

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	333-2105	SEMESTER	B
COURSE TITLE	RISK MEASUREMENT AND MANAGEMENT		
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
With the successful completion of the course the students will have obtained a sound understanding of the role and the functions of a financial institution from the risk management point of view. They will also be in position to understand, to assess, to calculate and to interpret the various risk measures, models and management methods of financial risks, as described in the syllabus.
General Competences
Search for, analysis and synthesis of data and information, with the use of the necessary technology Adapting to new situations Decision-making Working independently Team work Working in an international environment Working in an interdisciplinary environment Project planning and management Criticism and self-criticism Production of free, creative and inductive thinking

(3) SYLLABUS

Definitions and taxonomy of risks
Analysis of risks correlations, analysis and assessment of aggregation techniques (correlations, tail-correlations, integrated risk distributions, dynamic financial analysis, copulas), design, implementation and analysis of scenarios and stress testing within the risk management framework. Model risk, parameter risk. Cash flows based techniques, cost of capital, hedgeable and non hedgeable liabilities. New products risks. Measures of economic value (e.g. EV, MCEV) and their use for risk management and decision making. Risk capital, economic capital, design and structure of internal models. Calculation of capital requirements, capital budgeting. Risk measures and their properties. Value at Risk (VaR), Expected shortfall and other coherent risk measures, risk sensitivity indices,

attribution methods of risk capital (quantile, cost of capital). Elements of extreme value theory (EVT).

(4) TEACHING and LEARNING METHODS - EVALUATION

DELIVERY	<ul style="list-style-type: none"> Synchronous and Asynchronous E-Learning. Face-to-face learning. 	
USE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY	<ul style="list-style-type: none"> Communication with students via eclass educational platform and via e-mail. Educational material stored and presented into eclass educational platform. 	
TEACHING METHODS	Activity	Semester workload
	Lectures	24
	Problem solving – projects – Lab work	52
	Independent study	74
	Course total (25 per ECTS)	150
STUDENT PERFORMANCE EVALUATION	<p>Student evaluation is done in Greek through the completion of a project that is presented in class and through written examination which includes short-answer questions and problem solving.</p> <p>For students with disabilities, evaluation takes place via oral exams.</p>	

(5) ATTACHED BIBLIOGRAPHY

- *Suggested bibliography:*

- Quantitative Risk Management: Concepts, Techniques and Tools, Alexander J. McNeil, Rudiger Frey, Paul Embrechts, Princeton Univ. Press, 2005
- Risk Management, Michael Crouhy, Dan Galai and Robert Mark, McGraw-Hill.
- Value at Risk, Philippe Jorion, 3rd Ed., Mc Graw Hill, 2006
- Measuring Market Risk, Kevin Dowd, 2nd Ed., Wiley 2005
- On credit risk modelling and management, S. Xanthopoulos, Lecture Notes
- Risk Management and Shareholders' Value in Banking, A. Resti, A. Sironi, Wiley Finance
- The Professional's Handbook of Financial Risk Management, GARP (Global Association of Risk Professionals), Butterworth-Heinemann
- Risk Management and Capital Adequacy, Reto Gallati, McGraw-Hill.
- Financial Institutions Management, Anthony Saunders and Marcia Million Cornett, McGraw-Hill.
- Understanding Market, Credit, and Operational Risk: The Value at Risk Approach, Linda Allen, Jacob Boudoukh and Anthony Saunders, Oxford: Blackwell Publishing
- Θέματα στη διαχείριση Τραπεζικών Κινδύνων, Σ. Ξανθόπουλος, Σημειώσεις Παραδόσεων.