



The name of the discipline and the code: **Statistics**

Lecturer	Abdyralieva Elizat Talipovna
Contact information:	0706436379
Amount of credits:	4 credits (120 hours)
Date:	2020-21 academic year, III semester
The purpose and objective of the course	<p>The Main purpose of discipline "Statistics" – formation of theoretical knowledge of value among the students and a role of the statistical analysis in ensuring the effectiveness of economic activities in the decision-making process.</p> <p>The objectives of Course:</p> <ul style="list-style-type: none">- harnessing a complex of modern methods of gathering, processing, generalisation by students and the analysis of the statistical information for studying of tendencies and laws of economic events and processes;- application of statistical methods, methods of forecasting of economic processes to make informed decisions.
Course Description	Statistics is the art of using data to make numerical conjectures about problems. Descriptive statistics is the art of summarizing data. Topics include: graphs, the average, the standard deviation, the normal curve, correlation. Statistical inference is the art of making valid generalizations from samples.
Prerequisites	Economic theory, sociology, mathematics
Post requisites	This course help students to develop statistical and analytical thinking for making optimal and right decision in professional occupation.
Competence	<p>A study of course student need to know:</p> <ul style="list-style-type: none">– goals and objectives of statistical methods of collecting, processing and analysis of data– the use of basic techniques and methods of collecting, grouping and summary of static observations– analysis of statistical data- formulas for the calculation of statistical data <p>A study of course student should be able to:</p> <ul style="list-style-type: none">– make an observation using methods and techniques of research– build a chart and tables from the data– analyze statistical data– interpret statistical data– formulating conclusions arising from the analysis <p>A study of course student should get skills: implementation of statistical calculations and analysis of statistical data in a specific field of activity; use specific methods and theorems to analyze current data and formulate the main conclusions.</p>

<p>Course policy</p>	<p>Class attendance: When skipping classes, the student independently studies the missed topic and gives to the teacher in the form of a written work, essay or presentation on slides.</p> <p>Requirements of the teacher: Do not be late for classes, complete the teacher's tasks on time, do not use cell phones in class.</p> <p>Academic Conduct Policy: The course policy includes the following recommended list of teaching requirements for conducting classes and student discipline:</p> <ul style="list-style-type: none"> - do not miss classes; - do not be late for classes; - actively participate in the educational process; - show punctuality, accuracy, commitment; - perform independent tasks in a timely manner; - work in a team and take part in discussions; <p>Tolerance, benevolence, openness are welcomed.</p>
<p>Teaching methods:</p>	<ul style="list-style-type: none"> - Oral presentation of educational material (lecture, explanation, mentoring) - Discussion of studied material - Practical lessons(exercises)
<p>Form of testing knowledge</p>	<p>The points of final grade are distributed as follows:</p> <p>Current control work (max) – 40 points Frontier control work (max) – 40 points Final control work (written exam) – 20 points</p> <p>«Excellent» - 85 – 100 points – theoretical content of the course is learnt fully without gaps, necessary practical skills of work with untapped materials are formed, All provided by the training program learning activities are completed.</p> <p>«Good» - 70 – 84 points – theoretical content of the course is learnt fully without gaps, some practical skills of work with untapped materials are formed not enough, all provided by the training program learning activities are completed, some kinds of tasks are completed with errors.</p> <p>«Satisfactory» - 50 – 69 points – theoretical content of the course is learnt partly, necessary practical skills of work with untapped materials are formed mostly, all provided by the training program learning activities are completed, some kinds of tasks are completed with errors.</p> <p>«Unsatisfactory» - 0 – 49 points - theoretical content of the course is not learnt, necessary practical skills of work with untapped materials are not formed, all provided by the training program learning activities are not completed, some kinds of tasks are completed with gross errors.</p>
<p>References:</p> <p>The main</p> <p>Additional</p>	<p><u>The main</u></p> <ol style="list-style-type: none"> 1. R. Larson, B. Farber (2012), Elementary Statistics: Picturing the world, 5th edition. – Boston: Pearson Education, Inc. – 649 pages 2. I.I. Eliseeva (2004), General Theory of Statistics: Textbook, 5th edition, rev. and add., Moscow, Finance and Statistics. – 656 pages 3. N.N. Lobova, S.N. Pencheva, I.N. Pospelova (2007), Social and Economic Statistics: handbook, Barnaul, AGAU – 112 pages

	<p><u>Additional</u></p> <ol style="list-style-type: none"> 1. L.G. Batrakova (2013), Social and Economic Statistics: Textbook, Moscow, Logos. – 480 pages 2. A.F. Grishin (2004), Statistics: handbook, Moscow, Finance and Statistics. – 240 pages 3. G.L. Gromyko (2004), Theory of Statistics: workshop, 3rd edition, rev. and add., Moscow, Infra-M. – 205 pages 4. V.M. Gusarov (2002), Statistics: handbook for universities, Moscow, UNITY – DANA. – 463 pages 5. David Freedman, Robert Pisani, Roger Purves (2007), Statistics, 4th edition, New York, W.W. Norton & Company, Inc. – 576 pages 6. O.V. Kuchmaeva, A.I. Boyko, S.N. Brusnikina, E.A. Egorova, O.A. Zolotareva, M.V. Karmanov, L.L. Kozlova, S.I. Kuzin, O.L. Petryakova, N.V. Tatarkova, L.P. Kharchenko (2017), Demographic statistics. Textbook, Moscow, Knorus. – 480 pages 																																			
<p>Individual work of student</p>	<table border="1" data-bbox="544 763 1481 1832"> <thead> <tr> <th data-bbox="544 763 612 831">№</th> <th data-bbox="612 763 1233 831">Theme of papers</th> <th data-bbox="1233 763 1481 831">Points</th> </tr> </thead> <tbody> <tr> <td data-bbox="544 831 612 898">1</td> <td data-bbox="612 831 1233 898">The international statistical standards</td> <td data-bbox="1233 831 1481 1832" rowspan="10" style="text-align: center; vertical-align: middle;">20</td> </tr> <tr> <td data-bbox="544 898 612 965">2</td> <td data-bbox="612 898 1233 965">The basic stages of development of statistics</td> </tr> <tr> <td data-bbox="544 965 612 1032">3</td> <td data-bbox="612 965 1233 1032">The international statistical organisations</td> </tr> <tr> <td data-bbox="544 1032 612 1099">4</td> <td data-bbox="612 1032 1233 1099">Statistics developments in Kyrgyzstan</td> </tr> <tr> <td data-bbox="544 1099 612 1211">5</td> <td data-bbox="612 1099 1233 1211">The modern organization of statistics in Kyrgyzstan</td> </tr> <tr> <td data-bbox="544 1211 612 1323">6</td> <td data-bbox="612 1211 1233 1323">The appearance of Statistics as a science. The Founders of Statistics</td> </tr> <tr> <td data-bbox="544 1323 612 1391">7</td> <td data-bbox="612 1323 1233 1391">Statistics of USA</td> </tr> <tr> <td data-bbox="544 1391 612 1458">8</td> <td data-bbox="612 1391 1233 1458">Statistics of UK</td> </tr> <tr> <td data-bbox="544 1458 612 1525">9</td> <td data-bbox="612 1458 1233 1525">Statistics of Germany</td> </tr> <tr> <td data-bbox="544 1525 612 1592">10</td> <td data-bbox="612 1525 1233 1592">Statistics of Japan</td> </tr> <tr> <td colspan="3" data-bbox="544 1592 1481 1682" style="text-align: center;"><i>Problem Solving</i></td> </tr> <tr> <td data-bbox="544 1682 612 1749">1</td> <td data-bbox="612 1682 1233 1749">Problem solving 1</td> <td data-bbox="1233 1682 1481 1749" style="text-align: center;">10</td> </tr> <tr> <td data-bbox="544 1749 612 1832">2</td> <td data-bbox="612 1749 1233 1832">Problem solving 2</td> <td data-bbox="1233 1749 1481 1832" style="text-align: center;">10</td> </tr> </tbody> </table> <p data-bbox="544 1832 1481 1971">Note. Homeworks and IWS should be presented on time by the instructor. If you hand your work after deadline, 50% points will be taken which you obtained for work.</p>			№	Theme of papers	Points	1	The international statistical standards	20	2	The basic stages of development of statistics	3	The international statistical organisations	4	Statistics developments in Kyrgyzstan	5	The modern organization of statistics in Kyrgyzstan	6	The appearance of Statistics as a science. The Founders of Statistics	7	Statistics of USA	8	Statistics of UK	9	Statistics of Germany	10	Statistics of Japan	<i>Problem Solving</i>			1	Problem solving 1	10	2	Problem solving 2	10
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Calendar – thematic plan for the allocation of hours with a week and theme

(4 credits)

№	Week	Theme	Number of hours	Reference	Preparatory questions on the modules
1	03.09	Introduction to Statistics	2	Main: 1, pp. 2 – 15 Additional: 2,3,4,5	1. What is statistics? 2. The types of statistics and data.
2	06.09	Experimental Design in statistics	2	Main: 1, pp. 16 – 19 Additional: 2,3,4,5	Types of design of experiments and their functions.
3	10.09	Sampling methods	2	Main: 1, pp. 20 – 22 Additional: 2,3,4,5	The categories and methods of sampling.
4	13.09	Summarizing and grouping data. Frequency distribution	2	Main: 1 pp. 38 – 46 Additional: 2,3,4,5	Types of frequency distribution and the rules of creation of frequency table.
5	17.09	Graph representation of static data	2	Main: 1 pp. 53 – 59 Additional: 2,3,4,5	The types of graphs and their differences between themselves.
6	20.09	Measures of Central Tendency	2	Main: 1, pp. 65 – 71 Additional: 2,3,4,5	The kinds of the Measures of Central Tendency and how to find them
7	24.09	Measures of Variation	2	Main: 1, pp. 80 – 89 Additional: 2,3,4,5	The measures of variation and their formulas
8	27.09	Measures of Position	2	Main: 1, pp. 100 – 106 Additional: 2,3,4,5	1. How to find the first, second, and third quartiles of a data set 2. How to find the interquartile range of a data set.
9	01.10	Module 1	2		
10	04.10	Normal probability distributions	2	Main: 1, pp. 236 – 261 Additional: 2,3,4,5	The shape of normal distributions and features of normal distributions.
11	08.10	The sampling distribution	2	Main: 1, pp. 266 – 273 Additional: 2,3,4,5	What's the difference between the sampling distribution of the mean and Central Limit Theorem?
12	11.10	Confidence intervals	2	Main: 1, pp. 304 – 340 Additional: 2,3,4,5	1. What is a Confidence Interval? 2. How to Find a Confidence Interval for a Sample, with the Normal Distribution,

					for a Proportion, for Two Populations.
13	15.10	Hypothesis testing	2	Main: 1, pp. 356 – 409 Additional: 2,3,4,5	General definitions and stages of hypothesis testing
14	18.10	Correlation and Regression	2	Main: 1, pp. 484 – 518 Additional: 2,3,4,5	The relationship between two continuous variables and the tools for this relationship
15	22.10	Dynamics in statistics	2	Main: 2, pp. 445 – 465 Additional: 3	Concept and values of dynamics and types of dynamics.
16	25.10	Index numbers in statistics	2	Main: 2, pp. 526 – 563 Additional: 3	Types and characteristics of index numbers
17	29.10	Social statistics	2	Main: 3, pp. 312 – 313 Additional: 1	Importance and applications of social statistics
18	01.11	Population statistics	2	Main: 3, pp. 61 – 99 Additional: 1	1. What is understood by the natural movement of the population? 2. What are the main indicators of migration of the population.
19	05.11	Module	2		
20	08.11	Price and tariff statistics	2	Main: 3, pp. 77 – 80 Additional: 1	Tasks and system of indicators of price statistics
21	12.11	Finance statistics	2	Main: 3, pp. 81 – 83 Additional: 1	1. Methods and objectives of financial statistics. 2. Differences of cash money circulation from the cashless.
22	15.11	Labor and employment statistics	2	Main: 3, pp. 9 – 13 Additional: 1	The content and tasks of statistics of labour market.
23	19.11	Statistics of living standards of the population	2	Main: 3, pp. 92 – 99 Additional: 1	Concept and system of indicators of living standards of the population
24	22.11	Wage statistics	2	Main: 3, pp. 27 – 32 Additional: 1	Various salary categories and formulas of wage statistics
25	26.11	Demographic statistics	2	Additional: 6	The purpose, tasks and classification

					systems of demographic statistics
26	29.11	Statistics of the national wealth	2	Main: 3, pp. 33 – 36 Additional: 1	1. What is national wealth and what are its main elements? 2. Indicator systems of statistics of national wealth.
27	03.12	Statistics of production cost	2	Main: 3, pp. 72 – 76 Additional: 1	1. List the main types of production costs. 2. What indicators are used to analyze changes in the total production costs?
28	06.12	Statistics of working capital	2	Main: 3, pp. 46 – 50 Additional: 1	1. What indicators determine the availability of working capital? 2. What are the indicators characterizing the use of working capital.
29	10.12	Module 3	2		
30	13.12	Statistics of labour productivity	2	Main: 3, pp. 22 – 26 Additional: 1	1. What indicators and how are measured the levels of labor productivity? 2. What characterize labor productivity indices of variable composition, constant composition and structural changes?
		Total	60		

Schedule of individual work of students for I semester

№	Weeks Months	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	Sum of the points	
		October					November					December							
		1	Current control (4 credits)	10					15					15					
2	Deadline	30.09.19 – 05.10.19					04.11.19 – 09.11.19					09.12.19 – 14.12.19							