

Elective course in the area **Computer-Based Analysis**

Experimental Econometrics

Teaching Load	3 hours per week				
Kind of course	Elective in Master Program				
ECTS Credit Points	6 = 180 hours <table border="1"><tr><td>Lecture:</td><td><ul style="list-style-type: none">• 45 hours = 15 x 3 SWS</td></tr><tr><td>Self-study:</td><td><ul style="list-style-type: none">• 135 hours<ul style="list-style-type: none">➤ 105 hours: preparation before and after lectures, reading of handouts and textbooks, PC exercises➤ 30 hours: Preparation for final exam</td></tr></table>	Lecture:	<ul style="list-style-type: none">• 45 hours = 15 x 3 SWS	Self-study:	<ul style="list-style-type: none">• 135 hours<ul style="list-style-type: none">➤ 105 hours: preparation before and after lectures, reading of handouts and textbooks, PC exercises➤ 30 hours: Preparation for final exam
Lecture:	<ul style="list-style-type: none">• 45 hours = 15 x 3 SWS				
Self-study:	<ul style="list-style-type: none">• 135 hours<ul style="list-style-type: none">➤ 105 hours: preparation before and after lectures, reading of handouts and textbooks, PC exercises➤ 30 hours: Preparation for final exam				
Lecturer	Prof. Dr. Karsten Schmidt				
Course objective and Learning Outcomes	Students will learn to understand the properties of estimators, and the consequences that violations of assumptions have in the linear regression model, by carrying out Monte Carlo studies (computer experiments). They should be able to perform advanced econometric analyses on the computer by themselves. In particular, they should develop the ability to assess the consequences of the violation of certain assumptions in the linear regression model when the standard estimator is still used.				
Topics	<ul style="list-style-type: none">• Review of the multiple linear regression model (notation, assumptions, parameter estimation)• Introduction to GAUSS (matrix programming language)• Properties of estimators• Monte Carlo experiments• Violation of assumption: multicollinearity• Violation of assumption: heteroscedasticity• Violation of assumption: autocorrelation				

Literature	<ul style="list-style-type: none"> ➤ Kennedy, P.: A Guide to Econometrics, 6th ed., Malden (Blackwell) 2008 ➤ Ryan, T.P.: Modern Regression Methods, 2nd ed. Hoboken (Wiley) 2009 ➤ Schmidt, K., Trenkler, G.: Einführung in die Moderne Matrix-Algebra - mit Anwendungen in der Statistik, 2nd ed. Heidelberg (Springer) 2006 [<i>abbreviated version in English</i>]
Teaching Methods	<ul style="list-style-type: none"> • Lectures • Discussions • Exercises • Monte Carlo experiments
Grading	Final exam
Language of Instruction	English