Tarih: 24 Ağustos 2025 13:13

Department of Mathematics Education / Department of Mathematics and Science Education /

Course Code	Course Name	Teorical	Practice	Laboratory	Credits	ECTS
İMEAE 305	STATISTICS	2.00	0.00	0.00	2.00	2.00

Course Detail

Course Language	:	Turkish
Qualification Degree	:	Bachelor
Course Type	:	Compulsory
Preconditions	:	Not
Objectives of the Course	:	The aim of this course is to ensure the comprehension of fundamental concepts of statistics, the analysis of data, and the application of statistical methods in problem-solving processes
Course Contents	:	This course covers topics including sampling, organization and analysis of data; sampling distributions and estimation methods; the concept of confidence intervals; interval estimation for the difference between two population means, interval estimation for the ratio of two population variances, and interval estimation for the binomial parameter p; hypothesis testing; correlation and regression analysis.
Recommended or Required Reading	:	This course draws on resources aimed at facilitating the understanding of statistical theory, developing data analysis skills, and applying such knowledge in problem-solving contexts. In addition to lecture notes, various visual and digital tools—such as smart boards, projectors, and datasets—will be utilized. Recommended references are: (1) Ross, S. M. (2015). Introduction to Probability and Statistics (4th Edition) (S. Çelebioğlu & R. Kasap, Eds.). Ankara: Nobel Akademi Publishing; (2) Eyğü, H. (2020). Probability and Statistics with Solved Contemporary Examples. Ankara: Nobel Akademi Publishing; (3) Kavuncu, O. (2021). Fundamentals and Applied Statistics. Ankara: Nobel Akademi Publishing; (4) Mazmanoğlu, A. (2016). Basic Statistical Methods and Applications for Everyone. Ankara: Nobel Akademi Publishing. (5) Özmen, A. ve Şeniş, B. F. (Eds.). (2012). İstatistik. Eskişehir: Anadolu Üniversitesi Yayını.
Planned Learning Activities and Teaching Methods	:	To ensure effective understanding of the core topics in statistics, various teaching methods and learning activities will be employed throughout the course. The instructional process will combine theoretical lectures with practical activities such as sampling, organizing and analyzing data, interpreting sampling distributions, and making estimations. Topics including the construction of confidence intervals, interval estimation for differences between population means and for the ratio of variances, estimation for the binomial parameter p, and hypothesis testing will be reinforced through in-class problem-solving sessions, small group work, and individual applications. Additionally, students will develop their skills in data interpretation through applied examples related to correlation and regression analysis. During this process, digital tools, visual materials, real-world datasets, and interactive content will be actively utilized to enhance students' statistical thinking. To further support student engagement, question-and-answer techniques, case study analysis, and discussion-based sessions will also be integrated into the learning environment.
Recommended Optional Programme Components	:	Since the statistics course involves both conceptual understanding and intensive application, regular attendance is highly recommended. To reinforce theoretical content covered in class, students are encouraged to solve assigned practice problems and exercises individually. Moreover, performing basic analyses using digital tools such as Excel, R, or SPSS will support a deeper understanding of statistical procedures. Working with real-life datasets will contribute to the development of a statistical perspective. To ensure an effective learning process, students are expected to come to class prepared, review pre-assigned reading materials, and actively participate in discussions. Additional resources will be recommended as needed, and guidance will be provided to support individual academic development throughout the course.
Course Instructors	:	Doç. Dr. Deniz Kaya
Instructor's Assistants	:	There is no teaching assistant assigned to this course.
Presentation Of Course	:	This course will be conducted through face-to-face instruction, combining theoretical lectures with practical activities. The topics to be covered include sampling, organization and analysis of data; sampling distributions and estimation; the concept of confidence intervals; interval estimation for the difference between two population means, interval estimation for the ratio of two population variances, interval estimation for the binomial parameter p; hypothesis testing, correlation, and regression. These subjects will be addressed through explanatory presentations and reinforced with hands-on applications. To enhance student engagement, interactive methods such as problem-solving sessions, group work, and in-class discussions will be incorporated into the teaching process. Additionally, the use of digital presentations, smart boards, statistical software, and real-world data sets will support the learning process. Both individual and collaborative learning approaches will be encouraged throughout the course.
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Dosya İndirilme Tarihi	:	8/24/2025

Course Outcomes

Upon the completion of this course a student :

1 Can explain the concepts and ideas related to statistics.

2 Can apply the statistical research process (formulating research questions, collecting data, organizing, summarizing, representing, analysing, interpreting and making inferences).

3 Can use appropriate methods in data analysis.

4 Can use information and communication technologies in data analysis.

5 Can explain the importance of using information and communication technologies in the learning of statistical concepts and ideas.

6 Can calculate inferential statistics by applying measures of central distribution.

7 Can apply correlation and regression analysis.

8 Can explain the importance of statistical knowledge in real life.

Preconditions

Course Code	Course Name	Teorical	Practice	Laboratory	Credits	ECTS

Weekly Contents

	Teorical	Practice	Laboratory	Preparation Info	Teaching Methods	Course Learning Outcomes

	Teorical	Practice	Laboratory	Preparation Info	Teaching Methods	Course Learning Outcomes
1.Week	*Examination of basic concepts and definitions in statistics			*Before starting this week, it is expected that learners have a general awareness of the fundamental purpose, historical development, and areas of application of statistics. Recalling prior knowledge about key concepts such as variable, data, population, sample, parametric and statistical values will be beneficial. In addition, a basic understanding of the differences between quantitative and qualitative data, as well as the levels of measurement (nominal, ordinal, interval, ratio) and their role in the analysis process, will significantly contribute to comprehension of the course content. In this context, it is recommended to read the definition of statistics, basic concepts and statistics education section of the basic textbook titled Özmen, A. & Şeniş, B. F. (Eds.). (2012). Statistics. Eskişehir: Anadolu University Publication before the course.	*This week's lesson will be conducted using explanatory and interactive methods aimed at helping learners accurately and meaningfully internalize fundamental statistical concepts. The session will begin with the instructor presenting the conceptual framework, followed by question-and-answer activities and brief discussions in which students can actively engage with sample terms and real-life contexts. Learning will be reinforced through activities such as comparing related concepts, generating definition examples, and identifying concepts within given data sets. To enhance retention, small group work and digital presentation materials will be incorporated. The overall aim is to help students develop a strong and clear understanding of the foundational building blocks of statistics.	Ö.Ç.1 Ö.Ç.1 Ö.Ç.1
2.Week	*Examination of measurement and scales			*Before starting this week, learners are expected to have a general awareness of the concept of measurement, its role in statistical analysis, and its basic characteristics. Understanding the definitions and applications of nominal, ordinal, interval, and ratio scales, as well as their significance in both graphical and numerical data analysis, will contribute to a deeper comprehension of the course content. In addition, familiarity with concepts such as measurement errors, validity, and reliability is important for accurate data collection and interpretation. In this context, students are recommended to read the unit titled “Veri Derleme, Düzenleme ve Grafiksel Çözümleme” (Data Collection, Organization, and Graphical Analysis) from the main textbook: Özmen, A. & Şeniş, B. F. (Eds.). (2012). İstatistik. Eskişehir: Anadolu Üniversitesi Yayını prior to class.	*This week's lesson will be delivered through a combination of explanatory instruction, visual materials, and interactive discussion techniques to facilitate understanding of measurement concepts and scale types. After the instructor presents definitions and comparisons of the main scale types (nominal, ordinal, interval, ratio), students will engage with real or simulated data sets to explore how these scales are applied. Learning will be reinforced through graphical representations, tabular data arrangements, and short in-class exercises. Group work and guided question-and-answer sessions will also be incorporated to allow students to reconstruct the concepts in their own words. These methods aim to help learners grasp the concepts of measurement and data structure at both theoretical and applied levels.	Ö.Ç.1 Ö.Ç.2 Ö.Ç.1 Ö.Ç.2 Ö.Ç.1 Ö.Ç.2

	Teorical	Practice	Laboratory	Preparation Info	Teaching Methods	Course Learning Outcomes
3.Week	*Examination of frequency distributions and graphs			*Before starting this week, students are expected to have a solid understanding of data types (qualitative and quantitative), levels of measurement, and basic data collection methods. In addition, familiarity with the classification, tabulation, and summarization of data—covered in previous weeks—will support the comprehension of frequency distributions and graphical representations. It is particularly important to be acquainted with concepts such as grouping data, determining class intervals and boundaries, and understanding the structure of basic graphs such as histograms, frequency polygons, bar charts, and pie charts. In this context, students are recommended to read the unit titled “Ortalamalar, Değişkenlik ve Dağılma Ölçüleri” (Measures of Central Tendency, Variability, and Dispersion) from the main textbook: Özmen, A. & Şeniş, B. F. (Eds.). (2012). İstatistik. Eskişehir: Anadolu Üniversitesi Yayını prior to the lesson.	*This week's lesson will be conducted using applied and guided instructional methods aimed at developing foundational skills in data visualization and constructing frequency distributions. The instructor will present explanatory materials on how different types of data can be effectively represented using appropriate graphs, followed by active student engagement in activities such as creating frequency tables, determining class intervals, and selecting suitable graph types based on given data sets. Applied examples involving visual tools such as histograms, frequency polygons, bar charts, and pie charts will be used to guide analysis, and students will be encouraged to construct their own graphs using similar data. Additionally, small group work and the integration of digital content will support the retention of concepts and the development of visual literacy skills.	Ö.Ç.2 Ö.Ç.3 Ö.Ç.2 Ö.Ç.3 Ö.Ç.2 Ö.Ç.3
4.Week	*Measures of central tendency: Examination of the arithmetic mean and geometric mean			*Before starting this week, students are expected to have prior knowledge of data types, levels of measurement, and basic forms of graphical representation. Since the concept of central tendency forms the foundation of this week's topic, it is important to have a general understanding of how data tends to cluster around a central value. In particular, understanding what the arithmetic mean and geometric mean represent, in which types of data they are appropriate, and how they are calculated will contribute to more effective learning. Additionally, observing how these measures relate to real-life examples is essential for developing statistical thinking. In this context, students are recommended to read the relevant sections of the unit titled “Ortalamalar, Değişkenlik ve Dağılma Ölçüleri” (Measures of Central Tendency, Variability, and Dispersion) from the main textbook: Özmen, A. & Şeniş, B. F. (Eds.). (2012). İstatistik. Eskişehir: Anadolu Üniversitesi Yayını prior to the lesson.	*This week's lesson will be delivered through explanatory instruction, applied example problems, and interactive discussion methods to help students understand measures of central tendency. The instructor will present the definitions, calculation methods, and areas of application for both the arithmetic and geometric means using sample data. Following these explanations, calculations will be carried out step by step with the class, and the selection of appropriate central tendency measures for different data sets will be discussed. In addition, real-life examples will be used to interpret these measures, and students will engage in short group activities and individual practice to deepen their understanding. This approach, supported by visual tools and digital materials, aims to enhance students’ statistical thinking skills.	Ö.Ç.3 Ö.Ç.4 Ö.Ç.6 Ö.Ç.3 Ö.Ç.4 Ö.Ç.6 Ö.Ç.3 Ö.Ç.4 Ö.Ç.6

	Teorical	Practice	Laboratory	Preparation Info	Teaching Methods	Course Learning Outcomes
5.Week	*Non-sensitive averages: Examination of mode, median, and quantiles			*Before starting this week, students are expected to have a basic understanding of sensitive measures of central tendency, such as the arithmetic and geometric means. In order to comprehend non-sensitive averages, it is especially important to understand the impact of outliers on data sets. Accordingly, students should be prepared to learn what the mode, median, and quantiles (e.g., quartiles, percentiles) represent and in which situations these measures are preferred. Since these measures require ordering and positional analysis of data, prior knowledge of basic ranking and position-based interpretation is also essential. To prepare for this week's content, students are recommended to review the relevant sections of the unit titled "Ortalamalar, Değişkenlik ve Dağılma Ölçüleri" (Measures of Central Tendency, Variability, and Dispersion) in the course textbook: Özmen, A. & Şeniş, B. F. (Eds.). (2012). İstatistik. Eskişehir: Anadolu Üniversitesi Yayını.	*This week's instructional process will be carried out through explanatory presentations, comparative analyses, and student-centered application activities. The instructor will introduce the types of non-sensitive averages—mode, median, and quantiles—and explain how these measures are calculated and when they are preferred, using illustrative examples. To emphasize the effect of outliers, sensitive and non-sensitive averages will be analyzed comparatively, allowing students to observe these differences through concrete data sets. Interactive group work, calculations based on data ordering, and position-based analysis exercises will be employed to deepen students' conceptual understanding. Additionally, the use of digital tools and visual materials will support the learning process and aim to enhance students' statistical decision-making skills.	Ö.Ç.4 Ö.Ç.5 Ö.Ç.6 Ö.Ç.4 Ö.Ç.5 Ö.Ç.6 Ö.Ç.4 Ö.Ç.5 Ö.Ç.6
6.Week	*Measures of variability			*Before starting this week, students are expected to have grasped the measures of central tendency (such as mean, median, and mode) and to understand how these measures represent the general structure of a data set. Since measures of variability indicate how much data deviates from the center, it is important to have basic knowledge of data distribution and outliers to properly interpret them. Students should become familiar in advance with the definitions, calculation methods, and purposes of variability measures such as standard deviation, variance, range, and interquartile range, in order to engage more effectively with the weekly course content. For this purpose, it is recommended that students review the relevant sections on variability in the unit titled "Ortalamalar, Değişkenlik ve Dağılma Ölçüleri" from the main textbook: Özmen, A. & Şeniş, B. F. (Eds.). (2012). İstatistik. Eskişehir: Anadolu Üniversitesi Yayını.	*In this week's lesson, the conceptual foundations and calculation methods of measures of variability will be addressed through explanatory instruction and example-based applications. The instructor will introduce key variability measures—such as range, interquartile range, variance, and standard deviation—using sample data sets, and will explain what each measure represents and how it is used in data interpretation. Through both individual and group work, students will apply these measures to various data sets and develop skills for assessing the overall structure of distributions. Moreover, the accuracy of calculations will be verified using digital tools, and supported with graphical representations to promote a comprehensive perspective on statistical analysis. The course aims not only to strengthen students' computational abilities, but also to enhance their statistical reasoning and interpretation skills.	Ö.Ç.3 Ö.Ç.5 Ö.Ç.6 Ö.Ç.3 Ö.Ç.5 Ö.Ç.6 Ö.Ç.3 Ö.Ç.5 Ö.Ç.6

	Teorical	Practice	Laboratory	Preparation Info	Teaching Methods	Course Learning Outcomes
7.Week	*Examination of sampling distributions I			*Before starting this week, students are expected to have understood the relationship between the concepts of sample and population. In particular, it is important to have prior knowledge about how sampling processes—central to statistical inference—are influenced by factors such as randomness, representativeness, and sample size. A basic awareness of how statistics obtained from samples are used to estimate population parameters will support comprehension of this week's content. Students should also be familiar with the evaluation of the population mean through the sampling distribution of the sample mean, recognize the concept of standard error, and understand the general properties of sampling distributions. For this purpose, it is recommended that students read the relevant sections of the unit titled "Örnekleme ve Bazı Örnekleme Dağılımları" (Sampling and Some Sampling Distributions) in the main textbook: Özmen, A. & Şeniş, B. F. (Eds.). (2012). İstatistik. Eskişehir: Anadolu Üniversitesi Yayını in advance of the lesson.	*This week's lesson will be conducted through explanatory instruction, the use of visual materials, and application-based activities aimed at developing a fundamental understanding of sampling distributions. After emphasizing the distinction between population and sample, the instructor will present examples to illustrate the role and importance of sampling distributions in the statistical inference process. The concept of standard error and the distribution of the sample mean will be explored in depth using graphical representations and simulation-supported exercises. Students will engage in calculations with small sample sizes and be encouraged to analyze the effects of these distributions on various data sets. Interactive discussions and real-time quizzes delivered through digital platforms will be used to reinforce students' conceptual understanding.	Ö.Ç.2 Ö.Ç.4 Ö.Ç.5 Ö.Ç.6 Ö.Ç.2 Ö.Ç.4 Ö.Ç.5 Ö.Ç.6 Ö.Ç.2 Ö.Ç.4 Ö.Ç.5 Ö.Ç.6
8.Week	*Midterm exam week			*Midterm exam week	*Midterm exam week	
9.Week	*Examination of sampling distributions II			*Before starting this week, students are expected to have understood the concept of sampling distribution discussed in the previous week, along with the distributional characteristics of the sample mean and the relationship between standard error and population parameters. In particular, it is important to have knowledge of how the shape of a sampling distribution varies depending on sample size and the distribution of the population, as this forms the foundation for this week's concepts. Additionally, reviewing key ideas related to the normality assumption and the impact of the central limit theorem on sampling distributions will serve as important preparation for this week's applications. In this regard, it is recommended that students read the subsequent sections of the unit titled "Örnekleme ve Bazı Örnekleme Dağılımları" (Sampling and Some Sampling Distributions) in the textbook Özmen, A. & Şeniş, B. F. (Eds.). (2012). İstatistik. Eskişehir: Anadolu Üniversitesi Yayını prior to class.	*In this week's session, the behavior of sampling distributions under the assumption of normality will be examined in the context of the central limit theorem and the effects of varying sample sizes. The instructor will explain how the distribution of sample means is shaped under normality assumptions using graphical simulations and digital presentations, and students will be expected to conduct comparative analyses across different distribution types. Through group work and in-class applications, students will engage in constructing sampling distributions from data sets and explore the relationships between standard error, bias, and distribution shape. The use of statistical software or dynamic simulation tools will be encouraged to promote interactive participation and support the practical understanding of the underlying concepts.	Ö.Ç.3 Ö.Ç.5 Ö.Ç.6 Ö.Ç.3 Ö.Ç.5 Ö.Ç.6 Ö.Ç.3 Ö.Ç.5 Ö.Ç.6

	Teorical	Practice	Laboratory	Preparation Info	Teaching Methods	Course Learning Outcomes
10.Week	*Confidence interval estimation I			*Before starting this week, students are expected to have a solid understanding of the concepts of sampling distribution and standard error, as well as how the distribution of the sample mean relates to the population mean. To comprehend the concept of confidence intervals, it is essential to have a strong grasp of previous topics such as statistical inference processes, the assumption of normality, and the effect of the central limit theorem. Additionally, students should already know how to use z-tables and determine critical values associated with given confidence levels. In this context, it is recommended that students review the relevant sections of the unit titled “Tahmin Yöntemleri” (Estimation Methods) in the primary textbook Özmen, A. & Şeniş, B. F. (Eds.). (2012). İstatistik. Eskişehir: Anadolu Üniversitesi Yayını prior to the session.	*This week’s lesson will focus on introducing the concept of confidence intervals and estimating the population mean based on a single sample. The instructional process will involve explanatory lectures, worked examples, and student-centered applications. Students will learn how to construct interval estimates for population parameters at specific confidence levels (e.g., 95%, 99%), with particular emphasis on the use of z-tables, determining critical values, and understanding the role of standard error. Interactive questioning techniques and digital presentation tools will be used to ensure active student engagement, and conceptual understanding will be reinforced through hands-on exercises with small data sets. Additionally, in-class group discussions will explore how real-world, contextual problems can be addressed using confidence intervals.	Ö.Ç.2 Ö.Ç.5 Ö.Ç.6 Ö.Ç.2 Ö.Ç.5 Ö.Ç.6 Ö.Ç.2 Ö.Ç.5 Ö.Ç.6
11.Week	*Confidence interval estimation II			*Before starting this week, students are expected to have mastered the calculation of confidence intervals for a single sample, as well as the use of z-tables and critical values, as discussed in the previous week. Since this week focuses on confidence interval estimation for the difference between two population means, the ratio of two variances, and the binomial parameter, it is important to have foundational knowledge of how statistical differences and proportions are addressed. Moreover, understanding how sample size affects interval width and how uncertainty is interpreted relative to the confidence level will enhance the effectiveness of the practical activities. In this context, students are advised to read the relevant continuation sections of the unit “Tahmin Yöntemleri” (Estimation Methods) in the textbook Özmen, A. & Şeniş, B. F. (Eds.). (2012). İstatistik. Eskişehir: Anadolu Üniversitesi Yayını prior to class.	*This week’s instructional process will focus on estimating confidence intervals for the difference between two population means, the ratio of two population variances, and the binomial parameter p. The session will begin with a theoretical overview, followed by guided example calculations. Students will learn how to construct relevant intervals for various confidence levels and interpret them accordingly, while practicing the application of appropriate formulas, z-tables, and standard error computations. Interactive lectures and small group activities will promote active participation, and classroom discussions will center on interpreting confidence intervals within real-life contextual problems. Numerical examples will be supported by digital tools to help concretize abstract statistical concepts.	Ö.Ç.2 Ö.Ç.5 Ö.Ç.6 Ö.Ç.2 Ö.Ç.5 Ö.Ç.6 Ö.Ç.2 Ö.Ç.5 Ö.Ç.6

	Teorical	Practice	Laboratory	Preparation Info	Teaching Methods	Course Learning Outcomes
12.Week	*Examination of hypothesis testing I			*Before starting this week, students are expected to have a solid understanding of confidence interval estimation and how sample statistics provide information about population parameters. Prior to exploring hypothesis testing, it is important to have prior knowledge of fundamental statistical concepts such as the null hypothesis, alternative hypothesis, significance level, and error types (Type I and Type II). In addition, students should have practical experience with the normal distribution, z-scores, and determining critical values in order to deepen their understanding of hypothesis testing procedures. In this context, it is recommended that students review the initial sections of the unit titled “İstatistiksel Tahminleme ve Karar Alma” (Statistical Estimation and Decision Making) in the textbook Özmen, A. & Şeniş, B. F. (Eds.). (2012). İstatistik. Eskişehir: Anadolu Üniversitesi Yayını prior to class.	*In this week’s lesson, the fundamental principles of hypothesis testing will be introduced both theoretically and through applied examples. The session will begin with an explanation of key components such as the null and alternative hypotheses, significance level, test statistics, and decision-making rules. Next, z-test applications for the population mean based on a single sample will be demonstrated, with each step of the decision process explained in detail. Instruction will be supported by lecture, board work, and practice-based problem solving, including both individual and group exercises. The use of z-tables and identification of critical values will be practiced through hands-on examples. Additionally, classroom discussions will focus on interpreting the results of hypothesis tests using contextualized, real-world problem scenarios.	Ö.Ç.4 Ö.Ç.5 Ö.Ç.6 Ö.Ç.7 Ö.Ç.4 Ö.Ç.5 Ö.Ç.6 Ö.Ç.7 Ö.Ç.4 Ö.Ç.5 Ö.Ç.6 Ö.Ç.7
13.Week	*Examination of hypothesis testing II			*Before starting this week, students are expected to have a solid understanding of the core components of hypothesis testing—such as null and alternative hypotheses, significance level, test statistic, and decision rules—as well as practical experience with z-tests for a single sample mean. Since this week will focus on hypothesis tests involving comparisons between two samples and proportions, it is important for students to grasp the logic behind differences between two population parameters (e.g., means or proportions). Additionally, prior knowledge of the concept of the p-value and its role in the decision-making process will strengthen students' interpretative skills. In this context, it is recommended that students review the continuation sections of the unit titled “İstatistiksel Tahminleme ve Karar Alma” (Statistical Estimation and Decision Making) in the textbook Özmen, A. & Şeniş, B. F. (Eds.). (2012). İstatistik. Eskişehir: Anadolu Üniversitesi Yayını prior to class.	*This week’s lesson will focus on hypothesis tests for comparing two sample means and proportions. Students will first become familiar with the procedures for testing differences between independent and dependent samples, followed by learning how to calculate test statistics for proportion-based comparisons. The instructional process will include explanatory lectures, board demonstrations, and digital presentations. To promote active participation, students will engage in small group activities and in-class applications. Emphasis will be placed on interpreting p-values, making decisions based on significance levels, and selecting the appropriate test type according to the hypothesis structure. The course aims to enhance students’ statistical decision-making skills by integrating theoretical knowledge with practice through real-life contextual examples.	Ö.Ç.4 Ö.Ç.5 Ö.Ç.6 Ö.Ç.8 Ö.Ç.4 Ö.Ç.5 Ö.Ç.6 Ö.Ç.8 Ö.Ç.4 Ö.Ç.5 Ö.Ç.6 Ö.Ç.8

	Teorical	Practice	Laboratory	Preparation Info	Teaching Methods	Course Learning Outcomes
14.Week	*Regression analysis			*Before starting this week, students are expected to be familiar with fundamental statistical concepts used to describe the relationship between two continuous variables—such as correlation coefficients and scatter plots. Understanding the basic characteristics of linear relationships between variables is essential for grasping the logic of regression analysis. In addition, prior knowledge of the assumptions underlying the least squares method, the general structure of the linear regression model, and key terms (dependent and independent variables, regression coefficients, error term) will enhance the effectiveness of the lesson. In this context, it is recommended that students review the unit titled “Regresyon ve Korelasyon Çözümlemesi” (Regression and Correlation Analysis) in the main textbook Özmen, A. & Şeniş, B. F. (Eds.). (2012). İstatistik. Eskişehir: Anadolu Üniversitesi Yayını prior to class.	*This week’s lesson will address the process of modeling the linear relationship between dependent and independent variables within the scope of simple linear regression analysis. Students will be introduced to the theoretical framework for constructing the regression line, interpreting regression coefficients, and testing the significance of the model. This will be followed by applied problem-solving using various datasets, with in-class demonstrations of calculations based on the least squares method. The instructional process will be supported by lectures, digital presentations, board work, and both individual and group-based problem-solving activities. To enhance conceptual understanding and analytical skills, class discussions will focus on interpreting regression results using contextual examples and real-life data sets.	Ö.Ç.7 Ö.Ç.8 Ö.Ç.7 Ö.Ç.8 Ö.Ç.7 Ö.Ç.8
15.Week	*Correlation			*Before starting this week, students are expected to be familiar with fundamental concepts used to determine the direction and strength of the relationship between two continuous variables. In particular, it is important to have prior knowledge of positive and negative correlation, interpretation of the correlation coefficient, and the meaning of its values within the range of -1 to +1. Emphasis will also be placed on distinguishing between correlation and causation and on avoiding common interpretive errors. Additionally, it is aimed to develop basic awareness of the Pearson correlation coefficient and, where appropriate, the Spearman rank correlation coefficient. To prepare for the topic, students are advised to review the relevant sections on correlation in the unit titled “Regresyon ve Korelasyon Çözümlemesi” (Regression and Correlation Analysis) from the textbook Özmen, A. & Şeniş, B. F. (Eds.). (2012). İstatistik. Eskişehir: Anadolu Üniversitesi Yayını.	*This week’s lesson will focus on correlation analysis, which measures the strength and direction of the relationship between two variables. Students will be guided through the definition, calculation, and interpretation of the Pearson correlation coefficient step by step. Additionally, the Spearman rank correlation coefficient—used for non-parametric data—will be introduced with examples. The instructional process will be supported through lectures, board demonstrations, digital presentations, and individual problem-solving activities, enabling students to interpret correlation both graphically and numerically. Through applications based on real-life datasets, students will be encouraged to distinguish between correlation and causation and to accurately evaluate the strength of associations.	Ö.Ç.7 Ö.Ç.8 Ö.Ç.7 Ö.Ç.8 Ö.Ç.7 Ö.Ç.8

Assesment Methods %

1 Ara Sınav : 40.000

3 Final : 60.000

ECTS Workload

Activities	Count	Time(Hour)	Sum of Workload
Vize	1	1.00	1.00
Final	1	1.00	1.00
Ara Sınav Hazırlık	7	2.00	14.00
Final Sınavı Hazırlık	7	2.00	14.00
Ders Öncesi Bireysel Çalışma	14	1.00	14.00
Derse Katılım	14	2.00	28.00
		Total :	72.00
		Sum of Workload / 30 (Hour) :	2

Activities	Count	Time(Hour)	Sum of Workload
			ECTS : 2.00

Program And OutcomeRelation

	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	P.O. 14	P.O. 15	P.O. 16	P.O. 17	P.O. 18	P.O. 19	P.O. 20	P.O. 21	P.O. 22	P.O. 23	P.O.
L.O. 1	0	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	0	0	0	0	0	4
L.O. 2	0	4	4	0	0	0	4	0	0	0	0	0	0	0	0	4	4	4	0	0	0	0	0	5
L.O. 3	4	0	0	0	0	0	0	4	0	0	0	0	0	0	0	0	0	4	0	0	0	0	0	0
L.O. 4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	0	0	4	0	0	4
L.O. 5	0	0	4	0	0	0	0	0	0	0	0	4	0	0	0	4	0	0	0	0	0	0	0	0
L.O. 6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
L.O. 7	4	0	0	0	0	0	0	0	0	0	0	0	4	0	0	0	0	4	0	0	0	0	0	0
L.O. 8	0	0	0	0	0	0	4	0	0	0	0	4	0	0	0	4	4	4	0	0	0	0	0	4
Avarage	1.00	0.50	1.50	0	0	0	1.00	0.50	0	0	0	1.00	0.50	0	0	1.50	1.00	3.00	0	0	0.50	0	0	2.1

BEWARE OF PLAGIARISM! Please pay attention to proper academic citation rules and avoid plagiarism, an unethical and academically fraudulent behavior, when completing reports, assignments, or other academic works, and it is treated with the same disciplinary action as cheating in a classroom setting. It is imperative to refrain from presenting another person s ideas, language, expressions, or any other form of intellectual property as your own. Regardless of quality, your assignments/projects/research should reflect your original work. Perfection is not a requirement, and in case of any uncertainties regarding academic writing guidelines, you may seek clarification from your course instructor.

Engel Durumu/Uyarlama Talebi : Engel durumuna ilişkin herhangi bir uyarlama talebinde bulunmak isteyen öğrenciler, dersin öğretim elemanı ya da Nevsehir Engelli Öğrenci Birimi ile en kısa sürede iletişime geçmelidir.