DEREE COLLEGE SYLLABUS FOR: EC 4430 FINANCIAL DERIVATIVES

(Same as FN 4430 FINANCIAL DERIVATIVES) (Previously FN 3005 Foundations of Corporate Finance – L5) (Updated Fall 2021)	**UK LEVEL: 6** **UK CREDITS: 15** **US CREDITS: 3/0/3**
PREREQUISITES:	EC/FN 3046 Investment Analysis and Management I MA 1008 College Algebra MA 2105 Applied Calculus MA 2021 Applied Statistics
CATALOG DESCRIPTION:	The analytics of financial derivatives and risk management. Pricing and valuation of forwards, futures, swaps, options, and credit derivatives, and their use in managing risk.
RATIONALE:	Financial derivatives as a tool risk management are quite important from both the academic and the industry perspective. Thus, it is important for students to understand how financial derivatives can be used to hedge risk and/or alter the distribution of portfolio returns, but also to examine the risks they imply. This course is useful to students who plan to pursue graduate studies and/or plan to be employed in this field.
LEARNING OUTCOMES:	As a result of taking this course, the student should be able to: 1. Discuss the main characteristics of derivatives products and assess the limitations of derivative markets. 2. Explain the role of arbitrage and construct derivative securities' strategies to hedge various risks and reflect on the need for their use in hedging risk. 3. Demonstrate knowledge of pricing of derivatives products and interpret the emerging payoffs. 4. Carry out derivative products valuation by applying appropriate theory.
METHOD OF TEACHING AND LEARNING:	In congruence with the teaching and learning strategy of the College, the following tools are used: ➢ Class lectures and seminar-style class discussion of key terms and concepts with appropriate examples. ➢ Office hours: students are encouraged to make full use of the office hours of their instructor, where they can ask questions, see their exam paper, and go over lecture material. ➢ Use of the Simulated Trading Room for illustrating examples. ➢ Use of Blackboard, where instructors post lecture notes, assignment instructions, timely announcements, as well as additional resources.
ASSESSMENT:	**Summative**:

1st assessment: Individual project (2,600-2,800 words) and presentation	**50%**

Final assessment: In-class written examination (Two-hour, closed-book, comprehensive)	**50%**

Formative:

Numerical problems, assignment preparation	**0 %**

The formative assignments prepare students for the examinations and ensure that students are actively engaged during the term.

The 1st assessment tests Learning Outcomes 1 and 2.
The final assessment tests Learning Outcomes 1, 2, 3 and 4.

The final grade for this module will be determined by averaging all summative assessment grades, based on the predetermined weights for each assessment. If students pass the comprehensive assessment that tests all Learning Outcomes for this module and the average grade for the module is 40 or higher, students are not required to resit any failed assessments.

INDICATIVE READING:

REQUIRED READING:

Hull, J. Options, Futures and Other Derivatives. Prentice-Hall, latest edition.

Other library sources, including journal articles accessible through the Library, as assigned by the instructor.

RECOMMENDED READING:

Black, F. (1975). Fact and Fantasy in the use of Options. Financial Analysts Journal, Vol., 31 (4) 36-72

Black, F. S. (1989). How we came up with the Option Formula. Journal of Portfolio Management, Vol., 15 (2), 4-8.

Bookstaber, R.; Clarke R., (1981). Options can alter portfolio return distributions. Journal of Portfolio Management, Vol., 7 (3), 63-70

Cuthbertson and Nitzsche, Quantitative Financial Economics, Stocks, Bonds, and Foreign Exchange, Wiley, latest edition.

Figelman, I. (2008). Expected Return and Risk of Covered Call Strategies. The Journal of Portfolio Management, Vol., 34, 81-97

Jarrow and Chatterjea, Derivative Securities, Financial Markets and Risk Management. Norton, latest edition

Jorion, P. (2000). Risk management lessons from Long-Term Capital Management. European Financial Management, Vol. 6, (3), p277

	Labuszewski et all, (2010). The CME Group Risk Management Handbook: Products and Application. CME Group, 1st ed. McDonald, Derivatives Markets. Pearson, latest edition Merton, R. C. (1973). The Relation between Put and Call option prices: Comment. Journal of Finance, Vol., 2, 183-184. Moriarty, E., Phillips, S. and Tosini, P. (1981). A comparison of options and futures in the management of portfolio risk. Financial Analysts Journal, Vol. 37, Issue 1 Natenberg, Option Volatility and Pricing: Advanced Trading Strategies and Techniques, McGraw-Hill, latest edition. Neftci, Principles of Financial Engineering, Academic Press, latest edition. Strong R., and Dickinson A. (1994). Forecasting Better Hedge Ratios. Financial Analysts Journal, Vol., 50 (1), 70-72. Sundaram and Das, Derivatives Principles and Practice. McGraw-Hill Irwin, latest edition Wilmott, Howison and Dewynne, The Mathematics of Financial Derivatives, Cambridge, latest edition.
INDICATIVE MATERIAL: *(e.g. audiovisual, digital material, etc.)*	**REQUIRED MATERIAL:** N/A **RECOMMENDED MATERIAL:** N/A
COMMUNICATION REQUIREMENTS:	Use of appropriate academic conventions as applicable in oral and written communications
SOFTWARE REQUIREMENTS:	Word, Excel, PowerPoint, Refinitiv, Bloomberg
WWW RESOURCES:	www.cmegroup.com www.cboe.com/learncenter/default.aspx www.futuresmag.com www.ft.com www.bloomberg.com www.zerohedge.com www.isda.org
INDICATIVE CONTENT:	1. Introduction to Derivatives 2. Futures: Mechanics and Pricing

	3. Hedging Strategies Using Futures 4. Swaps and Swap Pricing 5. Option Markets and Properties of Stock Options 6. Option Strategies 7. Binomial Trees 8. Wiener Processes and Ito’s Lemma 9. Black Scholes and Merton Model 10. Option Analytics and Hedging 11. Value at Risk and Estimating Volatilities and Correlations 12. Credit Derivatives