MSc in Applied Economics and Finance

Syllabus:
Modelling and Forecasting Economic Time-series
Spring Quarter 2024-2025

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Prerequisite : Statistics and Introductory Econometrics

The syllabus is subject to minor changes. Presence in the classes after the first week implies that: a) you have understood the content of the syllabus and b) you have had your questions about it answered.

Background of the course:

Knowledge of forecasting methods is a highly demanded skill in the modern economy. This course aims to introduce these methods, and the main goal is to learn how to apply them in practice to univariate and multivariate models in economics, business and finance. We will cover the tools needed to analyze time series data, to build forecasting models, and to critically evaluate competing forecasts. Since the emphasis is on learning how to apply the forecasting methods to data, students should expect to spend a nontrivial amount of time outside of class working on assignments in EViews.

Learning outcomes:

The pedagogy of the course apart the typical lecture sessions is further enriched by several hands-on lab classes. Lab classes will permit students to apply empirically theoretical concepts in order to gain further experience and understanding. Upon the completion of the course students will be able to:

1. gain familiarity with EViews software package and know how to use it to analyze time series data

2. to understand statistical techniques applied to model economic, business and financial time series data

3. to independently develop suitable models to forecast economic or financial data

4. be able to evaluate the forecasting performance of various models and choose the most appropriate model among the alternatives

5. To solve problems related to business forecasting issues.

6. To perform informed decision making based on real data and econometric inferences.

7. To make usage of information technology.

8. To construct theoretically meaningful econometric specifications.

9. To perform critical analysis and logical reasoning for a business forecasting issues.

10. To develop self-learning skills and to enhance their creativity.

Assessment:

The course assessment entails an extensive forecasting assignment that accounts 70% of the overall course grade and a formal presentation of the results that accounts 30% .

Course assignment:

Forecasting project: soon, I will assign on an individual basis a forecasting project. Each student will then conceive of and execute a project using forecasting tools. In brief, you will need to, locate data that are relevant to your question, acknowledge and (if possible) correct any inadequacies in your data or your model, to execute forecasts, to evaluate the executed forecasts and finally to present easily digestible results that summarize your findings.

Academic misconduct:

Academic misconduct is unexpected with no tolerance at all. Exam cheating, plagiarism or copying assignments will result in a grade of zero. Additionally, even attempts at cheating, plagiarism, or facilitating academic dishonesty will be penalized. Students are strongly advised to read carefully the handbook.

Course readings:

- Keith Ord, Robert Fildes and Nikolaos Kourentzes, *Principles of Business Forecasting*. Second Edition (Wessex, 2017), ISBN 978-0-9990649-0-0. (R1)
- J. Holton Wilson and Barry Keating. *Business Forecasting*, Sixth Edition (McGraw-Hill/Irwin, 2009), ISBN 978-0073373645.

Topics covered

Lecture	Topics	Readings
Lecture 1	Introduction to Forecasting, the Why and the How **Lab**: Applied examples	Ch. 1, R1
Lecture 2	Software Familiarization **Lab**: Applied examples	Lecture Notes
Lecture 3	Basic Tools for Forecasting **Lab**: Applied examples	Ch. 2, R1
Lecture 4	Forecasting Non-Seasonal Series Seasonal Series: Forecasting and Decomposition **Lab**: Applied examples	Ch. 3,4, R1
Lecture 5	State-Space Models for Time Series **Lab**: Applied examples	Ch. 5, R1
Lecture 6	Autoregressive Integrated Moving Average (ARIMA) Models **Lab**: Applied examples	Ch. 6, R1
Lecture 7	Simple Linear Regression for Forecasting **Lab**: Applied examples	Ch. 7, R1
Lecture 8	Multiple Regression for Time Series **Lab**: Applied examples	Ch. 8, R1
Lecture 9	Model Building and Advanced Methods of Forecasting **Lab**: Applied examples	Ch. 9,10, R1
Lecture 10	Judgment-Based Forecasting **Lab**: Applied examples	Ch. 11, R1
Lecture 11	Putting Forecasting Methods to Work **Lab**: Applied examples	Ch. 12, R1
Lecture 12	Forecasting in Practice **Lab**: Applied examples	Ch. 13, R1
Course work deadline T.B.A.	The course work must be submitted	Use all the above sources
Lecture 13	Forecasting Project Presentations	Your Project