**Aims:**

This module aims to provide a comprehensive and systematic introduction to financial time series models and their applications to modeling and prediction of financial time series data.

The course focuses on applications, and will give intuitions on why we use this quantitative method and how to realize it by software.

**Learning objectives:**

At the end of the module students should:

* Know the basic characteristics of financial data, understand the application of financial time series models, and gain the experience in analyzing financial time series.
* Have a reasonable ability to derive results relating to some important financial time series models.
* Have a reasonable ability to fit time series models to financial time series data, and carry out related predictions using appropriate computer software.
* Have a reasonable ability to use residual plots and other techniques to assess the goodness of fit of a time series model to a financial time series.
* Have a reasonable ability to choose between alternative time series models for sets of financial time series data.

**Syllabus:**

Returns & their characteristics; Linear time series models & their applications; Volatility modeling & its implications.