

# Syllabus

## *Kursbeschreibung*

|                                                     |                                                                                                                                                                                                                                                                                       |
|-----------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Titel der Lehrveranstaltung</b>                  | Basic statistics and regressions                                                                                                                                                                                                                                                      |
| <b>Code der Lehrveranstaltung</b>                   | 29077                                                                                                                                                                                                                                                                                 |
| <b>Zusätzlicher Titel der Lehrveranstaltung</b>     |                                                                                                                                                                                                                                                                                       |
| <b>Wissenschaftlich-disziplinärer Bereich</b>       | NN                                                                                                                                                                                                                                                                                    |
| <b>Sprache</b>                                      | Englisch                                                                                                                                                                                                                                                                              |
| <b>Studiengang</b>                                  | Doktoratsstudium in Management                                                                                                                                                                                                                                                        |
| <b>Andere Studiengänge (gem. Lehrveranstaltung)</b> |                                                                                                                                                                                                                                                                                       |
| <b>Dozenten/Dozentinnen</b>                         |                                                                                                                                                                                                                                                                                       |
| <b>Wissensch. Mitarbeiter/Mitarbeiterin</b>         |                                                                                                                                                                                                                                                                                       |
| <b>Semester</b>                                     | Erstes Semester                                                                                                                                                                                                                                                                       |
| <b>Studienjahr/e</b>                                | 1                                                                                                                                                                                                                                                                                     |
| <b>KP</b>                                           | 0                                                                                                                                                                                                                                                                                     |
| <b>Vorlesungsstunden</b>                            | 20                                                                                                                                                                                                                                                                                    |
| <b>Laboratoriumsstunden</b>                         | 0                                                                                                                                                                                                                                                                                     |
| <b>Stunden für individuelles Studium</b>            | -                                                                                                                                                                                                                                                                                     |
| <b>Vorgesehene Sprechzeiten</b>                     |                                                                                                                                                                                                                                                                                       |
| <b>Inhaltsangabe</b>                                | This course introduces core statistical methods with a focus on inference and regression modeling, tailored to applications in management and business decision-making. Students learn how to estimate, test, and model relationships using data, with practical implementation in R. |
| <b>Themen der Lehrveranstaltung</b>                 | Part I: Statistical Inference<br>1. Sampling Distributions and the Logic of Inference<br>2. Confidence Intervals<br>3. Hypothesis Testing                                                                                                                                             |

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|                                                                                    | Part II: Regression Modeling<br>4. Simple and Multiple Linear Regression<br>5. Statistical Inference in Regression<br>6. Extending the linear regression model                                                                                                                                                                                                                                                                                                                                   |
| Stichwörter                                                                        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| Empfohlene Voraussetzungen                                                         | Not foreseen                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| Propädeutische Lehrveranstaltungen                                                 |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| Unterrichtsform                                                                    | Frontal lectures with practical in-class computing tutorials                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| Anwesenheitspflicht                                                                | Required                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| Spezifische Bildungsziele und erwartete Lernergebnisse                             | The first part covers statistical inference (estimation, confidence intervals, hypothesis testing); the second focuses on linear regression techniques for analyzing economic and managerial data. The course equips students with the tools to conduct empirical research and supports further study in econometrics and data-driven management.                                                                                                                                                |
| Spezifisches Bildungsziel und erwartete Lernergebnisse (zusätzliche Informationen) |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| Art der Prüfung                                                                    | Assessment is based on two short data analysis projects. The first focuses on statistical inference; the second applies linear regression to a business dataset.                                                                                                                                                                                                                                                                                                                                 |
| Bewertungskriterien                                                                |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| Pflichtliteratur                                                                   | Lecture slides and R computing handouts. In addition selected readings for following textbooks will be assigned in class:<br><br>Hogg, R. V., Tanis, E. A., & Zimmerman, D. L. (2019). <i>Probability and Statistical Inference</i> (10th ed.).<br><br>Pearson.James, G., Witten, D., Hastie, T., & Tibshirani, R. (2021). <i>An Introduction to Statistical Learning with Applications in R</i> (2nd ed.). Springer. Available free online: <a href="https://www.statle">https://www.statle</a> |
| Weiterführende Literatur                                                           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| Weitere Informationen                                                              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| Ziele für nachhaltige Entwicklung (SDGs)                                           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |