ACADEMIA DE STUDII ECONOMICE DIN BUCUREŞTI
FACULTATEA DE CIBERNETICĂ, STATISTICĂ ŞI INFORMATICĂ ECONOMICĂ
Calea Dorobanţi, 15-17, Sector 1, Bucureşti, 010552,
tel.: +4021 319 19 00, ext. 119, 281, 331, fax: +4021 319 19 09, email: decanat@csie.ase.ro, www.csie.ase.ro

Department of Statistics and Econometrics

DISCIPLINES FOR POSITION NO. 32, Assistant Professor:

Time series, Macroeconomic Statistics

1. TIME SERIES

1.1. Econometric analysis of the univariate time series:

- objectives; definitions;
- specifical notions for the analysis of the time series.
- different types of time series.
- Linear stationary models for time series: MA, AR and ARMA

1.2. ARIMA models and their building using the Box-Jenkins methodology.

- Steps and specifical tests;
- Forecasting using AR and MA models.
- Application on economic data.

1.3. ARIMA models using Box-Jenkins methodology

1.4. Extentions of ARIMA models

- Seasonal Autoregressive Integrated Moving Average - SARIMA
- Autoregressive conditional heteroscedasticity (ARCH) and Generalized Autoregressive Conditional Heteroskedasticity (GARCH) models

1.5. Multivariate analysis of stationary time series

- VAR models
- Granger causality

1.6. Multivariate analysis of non-stationary time series

- Cointegration
- VECM models
- Cointegration tests

2. MACROECONOMIC STATISTICS

2.1. **National Wealth -** the basis of the development of a national economy: concepts, definitions, steps of determining national wealth.

2.2. **Labor resource indicators.** Fixed assets indicators

2.3. **National Accounts** - function, object, history, nomenclatures

2.4. **Institutional aggregation and description** of the main sectors: firms, households, the state, the rest of the world. Components and description of the economic circuit.

Calea Dorobanţi, 15-17, Sector 1, Bucureşti, 010552,
tel.: +4021 319 19 00, ext. 119, 281, 331, fax: +4021 319 19 09, email: decanat@csie.ase.ro, www.csie.ase.ro

2.5. Description of the main calculation methods of the **output macroeconomic aggregates;** Description of the main output indicators: GDP, GNP, PIN, PNN, VN, VP**,** VPD; Comparison of macroeconomic indicators, comparison in space and time

2.6. Measuring **inflation** and determining indicators in comparable expression. Theoretical and Practical Fundamentals of Inflation Measurement: Statistical Indicators Theory.

References

1. Andrei, T., Bourbonais, R, Econometrie, Ed. Economică, Bucureşti, 2008
2. Anghelache,C., Isaic-Maniu Al., Mitrut C., Voineagu V, Sistemul Conturilor Naționale , Economica, București, 2009, România
3. Jula, D., Jula N-M., Econometria seriilor de timp, Ed Mustang, 2019
4. Voineagu, V., Ţiţan, E., Ţerban, R., Ghiţă, S., Todose, D., Boboc, C., Pele, D., Teorie şi practică econometrică, Ed. METEOR PRESS, Bucureşti, 2007