

YILDIZ TECHNICAL UNIVERSITY

Department of Economics

IKT2211 Statistics I
2020 - 2021 Fall

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Class Hours: Monday, 10:00 - 12:50, (Group 1)
Friday, 09:00 - 11:50, (Group 2)

Objectives:

The aim of this course is to introduce basic statistical concepts. Statistics I is the first semester of a two-semester sequence designed to prepare students to use statistics for data analysis. The first semester serves as a foundation for the second, covering methods for displaying and describing data in addition to formalisation of many important notions in economics and econometrics, such as “decisions under uncertainty,” and “learning from empirical observations”. Topics include, but not limited to graphical and numerical summaries to describe the distribution of a variable, basic probability theory, discrete and continuous distributions and distribution of sampling statistics.

Learning Outcomes:

After successfully completing this course:

1. Students will be able to analyze and interpret the types of data used in economics and other social sciences by the means of numerical summary measures and various charts/graphs and report his/her findings formally.
2. Students will be capable of quantifying the element of uncertainty in economic phenomena from the point of the probability theory.
3. Students will have the functional knowledge of basic statistical concepts and processes such as random variables and their distributions.

Prerequisites:

There is no formal prerequisite for this course. However, lectures will occasionally make use of elementary calculus.

Mode of Instruction:

Lecture slides will be available at <http://avesis.yildiz.edu.tr/toaksoy/> under “Documents” section. Attendance is not obligatory. However, students attending the classes are expected to have a prior examination of the subject, which may involve, preferably, reading the material beforehand or at least taking a glance at the slides and learning some of the vocabulary. Interrupting the lecture with questions relevant to the subject is always encouraged and welcome. Students should keep in mind that Statistics course is not all about formulas. It is concerned with how to learn things about the world using incomplete information. In order to understand the logic behind the formulas, they

should devote a considerable amount of studying.

Note-taking by writing, rather than by typing or taking photos of the white board improves conceptual learning significantly. Additionally, with cellphones, some students distract others by viewing non-course material during class. **Therefore, use of cellphones is prohibited during lectures.** Put your cellphone away and have it either off or set to airplane mode (even simply vibrating is a distraction to you). You will be asked to leave the room if you are found using either in class.

Grading Policy:

Grading of the course will be based on two midterm exams (60%) and one final exam (40%). All exams will be closed-books, closed-notes. There will be no make-up exams except for documented medical reasons.

≥ 85	AA	40 - 48	DC
76 - 84	BA	30 - 39	DD
67 - 75	BB	20 - 29	FD
58 - 66	CB	≤ 19	FF
49 - 57	CC		

Readings:

The textbook of the course is:

[NCT] Paul Newbold, William Carlson and Betty Thorne. *Statistics for Business and Economics*. Prentice Hall. 8th Edition. 2013.

Other relevant readings are:

[KB] Ken Black. *Business Statistics: For Contemporary Decision Making*. John Wiley & Sons. 2011.

[M&M] Irvin Miller and Marylees Miller. *John E. Freund's Mathematical Statistics with Applications*. Pearson. 8th Edition. 2005.

Tentative Course Outline:

The weekly coverage might change as it depends on the progress of the class. However, you must keep up with the reading assignments.

Week	Content
Week 1	<ul style="list-style-type: none">• Introduction
Week 2	<ul style="list-style-type: none">• Describing Data: Graphical• Reading assignment: (NCT, Ch.1), (KB, Ch.2)
Week 3	<ul style="list-style-type: none">• Describing Data: Numerical• Reading assignment: (NCT, Ch.2), (KB, Ch.3)
Week 4	<ul style="list-style-type: none">• Describing Data: Numerical (<i>cont.</i>)• Reading assignment: (NCT, Ch.2), (KB, Ch.3)
Week 5	<ul style="list-style-type: none">• Probability Theory• Reading assignment: (NCT, Ch.3), (KB, Ch.4)
Week 6	<ul style="list-style-type: none">• Probability Theory (<i>cont.</i>)• Reading assignment: (NCT, Ch.3), (KB, Ch.4)
Week 7	<ul style="list-style-type: none">• Discrete Random Variables and Their Probability Distributions• Reading assignment: (NCT, Ch.4), (KB, Ch.5)
Week 8	<ul style="list-style-type: none">• Discrete Random Variables and Their Probability Distributions (<i>cont.</i>)• Reading assignment: (NCT, Ch.4), (KB, Ch.5)
Week 9	<ul style="list-style-type: none">• Continuous Random Variables and Their Probability Distributions• Reading assignment: (NCT, Ch.5), (KB, Ch.6)
Week 10	<ul style="list-style-type: none">• Continuous Random Variables and Their Probability Distributions (<i>cont.</i>)• Reading assignment: (NCT, Ch.5), (KB, Ch.6),
Week 11	<ul style="list-style-type: none">• Additional Topics on Probability Distributions and Probability Densities• Reading assignment: (M&M, Ch. 3)
Week 12	<ul style="list-style-type: none">• Mathematical Expectation• Reading assignment: (M&M, Ch. 4)