

Course title:	Business Statistics
Lecturer:	Magdalena Skolimowska-Kulig, PhD
Number of credits	6
Number of hours:	36 (18+18)
Duration:	Winter semester
Language of instruction	English
Type:	Lecture with discussions
Assessment method:	A test (last class) and an exam (in the examination session) (both written)
Prerequisites:	-
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Course purpose:	The course introduces basic ideas and concepts of statistics. It acquaints students with graphical and numerical methods of data presentation, and techniques of statistical inference - the estimation, testing hypotheses and analysis of correlation, and presents the way they are used in making business decisions
Course contents:	<p>Topic 1 Describing data and the distribution</p> <ul style="list-style-type: none"> - Graphically – the frequency plot (bar graphs and histograms), the time plot, the box plot - Numerically - measures of location and dispersion, five-number summary <p>Topic 2 Descriptive statistics for pairs of observations:</p> <ul style="list-style-type: none"> - The scatter plot, the correlation coefficient (measure of linear dependence), the least squares linear regression - The table of contingency <p>Topic 3 Producing data - experimental design, randomization, observational data, random sampling</p> <p>Topic 4 Probability Models</p> <ul style="list-style-type: none"> - probability rules - random variables and their probability distributions – the expected value and the standard deviation, binomial and Poisson distributions - normal distribution – standardization, central limit theory <p>Topic 5 Sample distributions of the mean and the proportion</p> <p>Topic 6 Estimation – confidence intervals for</p> <ul style="list-style-type: none"> - expected values and proportions, - comparing two parameters <p>Topic 7 Hypothesis testing - tests for expected values and proportions; comparing two populations.</p>
Recommended reading:	<ol style="list-style-type: none"> 1. <i>Introduction to the Practice of Statistics</i>; D.S. Moore, G. P. McCabe, B. A. Craig; W. H. Freeman and Company, New York 2009 2. <i>Basic Statistics for Business & Economics</i>; D.A. Lind, W.G. Marchal, S.A. Wathen; The McGraw-Hill Companies. McGraw-Hill Higher Education, 2006 3. <i>Business Statistics</i>; N.R. Sharpe, R.D. De Veaux, P.F. Velleman; Pearson Addison Wesley; 2012