BUSINESS STATISTICS USING EXCEL

The higher education curriculum (training program) on an academic discipline for the specialties 1-25 80 10 «Statistics and analysis»
COMPILERS:

Agabekova N.V., head of the Statistics Department of the educational institution “Belarusian State Economic University”, Doctor of Economics;

REVIEWERS:

Bondarenko N.N., ass. prof. of the Finance and Real Estate Management Department of educational institution “Institute of Business (BSU)”, Candidate of Economics;

Zaretsky V.O., ass. prof. of the Department of Accounting, Analysis, Audit in Industry of the educational institution “Belarusian State Economic University”, Candidate of Economics

RECOMMENDED FOR APPROVAL:

Statistics Department of the educational institution “Belarusian State Economic University”

(Protocol № 4 from 21 November, 2019)

Scientific and methodological Council of the educational institution “Belarusian State Economic University”

Managerial decision-making at all levels - from the national or regional level, and to economic entities - is not possible without proper statistical software products, and in particular, the Excel computer program, which is a component of the office suite of Microsoft Office applications, installed everywhere, will allow you to quickly and efficiently conduct comprehensive data analysis to ensure decision-making in business.

Discipline "Business Statistics using Excel" is one of the special educational disciplines that form of training in the field of business administration.

The subject of discipline - to disclose the nature and content of the statistical survey, giving a quantitative description of the massive socio-economic phenomena and processes that you can make well-founded decisions in conditions of uncertainty.

The purpose of the study "Business Statistics using Excel" - to form the future experts knowledge of the theoretical foundations of statistical science, a common methodological approach, as well as practical skills in statistical research in the field of business management in market conditions.

The objectives of teaching the discipline "Business Statistics using Excel": to familiarize undergraduates with existing regulations, reveals the essence of the content of statistical indicators to make the most important statistical and economic calculations with the help of statistical indicators, simulate and analyze using statistical indicators phenomena and processes occurring in the economy in a computer program Excel.

As a result of studying the discipline "Business Statistics using Excel" are formed:

UK-7. To speak a foreign language for communication in an interdisciplinary and scientific environment, in various forms of international cooperation;

SC-11. Be able to analyze formally statistical problems and use computer technology for statistical data processing

As a result of studying the discipline, undergraduates should know:

role of statistical techniques and solving practical problems in the field of modern economics and management; main advantages and disadvantages of statistical techniques; basic approaches to decision-making under conditions of uncertainty.
**should be able to:**

- use Excel for Statistical Data Analysis;
- justify the choice of the method and specific algorithms for processing of statistical data;
- use the results of sample surveys to justify the adoption of managerial decisions in business;
- create and use regression models to analyze economic data;
- identify and interpret statistically significant correlation in the data, use them for planning of economic activity;
- create a statistically-based forecasts to evaluate the accuracy of predictive models;
- interpret the results taking into account emerging statistical errors.

**should possess:**

skills in assessing specific situations and making decisions on strategic and tactical lines of business activity using statistical tools based on the Excel computer program.

108 hours are allocated for the study of a discipline in full-time education, including classroom 48 hours, of which 28 hours are lectures and 20 hours are laboratory classes. In extramural studies - 12 class hours, including 4 hours of lectures and 8 hours of laboratory classes. The distribution of classroom hours by topic is presented in the educational and methodological maps of the curriculum.

The form of current control – exam.

The structure of the program and the methodology for teaching the discipline take into account the new results of economic research and the latest achievements in the field of pedagogy and information technology, orienting students to the acquisition of relevant professional competencies.
CONTENT OF EDUCATIONAL MATERIAL

Topic 1. Methods of Visualizing and Presenting Data


Topic 2. Data Descriptors


Topic 3. Methodology of sample surveys. Hypothesis testing

samples, for paired (dependent) samples, one-sample student t-test. Interpretation of hypothesis test results. Errors of the first and second kind. Chi-Square and Non-Parametric Hypothesis Testing.

**Topic 4. Linear Correlation and Regression Analysis**


**Topic 5. Time Series Data and Analysis**

Seasonal adjustment. Time Series Forecasting Methods. Forecasting time series with trend and seasonal components.

**Topic 6. Excel For Statistical Data Analysis**

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<thead>
<tr>
<th>Number of topic</th>
<th>Name of section, topic</th>
<th>The number of classroom hours</th>
<th>Other</th>
<th>The form of knowledge control</th>
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<td>lectures</td>
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### Methodical cart for the academic discipline «Business Statistics using Excel» for part-time education

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| Total hours     | 4                       | 8 | | | | | |
An important step in mastering the knowledge of a discipline is the independent work of students. We recommend a time budget for independent work on average 2 hours for a 2-hour classroom lesson.

The main areas of independent work of students are:
- initially a detailed familiarization with the curriculum;
- familiarization with the list of recommended literature on the discipline as a whole and its sections, its presence in the library and other available sources, the study of the necessary literature on the topic, the selection of additional literature;
- study and expansion of the lecture material of the teacher due to special literature, consultations;
- preparation for laboratory studies according to specially developed plans with the study of special statistical packages of applied programs;
- preparation for the implementation of diagnostic forms of control (survey, tests, etc.);
- preparation for the exam.
REFERENCES

1. Main:


2. Additional:

13. Электронный ресурс http://home.ubalt.edu/ntsbarsh/Business-stat/excel/excel.htm#rintro
Protocol

for the coordination of the training program on the academic discipline with other disciplines of the specialty

<table>
<thead>
<tr>
<th>Title of the discipline coordination with which is required</th>
<th>Department title</th>
<th>Offers on changes in training program contents of academic discipline</th>
<th>The decision made by the Department which developed the training program (with the indication of date and number of the protocol)</th>
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<td>Business Analysis</td>
<td>Department of Accounting, Analysis, Audit in branches of the national economy</td>
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Additions and changes to the training program
for higher education establishment
For the academic year 20__/20__

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<th>Number</th>
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The program is revised and approved at the meeting of the Statistics Department (protocol № __, ___________)

Head of Department ____________________________ N.V. Agabekova

APPROVE

Dean of Faculty of Digital Economy

_________________________ D.A. Marushko