UNIVERSITY OF ECONOMICS - VARNA
FACULTY OF „COMPUTER SCIENCE"
DEPARTMENT „STATISTICS"

ACCEPTED BY:
Rector:
(Prof. Dr. Plamen Iliev)

SYLLABUS

SUBJECT: "INTRODUCTION TO STATISTICS";

DEGREE PROGRAMME: „International Business"; „Business Economics";

BACHELOR`S DEGREE

YEAR OF STUDY: 2; SEMESTER: 4;

TOTAL STUDENT WORKLOAD: 270 h.; incl. curricular 75 h.

CREDITS: 9

DISTRIBUTION OF WORKLOAD ACCORDING TO THE CURRICULUM

TYPE OF STUDY HOURSE	WORKLOAD, h.	TEACHING HOURS PER WEEK, h
CURRICULAR: incl. • LECTURES • SEMINARS (lab. exercises)	 45 30	 3 2
EXTRACURRICULAR	195	-

Prepared by:
1. ……………………………..
   (Prof. Dr. V. Hadzhiev)

2. ……………………………
   (Assist. Prof. Sl. Zhelyazkova)

Head of department: ……………………………..
„Statistics"   **(Prof. Dr. V. Hadzhiev)**

I. ANNOTATION

The proposed discipline "Introduction to Statistics" aims to give the students an introduction to the field of statistics and its many applications. The classes' focus is primarily on the fields of business administration and economics.

The course systematically and correctly builds up the basic ideas of business statistics. It is a combination of lectures and computer-based practice, firmly joining theory with practice. It introduces techniques for summarizing and presenting data, estimation, confidence intervals and hypothesis testing.

The presentation focuses mainly on key concepts understanding and statistical thinking, and less on formulas and calculations, which can now be done on personal computers using user-friendly software.

II. THEMATIC CONTENT

No.	TITLE OF UNIT AND SUBTOPICS	NUMBER OF HOURS		
		L	S	L.E.
	1. Introduction to Statistics	4	2	
1.1	The Importance of Statistics			
1.2	Some Basic Definitions			
1.3	The Importance of Sampling			
1.4	The Functions of Statistics			
	2. Empirical Distributions	3	2	
2.1	Frequency Distributions			
2.2	Pictorial Displays			
2.3	Descriptive Statistics			
	3. Measures of Central Tendency and Dispersion	4	4	
3.1	Measures of Central Tendency			
3.2	Measures of Dispersion			
3.3	Measures of Skewness and Kurtosis			
	4. Probability Distributions	3	2	
4.1	Binomial Distribution			
4.2	Normal Distribution			
4.3	t Distribution			
4.4	F Distribution			
	5. Sampling Distributions	4	4	
5.1	Introduction to Inferential Statistics			
5.2	Sampling Distributions			
5.3	The Central Limit Theorem			
5.4	Methods of Sampling			
	6. Estimating with Confidence Intervals	6	2	
6.1	The Principle of a Confidence Interval			
6.2	Confidence Interval for the Population Mean			
6.3	Confidence Interval for the Population Proportions			
6.4	Determining the Sample Size			
	7. Hypothesis Testing	6	2	
7.1	The Principle of Hypothesis Testing			
7.2	Tests of Two Populations			
7.3	Tests of Variances and Analysis of Variance			
	8. Simple Regression and Correlation Analysis	6	4	
8.1	The Correlation Relationships			

8.2	The Basic Objective of Regression Analysis			
8.3	Ordinary Least Squares			
8.4	Correlation Analysis			
9. Time Series Analysis		**6**	**4**	
9.1	Descriptive Analysis			
9.2	Time Series and Their Components			
9.3	Smoothing Techniques			
10. Index numbers		**3**	**4**	
10.1	Simple Price Index			
10.2	Weighted Price Indexes			
10.3	Indexes of Volume			
	Total:	**45**	**30**	

III. **FORMS OF CONTROL:**

No. by row	TYPE AND FORM OF CONTROL	№	extra-curricu-lar, h.
1.	**Midterm control**		
1.1.	Test (mixed type questions)	**4**	**60**
1.2.	Test (problems solving)	**2**	**60**
	Total midterm control:	**6**	**120**
2.	**Final term control**		
2.1.	Examination (mixed type questions, problems solving)	**1**	**75**
	Total final term control:	**1**	**75**
	Total for all types of control:	**7**	**195**

IV. **LITERATURE**

REQUIRED (BASIC) LITERATURE:
1. Anderson, David R., Dennis J. Sweeney, and Thomas A. Williams. Statistics for Business and Economics. New York: Cengage Learning, 2014.
2. Mann, Prem S. Introductory Statistics. Singapore: John Wiley & Sons Ltd, 2013.
3. Weiss, Neil A. Introductory Statistics. Edinburgh: Pearson, 2014.

RECOMMENDED (ADDITIONAL) LITERATURE:

1. Lind, Douglas A, William G. Marchal, and Samuel A. Wathen. Basic Statistics for Business & Economics. Boston: McGraw-Hill/Irwin, 2006.
2. Newbold, Paul, William L. Carlson and Betty M. Thorne. Statistics for Business and Economics. Pearson, 2012.
3. Siegel, Andrew F. Practical Business Statistics. Boston: Elsevier, 2012.

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