COURSE DESCRIPTION

1. Information about the programme

1.1 Institution of higher education	**Alexandru Ioan Cuza University of Iasi**
1.2 Faculty	**Faculty of Economics and Business Administration**
1.3 Department	**Department of Finance, Money and Public Administration**
1.4 Field of study	**Finance**
1.5 Level	**Master**
1.6 Study programme/ Qualification	**Finance and Risk Management**

2. Information about the course

2.1 Course name			**Financial Econometrics**				
2.2 Course coordinator			**Dimitrios Asteriou** (Professor - Oxford Brookes University, UK)				
2.3 Seminar coordinator			**Dimitrios Asteriou** (Professor - Oxford Brookes University, UK)				
2.4 Year of study	**1**	**2.5** Semester	**2**	**2.6** Type of assessment	**EVP**	**2.7** Course status	**C**

** C – Compulsory / E - Elective*

3. Total estimated time (hours alloted to teaching activities per semester)

3.1 Number of hours per week	**3**	of which: **3.2 l**ecture	**1**	**3.3** seminar/lab	**2**
3.4 Number of hours in the curriculum	**42**	of which: **3.5 l**ecture	**14**	**3.6** seminar/lab	**28**

Time distribution	hrs
Study of the textbook, coursebook, bibliography and lecture notes	**84**
Additional research in the library, online and on the field	**18**
Preparation of seminars/labs, homework, projects, portfolios and essays	**98**
Tutorials	**4**
Assessment	**4**
Other activities.....	

3.7 Total number of self-study hours	**208**
3.8 Total number of hours per semester	**250**
3.9 Number of credits	**10**

4. Prerequisites (if applicable)

4.1 Curriculum-based	**-**
4.2 Competence-based	**Quantitative Methods** (recommended)

5. Conditions (if applicable)

5.1 For lectures	▪ Attendance is strongly encouraged. ▪ Operation of cell phones and other handheld electronic devices for sending and reading text messages and e-mails, recording or other disruptive activities for fellow students and instructor is not allowed. Devices should be turned off or set to the vibrate mode before the start of the lecture.

5.2 For seminars / labs	▪ Attendance is compulsory at minimum 70% of the labs. In case of absence, the instructor should be informed in advance. ▪ Operation of cell phones and other handheld electronic devices for sending and reading text messages and e-mails, recording or other disruptive activities for fellow students and instructor is not allowed. Devices should be turned off or set to the vibrate mode before the start of the laboratory.

6. Specific competencies

Professional competencies	**C1.** Analysis of the theoretical and practical aspects of financial markets, models, instruments that are used in the management of risks. **C2.** Adequate use of mathematical and statistical concepts, methods and techniques in assessing risks and performing independent research in finance. **C3.** Evaluation of the main risk factors for organizations and financial systems. **C4.** Implementing effective financial management and reporting within the business environment to ensure value creation. **C5.** Ensuring effective and appropriate governance and management of risk within an organization, in the context of an overall ethical framework.
Transversal competencies	**CT1.** Application of the professional ethical norms and values in decision-making and undertaking of complex professional tasks, independently or within a team. **CT2.** Human resources planning within a group or organization, in the context of awareness of own responsibility for professional outcomes. **CT3.** Assuming the need for continuous development to create prerequisites for career progression and adapt own professional and managerial competencies to the economic dynamics.

7. Course objectives (provided by the specific competencies grid)

7.1. Main objective	The objective of this course is to show how econometrics can be combined with economic theory to enhance the explanatory power of economics. It extends an introductory course in quantitative methods by covering a range of techniques widely used in modern applied econometric work, and demonstrates how these techniques can be applied to specific areas of economic enquiry. The course also shows how economic theories can be converted into a simple mathematical form suitable for estimation.
7.2. Specific objectives	On completion of the course, students will be able to: ▪ Understand the main concepts of ordinary least squares and the problems involved (autocorrelation, heteroskedasticity, multicollinearity, etc). ▪ Understand the main concepts regarding time series analysis techniques ▪ Apply the econometric theories and methods of estimation for problems regarding financial econometric applications (CAPM, Stock Market Anomalies etc.) ▪ Estimate econometric models, analyze data, and interpret results regarding financial econometric applications ▪ Make financial decisions based on econometric methods and estimations

8. Content

8.1	Lectures	Teaching methods	Observations (hours & readings)
1.	Introduction to Financial Econometrics	Lecture	1h: Asteriou (1,2)
2.	Simple and Multiple Regressions	Lecture	1h: Asteriou (3,4)
3.	Multicollinearity	Lecture	1h: Asteriou (5)
4.	Heteroskedasticity	Lecture	1h: Asteriou (6)
5.	Autocorrelation	Lecture	1h: Asteriou (7)
6.	Misspecification	Lecture	1h: Asteriou (8)
7.	Dummy Variables	Lecture	1h: Asteriou (9)
8.	ARIMA models	Lecture	1h: Asteriou (13)
9.	ARCH-GARCH models	Lecture	1h: Asteriou (14)
10.	VAR and Causality	Lecture	1h: Asteriou (15)
11.	Non-Stationarity and Unit Roots	Lecture	1h: Asteriou (16)
12.	Cointegration and ECMs	Lecture	1h: Asteriou (17)
13.	Panel Data	Lecture	1h: Asteriou (21,22,23)
14.	Financial Econometrics Applications: CAPM and Calendar Effects	Lecture	1h: Asteriou (24), Case

Bibliography

Main readings:

- Asteriou Dimitrios and Stephen Hall (2015) *Applied Econometrics*, 3rd edition, Palgrave-McMillan.

Additional readings:

- Ramanathan R. (2001) *Introductory Econometrics with Applications*, 5th edition, South-Western.
- Dougherty C. (2011) *Introduction to Econometrics*, 4th edition, Oxford University Press.
- Thomas R. L. (1997) *Modern Econometrics,* Addison Wesley.
- Kennedy Peter (1998) *A Guide to Modern Econometrics,* Blackwell.
- Enders, W. (2014) *Applied Econometric Time Series*, 4th edition, Wiley.
- Mills, T. (1999) *The Econometric Modeling of Financial Time Series*, Cambridge University Press.
- Harvey, A. (1993) *Time Series Models*, 2nd edition, MIT Press.
- Maddala, G., I.-M. Kim. *Unit Roots, Cointegration and Structural Change*, Cambridge University Press.

Other readings such as cases, simulations, journal papers, press articles will be provided periodically throughout the course via FEAA eLearning platform, e-mail or handed-in in class.

8.2	Seminars / Labs	Teaching methods	Observations (hours & readings)
1.	Introduction to Financial Econometrics	Laboratory with EViews	2h: Asteriou (1,2)
2.	Simple and Multiple Regressions	Laboratory with EViews	2h: Asteriou (3,4)
3.	Multicollinearity	Laboratory with EViews	2h: Asteriou (5)
4.	Heteroskedasticity	Laboratory with EViews	2h: Asteriou (6)

5.	Autocorrelation	Laboratory with EViews	2h: Asteriou (7)
6.	Misspecification	Laboratory with EViews	2h: Asteriou (8)
7.	Dummy Variables	Laboratory with EViews	2h: Asteriou (9)
8.	ARIMA models	Laboratory with EViews	2h: Asteriou (13)
9.	ARCH-GARCH models	Laboratory with EViews	2h: Asteriou (14)
10.	VAR and Causality	Laboratory with EViews	2h: Asteriou (15)
11.	Non-Stationarity and Unit Roots	Laboratory with EViews	2h: Asteriou (16)
12.	Cointegration and ECMs	Laboratory with EViews	2h: Asteriou (17)
13.	Panel Data	Laboratory with EViews	2h: Asteriou (21,22,23)
14.	Financial Econometrics Applications: CAPM and Calendar Effects	Laboratory with EViews	2h: Asteriou (24), Case

Bibliography

Main reading:

- Asteriou Dimitrios and Stephen Hall (2015) *Applied Econometrics*, 3rd edition, Palgrave-McMillan.

Additional readings:

Other readings will be provided periodically throughout the course via FEAA eLearning platform, e-mail or handed-in in class. Econometrics is more effectively "learned by doing" than "learned through reading". It is therefore imperative to practice with sets of exercises and get into the habit of doing econometrics in the computer lab. Reading is a useful supplement to this, but it is no substitute for it. Nevertheless, some reading of the recommended texts is encouraged.

9. Corroboration of the course content with the expectations of community representatives, professional associations and representative employers from the programme's related field

This course provides students with the core knowledge, skills, and abilities that are generally accepted and applied by finance and investments professionals throughout the world in terms of undertaking applied research with estimation, analysis and interpretation of financial data. Topics cover all aspects of modern econometrics that are necessary for financial analysts in order to perform financial analysis with data and offer also an adequate preparation for CFA and PRM exams.
Moreover, this is a student-centered course that follows the best practices of learning and teaching in graduate education through the adoption of a variety of active-learning instructional methods.

10. Assessment

Type of activity	**10.1 Assessment criteria** (based on the course learning objectives)	**10.2 Assessment methods**	**10.3 Weight in final grade (%)**
10.4 Lectures	▪ Clarity and depth of explanation of the main concepts regarding ordinary least squares (including autocorrelation, heteroskedasticity, multicollinearity) and time series analysis techniques	**Individual Coursework**	**50%**

10.5 Seminar/ Labs	▪ Accuracy of application of the econometric theories and methods of estimation for problems regarding financial econometric applications (CAPM, Stock Market Anomalies etc) ▪ Quality of estimation of econometric models, analyzing data, and interpreting results regarding financial econometric applications ▪ Quality of work in a team of students	**Group Coursework**	**50%**

10.6 Minimum performance standard

- Demonstration of the competency to undertake both individual and group work in terms of collecting data, estimating econometric models, applying diagnostic checks and making policy recommendations and conclusions from the obtained econometric results.
- Correct answers provided to at least half of questions in individual / group coursework.
- *Individual work* will require solving practical exercises from various chapters of the book that involve estimation and interpretation of real economic data.
- *Group work* will involve the submission of an analytical report on a financial econometrics topic, including literature review, data collection techniques, estimation of various econometric models, presentation of results and conclusions/discussion of results.
- A minimum passing grade of 5, computed as $F = 0{,}50 \cdot I + 0{,}50 \cdot G$, where F – final grade, I – individual coursework grade, G – group coursework grade.

Date	Course Coordinator	Seminar Coordinator
14.09.2020	Dr. Dimitrios ASTERIOU	Dr. Dimitrios ASTERIOU

Date of approval	Head of Department
23.09.2020	Prof. dr. Ovidiu STOICA