Faculty of Business Management and Economics

SUMMER MODULE COURSE

Title		
Digitalization - Computer Lab in Regression Analysis		
Responsible:	**Target group**	**Number of participants**
Chair of Econometrics	2nd or 3rd year bachelor students in business or economics	No limitation
Course period:	**Term:**	**ECTS:**
April 12th – July 16th	summer semester 2021	5

Contents & Objectives:

This course considers different distributions, their characteristics, simulation experiments, as well as the linear regression model. The main software used are Excel and Gretl.

The course starts by reviewing different distributions using a so-called shiny-app that lets the user see how distributions behave when their respective parameters change. Students also learn to generate samples of these, and estimate as well as interpret the descriptive statistics using Excel.

The second part of the course deals with the linear regression model and its application to some empirical data sets. The students are introduced to empirical studies and the open-source software Gretl.

At the end of the course an overview is given of possible problems with empirical specifications in the context of the linear regression model. The students are able to estimate a linear regression using Gretl or Excel, interpret the results, and be aware of possible shortcomings in the data.

Find more information here: https://www.wiwi.uniwuerzburg.de/en/lehrstuhl/qwf/teaching/bachelor/core-electives/

Prerequisites:

A basic understanding of statistics and statistical methodology will be vital in order to follow the course.

Course Structure:

(# day/ # lecture)	**CONTENTS**
1	Terms and concepts
2	Univariate distributions part I, Shiny App
3	Moments and hypothesis testing
4	Exercise – Moments and hypothesis testing
5	Univariate distributions part II, multivariate normal distribution
6	Exercise - Distributions
7	Simple regression
8	Exercise – Simple regression
9	Multiple regression
10	Exercise – Multiple regression
11	Topics in multiple regression – Partial effects, quadratic effects and interaction terms
12	Topics in multiple regression – Multicollinearity and heteroscedasticity
13	Exercise – Topics in multiple regression

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Literature:
Ashenfelter O., Levine P. B. and Zimmerman D. J.: Statistics and econometrics: methods and applications, Wiley, 2003 Casella, G. and Berger, R.: Statistical Inference, Cengage Learning Inc., 2nd edition, 2008 Dougherty, C. R. S.: Introduction to econometrics, Oxford University Press, 5th edition, 2016 Wooldridge, J. M.: Introduction to econometrics, Cengage Learning, 2014 Wooldridge, J. M.: Introductory econometrics: a modern approach, 7th edition, Cengage, 20020
Assessment:
There will be a paper-based exam (60 min.) at the end of the semester.
Contact:
Mrs. Tamara Schamberger, M.Sc., Email: tamara.schamberger@uni-wuerzburg.de
Application:
○ transcript of records (regarding your current degree programme) ○ certificate of secondary school ○ short CV ○ copy of passport ○ application form (will be generated in the application process) **APPLY NOW:** https://flip.wiwi.uni-wuerzburg.de/module-study