COURSE OUTLINE

(1) GENERAL

SCHOOL	SCHOOL OF ENGINEERING			
ACADEMIC UNIT	DEPARTMENT OF FINANCIAL AND MANAGEMENT ENGINEERING			
LEVEL OF STUDIES	UNDERGRADUATE			
COURSE CODE	**OI0112**	**SEMESTER**	**9**	
COURSE TITLE	Financial Risk Analysis and Management			
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*	SPECIAL BACKGROUND/SPECIALISED GENERAL KNOWLEDGE/ SKILLS DEVELOPMENT			
PREREQUISITE COURSES:	The following courses are recommended: ● PROBABILITIES ● STATISTICS ● DERIVATIVES AND NEW FINANCIAL PRODUCTS			
LANGUAGE OF INSTRUCTION and EXAMINATIONS:	GREEK			
IS THE COURSE OFFERED TO ERASMUS STUDENTS	YES			
COURSE WEBSITE (URL)	http://www.fme.aegean.gr/en/c/financial-risk-analysis-and-management			

(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 course is addressed to undergraduate students of the Financial Engineering track. Its main objective is to introduce the student to the key issues of financial risk analysis and management. More specifically, the student will be able, after associating the concept of risk with the concept of probability, to use both measurement and management – hedging techniques of financial risks. The student, upon successful completion of the course, will be able to:

- Understand the concept of risk and its distinction from the concept of uncertainty.
- Familiarize himself/herself with the key financial risks:

- Credit risk.
- Interest rate risk.
- Liquidity risk.
- Operational risk.
- Market risk.

- To know and be able to apply the various techniques of financial risks measurement.
- To fully understand the way in which the modern financial instruments (eg Derivatives) are used to hedge financial risks (eg Credit Default Swaps, Interest Rate Swaps, etc).
- To become familiar with the concept of Value-at-Risk (VaR) and its variants, to know and be able to apply different ways of calculating and estimating it, and to understand its usefulness in measuring the financial risk.
- To become familiar with modern concepts of measuring financial risk (Expected Shortfall).

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

- 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
- Production of new research ideas
- Criticism and self-criticism
- Production of free, creative and inductive thinking

(3) SYLLABUS

Introduction to the concept of risk and its distinction from the concept of uncertainty. Basic descriptive risk measures. Interest rate risk. Interest rate risk management. Credit risk. Credit risk management. Liquidity risk. Liquidity risk management. Operational risk. Market risk. Introduction to the concept of value-at-risk (VaR). VaR specific issues: Marginal and incremental VaR, The case that fluctuations and correlations are functions of time, Special Issues: Historical simulation and Monte-Carlo simulation. Expected Shortfall.

(4) TEACHING and LEARNING METHODS - EVALUATION

DELIVERY *Face-to-face, Distance learning, etc.*	Due to covid constraints, lectures are served via distance e-learning methods (zoom platform).
USE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY *Use of ICT in teaching, laboratory education, communication with students*	**Use of ICT in teaching.** **Use of ICT in laboratory education.**
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*	
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.*	Projects given on a regular basis: 30% Written examinations at the end of the semester, in Greek, which include questions of knowledge development and understanding of the content of the course, as well as problem solving OR final project accompanied with oral presentation: 70%

Activity	*Semester workload*
Lectures/Laboratory practice	39
Study and analysis of the bibliography	90
Projects	18
Final exam	3
Course total	**150**

(5) ATTACHED BIBLIOGRAPHY

Διαχείριση τραπεζικών και χρηματοοικονομικών κινδύνων (2010). Ν. Σχοινιωτάκης και Γ.Συλλιγάρδος. Εκδόσεις Δίσιγμα.

Διαχείριση χρηματοοικονομικών κινδύνων με το MATLAB: Μια εφαρμοσμένη προσέγγιση (2009). Α. Ζαπράνης. Εκδόσεις Κλειδάριθμος.

Financial risk manager handbook, second edition (2003). P. Jorion. Wiley

Διαχείριση χρηματοπιστωτικών ιδρυμάτων και διαχείριση κινδύνων (2017). A. Saumders & M.M. Cornett. Broken Hill.

Εισαγωγή στην τραπεζική χρηματοοικονομική διοικητική, Τόμος Α (2002). Κ. Μελλάς. Εκδόσεις Εξάντας.

Διαχείριση πιστωτικού κινδύνου (2009). Κ. Ζοπουνίδης και Χ. Λεμονάκης. Εκδόσεις Κλειδάριθμος.