

<b>Basic data of the subject</b>	
<b>Academic Unit:</b>	<b>Faculty of Life and Environmental Sciences Agrobussines Department</b>
<b>Course title:</b>	<b>Business Statistics</b>
<b>Level:</b>	<b>Bsc</b>
<b>Course status:</b>	<b>O</b>
<b>Study year:</b>	<b>I</b>
<b>Number of hours per week:</b>	<b>3+2</b>
<b>Credit value – ECTS:</b>	<b>7</b>
<b>Time / location:</b>	<b>To be announced</b>
<b>Lecturer:</b>	<b>Prof. Asoc. Dr. Ekrem Gjokaj</b>
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<b>Course description</b>	
	The study of Business Statistics is involved with designing data collection methods, analyzing the data and interpreting and drawing conclusions based on those analyses which ultimately helps in decision making. Business Statistics is essentially about improving the quality of decision making. The course is designed to give students the proper knowledge of collecting, analyzing, presenting, and interpreting data. In the agribusiness community, managers must make decisions based on what will happen to such things as demand, costs, and profits. These decisions are an effort to shape the future of enterprises. Business Statistics teaches the collection and presentation of data; measures of central tendency, dispersion, probability, sampling distributions, statistical inference, regression correlation, index numbers, time series analysis, and forecasting.

<b>Course objectives:</b>	The overarching objective of Statistics in Business is for students to describe data and make evidencebased decisions using inferential statistics that are based on well-reasoned statistical arguments. The specific course objectives are to: describe data with descriptive statistics; perform statistical analyses; interpret the results of statistical analyses; make inferences about the population from sample data; frame and formulate management decision problems; understand the basic concepts underlying quantitative analysis; use sound judgment in the applications of quantitative methods to management decisions; testing hypothesis; forecasts etc.
<b>Learning outcomes:</b>	At the end of the course the student is expected to

	<p>be able to:</p> <ul style="list-style-type: none"> <li>• Recognise descriptive statistics in tabular and graphical forms for example frequency distributions, relative frequency distributions, cumulative frequency distributions, bar graphs, pie charts, histograms etc.</li> <li>• Calculate and interpret descriptive statistics in numerical values to summarize the location and variability of data for example, mean, median, mode, percentiles, range, variance, standard deviation, coefficient of variation, correlation coefficient etc.</li> <li>• Analyse the basic concepts of probability.</li> <li>• Identify probability values for discrete distributions for example, binomial distribution, and poison distribution.</li> <li>• Identify probability values for continuous distributions for example, normal distribution and exponential distribution.</li> <li>• Combine different sampling methods and study the characteristics of the sampling distribution.</li> <li>• Formulate confidence intervals.</li> <li>• Formulate null and alternative hypothesis for one-tailed and two-tailed hypothesis tests.</li> <li>• Synthesize the results of regression analysis and analysis of variance.</li> </ul>

<b>Contribution on student load (must correspond with learning outcomes)</b>			
<b>Activity</b>	<b>Hours</b>	<b>Days/week</b>	<b>Total</b>
Lectures	3	15	45
Exercise theoretical/laboratory	2	15	30
Practice work	1	3	3
Contact with lecturer/consultations	1	15	15
Field exercises	/	/	/
Mid-terms, seminars	1	1	1
Homework	1	15	15
Individual time spent studying (at the library or home)	2	15	30
Final preparation for the exam	2	8	16
Time spent in evaluation (tests, quiz, final exam)	2	5	10
Projects, presentations, etc.	2	5	10
<b>Total</b>			<b>175</b>

<b>Teaching methods</b>	Lectures, Seminars, Task Courses, Intermediate Examinations, & Completion.
<b>Evaluation methods</b>	Mid-term exam 15%, Seminars or other engagements:25%, Final exam: 60%, Total: 100%.
<b>Literature</b>	

<b>Basic Literature:</b>	<ul style="list-style-type: none"> <li>• Bruce L. Bowerman Richard T. O’Connell Emily S. Murphree , Business Statistics in Practice 7E, Published by McGraw-Hill/Irwin, a business unit of The McGraw-Hill Companies, Inc., 1221 Avenue of the Americas, New York, NY, 2014</li> <li>• Robert H. Shumway • David S. Stoffer, Time Series Analysis and its Applications with R Examples, third edition © Springer Science+Business Media, LLC 2011</li> <li>• David S. Moore, P. George P. McCabe, Layth C. Alwan, Bruce A. Craig, William M. Duckworth, The Practice of Statistics for Business and Economics 2010, W. H. Freeman and Company New York</li> <li>• David F. Groebner, Patrick W. SHANNON, PHILLIP C. FRY, KENT D. SMITH, Business Statistics A Decision-Making Approach 8E, 2008, Prentice Hall, PEARSON Education</li> <li>• C. Reimann, P. Filzmoser, R. G. Garrett, R. Dutter, Statistical Data Analysis Explained: Applied Environmental Statistics with R. © 2008 John Wiley &amp; Sons, Ltd. ISBN: 978-0470-98581-6</li> </ul>
<b>Additional Literature:</b>	<ul style="list-style-type: none"> <li>• “Statistike Biznesi”, J. Vathi, A. Mane, I.Pagria, 2008</li> <li>• “Statistika” M. Osmani, (2004)</li> </ul>

<b>Designed study plan:</b>	
<b>Week</b>	<b>Lectures which will be held</b>
<i>First week:</i>	An Introduction to business statistics.
<i>Second week:</i>	Describing Data in Tables and Distributions.
<i>Third week:</i>	Describing Data Numerically.
<i>Fourth week:</i>	Displaying and Exploring Data.
<i>Fifth week:</i>	Probability Concepts.
<i>Sixth week:</i>	Probability Distributions.
<i>Seventh week:</i>	Continuous Probability Distributions.
<i>Eighth week:</i>	Sampling Methods and the Central Limit Theorem.
<i>Ninth week:</i>	Estimation and Confidence Intervals.

<b>Tenth week:</b>	Hypothesis testing (One-Sample Hypothesis Testing & TwoSample Hypothesis Testing.)
<b>Eleventh week:</b>	Linear Regression, simple Regression and Multiply regression.
<b>Twelfth week:</b>	Correlation.
<b>Thirteenth week:</b>	Index Numbers.
<b>Fourteenth week:</b>	Time Series and Forecasting.
<b>Fifteenth week:</b>	Statistical Process Control and Operations Management.

#### **Academic policies and rules of conduct:**

Students are obliged to regularly attend lectures, participate in field study visits (excursions). Switching off mobile phones, entering the classroom on time and keeping quiet in class are also mandatory.

### **Exercises**

#### **Designed study plan:**

<b>Week</b>	<b>Exercises which will be held</b>
<b>First week:</b>	Discussion and distribution of the semestral project topics.
<b>Second week:</b>	Assignments, quizzes and case studies related to the topic of the first week lecture.
<b>Third week:</b>	Assignments, quizzes and case studies related to the topic of the second week lecture.
<b>Fourth week:</b>	Assignments, quizzes and case studies related to the topic of the third week lecture.
<b>Fifth week:</b>	Assignments, quizzes and case studies related to the topic of the fourth week lecture.
<b>Sixth week:</b>	Assignments, quizzes and case studies related to the topic of the fifth week lecture.
<b>Seventh week:</b>	Assignments, quizzes and case studies related to the topic of the sixth week lecture.
<b>Eighth week:</b>	Assignments, quizzes and case studies related to the topic of the seventh week lecture.
<b>Ninth week:</b>	Assignments, quizzes and case studies related to the topic of the eighth week lecture.
<b>Tenth week:</b>	Assignments, quizzes and case studies related to the topic of the ninth week lecture.
<b>Eleventh week:</b>	Assignments, quizzes and case studies related to the topic of the tenth week lecture.

<b><i>Twelfth week:</i></b>	Assignments, quizzes and case studies related to the topic of the eleventh week lecture.
<b><i>Thirteenth week:</i></b>	Assignments, quizzes and case studies related to the topic of the twelfth week lecture.
<b><i>Fourteenth week:</i></b>	Assignments, quizzes and case studies related to the topic of the thirteenth week lecture.
<b><i>Fifteenth week:</i></b>	Presentation of the course projects.