TED UNIVERSITY

ED 510 & INTRODUCTION TO EDUCATIONAL STATISTICS

Fall-2024-2025 Syllabus

Course Information				
Course Code	**Course Name**	**Location**	**Time**	**Instructional Modality**
ED 510	Introduction to Educational Statistics	D226	Thursday 18.00-21.00	Face to face

Instructor Information	
Name:	Assoc.Prof.Dr. Münevver İlgün Dibek
Office:	D111
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Office Hours:	Thursday 17.00-18.00

Course Assistant
Name: -
E-mail:-
Office:-

GENERAL INFORMATION

Course Description
(3+0+0) 3 Credits / 7.5 ECTS

Basic concepts of statistics; grouping of data; measures of central tendency; measures of variability and checking the normality of distributions; parametric and nonparametric statistical methods.

Prerequisites

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Course Objectives

This course aims to provide students with the knowledge and skills about basic statistical concepts and data analysis techniques. The course will focus on data organization, descriptive, and inferential statistics.

Learning Outcomes

Upon successful completion of this course, students will be able to:

1. *Differentiate different measurement scales,*
2. *Generate measures of central tendency and variation for a data set,*
3. *Calculate probability by using normal distribution,*
4. *Formulate null and alternative hypotheses,*
5. *Calculate test statistics for hypothesis tests,*
6. *Demonstrate analysis of parametric and non-parametric tests.*

Course Materials

Textbook(s):

Gravetter, F. J. & Wallnau, L. B. (2016*). Statistics for the behavioral sciences (10th ed.)* Wadsworth. Other editions will work fine as well.

Recommended Readings:

- Cohen, J. (1988). *Statistical power analysis for the behavioral sciences*. Erlbaum.
- Keppel, G., & Wickens, T. D. (2004). *Design and analysis: A researcher's handbook* (4th ed.). Prentice Hall.
- Keselman, H. J., Huberty, C. J., & Lix, L. M. (2000). Statistical practices of educational researchers: An analysis of their ANOVA, MANOVA, and ANCOVA analysis. *Review of Educational Research, 68*(3), 250-286.
- Kirk, R. E. (2012). *Experimental design: Procedures for the behavioral sciences* (4th ed.) Brooks/Cole Publishing Company.
- Miller, M. D., Linn, R. L., & Gronlund, N. E. (2013). *Measurement and assessment in teaching,* 11th Edition. Pearson Education, Inc. (Main Book for this course)
- Pallant, J. (2016). *SPSS survival manual.* Open University.
- Tabachnick, B. G., & Fidell, L. S. (2007). *Experimental designs using ANOVA.* Thomson/Brooks/Cole.

Supplementary Materials:

Green, S. B., Salkind, N. J., & Akey, T. M. (2008). *Using SPSS for Windows and Macintosh: Analyzing and understanding data* (5th ed.). Prentice Hall.

Student Workload (Total 210 Hours)

Course Readings (28 hrs), Exams (56hrs), Hands-on Work (40 hrs), Lectures (42 hrs), Oral Presentation (28hrs) and Report on a Topic (16 hrs)

Planned Learning Activities and Teaching Methods

Telling/Explaining Discussion/Debate Questioning Reading Peer Teaching Demonstrating Problem Solving Collaborating Think-Pair-Share Oral Presentations/Reports Concept Mapping Brainstorming Hands-on Activities

ASSESSMENT METHODS

- ***Homework assignments (30%):*** *The homework assignments are intended to help you develop the specific skills taught in class. They will be distributed at the end of each class and are due at the following session. Late submissions will not be accepted unless there are excused, instructor-approved circumstances.*

- ***Midterm Exam (30%)****: The in-class exam will be closed-book. A formula sheet will be provided. You may use a calculator, but sharing calculators during the exam is not allowed. You will be responsible for all the topics we have covered so far in the midterm exam. More detailed instructions regarding format and content of the exam will be given later in the semester. The exam will be held on* ***7th November, 2024****.*

- ***Final Exam (40%):*** *In-class exam (closed-book). In the final exam, all topics covered throughout the semester will be included, but the questions will primarily focus on the topics covered between the midterm and the final exam. More detailed instructions regarding format and content of the exam will be given later in the semester. The exam date will be on announced.*

GRADING

The course grade will be based on the following:

Course Requirements	Weight
Homework Assignments	30 %
Midterm	30 %
Final Exam	40 %
Total	100%

Grade Evaluation Scale

Below is the grading system used in this course:

Percentage Scores	Letter Grades
100-90	AA
89-85	BA

84-80	BB
79-75	CB
74-70	CC
69-60	DC
59-50	DD
49-0	F
Absent & Unsuccessful	FX

Make-up

You will not have the right to take a make-up exam unless you have a medical report.

COURSE POLICIES

Professionalism

(i.e. Professionalism includes regular attendance in class, timely completion of assignments, and active participation in all activities and discussions.)

Plagiarism / Academic Dishonesty

(i.e. This course adheres to the academic honesty policy. I expect that all work submitted and presented by you will be your own original work and that the contributions of others will be openly acknowledged. Failure to adhere to this policy will result in disciplinary action. For more information:

a. Plagiarism is a form of dishonesty that occurs when a person passes off someone else's work as his or her own. This can range from failing to cite an author for ideas incorporated into a student's paper to cutting and pasting paragraphs from different websites to handing in a paper downloaded from the internet. All are plagiarism.

b. All parties to plagiarism are considered equally guilty. If you share your coursework with another student and s/he plagiarizes it, you are considered as guilty as the one who has plagiarized your work since you enabled the plagiarism to take place. Under no circumstances should a student make his/her coursework available to another student unless the instructor gives explicit permission for this to happen. Copying someone's work is an extreme and straightforward act of plagiarism. More commonly, however, students plagiarize without realizing they are doing so. This generally happens when a student fails to acknowledge the source of an idea or phrasing. Avoid plagiarism by citing sources properly! For all rules and requirements of APA citations, please consult the 7th edition of the Publication Manual of the American Psychological Association.

c. Read the academic honesty contract (https://student.tedu.edu.tr/en/student/principles-of-academic-integrity). By signing this contract, you certify that you have read, understood and

complied to agree with all rules and regulations of academic honesty.)

Cheating

(i.e. You may neither receive help from nor give help to others during an in-class exam. During exams, you may not leave the room, talk, or use dictionaries, translators, cell phones or programmable calculators. And please keep your eyes on your own work.)

Attendance

(i.e. This course requires your regular participation, attendance, and punctuality. It is expected that you attend the class on a regular basis and be on time. It is your responsibility to keep in touch with me about the emergencies prior to class. The TEDU policy concerning attendance will be followed strictly.)

Late Assignment Submission Policy

(i.e. Each assignment is to be turned in on time. Arrangements for accepting late assignments will be made only in unusual circumstances (e.g., major illness, death of loved one), and only if you are able to provide documentation to support your excuse. In all other cases, there will be **a 10% point-reduction** per day for late work, and the assignment will not be accepted after three days late.)

Extra Credit

(i.e. There is no rewriting or extra credit offered in this course.)

Class Participation

(i.e. Class participation is an integral part of this course. Classes may involve watching movies, reading, questioning, discussions/debates, video presentations, field trips, observation, reflection, demonstrating, poster presentations, hands-on work, group work, collaborating, educational games, problem solving, library/web research projects, class presentations, and written assignments.)

Class Readings

(i.e. Please read the assigned articles or chapters prior to class so that you may participate fully in the course discussions.)

Student Support and Accommodation

Note any relevant academic and personal support services (for example, campus or

college writing centers, counselling services, study centers, etc.)

Announcements

(i.e. All announcements will be made on the LMS site for this course. It is your responsibility to keep your e-mail address operative all times. Check your e-mails regularly in order to stay informed.)

PLANNED COURSE SCHEDULE

Date/Week	Assigned Chapters	Topics Assigned /Assessment
Week 1 23 – 27 Sep	-	First meeting and overview of the course
Week 2 30 Sep – 04 Oct	Chp 1 & 2	Introduction to Statistics, Frequency distributions (till stem-and-leaf display) Getting started SPSS
Week 3 07 - 11 Oct	Chp 3 & 4	Frequency distributions, Central Tendency, Variability
Week 4 14 - 18 Oct	Chp 5 & 6 & 7	z-scores, Probability and samples
Week 5 21 - 25 Oct	Chp 8 & 9	Introduction to hypothesis testing, Single sample t
Week 6 28 Oct- 01 Nov	Chp 10 & 11	Independent measures t, Repeated measures t
Week 7 04 – 08 Nov		IN-CLASS MIDTERM
Week 8 11 – 15 Nov	Chp 12 Chp 14	Introduction to analysis of variance Two-factor analysis of variance
Week 9 18 – 22 Nov	Chp 13	Repeated measures analysis of variance

Week 10 25– 29 Nov	Chp 13*	Regression
Week 11 02– 06 Dec	Chp 15 & 17	Correlation, Chi-square statistics
Week 12 09– 13 Dec	Chp 10**	Non-Parametric Tests
Week 13 16– 20 Dec	Chp 4 & 5***	Reliability and Validity
Week 14 23– 27 Dec		Wrapping up semester

* Pallant, J. (2016). *SPSS survival manual.* Open University.

**Green, S. B., Salkind, N. J., & Akey, T. M. (2008). *Using SPSS for Windows and Macintosh: Analyzing and understanding data* (5th ed.). Prentice Hall.

***Miller, M. D., Linn, R. L., & Gronlund, N. E. (2013). *Measurement and assessment in teaching*, 11th Edition. Pearson Education, Inc. (Main Book for this course)