Course Title	Business Statistics II
Course Code	MAT 202
Course Type	Compulsory
Level	Undergraduate
Year / Semester	Year 2 / Semester 4
Teacher's Name	ROMANA NOVAKOVIC

ECTS	6	Lectures / week	3	Laboratories / week	

Course Purpose and Objectives	This course provides students with an in-depth knowledge in statistical methods used for a wide variety of applications. Topics include random variables, expected value, variance, covariance/correlation, method of moments, distributions, confidence intervals, review of hypothesis testing, ordinary least squares, and others. By the end of the course, students should be ready to solve complex statistically problems and use their gained knowledge for decision making.

Learning Outcomes	Upon successful completion of this course, students should be able to: ▪ Apply laws of probability. ▪ Construct and interpret confidence intervals. ▪ Demonstrate how to test hypotheses. ▪ Estimate regression analysis. ▪ Conduct statistical analysis on real data and interpret the findings.

Prerequisites	NONE	Required	NONE

Course Content	▪ Random variables Discrete random variables, continuous random variables. ▪ Joint Distributions Discrete random variables, continuous random variables, independent random variables, conditional distributions. ▪ Expected values The expected value of a random variable, variance and standard deviation, covariance and correlation, the moment generating function. ▪ Limit theorems – The law of large numbers ▪ Distributions Derived from the Normal Distribution Chi-square, t, and F Distributions. ▪ Estimation of Parameters and Fitting of Probability Distributions

	Parameter estimation, the method of moments, the method of maximum likelihood. 　▪ Estimating with Confidence Statistical confidence, confidence intervals, how confidence intervals behave. 　▪ Testing hypotheses and Assessing Goodness of Fit 　▪ Linear Least Squares Simple linear regression, assumptions of the linear regression model, multiple linear regression.
Teaching Methodology	This course will be delivered as a combination of interactive lectures, handouts, and in-class problem-solving exercises that students will prepare to conduct statistical analysis using data. Students will solve homework exercises, interpret, and present the findings.
Bibliography	▪ Mathematical Statistics and Data Analysis 　Rice, J. 　Brooks/Cole 　2007 　3rd edition ▪ Statistical Techniques in Business & Economics 　Lind Douglas A., Marchal William G. and Wathen Samuel A. 　McGraw-Hill Irwin 　2012 　15th edition ▪ CFA Program Curriculum 2020 Level I 　Statistical Concepts and Market Returns (reading 8), Probability Concepts (reading 9), Common Probability Distributions (reading 10), Sampling and Estimation (reading 11), Hypothesis Testing (reading 12) 　Wiley ▪ Introduction to the practice of statistics 　David S. Moore, George P. McCade, Bruce A. Craig 　New York: W.H. Freeman and Co. 　2017 　9th edition ▪ Introductory Statistics for Business and Economics 　Thomas H. Wonnaccott Ronald J. Wonnacott 　John Wiley and Sons 　1990 　4th edition ▪ Econometric Analysis 　Greene, William H.

	Prentice Hall 2011 7th edition
Assessment	Participation 10% Midterm Exam 30% Homework 10% Final Exam 50%
Language	English