F70TS Time Series

COURSE DETAILS
Course Code: F70TS
Full Course Title: Time Series
SCQF Level: 10
SCAF Credits: 15
Available as Elective: No

DELIVERY LEVEL
Undergraduate: Yes
Postgraduate Taught: Yes
Postgraduate Research: No

Additional Information:

COURSE AIMS
To introduce students to time series analysis, in particular well known linear models, non-linear models, their probabilistic properties, estimation, model selection, statistical inference and forecasting based on the fitted models, as well as their applications in finance and insurance.

LEARNING OUTCOMES – SUBJECT MASTERY
After studying this course, students should be able to:

- Describe the properties of a time series using basic analytical and graphical tools
- Understand the definitions, properties and applicability of well-known time series models
- Fit time series models to practical data sets and select suitable models
- Carry out simple statistical inference, in particular forecasting, based on the fitted models
- Estimate and remove possible trend and seasonality in a time series
- Analyse the residuals of a time series using stationary models

LEARNING OUTCOMES – PERSONAL ABILITIES
At the end of the course, students should be able to:

- Demonstrate the ability to learn independently
- Manage time work to deadlines and prioritise workloads
- Use an appropriate computer package to process data
- Present results in a way which demonstrates that they have understood the technical and broader issues of time series analysis

SYLLABUS

- Classical decomposition
- Stationary processes
- Moving average processes
F70TS Time Series

- Autoregressive processes
- Autoregressive moving average processes
- ARIMA processes
- Model building
- Forecasting
- Other models used in finance and insurance

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