**Ankara Üniversitesi  
Kütüphane ve Dokümantasyon Daire Başkanlığı**

**Açık Ders Malzemeleri**

Ders izlence Formu

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| Dersin Kodu ve İsmi | **İKT243 Statistics 1** |
| Dersin Sorumlusu | Prof. Dr. Onur Özsoy |
| Dersin Düzeyi | Lisans |
| Dersin Kredisi | 4 |
| Dersin Türü | Teorik |
| Dersin İçeriği | |  |  |  | | --- | --- | --- | | **WEEK** | **TOPIC** | **Reading Assignment** | | 1 | **Course Introduction:** Data and Statistics | Chapter 1 | | 2 | **Summarizing Data Graphically:** Introduction to the Computer | Chapter 1 and 2 | | 3 | **Summarizing Data Numerically**: Statistical tables and graphs. Histograms. Measures of central tendency (arithmetic mean, median, mode). Measures of variability (range, variance, standard deviation). Tchebysh-effs Theorem and the empirical rule. Coefficient of variation. Percentiles and quartiles. | Chapter 1 and 2 | | 4 | **Summarizing Data Numerically:** Statistical tables and graphs. **Histograms.** Measures of central tendency  (arithmetic mean, median, mode). Measures of variability (range, variance, standard deviation). Tchebysh-effs Theorem and the empirical rule. Coefficient of variation. Percentiles and quartiles. | Chapter 2 and 3 | | 5 | **Probability Theory:** Role of probability in statistics. Experiments and experimental outcomes. Sample space, events, union, intersection, and complements of events. Mutually exclusive events, independent events, and conditional probability. Additive and multiplicative rules. Discrete probability distributions. Mathematical expectation. | Chapter 4 | | 6 | **Discrete Probability Distributions:** Random Variables, Expected Value and Variance | Chapter 5 | | 7 | **Discrete Probability Distributions:** Binomial distributions, mean, variance, use of binomial formula and probability tables. Poisson distributions, mean, variance, use of Poisson formula and probability tables. Applications. | Chapter 5 | | 8 | **The normal distribution:** The parameters of the normal distribution. The standard normal distribution. Tabulated areas under the standard normal curve. The standardization formula. Applications. The normal approximation to the binomial. | Chapter 6 | | 9 | **Sampling Distributions:** The central limit theorem. Distribution of the mean of a sample from a normal population. Large-sample sampling distributions of sample means and proportion for one and two populations. | Chapter 5, 6 and 7 | | 10 | **Large-sample estimator:** Point and interval estimation. Interpretation of these estimators. Unbiased estimators. Large-sample estimation of means and proportions for one and two populations. | Chapter 8 | | 11 | **Large-sample tests of hypotheses:** Large-sample hypothesis testing for means and proportions for one and two populations. Observed significance levels. | Chapter 9 | | 12 | **Index Numbers** | Chapter 11 | | 13 | **Nonparametric tests** | Chapter 12 | | 14 | **General Overview, questions and answers** |  | |
| Dersin Amacı | An important aspect of being a manager is making decisions. The best decisions are those which are made based on fact. Such decisions require the use of data which often exhibit variation. In this class, the underlying principle will be the use of statistical analysis of data to make intelligent, fact-based decisions. We will specifically work on learning the following:   1. How to distinguish between different types of data. 2. How to construct and interpret several pictorial and numerical summaries of data. 3. How to calculate, interpret and use measures of variance. 4. How to use probability and probability distributions 5. How to assess the likelihood of important events. 6. How to use the central limit theorem to better understand sampled data. 7. How to estimate parameters of the normal and binomial distributions. 8. How to construct confidence intervals and make decisions based on the confidence intervals 9. How to conduct hypotheses tests. 10. How to do nonparametric tests. 11. How to construct, use, and interpret index numbers. 12. How to use statistical software to make calculations, and 13. how to interpret the computer output. |
| Dersin Süresi | 1 Yarıyıl (4 saat) |
| Eğitim Dili | İngilizce |
| Ön Koşul | YOK |
| Önerilen Kaynaklar | 1. Özsoy, Onur. (2010) ***İktisatçılar ve İşletmeciler İçin İstatistik, 3. Baskı***  Ankara:Siyasal Kitabevi. 2. Özsoy, Onur. (2004) ***Soru ve Yanıtlarla İstatistik,*** Ankara:Turhan Kitabevi.   Mark L. Berenson, David M. Levine and Timothy C. Krehbiel **Basic Business Statistics**,11th edition, |