitation (rain and snow observations), using what tools, how it is determined by taking into consideration a principle, the importance of agricultural meteorological point rainfall records.</li> <li>• Agriculture and precipitation.</li> </ul>	
<b>12</b>	Repeating courses and midterm exam	

13	<ul style="list-style-type: none"> <li>Air pressure measuring instruments, principles, units, and the concept of isobar.</li> <li>High and low pressure.</li> <li>The formation of the wind.</li> <li>Wind direction and range, speed and frequency.</li> <li>Wind measuring instruments, the principle, the units used.</li> <li>The importance of the wind. The advantages and disadvantages of agricultural meteorological wind angle.</li> </ul>	
14	<ul style="list-style-type: none"> <li>Climate classification.</li> <li>Phenology and agro-climatic studies.</li> <li>What is Observation Observations are made of agricultural meteorological stations.</li> <li>What is a park of agricultural meteorology observation that the observation and measurement tools are located in parks.</li> <li>Climatological Observations, rasata output clocks.</li> <li>Observations Microclimatological and microclimate.</li> <li>Synoptic Observations, Observations and observation aerolojik parks.</li> <li>Utilization of satellites in meteorology.</li> </ul>	

22	Textbooks, References and/or Other Materials:	<ul style="list-style-type: none"> <li>Öğr. Gör. Dr. Arzu Mor Tarımsal Meteoroloji Ders Sunum Notları (Basılmamış)</li> <li>Arıcı, İ. ve Korukçu A., 2006. Meteoroloji I. Uludağ Üniversitesi Ziraat Fakültesi Yayınları, 5.Baskı Ders Notları No:6 Bursa.</li> <li>Aküzüm, T., Erözel, A.Z., Evsahibioğlu, A.N., Kodal, S., Tokgöz, A., Öztürk, F., Beyribey, M., Selenay, F., Yurtsever, E. Meteoroloji I Ankara Üniversitesi Ziraat Fak. Tarımsal Yapılar ve Sulama Bölümü. A.Ü. Yayınları No:1325 Ders Kitabı:384 Ankara 1994</li> <li>AKÜZÜM, T., 1986. "Agrometeoroloji ve Kültürteknik Çalışmalarındaki Yeri". Kültürteknik Giriş Ders Kitabı. A.Ü. Ziraat Fakültesi Yayınları No:996, Ofset Basım No:28, Ankara</li> <li>20'th International Postgraduate Course on Agrometeorology. Kurs notları. ISRAEL</li> <li>Yrd. Doç.Dr. Yunus Borhan. İ.T.Ü. Uçak ve Uzay Bilimleri Fakültesi Meteoroloji Mühendisliği Bölümü Genel Meteoroloji Ders notları. Nisan 1988.</li> <li>Tanin, Y., Ünal, N., Kacar, M., Tarımsal Meteoroloji I Ankara 1982.</li> </ul>
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23	Assesment	
TERM LEARNING ACTIVITIES	NUMBE R	WEIGHT
Midterm Exam	2	40.00
Quiz	0	0.00
Home work-project	0	0.00
Final Exam	1	60.00
Total	3	100.00
Contribution of Term (Year) Learning Activities to Success Grade		40.00
Contribution of Final Exam to Success Grade		60.00

Total									100.00							
Measurement and Evaluation Techniques Used in the Course																
24	ECTS / WORK LOAD TABLE															
25	CONTRIBUTION OF LEARNING OUTCOMES TO PROGRAMME QUALIFICATIONS															
	PQ1	PQ2	PQ3	PQ4	PQ5	PQ6	PQ7	PQ8	PQ9	PQ10	PQ11	PQ12	PQ13	PQ14	PQ15	PQ16
ÖK1	3	4	2	2	3	3	2	4	3	2	1	4	2	3	2	3
ÖK2	3	4	2	2	2	2	2	4	3	2	1	4	2	2	1	3
ÖK3	3	4	2	2	3	3	4	4	3	4	1	4	4	3	3	3
ÖK4	3	4	3	2	3	3	4	4	3	4	1	4	4	4	3	3
ÖK5	3	4	3	2	3	3	4	4	3	4	1	4	4	4	2	3
ÖK6	3	4	2	2	3	3	4	4	3	4	1	4	4	4	4	3
ÖK7	3	4	2	2	3	3	2	4	3	2	1	4	2	4	4	3
ÖK8	3	3	1	2	2	2	1	3	3	1	1	4	1	1	1	3
LO: Learning Objectives    PQ: Program Qualifications																
Contribution Level:	1 very low			2 low			3 Medium			4 High			5 Very High			