

# Methods in Transportation Econometrics and Statistics (Master)

## Curriculum WS 2024/25

Subject	# Lectures
<i>How to explain econometrics to my grandmother?</i> Definition and objectives of econometrics; the role of statistics; mathematical models and their categories; example: Covid-19 models	1
<i>What are the influence factors?</i> Linear models: specification, matrix notation, ordinary-least squares parameter estimation	1
<i>Significant or not?</i> Classical inferential statistics of linear models: confidence intervals and tests	1
<i>To be or not to be?</i> Logistic regression (no Youtube lecture)	0.5
<i>Is the p-value dead?</i> Bayesian inference	1
<i>Why the interviewer wants to know my age?</i> principles of surveys as input for discrete-choice models: variable categories, revealed preference/choice, stated preference/choice, choice-based conjoint analysis, design of the questionnaire.	1
<i>Car or public transport?</i> general aspects of discrete-choice theory, its difference to linear models, and their relevance for traffic econometrics	1
<i>How to model a homo oeconomicus not knowing everything?</i> binomial and multinomial logit and probit models	1
<i>How to maximize profit from an airports perspective?</i> Elasticities	0.5
<i>How to estimate the value of time?</i> Maximum-likelihood estimation and inferential statistics	1
<i>How to determine the right model and assess the model quality?</i> Likelihood-ratio test and goodness-of-fit measures	1
<i>How to tackle hierarchical decisions and other complex cases?</i> Advanced concepts: nonlinear models, GEV models, particularly nested-logit models	1
<i>Why is sun power not “carbon free”?</i> Introduction to the input-output analysis	1
<i>Is Greta right in promoting electrical vehicles?</i> introduction to life-cycle assessment (German: “Ökobilanz”)	1
Spare time and preparation for the examination	0-1