ANKARA YILDIRIM BEYAZIT ÜNİVERSİTESİ
MÜHENDİSLİK VE DOĞA BİLİMLERİ FAKÜLTESİ
MATEMATİK BÖLÜMÜ

Ders Adı: Matematiksel İstatistik **Ders Adi(İng):** Mathematical Statistics						**Program : Mathematics Department**			
Dönem	**Sınıfı**	**Ders Kodu**	**Teori**	**Uyg.**	**Lab.**	**Toplam**	**AKTS**	**Dili**	**Dersin Türü (Z/S)**
2	3	MATH 332	3	0	0	3	6	English	C

Dersin Önkoşulu	None	
Dersin Koordinatörü	Dr. Fatma PARLAK	**e-mail :** fparlak@aybu.edu.tr **Web :**
Kurs Asistanı	None	**Mail :** **Web :**
Dersin Veriliş Şekli	In person	
Dersin Amacı	This course aims to: 1. Introduce fundamental concepts of probability and mathematical statistics. 2. Explore essential distributions and their properties. 3. Provide an overview of core statistical methods for data analysis.	
Dersin Öğrenme Kazanımları	Upon successful completion, students will be able to: 1. Utilize tools for making statistical inferences from data. 2. Understand and apply theoretical foundations of commonly used statistical methods.	
Ders Kitabı, Referanslar ve/veya Diğer Kaynaklar	**1)** Larsen, R. J. and Marx, M. L., Introduction to Mathematical Statistics and its Applications, international edition Pearson **2)** Hogg, R. V., MCKean, J. W. and Craig, A. T., Introduction to Mathematical Statistics, 7th edition Pearson.	

Değerlendirme		**Sayısı**	**(%) Katkı oranı**
	Vize	**1**	**30**
	Ödev	**1**	**10**
	Sunum	**0**	**0**
	Final Sınavı	**1**	**60**

Ders Planı

Hafta	Konular
1	Sample spaces, probability functions, conditional probability, and independence.
2	Combinatorics and combinatorial probability.
3	Binomial and hypergeometric probabilities; discrete random variables.
4	Continuous random variables; expected values, variance, and joint densities.
5	Transforming and combining random variables; conditional densities.
6	Order statistics and moment generating functions.
7	Discrete distributions (e.g., Poisson, geometric).
8	Continuous distributions (e.g., normal, chi-square, gamma).
9	**Midterm Exam**
10	Interval estimation (Include worked examples and assign simple problems for practice).
11	Properties of estimators; minimum variance estimators.
12	Sufficient estimators and consistency.
13	Hypothesis testing and decision rules. Introduce Type I and II errors with examples.
14	Testing binomial data; real-world applications of hypothesis testing.
15	**Review Session**: Consolidate understanding of key concepts and prepare for final exam.

AKTS / İŞ YÜKÜ TABLOSU			
Etkinlik	**SAYISI**	**Süresi [Saat]**	**Toplam İş Yükü [Saat]**
Teorik Dersler	14	3	42
Uygulamalı Dersler	0	0	0
Sınıf Dışı Ders Çalışma Süresi (Ön çalışma, pekiştirme)	14	2	28
Ödevler	1	10	10
Projeler	0	0	0
Arazi Çalışmaları	0	0	0
Arasınavlar	1	2	2
Diğer	0	0	0
Yarıyıl Sonu Sınavları	1	2	2
Toplam İş Yükü	31	19	84
Toplam İş Yükü / 30 saat			28