

Methods in Transportation Econometrics and Statistics (Master)

Curriculum WS 2023/24

| 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 | 1.5 |
| <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 | 2 |
| <i>To be or not to be?</i> Logistic regression (no Youtube lecture) | 0.5 |
| <i>Is the p-value dead? How to introduce prior knowledge to help map-matching?</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 tackle hierarchical decisions and other complex cases?</i> Nonlinear models and 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 |