**Introduction to Behavioral Statistics**

**PSY356**

ID 5831

**Spring 2023**

**Instructor:**  Gulnara Kurmanova, PhD

**Office:** Psychology Department

**Course time:**

Lecture: Monday 10:50 - 12:05

Seminar: Wednesday 10:50 - 12:05

**Credit hours:** 6

**Course status:** Required

**Office hours:** Tuesday 11:00 – 12:00

Thursday 11:00 – 12:00

**Pre-requisites:** MAT133

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**Phone:** 663309

**Enrollment Key:** PSY356

Room: 432 (tbc)

**Required textbooks:**

1. Aron A. et al. Statistics for Psychology. Pearson Education, Inc. 6th ed. 2013.
2. Field A. Discovering Statistics. SAGE Publitions, 5th ed. 2017.
3. Foster G.C. et al. An Introduction to Psychological Statistics. University of Missouri, St. Louis. Open Educational Resources, 2018 (main textbook).
4. Goss-Sampson M. Statistical Analysis in JASP: A Guide for Students. 4th ed. 2020.

**Course description:**

This course will introduce you to the basic theory and practical tools of statistics with applications to psychology. The course includes the following topics: organizing and visualizing data; basic concepts of statistics; hypotheses testing; statistical inference logic; the most popular among psychologists’ statistical tools and methods; statistical calculations: manually, in Excel, using JASP; reporting of findings with APA style.

**Objectives:**

* You will understand and apply basic statistical concepts in psychology, including hypotheses testing and statistical inference.
* You will be able to use JASP and other tools to solve some typical statistical problems.
* You will be able to analyze the statistical inference in scientific articles and research reports you read and provide justified criticism, if necessary.

**Resources to Support Student Learning:**

* Library Help, eReserves and research tools: <https://library.auca.kg/>
* Writing Center: <https://warc.auca.kg/>
* Academic Advising Office: <https://auca.kg/en/academic_advising/>
* Psychological Counseling Services: <https://auca.kg/en/psycons/>
* AUCA Student Code of Conduct <https://auca.kg/uploads/Students_life/Docs/Code%20of%20Students%202019.pdf>
* AUCA Bylaws of the Academic Appeals Committee <https://auca.kg/uploads/Faculty%20Senate/Academic%20Appeals%20Committee%20Bylaws.pdf>
* Accommodation policy (for students with special educational needs) <https://auca.kg/en/p5732652484/>

**Equipment and software:**

* Computers with pre-installed software are available in the lab
* You can use your own laptops if you want. I’ll help you to install all the necessary software.
* It is very good if you have headphones. In this case, you will be able to work at your own pace.

**Academic Honesty**

Students are expected to follow the AUCA Academic Honesty code. All types of plagiarism are strictly prohibited. “Papers may appear to be plagiarized if students: occasionally use the words of another scholar without quotation marks and proper reference, with the result that it appears that the words are the student’s own; occasionally use the ideas of another scholar without proper reference; inadequately paraphrase the words or ideas of another scholar; or fail to include the bibliographic citation for all sources used in the process of completing the assignment. Self-plagiarism is also dishonest, it is not appropriate to hand in the same work for assignments given in more than one class, without the permission of every instructor”.

If a student fails to observe this requirement, the instructor may assign an “F” for the work or an “F” for the whole class, depending on the type of assignment and relevant circumstances. Students are expected to read and follow the section on Student Academic Dishonesty of the AUCA Code of Student Rights, Responsibilities and Conduct.

* On the first occasion you are caught plagiarizing, you fail that assignment.
* The second time, you fail the course.
* The third time, you may be subject to more severe penalties.

The Registrar, your academic advisor, and the FYS Director will all be informed of your plagiarism. You will also be required to arrange a session with a WARC tutor, who will review your paper with you and help you avoid making the same mistake in the future.

**Course rules and regulations**

**Documents, devices and on-line policy.** The use of mobile phones and laptops to connect to the Internet for learning tasks is encouraged. Please, put mobile phones into silent mode. Please keep all your written work on your computer or in the cloud until final grading.It is expected that you can use some common software and online resources, like calculator or Excel. I also expect the student to be able to use the Tracking > Track Changes option of the Word app.

**Individual program.** In exceptional cases, for academical reasons and for students showing excellent academic progress, it is allowed to take a course on an individual program. In this case, the student does the same work as everyone else, but contacts me at a designated time.

**Review the course requirements carefully**. This syllabus may change slightly to accommodate unforeseen events.

**Please, keep track of your points and grade in e-course**, so, later on, you will not be surprised by your final grade.

**Communication with me is best via email** at [kurmanova\_g@auca.kg](mailto:kurmanova_g@auca.kg) . As a rule, I answer your emails in 24 hours, except weekends and holidays. If you didn’t get my reply timely, please, contact me personally via phone or Whatsapp. Also, make sure my emails don't end up in your spam folder.

**JIT rule.** For this course, the Just In Time rule works. Here it means that your papers submitted after deadline or not via the e-course will not be evaluated.

**Course requirements:**

1. **Attendance and Participation Requirements – 20%.** Students who take notes, ask questions, respond to questions, and meet the instructor for discussions are typically the ones who succeed in this class. I strongly recommend you attend class prepared. If you do happen to miss a class, that’s OK, but you will be responsible for *all* material covered in lecture or seminar, some of which will not be covered by the textbooks. If you know about an absence beforehand, please send me an email to let me know. **X-grade** specifically denotes non-attendance; (a) X grade cannot be requested by students and is only given at the discretion of a faculty member; (b) X grade should not affect the GPA. Receiving an X grade for the same course twice, results in an automatic F grade for that course. Students gain bonus points (up to 5, for the whole course) for the active participation in the class.
2. **Class work – 20%.** Classwork points generally account for an indirect measure of attendance also, so, if you were in class but not submitted your classwork, you can lose your attendance points.
3. **Home work – 20%.** Midterm also includes answering questions and solving typical statistical problems.
4. **Midterm – 20%**. Midterm also includes answering questions and solving typical statistical problems.
5. **Final exam – 20%**. Final exam consists of two parts: (1) answering questions and solving typical statistical problems and (2) making statistical inference using JASP.

**Grading**

Grades will be based on a total of 100 points. If you would like to discuss your grades, tell me.

**Attendance** 20 points

**Homework** 20 points

**Class work** 20 points

**Midterm Exam** 20 points

**Final Exam** 20 points

If a student does not miss classes, performs class and homework on time and with excellent quality, asks good questions and gives meaningful answers, has higher scores for quizzes and midterm, and also brings new interesting elements into the educational process, the lecturer can evaluate his success with the highest score without final exam.

If you feel that the evaluation of your work was not fair or you noticed some scoring mistakes in your grade, tell me. If your demands are reasonable, the grade will be reconsidered.

As your final exams ended and exams and papers are being graded, please be reminded that grade negotiations are not acceptable at AUCA. You may contact me one time and receive feedback for why you received the grade so that you can perform better in the future. However, you should have no expectation that the grade will be changed. Repeatedly contacting professors with a request of grade change may be considered as grounds for sanction under the anti-harassment policies.

I carefully evaluate your work based on your performance throughout the semester, and my evaluations should be respected. If you think there are objective reasons to disagree with your grade you may follow the rules of the formal grade appeal process after the grades are posted.

A grade of **Incomplete** is reserved for only those special cases when a student has missed a significant portion of the semester's work because of health issues or other unavoidable circumstances.

**0 ≤ F ≤ 45 < D- ≤ 50 < D ≤ 55 < D+ ≤ 60 < C- ≤ 65 < C ≤ 70 < C+ ≤75 < B- ≤ 80 < B ≤ 85 < B+ ≤ 90< A- ≤ 95 < A ≤100.**

**Class schedule**

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| --- | --- | --- | --- |
| **Date** | **Topic** | **Reading** | **Seminar** |
| **Week 1**  Jan 16, 18 | Introduction. Why statistics? Introduction to JASP | Foster Ch.1 Introduction | Introduction to JASP: Discover Statistics with JASP |
| **Week 2**  Jan 23, 25 | Describing and Visualizing Data | Foster Ch.2 Describing Data using  Distributions and Graphs | Computing Frequencies and Creating an APA-Style Frequency Table Using JASP, Excel, and Word |
| **Week 3**  Jan 30, Feb 01 | Central Tendency. JASP in central tendency analysis. | Foster Ch.3 Central Tendency | Computing Variability (Standard Deviation, Variance, & Range) with JASP |
| **Week 4**  Feb 06, 08 | Normal Distribution. | Foster Ch.4 Normal Distribution, Ch.5 Probability | How to Create a Normal Distribution and Examine Probability exercise with JASP |
| **Week 5**  Feb 13, 15 | Sample and Population. | Foster Ch.6 Sampling Distribution | z scores and distribution plots in JASP |
| **Week 6**  Feb 20, 22 | Hypothesis Testing. Midterm. | Foster Ch.7 Hypothesis Testing | Midterm |
| **Week 7**  Feb 27, Mar 01 | One-Sample T Test | Foster Ch.8 Introduction to T-Tests | How To Do a One Sample t Test in JASP |
| **Week 8**  Mar 06 | T Test for Repeated Measures | Foster Ch.9 Repeated Measures T Test | No seminar |
| **Week 9**  Mar 13, 15 | T Test for Independent Groups | Foster Ch.10 Independent Samples T Test | How to do a Paired Samples t Test in JASP |
| **Week 10**  Mar 27, 29 | One Way ANOVA | Foster Ch.11 Analysis of Variance | How to do an Independent Samples t Test in JASP |
| **Week 11**  Apr 03, 05 | Two Way ANOVA. MANOVA. | Field Ch.12 Factorial ANOVA | How To Do One Way ANOVA in JASP |
| **Week 12**  Apr 10, 12 | Correlation | Foster Ch.12 Correlation | Two Way Within- and Between Subjects ANOVA in JASP |
| **Week 13**  Apr 17, 19 | Factor Analysis | Field Ch.17 Factor Analysis | How to do a Pearson’s Correlation in JASP |
| **Week 14**  Apr 24, 26 | Linear Regression | Foster Ch.13 Linear Regression | Exploratory Factor Analysis |
| **Week 15**  May 03 | No lecture | No reading | How to do Simple Linear Regression in JASP |
| **Week 16**  May 08, 10 | Chi-Square Test | Foster Ch.14 Chi-Square | How to do Chi Square test in JASP |
| **Week 17**  May 17 | Final Exam |  |  |