

## COURSE OUTLINE

### 1. GENERAL

<b>SCHOOL</b>	BUSINESS AND ECONOMICS		
<b>DEPARTMENT</b>	BUSINESS ADMINISTRATION		
<b>DIVISION</b>	BUSINESS ADMINISTRATION		
<b>LEVEL OF STUDY</b>	UNDERGRADUATE		
<b>COURSE UNIT CODE</b>	1101005	<b>SEMESTER OF STUDY</b>	1
<b>COURSE TITLE</b>	BUSINESS MATHEMATICS		
<b>COURSEWORK BREAKDOWN</b>		<b>TEACHING WEEKLY HOURS</b>	<b>ECTS Credits</b>
Lectures, Laboratory exercises, case studies		5	6
<b>COURSE UNIT TYPE</b>	General Background Course		
<b>PREREQUISITES :</b>			
<b>LANGUAGE OF INSTRUCTION/EXAMS:</b>	GREEK		
<b>COURSE DELIVERED TO ERASMUS STUDENTS</b>	YES		
<b>MODULE WEB PAGE (URL)</b>	<a href="http://moodle.teipir.gr/course/view.php?id=71">http://moodle.teipir.gr/course/view.php?id=71</a>		

### 2. LEARNING OUTCOMES

<b>Learning Outcomes</b>
<p>The aim of the course is to introduce students to the basic concepts of interest and interest rate. Moreover the student will learn to apply basic rules of differential and integral calculus in financial functions.</p> <p>Upon successful completion of the course students should be able to:</p> <ul style="list-style-type: none"> <li>• develop applications of the techniques of simple and compound interest on financial -economic transactions</li> <li>• recognize the importance of annuities and must be able to calculate the present and final value of lapsed, advanced and Enduring annuity</li> <li>• use basic principles of differential and calculus in financial functions and interpret the results</li> <li>• use basic principles of integral calculus in order to solve economic problems and interpret the results</li> </ul>
<b>General Skills</b>
<ul style="list-style-type: none"> <li>- Search, analysis and synthesis of data with the use of new technologies</li> <li>- Teamwork</li> <li>- Decision-making</li> <li>- Planning and management of projects</li> </ul>

### 3. COURSE CONTENTS

Rate, simple interest. Bill replacement Compound Interest Annuities Definition derivative Study economic functions through derivatives Rules of integration Usage of integrals in order to study economic problems #
--

**4. TEACHING METHODS - ASSESSMENT**

<b>MODE OF DELIVERY</b>	In-Class	
<b>USE OF INFORMATION AND COMMUNICATION TECHNOLOGY</b>	Support of the learning process through the LMS platform of PUAS, Use of $\varnothing^{\circ} \text{E}^{\circ} \text{E}^{\sim} \text{1}\# \text{D}^{\circ} -^{\circ}, \# \text{1}, \# \text{1} \text{6E}$	
<b>TEACHING METHODS</b>	<b>Method description</b>	<b>Semester Workload</b>
	Lectures	39
	Presentation of Case Studies, Class Discussions	26
	Laboratory exercises	15
	Independent and Directed Learning	70
	<b>TOTAL</b>	<b>150</b>
<b>+ASSESSMENT METHODS</b>	<p><b>I. Final Written Exam (80%) (Summative Evaluation)</b>          includes:          - Multiple choice questions or true/false questions          - Short answer questions  <u>Evaluation Objective:</u> To understand the fundamentals of the course.  <u>Evaluation Criteria:</u> Comprehensiveness, accuracy, and critical evaluation.</p> <p><b>II. Multiple Choice Test (20%) (Formative Evaluation)</b>          Concerns issues covered by lectures.  <u>Evaluation Objective:</u> Examination of students' progress in relation to learning outcomes, feedback and fine tuning of the course lectures.  <u>Evaluation Criteria:</u> Comprehensiveness, accuracy, and critical evaluation.</p> <p>Evaluation criteria are explicitly referred on the site of the course for each learning activity.</p>	

**5. RESOURCES**

<p><b>REFERENCES</b>          Chiang A., Wainwright K., (2005) Magraw Hill Company          Cuthbertson K. (1996) <i>Quantitative Financial Economics stocks, bonds and foreign exchange</i> Wiley          Hands D Wade (2004) <i>Introductory Mathematical Economics</i> Oxford University Press</p>
--

Martin A., Norman B., (2008). Mathematics for Economics and Finance Cambridge university press  
Sydsaeter K. and Hammond P., (2002). Essential Mathematics for economic analysis Prentise Hall

**JOURNALS**

Journal of financial mathematics

Journal of financial economis and mathematics

Siam journal of financial mathematics

Mathematical finance