

Course Title	Options and Futures				
Course Code	AEF470				
Course Type	Elective				
Level	Bachelor (1 st Cycle)				
Year / Semester	4 th Year / 7 th or 8 th Semester				
Teacher's Name	TBA				
ECTS	6	Lectures / week	3 Hours / 14 weeks	Laboratories / week	None
Course Purpose and Objectives	The goal of this course is provide to students a fundamental understanding of derivatives. Forward contracts, futures contracts, options, swaps and structured products will be illustrated and analyzed. Emphasis will be given on three aspects of derivatives – the nature of their payoffs, how they are priced and how they can be used for hedging and speculative purposes.				
Learning Outcomes	<p>Upon successful completion of this course students should be able to:</p> <ul style="list-style-type: none"> • Define derivative securities. • Describe the characteristics and features of various derivative securities. • Calculate and explain investment and arbitrage strategies with derivative securities. • Manage risk exposure and hedge by means of derivative securities. • Price derivative securities with mathematical models. 				
Prerequisites	AEF135	Co-requisites	None		
Course Content	Futures Markets and the Use of Futures for Hedging; Forward and Futures Prices; Interest Rates and Duration; Swaps; Options Markets; Properties of Stock Option Prices; Trading Strategies Involving Options; Introduction to Binomial Trees; Model of the Behavior of Stock Prices; The Black-Scholes Model; Options on Stock Indices, Futures; The Greek Letters; Value at Risk; Estimating Volatilities and Correlations; Numerical Procedures; Volatility Smiles and Alternatives to Black-Scholes; Exotic Options; Extensions of the Theoretical Framework for Pricing Derivatives: Martingales and Measures; Interest Rate Derivatives: The Standard Market Models, Models of the Short Rate, More Advanced Models; Credit Risk; Recent developments and contemporary issues pertaining to the subject-matter of the course.				

Teaching Methodology	Face to Face		
Bibliography	<p>John Hull: Fundamentals of Futures and Options Markets, Prentice-Hall, (Latest Edition).</p> <p>Robert Kolb: Futures, Options, & Swaps, Blackwell, (latest edition).</p> <p>Jarrow R. and Turnbull S.: Derivative Securities, South-Western, (latest edition).</p> <p>Stult Rene: Risk Management & Derivative, Thomson, (latest edition).</p> <p>McDonald Robert: Derivatives Markets, Pearson, (Latest Edition).</p> <p>S. Natenberg, Option Volatility & Pricing: Advanced Trading Strategies and Techniques. Latest Edition.</p> <p style="text-align: right;">L. G.</p> <p>McMillan. Options as a Strategic Investment. Latest Edition.</p> <p>Additional Readings (Journals)</p> <p>R. Johannes and W. Weiguan. Neural Networks for Option Pricing and Hedging: A Literature Review (August 13, 2020). Journal of Computational Finance, Forthcoming, Available at SSRN: https://ssrn.com/abstract=3673153</p>		
Assessment	Examinations	60%	
	Class Participation and Attendance	10%	
	Assignments	30%	
		100%	
Language	English		