COURSE OUTLINE

(1) GENERAL

SCHOOL	Economic Science		
ACADEMIC UNIT	Accounting and Finance		
LEVEL OF STUDIES	Undergraduate		
COURSE CODE	AF703	SEMESTER	Seventh
COURSE TITLE	Financial Econometrics		

INDEPENDENT TEACHING ACTIVITIES *if credits are awarded for separate components of the course, e.g. lectures, laboratory exercises, etc. If the credits are awarded for the whole of the course, give the weekly teaching hours and the total credits*	WEEKLY TEACHING HOURS	CREDITS
	3	5
Add rows if necessary. The organisation of teaching and the teaching methods used are described in detail at (d).		

COURSE TYPE *general background, special background, specialised general knowledge, skills development*	Scientific Knowledge
PREREQUISITE COURSES:	Econometrics I, Econometrics II
LANGUAGE OF INSTRUCTION and EXAMINATIONS:	Greek
IS THE COURSE OFFERED TO ERASMUS STUDENTS	Yes
COURSE WEBSITE (URL)	https://eclass.uowm.gr/courses/ACCFIN162/ (Note: students must register in the university's online platform, Eclass)

(2) LEARNING OUTCOMES

Learning outcomes

The course learning outcomes, specific knowledge, skills and competences of an appropriate level, which the students will acquire with the successful completion of the course are described.

Consult Appendix A

- *Description of the level of learning outcomes for each qualifications cycle, according to the Qualifications Framework of the European Higher Education Area*
- *Descriptors for Levels 6, 7 & 8 of the European Qualifications Framework for Lifelong Learning and Appendix B*
- *Guidelines for writing Learning Outcomes*

The aim of the course is to introduce students to econometric models that apply to finance and general economics. The material involves stochastic processes such as ARMA, GARCH, EGARCH etc Stochastic and deterministic non-stationarity as well as cointegration are also examined. Part of the lesson is student involvement with real data. All econometric exercises are held in the department's laboratory.

Upon successful completion of the course, the students will:

- have fully understood the statistical properties of financial returns,
- be able to formulate and analyze the properties of ARIMA models as well as to evaluate, analyze and evaluate these models based on their predictive ability,
- have understood the principle of Maximum Likelihood and will employ it for estimation and statistical inference,
- have comprehended ARCH and GARCH models and will be able to apply them to financial assets that exhibit volatility clustering and dynamic asymmetry, and
- apply cointegration techniques to exemplify long-term and short-term relationships between financial data

General Competences

Taking into consideration the general competences that the degree-holder must acquire (as these appear in the Diploma Supplement and appear below), at which of the following does the course aim?

Search for, analysis and synthesis of data and information, with the use of the necessary technology	*Project planning and management*
Adapting to new situations	*Respect for difference and multiculturalism*
Decision-making	*Respect for the natural environment*
Working independently	*Showing social, professional and ethical responsibility and sensitivity to gender issues*
Team work	*Criticism and self-criticism*
Working in an international environment	*Production of free, creative and inductive thinking*
Working in an interdisciplinary environment	*……*
Production of new research ideas	*Others…*
	…….

Decision-making
Working independently
Production of new research ideas
Criticism and self-criticism

(3) SYLLABUS

1. Characteristics of financial series: independence, stationarity and normality.
2. Introduction to ARMA models.
3. Box-Jenkins Methodology
4. Introduction to non-stationary time series, Cointegration.
5. Introduction to ARCH/GARCH type of models.
6. Efficiency, Random Walk, Predictability and volatility of financial time series.
7. Test for Market Efficiency and time varying risk premium: stocks, bonds, exchange rates.

(4) TEACHING and LEARNING METHODS - EVALUATION

DELIVERY *Face-to-face, Distance learning, etc.*	Face to face
USE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY *Use of ICT in teaching, laboratory education, communication with students*	Support the learning process using the Eclass online platform Laboratory education using econometric software EViews
TEACHING METHODS *The manner and methods of teaching are described in detail.* *Lectures, seminars, laboratory practice, fieldwork, study and analysis of bibliography, tutorials, placements, clinical practice, art workshop, interactive teaching, educational visits, project, essay writing, artistic creativity, etc.* *The student's study hours for each learning activity are given as well as the hours of non-directed study according to the principles of the ECTS*	

Activity	*Semester workload*
Lectures	50
Laboratory practice	50
Individual Study	50
Course total	***150***

STUDENT PERFORMANCE EVALUATION *Description of the evaluation procedure* *Language of evaluation, methods of evaluation, summative or conclusive, multiple choice questionnaires, short-answer questions, open-ended questions, problem solving, written work, essay/report, oral examination, public presentation, laboratory work, clinical examination of patient, art interpretation, other* *Specifically-defined evaluation criteria are given, and if and where they are accessible to students.*	Final Exams (short answer questions, multiple choice questions, problem solving) 100%

(5) SUGGESTED BIBLIOGRAPHY

1) Δριτσάκης, Ν., Δριτσάκη Χ. και Δριτσάκη Μ. (2022) Εισαγωγή στη Χρηματοοικονομική Οικονομετρία με τη χρήση του λογισμικού EViews, Εκδόσεις Κλειδάριθμος, Αθήνα
2) Δημέλη Σ. (2013) Σύγχρονες Μέθοδοι Ανάλυσης Χρονολογικών Σειρών, Εκδόσεις ΟΠΑ, Αθήνα
3) Chris Brooks (2022) Εισαγωγή στην Χρηματοοικονομική Οικονομετρία, Εκδόσεις Gutenberg, Αθήνα
4) Campbell J., A. Lo and G. MacKinlay, (1997) The Econometrics of Financial Markets, Princeton Univ. Press
5) Hamilton J. D. (1994) Time Series Analysis, Princeton University Press.

6) Mills T. and R Markellos (2008) The Econometric Modelling of Financial Time Series, Cambridge Univ. Press

Suggested Articles

1) Dritsaki M. and Dritsaki, C. (2021). "Comparison of the Holt-Winters exponential smoothing method with ARIMA models: Forecasting of GDP per capita in five Balkan countries members of European Union (EU) post COVID", Modern Economy, Vol.12 No.12, pp.1972-1998. (Impact Factor).
2) Dritsaki M. and Dritsaki, C. (2020). "Forecasting European Union CO2 emissions using autoregressive integrated moving average-autoregressive conditional heteroscedasticity models", International Journal of Energy Economics and Policy, Vol.10, No.4, pp.411-423. (Impact Factor, Scopus)
3) Dritsaki C. (2019). "Modeling the volatility of exchange rate currency using GARCH model", Economia Internazionale, Vol.72, No.2, pp.209-230. (Impact Factor).
4) Dritsaki C. (2018). "The performance of hybrid ARIMA-GARCH modelling and forecasting oil price" International Journal of Energy Economics and Policy, Vol.8, No.3, pp.14-21. (Scopus, Impact Factor).
5) Dritsaki C. (2017). "An empirical evaluation in GARCH volatility modeling: Evidence from the Stockholm stock exchange" Journal of Mathematical Finance, Vol.7, No.2, pp.366-390. (Scopus, Impact Factor).