COURSE OUTLINE

(1) GENERAL

SCHOOL	SCHOOL OF SCIENCES		
ACADEMIC UNIT	DEPARTMENT OF STATISTICS & ACTUARIAL – FINANCIAL MATHEMATICS		
LEVEL OF STUDIES	POSTGRADUATE PROGRAM Statistics & Actuarial – Financial Mathematics		
COURSE CODE	**333-0107**	**SEMESTER**	**B**
COURSE TITLE	ECONOMETRICS AND TIME SERIES		
INDEPENDENT TEACHING ACTIVITIES		**WEEKLY TEACHING HOURS**	**CREDITS**
		2	6
COURSE TYPE	SPECIALISED GENERAL KNOWLEDGE		
PREREQUISITE COURSES:	NO		
LANGUAGE OF INSTRUCTION and EXAMINATIONS:	GREEK		
IS THE COURSE OFFERED TO ERASMUS STUDENTS	YES		
COURSE WEBSITE (URL)	http://www.samos.aegean.gr/samos_actuar/modules_eng.html		

(2) LEARNING OUTCOMES

Learning outcomes
Graduate students attending the course usually come from a variety of undergraduate backgrounds. Both theoretical and applied in character course lectures are offered, as the objective is to supply students who successfully complete the course with the necessary skills that are needed for those wishing to procced to the PhD level, as well as those wishing to seek a high level practitioner's post. The first learning outcome is that students should be able to properly specify and estimate a single equation econometric model as well as simple multi- equation structural equations or VAR models, selecting the each time most appropriate estimation method. Further, emphasis is given to the understanding of econometric concepts such as spurious correlation, Granger causality, and statistical equilibrium, as well as to the familiarization of Monte Carlo simulation. At last it comes the understanding of the related with those concepts econometric methods as they are described in the course syllabus below.
General Competences
Search for, analysis and synthesis of data and information, with the use of the necessary technology Production of new research ideas Project planning and management Production of free, creative and inductive thinking

(3) SYLLABUS

Review of the linear model, the underlying assumptions. Generalized Least Squares, theory and practice. Stochastic convergence and econometric estimation. Autoregressive models, the concept of Granger causality and its testing. Simultaneous equation models. Applied econometrics: cost, production and consumption functions. Models with autoregressive conditional heteroscedasticity. Problems due to non-stationarity, spurious correlations. VAR models. Finding critical values with the Monte Carlo method: pros and cons. Dickey-Fuller and related tests. The concept of statistical equilibrium, co-integration and error correction models.

(4) TEACHING and LEARNING METHODS – EVALUATION

<table>
<tr><td>DELIVERY</td><td>Synchronous and Asynchronous E-Learning and Face-to-face learning.</td></tr>
<tr><td>USE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY</td><td>• Communication with students via e-mail & eclass
• Course material on eclass.</td></tr>
<tr><td>TEACHING METHODS</td><td>
<table>
<tr><th>Activity</th><th>Semester workload</th></tr>
<tr><td>Lectures</td><td>24</td></tr>
<tr><td>Independent study</td><td>100</td></tr>
<tr><td>Problem solving – projects – Lab work</td><td>26</td></tr>
<tr><td></td><td></td></tr>
<tr><td>Course total (25 per ECTS)</td><td>150</td></tr>
</table>
</td></tr>
<tr><td>STUDENT PERFORMANCE EVALUATION</td><td>Student evaluation is done in Greek through:
(a) a written examination which includes questions and problem solving and/or
(b) homework done individually or in small groups, delivered regularly and presented in public.

For students with disabilities, evaluation takes place via oral exams.</td></tr>
</table>

(5) ATTACHED BIBLIOGRAPHY

- Suggested bibliography:

In Greek:

1. Τζαβαλής Η. (2008). Οικονομετρία, Εκδόσεις Οικονομικού Πανεπιστημίου Αθηνών, Αθήνα.

In English:

2. Enders W. (2014). Applied Econometric Time Series, Wiley, NY, USA.
3. Goldberger A. S. (1991). A course in Econometrics, Harvard University Press, USA.
4. Engle R. F. and Granger C. W. J. (1991). Long Run Economic Relationships – Readings in Co-integration, Oxford University Press, NY.
5. Johnston J. (1984). Econometric Methods, McGraw-Hill, Singapore
6. Johnston J. and Dinardo J. (1997). Econometric Methods, 4th ed., McGraw-Hill, NY, USA.
7. Pindyck R. S. and Rubinfeld D. L. (1998) Econometric Models and Economic Forecasts, 4th ed., McGraw-Hill, NY, USA.
8. Price S. (1991). Co-integration: Practical applications and problems, the Treasury (UK).