

**DEREE COLLEGE SYLLABUS FOR: FN 4430 FINANCIAL DERIVATIVES**

(Same as EC 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**

<b>PREREQUISITES:</b>	EC/FN 3046 Investment Analysis and Management I MA 1008 College Algebra MA 2105 Applied Calculus MA 2021 Applied Statistics
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<b>CATALOG DESCRIPTION:</b>	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.
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<b>RATIONALE:</b>	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.
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<b>LEARNING OUTCOMES:</b>	As a result of taking this course, the student should be able to: <ol style="list-style-type: none"> <li>1. Discuss the main characteristics of derivatives products and assess the limitations of derivative markets.</li> <li>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.</li> <li>3. Demonstrate knowledge of pricing of derivatives products and interpret the emerging payoffs.</li> <li>4. Carry out derivative products valuation by applying appropriate theory.</li> </ol>
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<b>METHOD OF TEACHING AND LEARNING:</b>	In congruence with the teaching and learning strategy of the College, the following tools are used: <ul style="list-style-type: none"> <li>➤ Class lectures and seminar-style class discussion of key terms and concepts with appropriate examples.</li> <li>➤ 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.</li> <li>➤ Use of the Simulated Trading Room for illustrating examples.</li> <li>➤ Use of Blackboard, where instructors post lecture notes, assignment instructions, timely announcements, as well as additional resources.</li> </ul>
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<b>ASSESSMENT:</b>	<b>Summative:</b> <table border="1" style="width: 100%; margin-top: 10px;"> <tr> <td style="width: 70%;">1<sup>st</sup> assessment: Individual project (2,600-2,800 words) and presentation</td> <td style="width: 30%; text-align: center;"><b>50%</b></td> </tr> </table>	1 <sup>st</sup> assessment: Individual project (2,600-2,800 words) and presentation	<b>50%</b>
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	<table border="1" data-bbox="483 205 1273 310"> <tr> <td data-bbox="483 205 1101 310">Final assessment: In-class written examination (Two-hour, closed-book, comprehensive)</td> <td data-bbox="1101 205 1273 310"><b>50%</b></td> </tr> </table> <p data-bbox="483 344 634 373"><b>Formative:</b></p> <table border="1" data-bbox="483 373 1273 447"> <tr> <td data-bbox="483 373 1101 447">Numerical problems, assignment preparation</td> <td data-bbox="1101 373 1273 447"><b>0 %</b></td> </tr> </table> <p data-bbox="483 483 1487 548">The formative assignments prepare students for the examinations and ensure that students are actively engaged during the term.</p> <p data-bbox="483 581 1273 646">The 1<sup>st</sup> assessment tests Learning Outcomes 1 and 2. The final assessment tests Learning Outcomes 1, 2, 3 and 4.</p> <p data-bbox="483 680 1507 846">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.</p>	Final assessment: In-class written examination (Two-hour, closed-book, comprehensive)	<b>50%</b>	Numerical problems, assignment preparation	<b>0 %</b>
Final assessment: In-class written examination (Two-hour, closed-book, comprehensive)	<b>50%</b>				
Numerical problems, assignment preparation	<b>0 %</b>				
<b>INDICATIVE READING:</b>	<p data-bbox="483 884 789 913"><b>REQUIRED READING:</b></p> <p data-bbox="483 947 1446 976">Hull, J. Options, Futures and Other Derivatives. Prentice-Hall, latest edition.</p> <p data-bbox="483 1010 1446 1075">Other library sources, including journal articles accessible through the Library, as assigned by the instructor.</p> <p data-bbox="483 1150 870 1180"><b>RECOMMENDED READING:</b></p> <p data-bbox="483 1213 1446 1278">Black, F. (1975). Fact and Fantasy in the use of Options. Financial Analysts Journal, Vol., 31 (4) 36-72</p> <p data-bbox="483 1312 1446 1377">Black, F. S. (1989). How we came up with the Option Formula. Journal of Portfolio Management, Vol., 15 (2), 4-8.</p> <p data-bbox="483 1411 1349 1476">Bookstaber, R.; Clarke R., (1981). Options can alter portfolio return distributions. Journal of Portfolio Management, Vol., 7 (3), 63-70</p> <p data-bbox="483 1509 1446 1575">Cuthbertson and Nitzsche, Quantitative Financial Economics, Stocks, Bonds, and Foreign Exchange, Wiley, latest edition.</p> <p data-bbox="483 1608 1446 1673">Figelman, I. (2008). Expected Return and Risk of Covered Call Strategies. The Journal of Portfolio Management, Vol., 34, 81-97</p> <p data-bbox="483 1707 1446 1772">Jarrow and Chatterjea, Derivative Securities, Financial Markets and Risk Management. Norton, latest edition</p> <p data-bbox="483 1806 1446 1871">Jorion, P. (2000). Risk management lessons from Long-Term Capital Management. European Financial Management, Vol. 6, (3), p277</p>				

	<p>Labuszewski et al, (2010). The CME Group Risk Management Handbook: Products and Application. CME Group, 1st ed.</p> <p>McDonald, Derivatives Markets. Pearson, latest edition</p> <p>Merton, R. C. (1973). The Relation between Put and Call option prices: Comment. Journal of Finance, Vol., 2, 183-184.</p> <p>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</p> <p>Natenberg, Option Volatility and Pricing: Advanced Trading Strategies and Techniques, McGraw-Hill, latest edition.</p> <p>Neftci, Principles of Financial Engineering, Academic Press, latest edition.</p> <p>Strong R., and Dickinson A. (1994). Forecasting Better Hedge Ratios. Financial Analysts Journal, Vol., 50 (1), 70-72.</p> <p>Sundaram and Das, Derivatives Principles and Practice. McGraw-Hill Irwin, latest edition</p> <p>Wilmott, Howison and Dewynne, The Mathematics of Financial Derivatives, Cambridge, latest edition.</p>
<p><b>INDICATIVE MATERIAL:</b> <i>(e.g. audiovisual, digital material, etc.)</i></p>	<p><b>REQUIRED MATERIAL:</b> N/A</p> <p><b>RECOMMENDED MATERIAL:</b> N/A</p>
<p><b>COMMUNICATION REQUIREMENTS:</b></p>	<p>Use of appropriate academic conventions as applicable in oral and written communications</p>
<p><b>SOFTWARE REQUIREMENTS:</b></p>	<p>Word, Excel, PowerPoint, Refinitiv, Bloomberg</p>
<p><b>WWW RESOURCES:</b></p>	<p><a href="http://www.cmegroup.com">www.cmegroup.com</a>  <a href="http://www.cboe.com/learncenter/default.aspx">www.cboe.com/learncenter/default.aspx</a>  <a href="http://www.futuresmag.com">www.futuresmag.com</a>  <a href="http://www.ft.com">www.ft.com</a>  <a href="http://www.bloomberg.com">www.bloomberg.com</a>  <a href="http://www.zerohedge.com">www.zerohedge.com</a>  <a href="http://www.isda.org">www.isda.org</a></p>
<p><b>INDICATIVE CONTENT:</b></p>	<ol style="list-style-type: none"> <li>1. Introduction to Derivatives</li> <li>2. Futures: Mechanics and Pricing</li> </ol>

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|  | <ol style="list-style-type: none"><li>3. Hedging Strategies Using Futures</li><li>4. Swaps and Swap Pricing</li><li>5. Option Markets and Properties of Stock Options</li><li>6. Option Strategies</li><li>7. Binomial Trees</li><li>8. Wiener Processes and Ito's Lemma</li><li>9. Black Scholes and Merton Model</li><li>10. Option Analytics and Hedging</li><li>11. Value at Risk and Estimating Volatilities and Correlations</li><li>12. Credit Derivatives</li></ol> |
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