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 (20 hours)

Where: Aula Seminari "Giorgio Pizzutto", Dept. of Economics, Management and Quantitative Methods, II floor, via Conservatorio 7

Enrolment: Course limited to 12 students due to room capacity. Enrolment is on a first come, first served basis.

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)