

COG 110 - Climatology II - Fen Edebiyat Fakültesi - Coğrafya Bölümü

General Info

Objectives of the Course

.The aim of this course is to students; Among the climatic elements and factors that determine the climatic conditions, the factors such as air humidity and rainfall and the land-sea distribution, altitude, landforms, sea currents that affect the amount of precipitation are examined. It is the students' understanding of the systems that are effective in the emergence of different climatic conditions in the world and mainly provide energy exchange from large to small (Rossby waves, planetary fronts, mid-latitude depressions, tropical cyclones, tornadoes, thunderstorms).

Course Contents

Condensation, fog, clouds, precipitation, causes and forms of precipitation, characteristics of precipitation, factors affecting the amount of precipitation, geographical distribution of precipitation, pressure systems on earth, causes of formation and distribution, weather, weather type and climate concepts, air masses, fronts, weather conditions related to mid-latitude cyclones, effects of landforms on fronts, cyclogenesis areas and paths followed by cyclones, modern atmospheric circulation, tropical cyclones.

Recommended or Required Reading

Murat Türkeş, 2023, Genel Klimatoloji, Atmosfer, Hava ve İklimin Temelleri, Kriyer Yayınevi, İstanbul.

Ali Ümran Kömüştü, 2024, Temel Klimatoloji, Akademisyen Yayınevi, Ankara.

Strahler, Alan H.Anderson, Bruce T, 2011, Visualizing weather and climate.

Oğuz Erol, 2014, Genel Klimatoloji, Çantay Kitabevi, İstanbul.

Planned Learning Activities and Teaching Methods

Lecturing, Discussion, Question and Answer

Recommended Optional Programme Components

Climate is a determining factor in many areas from agriculture to water resources, from ecosystems to human health. For this reason, climatology contributes to the understanding and management of today's biggest environmental problems such as global warming, drought, extreme weather events.

Instructor's Assistants

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Presentation Of Course

Face-to-face, presentation

Dersi Veren Öğretim Elemanları

Dr. Öğr. Üyesi Barış Durmuş

Program Outcomes

1. To have knowledge about the concepts related to climatology and meteorology.
2. To be able to analyse the components of the hydrological cycle.
3. To be able to comprehend the spatial and temporal distribution of atmospheric moisture and its role on the earth's energy budget.
4. To learn the physical processes that are effective in the formation of climate elements such as clouds and precipitation
5. Defining the air masses, pressure systems and patterns and events which are the main factors in shaping the climate.

Weekly Contents

Order	PreparationInfo	Laboratory	TeachingMethods	Theoretical	Practise
1	Examine the slide uploaded to your system. Research about the hydrological cycle.	-	-Lecture, Discussion, Question-Answer	Hydrological Cycle	-
2	Examine the slide uploaded to your system. Read the relevant chapter from your source book.	-	-Lecture, Discussion, Question-Answer	Humidity	-
3	Examine the slide uploaded to your system. Read the relevant chapter from your source book.	-	-Lecture, Discussion, Question-Answer	Stability and instability of air masses	-
4	Examine the slide uploaded to your system. Read the relevant section from your source book. Also examine the sources and visuals published by the General Directorate of Meteorology.	-	-Lecture, Discussion, Question-Answer	Cloud formation and types	Photograph and describe different types of clouds.
5	Examine the slide uploaded to your system. Read the relevant chapter from your source book.	-	-Lecture, Discussion, Question-Answer	Fog formation	-

Order	PreparationInfo	Laboratory	TeachingMethods	Theoretical	Practise
6	Examine the slide uploaded to your system. Read the relevant chapter from your source book. Also read "Sariş, F., Hannah, D. M., & Eastwood, W. J. (2010). Spatial variability of precipitation regimes over Turkey. Hydrological Sciences Journal, 55(2), 234–249."	-	-Lecture, Discussion, Question-Answer	Precipitation formation systems, types and regime	Global precipitation systems will be analysed through Ventusky web application.
7	Examine the slide uploaded to your system. Read the relevant chapter from your source book.	-	-Lecture, Discussion, Question-Answer	Air masses	The movements of air masses will be analysed through Ventusky web application.
8	Examine the slide uploaded to your system. Read the relevant chapter from your source book. Also analyse the frontal air movements in the Ventusky application.	-	-Lecture, Discussion, Question-Answer	Fronts	The frontal air movements will be analysed from Ventusky application.
9	Examine the slide uploaded to your system. Read the relevant chapter from your source book. Also analyse the pressure movements in the Ventusky application.	-	-Lecture, Discussion, Question-Answer	Cyclones and anticyclones	-
10	Examine the slide uploaded to your system. Read the relevant chapter from your source book.	-	-Lecture, Discussion, Question-Answer	Storms	-
11	Examine the slide uploaded to your system. Read the relevant chapter from your source book.	-	-Lecture, Discussion, Question-Answer	Cyclones and tropical cyclones	-
12	Examine the slide uploaded to your system. Read the relevant chapter from your source book.	-	-Lecture, Discussion, Question-Answer	Atmosphere optics	-
13	Examine the slide uploaded to your system. Read the relevant chapter from your source book. Read the article titled "Hava Kirliliği ve Asit Yağmurlarının Çevre Ve İnsan Sağlığı Üzerine Etkileri".	-	-Lecture, Discussion, Question-Answer	Air pollution and acid precipitation	-
14	Examine the slide uploaded to your system. Read the relevant chapter from your source book. Examine the source named 'Climate of Turkey according to Köppen Climate Classification' prepared by the General Directorate of Meteorology.	-	-Lecture, Discussion, Question-Answer	Climate classifications and Turkey	-

Workload

Activities	Number	PLEASE SELECT TWO DISTINCT LANGUAGES
Vize	1	1,00
Ödev	7	1,00
Final	1	1,00
Teorik Ders Anlatım	14	3,00
Ara Sınav Hazırlık	7	1,00
Final Sınavı Hazırlık	7	1,00
Ders Sonrası Bireysel Çalışma	14	1,00
Derse Katılım	14	1,00
Ders Öncesi Bireysel Çalışma	14	1,00
Vaka Çalışması	7	1,00
Tartışmalı Ders	14	1,00
Problem Çözme	14	1,00

Activities	Weight (%)
Ara Sınav	40,00
Final	60,00

Coğrafya Bölümü / COĞRAFYA X Learning Outcome Relation

	P.O. 1	P.O. 2	P.O. 3	P.O. 4	P.O. 5	P.O. 6	P.O. 7	P.O. 8	P.O. 9	P.O. 10	P.O. 11	P.O. 12	P.O. 13
L.O. 1	5	3	5	4	3	3	4	2	3	5	4	3	2
L.O. 2	4	4	5	4	4	3	4	2	4	4	4	3	2
L.O. 3	4	3	5	4	3	3	4	2	3	5	4	3	2
L.O. 4	4	3	5	4	3	3	4	2	3	4	4	3	2
L.O. 5	5	3	5	5	3	3	5	2	3	5	4	3	2

Table :

- P.O. 1 :** Coğrafya bilminde kuramsal ve uygulamalı bilgilere sahip olma
- P.O. 2 :** İnsan-mekan etkileşiminin tespitinde yararlanılan başlıca araştırma yöntem ve tekniklerini kullanabilme, bu etkileşimin ifadesinde kullanılan görsel araçları (tablo, grafik, harita) vb hazırlayabilme ve gerekli araç gereçleri yazılımları kullanabilme.
- P.O. 3 :** Coğrafya biliminin temel terimlerini kavrama ve coğrafi terminolojiyi yerinde kullanabilme.
- P.O. 4 :** Coğrafya bilimi kapsamında mekanı doğal ve beşeri özellikleriyle tanıma, mekanın kullanımından kaynaklanan sorunları tespit edebilme, çözüm önerisi sunabilme.
- P.O. 5 :** Coğrafi Bilgi Sistemleri, uzaktan algılama vb coğrafi teknolojilerle çalışabilme.
- P.O. 6 :** Disiplinler arasındaki çalışmaların önemini kavrama, bilgi ve becerilerini diğer disiplinlerle paylaşabilme ve ortak projelerde değerlendirebilme.
- P.O. 7 :** Mekan ve mekanı oluşturan fiziki ve beşeri unsurlar arasında ilişki kurabilme ve bu ilişkileri yorumlayabilme becerisi
- P.O. 8 :** Sahip olduğu bilgi ve becerileri laboratuvar ve arazi çalışmaları ile bütünleştirebilme
- P.O. 9 :** Coğrafî verilerin toplanması, yorumlanması, değerlendirilmesi ve akademik yayın haline getirilmesi sürecinde bilimsel etik değerlere uygun hareket etme.
- P.O. 10 :** Bölgesel dengesizlik, iklim değişikliği, kentleşme, küreselleşme, sürdürülebilirlik, göç, çevre sorunları gibi konuları geniş bir bakış açısı ile yorumlayabilme
- P.O. 11 :** Coğrafi konuları, sistematik bir yaklaşımla ele alma, araştırma ve sunma becerisi
- P.O. 12 :** Bireysel çalışma becerisi ve bağımsız karar verebilme yetisine sahip olarak fikirlerini sözlü ve yazılı ifade ederek iletişim kurabilme
- P.O. 13 :** Toplumsal sorumluluk ve mesleki etik bilinciyle yaşadığı sosyal çevre için mesleki proje ve etkinlikler planlayabilme ve uygulayabilme.
- L.O. 1 :** Klimatoloji ve meteoroloji ile ilgili kavramlar hakkında bilgi sahibi olmak
- L.O. 2 :** Hidrolojik döngünün bileşenlerini analiz edebilmek.
- L.O. 3 :** Atmosferdeki nemin alansal ve zamansal dağılımını ve dünyanın enerji bütçesi üzerindeki rolünü kavrayabilmek.
- L.O. 4 :** Bulutlar ve yağış gibi iklim elemanlarının oluşumunda etkili olan fiziksel süreçleri öğrenmek
- L.O. 5 :** İklimin şekillenmesinde temel etkenlerden olan hava kütleleri, basınç sistemleri ve desenleri ile olaylarının tanımlanması.