

YILDIZ TECHNICAL UNIVERSITY

Department of Economics

IKT2212 Statistics II
2023 - 2024 Spring

Instructor: Assoc. Prof. Tunç Durmaz
Office: G2-303
Phone: +90(0)212-383-6889
Email: tdurmaz@yildiz.edu.tr
WWW: <http://avesis.yildiz.edu.tr/tdurmaz/>

Class Hours: Wednesday, 10:00AM - 12:50PM; Room Z-14.

Office Hours: Tuesday, 2:00PM - 3:00PM.

Objectives:

Statistics II is the second semester of a two-semester sequence which focuses on statistical inference. It intends to provide the basic statistical tools that will be used in later econometrics courses. These tools are necessary for students to be a good practitioner and consumer of empirical economics. The material covers methods and properties of point estimation, interval estimation, hypothesis testing, analysis of variance, and Bayesian inference.

Learning Outcomes:

After successfully completing this course:

1. Students will have the functional knowledge of point estimation methods.
2. Students will be capable of analyzing properties of different estimators.
3. Students will be able to apply the procedures of interval estimation, hypothesis testing and analysis of variance and interpret their findings.

Prerequisites:

There is no official prerequisite for this course. However, students are expected to have a good understanding of calculus and topics covered in Statistics I.

Mode of Instruction:

Lecture slides will be uploaded on the online learning platform (OBS). 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 one midterm (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.

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:

[C] Stanley H. Chan. *Introduction to Probability for Data Science*. University of Michigan Publishing. 2022.

[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 (21 Feb)	<ul style="list-style-type: none">• Confidence Interval Estimation: Single Population• Reading assignment: (NCT, Ch.7), (KB, Ch.8)
Week 2 (28 Feb)	<ul style="list-style-type: none">• Confidence Interval Estimation: Single Population (<i>cont.</i>)• Reading assignment: (NCT, Ch.7), (KB, Ch.8)
Week 3 (06 Mar)	<ul style="list-style-type: none">• Confidence Interval Estimation: Further Topics• Reading assignment: (NCT, Ch.8), (KB, Ch.10)
Week 4 (13 Mar)	<ul style="list-style-type: none">• Point Estimation• Reading assignment:(Lecture Notes)
Week 5 (20 Mar)	<ul style="list-style-type: none">• Point Estimation (<i>cont.</i>)• Reading assignment:(Lecture Notes)
Week 6 (27 Mar)	<ul style="list-style-type: none">• Hypothesis Testing: Single Population• Reading assignment: (NCT, Ch.9), (KB, Ch.9)
Week 7 (03 Apr)	<ul style="list-style-type: none">• Hypothesis Testing: Single Population (<i>cont.</i>)• Reading assignment: (NCT, Ch.9), (KB, Ch.9)
Week 8 (10 Apr)	Public holiday (Ramadan Feast)
Week 9 (17 Apr)	Midterm I
Week 10 (24 Apr)	<ul style="list-style-type: none">• Hypothesis Testing: Two Populations• Reading assignment: (NCT, Ch.10), (KB, Ch.10)
Week 11 (01 May)	Public holiday (Labor Day)
Week 12 (08 May)	<ul style="list-style-type: none">• Analysis of Variance• Reading assignment: (NCT, Ch.15), (KB, Ch.11)
Week 13 (15 May)	<ul style="list-style-type: none">• Analysis of Variance (<i>cont.</i>)• Reading assignment: (NCT, Ch.15), (KB, Ch.11)
Week 14 (22 May)	<ul style="list-style-type: none">• Bayesian Inference• Reading assignment: (Lecture Notes)