GIMAS8AD MODELLING and FORECASTING

GIMAS8AD		Duration: 42 hours	ECTS Credits: 4	Semester: S8
Modelling and Forecasting				
Person(s) in charge:				
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Keywords: SAS Software, linear regression, time series, smoothing, Box and Jenkins' method				
Prerequisites: Basic notions of stochastic analysis and statistics: random variables, estimators, statistical hypothesis testing				
Objective:				
forecast a phenomenon, using a model based on its past and / or its context				
Program and contents:				
Introduction to SAS software				
Regression as a modelling tool:				
 simple and multiple linear regression models regression control (local and global quality indexes) regression models selection (Mallows' Cp, step by step procedures) regression validation (analysis of residuals, influential or suspicious observations) 				
Time series analysis and forecasting				
 time series decomposition: trend and seasonal structure analysis. Smoothing techniques ARMA, ARIMA, SARIMA models, Box and Jenkins' method. multivariate time series and intervention models. 				
Abilities:				
Levels	Description and operational verbs			
Know				
Understand				
Apply				
Analyze				
Summarise				
Assess				
Evaluation:				
Vritten test	Continuous Control	Oral report	Project	Written report