

Lecture (M.Sc.)

Forecasting

Dr. Dominik Heinisch (Volkswagen AG)

Winter Term 2024-25 (seminar)

Time & Location: 6 to 7 lecture days with 2 lectures each (16:00-20:00), exact dates can be found in the outline below, additional 1 or 2 days for presenting the results at the end of the semester

Room:

6 Credits: **MSc Economic Behavior and Governance** (Module 1b); **MSc Business Studies** (Module: METHODS)

For successful participation in the course, prior knowledge of econometrics is required. Please register only if you have completed an econometrics course before.

Scope and Format:

Even though predictions often go wrong, they are everywhere. But why is it so difficult to foresee the future, and is there any chance to improve? Or are we hopelessly lost to the fortune of coincidences? In this lecture, we will embark on an adventurous journey through the universe of forecasting. We will start from chaos and venture towards determinism, always in search of signals from the future that will guide us to enlightenment. Our exploration will reveal how easily we could be led astray by noisy data and/or our intuition. We will grasp what constitutes a good forecast and how forecasts can translate into helpful decisions. This journey will be less theoretically oriented and more focused on real-world problems and pragmatic solutions. The lecture aims to provide a general understanding of different forecasting techniques in a daily forecaster's life, with a focus on data-driven approaches including statistics, econometrics, and machine learning techniques, combined with concepts from behavioral economics. Expect to gain practical knowledge, insights, and strategies.

Credit requirements:

Presentations with (short) assignment (approx. 5-10 pages)

Preparation and active participation in seminars.

Registration required:

Please register by sending an email to heinisch@uni-kassel.de (registration closes on October 13).

Outline:

- 1. Introduction (October 15)**
- 2. Basic Concepts (October 15)**
- 3. Statistical forecasting techniques I (October 29)**
- 4. Statistical forecasting techniques II (October 29)**
- 5. Measuring forecast quality (November 12)**
- 6. Forecasting without data (November 12)**
- 7. Updating (November 26)**
- 8. Super-Forecasters (November 26)**
- 9. A better Crystal Ball (December 10)**
- 10. Communicating Forecasts (December 10)**
- 11. Man vs. Machine (January 14)**
- 12. Biases Nudges (January 14)**
- 13. Open Topics (so far not predictable) (January 28)**