|  |  |
| --- | --- |
| Title of the course | **Economic Statistics** |
| Title of the Academic Programme  | Management (Bachelor, 2nd year) |
| Type of the course | Core (mandatory) |
| Prerequisites | Mathematical Analysis, Theory of Probability, Economics |
| ECTS workload | 6 |
| Total indicative study hours | Directed Study | Self-directed study  | Total |
| 64 | 164 | 228 |
| Course Overview | Mathematical statistics is a branch of mathematics, that studies how to collect, generate, classify and analyze data using the tools of the Theory of probability. The goal of the course «Economic Statistics» is to introduce students to the basic notions and methods of statistical analysis, which can be applied to obtain optimal solutions in economy and business.The first module introduces methods of descriptive statistics and basic methods of inferential statistics.The second module introduces other methods of statistical data analysis. |
| Intended Learning Outcomes (ILO) | - Know the basic concepts of economic statistics, statistical methods of collection, processing and analysis, tabular and graphical presentation of results and conclusions. - Be able to formulate the research problem, find the necessary statistical information for the task, substantiate the methods of analyzing statistical data, analyze the results, obtained by these methods, apply them to make managerial decisions. - Be able to collect and process data, effectively using modern computer technologies. |
| Indicative Course Content | **Module 1**1. Mathematical statistics: the subject and method. General information on statistical observation
2. Statistical data: summarizing, grouping and representation (analytical and graphical); statistical tables.
3. Generalizing statistical indicators: absolute and relative values, average values, structural average values, variance
4. Selective observation, point and interval estimation
5. Statistical hypothesis testing

**Module 2**1. Statistical hypothesis testing
2. Introductory lesson on working with statistical functions of MS Excel
3. Factor analysis and variance analysis
4. Non-parametric methods of analysis
5. Statistics of relations
6. Other types of statistical analysis: cluster analysis, survival analysis, index analysis
7. Introduction to time series analysis
8. Practical statistical research
 |
| Teaching and Learning Methods | The course consists of lectures and tutorials. The tutorials involve solving problems. |
| Indicative Assessment Methods and Strategy | **Homework**: Each student is expected to make his/her weekly homework. Moreover, during the second module there will be Practical statistical research for every student: he/she is expected to collect data from different sources, classify and analyze it using statistical tools and methods, studied during the course. **Tests and Exam**: There will be two tests – 80 min written examination each, and two comprehensive Final Exams during the end of module exam period – 80 min written examination each. **Grading Policy**: The graded activities include class preparation, homework, including practical statistical research, tests, and the Final Exam.The total grade for the course is calculated by the total cumulated grade (k3 = 80% of the total grade) and the 2nd exam grade (k4 = 20% of the total grade):O\_total=k3\*O\_total\_cum+k4\*O\_exam2. The total cumulated grade is calculated by mean value of the total grade for the 1st term and the 2nd cumulated grade: O\_total\_cum=0,5\*(O\_term1+O\_cum2). The total grade for the 1st term is calculated by the 1st cumulated grade (k1=60% of the total grade) and the 1st exam grade (k2 = 40% of the total grade): O\_term1=k1\*O\_cum1+k2\*O\_exam1. The 1st cumulated grade consists of the grades for Class participation – 20%, Home assignments – 80%.The 2nd cumulated grade consists of the grades for Class participation – 10%, Home assignments – 20%, Practical statistical research – 20%, Test №1 – 20%, Test №2 – 30%. |
| Readings / Indicative Learning Resources | Mandatory W. H. Greene. (2018) Econometric Analysis, Stern School of Business, New York University, 8-th EditionOptional Bruce, Peter C., and Inbal Yahav. Introductory Statistics and Analytics : A Resampling Perspective, John Wiley & Sons, Incorporated, 2015. ProQuest Ebook Central, https://ebookcentral.proquest.com/lib/hselibraryebooks/detail.action?docID=1883957. |
| Course Instructor | Suriya Sh. Kumacheva |