

Course Title: *Applied Time Series and Applications*

Instructor: Professor Hilde C. Bjørnland, BI Norwegian Business School
(<https://www.bjornland.no/>)

Target Audience: MSc students (Data Science for Economics and Health; Economics and political science)

Course Period: October 1–8, 2025

Course Description:

This course introduces students to univariate and multivariate time series analysis, with a strong focus on real-world applications in macroeconomics and energy economics. Emphasis is placed on both theoretical understanding and hands-on modeling.

Learning Objectives:

- Understand and specify models for stationary and non-stationary time series
- Perform structural analysis using time series data
- Apply decomposition techniques to extract trends and cycles
- Work with both univariate and multivariate time series models

Teaching Methods:

- Lectures
- Group presentations
- One seminar

Course Modules & Duration:

- 4 days of lectures
- 1 day of seminar
- Total duration: 5 days

Evaluation Method:

- Group presentations

Provisional Timetable:

- **01 October (Wed):** Lecture, 8:30–13:30 (5 hours)
- **02 October (Thu):** Seminar, 12:15–13:15 (1 hour)
- **06 October (Mon):** Lecture, 8:30–12:30 (4 hours)
- **07 October (Tue):** Lecture, 8:30–13:30 (5 hours)
- **08 October (Wed):** Lecture, 8:30–13:30 (5 hours)