

TOPIC-SPECIFIC LEARNING JOURNEY

COURSE PACKAGE:

“DERIVATIVES”

ENTRIMA
LEARNING PLATFORM

ENTRIMA's Learning Platform lists a wide range of courses, all related to markets & trading. Some of these courses have been bundled to form a course package, as they all concerns the same field of expertise.

The Course Package "**Derivative contracts**" consists of the following courses:

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4. Options – Introduction	6
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16. Swaps – Credit default swaps	18

Each of these courses ends with an exam. Upon passing the exam the learner will be certified instantly. The contents, duration and level of each course is set out in the pages hereafter.

Duration

Total duration^{*)} of all sixteen (**16**) courses together: **680** minutes (i.e. **12** hours)

➤ Study hours:	12
➤ CPD points:	12

^{*)} Excluding examination

COURSE:**FUTURES, FORWARDS & OTHER DERIVATIVES – INTRODUCTION**

This course concerns a general introduction to derivatives contracts, including futures contracts, swap agreements and option contracts. The lessons give insight in what these financial instruments concern and how they can be applied.

This course covers the following video lessons:

1. Introduction
2. Term contracts
3. Swaps
4. Options
5. Combinations
6. Settlement
7. Contract-for-difference
8. Tool to speculate
9. Tools to hedge
10. Derivatives markets

- A. Examination
- B. Certification

❖ Level:	Basic	No prerequisites
❖ Intensity:	20 minutes	Excluding examination
❖ Language:	Voice & text	English
❖ Including:	Examination	Certification upon passing

COURSE:**FUTURES, FORWARDS & OTHER DERIVATIVES – POSITION MANAGEMENT**

This course provides insight in the opening of a futures position and closing it. It also sets out the terminology long and short. Furthermore, the lessons allow to master the concept of rolling a futures position, by describing the process and touching upon related aspects.

This course covers the following video lessons:

1. Introduction
2. Opening transaction – Long & short position
3. Closing transaction – Eliminate position
4. Long versus short
5. Rolling a futures position – Introduction
6. Rolling a futures position – Investor or speculator
7. Rolling a futures position – Hedger
8. Rolling a futures position – The concept
9. Rolling a futures position – Practical aspects
10. Rolling a futures position – Roll yield
11. Rolling a futures position – Forward curve structure
12. Rolling a futures position – Rolling a short position
13. Rolling a futures position – Rolling a long position
14. Notional value
15. Open interest

- A. Examination
- B. Certification

❖ Level:	Intermediate	Prerequisite: "Futures, forwards & other derivatives – Introduction"
❖ Intensity:	35 minutes	Excluding examination
❖ Language:	Voice & text	English
❖ Including:	Examination	Certification upon passing

COURSE: FUTURES CONTRACTS

This course provides insight in the what futures contracts are, how positions are opened and closed (and rolled) and what obligations that brings along, as well as the clearing, margining and settlement of futures contracts, plus related trading operations.

This course covers the following topics:

- Introduction
- Position management
- Application of futures contracts
- Clearing of futures contracts
- Margining of futures positions
- Settlement of futures contracts
- Exchange of Futures for Physicals (EFP)

- A. Examination
- B. Certification

❖ Level:	Intermediate	Prerequisite: "Futures, forwards & other derivatives - <i>Introduction</i> "
❖ Intensity:	40 minutes	Including examination
❖ Language:	Voice & text	English
❖ Including:	Examination	Certification upon passing

COURSE:**OPTIONS – INTRODUCTION**

This course provides all fundamentals of options, including the working of these instruments, both from the position of the holder and writer, option valuation, factors of influence and settlement of contracts, as well as the financial performance of positions.

This course covers the following video lessons:

1. Single-sided right
2. Tool to speculate or hedge
3. Position management
4. A premium to compensate risk
5. Options trading – Brokers & exchanges
6. Open interest
7. Contract specifications – Introduction
8. Contract specifications – Strike
9. Contract specifications – Maturity
10. Contract specifications – Underlying value
11. Contract specifications – Contract size
12. Contract specifications – Settlement type
13. Contract specifications – Style
14. Contract specifications – Currency
15. Contract specifications – Additional notes
16. Position management – Right vs obligation
17. Position management – Opening & closing
18. Position management – Settlement
19. Position management – Netting
20. Intrinsic value – Introduction
21. Intrinsic value – Pay-off
22. Intrinsic value – Option positions
23. Premium – Introduction
24. Premium - Pricing or options
25. Premium – Price driving factors – Introduction
26. Premium – Price driving factors – Volatility
27. Premium – Price driving factors – Price u.v.
28. Premium – Price driving factors – Cost of carry
29. Premium – Price driving factors – Strike price
30. Premium – Price driving factors – Maturity
31. Premium – Price driving factors – Option style
32. Valuation – Intrinsic value & time value
33. Moneyness – Introduction
34. Moneyness – At-the-money
35. Moneyness – In-the-money
36. Moneyness – Out-of-the-money
37. Moneyness – Application
38. Premium erosion
39. Positions – Investing & speculation
40. Positions – Leverage
41. Positions – Financial performance – Long call
42. Positions – Financial performance – Short call
43. Positions – Financial performance – Long put
44. Positions – Financial performance – Short put
45. Positions – Financial performance – Zero-sum

- A. Examination
- B. Certification

❖ Level:	Basic	No prerequisites
❖ Intensity:	70 minutes	Excluding examination
❖ Language:	Voice & text	English
❖ Including:	Examination	Certification upon passing

COURSE:**OPTIONS – EXERCISE, ASSIGNMENT & SETTLEMENT**

This course provides all essentials concerning the exercising of option and the related assignment and settlement. It includes the processes of physical delivery and cash settlement. Next, the possibility of early exercise in case of American style options is covered and it is set out when this would be preferred.

This course covers the following video lessons:

1. Exercise & assignment
2. Settlement
3. Option on cash or spot product
4. Option on futures contract
5. Commodity options
6. Power & gas options
7. Cash settled options
8. Early exercise – Introduction
9. Early exercise – Call option
10. Early exercise – Put option
11. Early exercise – Put-call parity
12. Early exercise – Option style

A. Examination

B. Certification

❖ Level:	Intermediate	Prerequisite: "Options – Introduction"
❖ Intensity:	15 minutes	Excluding examination
❖ Language:	Voice & text	English
❖ Including:	Examination	Certification upon passing

COURSE:**OPTIONS – HEDGING EXPOSURES**

Options can be used for hedging purposes, whereas option positions can be hedged with forwards or futures. This course provides the essentials of hedging strategies with options. It is covered how commodity consumers can hedge their exposures with options, and the same applies to commodity producers. Next, it is set out how options can be hedged with term contracts. In particular the concept of Delta-hedging is explained.

This course covers the following video lessons:

1. Consumer hedge – Introduction
2. Consumer hedge – Capping at different levels
3. Consumer hedge – Selecting the strike price
4. Producer hedge – Introduction
5. Producer hedge – Flooring at different levels
6. Producer hedge – Selecting the strike price
7. Selection of strike & maturity
8. Hedging a linear exposure with a non-linear instrument
9. Hedging a non-linear exposure with a linear instrument
10. Hedging long call with short future
11. Hedging short call with long future
12. Hedging long put with long future
13. Hedging short put with short future
14. Delta-hedging – Introduction
15. Delta-hedging – Dynamic hedging
16. Delta-hedging – Delta-neutrality
17. Delta-hedging – Making or losing money
18. Delta-hedging – Relevant Greeks
19. Delta-hedging – Premium long or short

A. Examination

B. Certification

❖ Level:	Intermediate	Prerequisite: "Options – Introduction"
❖ Intensity:	45 minutes	Excluding examination
❖ Language:	Voice & text	English
❖ Including:	Examination	Certification upon passing

COURSE:**OPTIONS – PUT-CALL PARITY & SYNTHETICS**

This course provides the essentials of the put-call parity regarding options. It is explained what it concerns and how it can be applied, for instance, to price or value options. The course also sets out how synthetic outright positions or derivatives positions can be created with options. The combination of the put-call parity and the theory concerning synthetics allows for arbitrage strategies. This knowledge is shared during the final part of the course.

This course covers the following video lessons:

1. The arbitrage model
2. Arbitrage
3. Time value
4. Stock options
5. Commodity options
6. Early exercise
7. Synthetic long futures position
8. Synthetic short futures position
9. Synthetic option positions – Introduction
10. Synthetic long call option position
11. Synthetic long put option position
12. Synthetic short call option position
13. Synthetic short put option position
14. Arbitrage – Profit from mispricing
15. Arbitrage – Conversion
16. Arbitrage – Reversal
17. Arbitrage – Realising the profit
18. Arbitrage – Box

A. Examination

B. Certification

❖ Level:	Advanced	Prerequisite: "Options – Hedging Exposures"
❖ Intensity:	25 minutes	Excluding examination
❖ Language:	Voice & text	English
❖ Including:	Examination	Certification upon passing

COURSE: OPTIONS – GREEK VARIABLES

This course provides learners with a comprehensive overview of the risk parameters related to option positions. It is explained how the Greek variables can be used to perform risk management. Throughout the course one can master advanced knowledge of the Greeks and how sensitivity analysis can be effectuated, as well as how this allows to manage positions. In addition, the relationships between the risk parameters are clarified.

This course covers the following video lessons:

- | | |
|--|---|
| 1. Risk parameters | 18. Vanna |
| 2. Dynamic concepts | 19. Vomma |
| 3. Delta – Introduction | 20. Charm |
| 4. Delta – Call Delta versus put Delta | 21. Veta |
| 5. Delta – Sensitivity | 22. Vera |
| 6. Delta – Long versus short position | 23. Gamma – Introduction |
| 7. Delta – Portfolio management | 24. Gamma – Characteristics |
| 8. Delta – Relevant notes | 25. Gamma – Rules of thumb |
| 9. Delta – Hedge ratio | 26. Third order Greeks |
| 10. Delta – Non-linear exposure vs. linear hedge | 27. Application – Coherence – Delta |
| 11. Delta – Dynamics of Delta | 28. Application – Coherence – Gamma, Vega & Theta |
| 12. Theta – Introduction | 29. Application – Coherence – The process of the underlying |
| 13. Theta – Portfolio management | 30. Application – Coherence – Greeks of a linear product |
| 14. Vega – Introduction | 31. Risks beyond Greeks – Liquidity risk |
| 15. Vega – Portfolio management | 32. Risks beyond Greeks – PIN risk |
| 16. Rho | 33. Risks beyond Greeks – Fugit |
| 17. Second order Greeks – Introduction | |

A. Examination

B. Certification

❖ Level:	Advanced	Prerequisite: "Options – Introduction"
❖ Intensity:	70 minutes	Excluding examination
❖ Language:	Voice & text	English
❖ Including:	Examination	Certification upon passing

COURSE: OPTIONS – EXOTICS

This course provides all fundamentals of non-vanilla (or exotic) options, including their specific characteristics and what they could be used for, as well as their pricing or valuation. This knowledge is also crucial for those who want to master modelling of flexibility in commodity or energy portfolios of physical players.

This course covers the following video lessons:

1. Introduction to exotic options
2. Features of exotic options
3. Exercise style – Asian style
4. Exercise style – Bermudan style
5. Exercise style – Canary style
6. Exercise style – Capped style
7. Exercise style – Compound option
8. Exercise style – Shout option
9. Exercise style – Swing option
10. Standard style – Different payoff – Introduction
11. Standard style – Different payoff – Cross option
12. Standard style – Different payoff – Quanto option
13. Standard style – Different payoff – Exchange option
14. Standard style – Different payoff – Basket option
15. Standard style – Different payoff – Rainbow option
16. Standard style – Different payoff – Low exercise price option (LEPO)
17. Path-dependent options – Introduction
18. Path-dependent options – Lookback option
19. Path-dependent options – Binary option
20. Path-dependent options – Asian option
21. Path-dependent options – Barrier option
22. Path-dependent options – Specific barrier options

- A. Examination
- B. Certification

❖ Level:	Advanced	Prerequisite: "Options – Introduction"
❖ Intensity:	35 minutes	Excluding examination
❖ Language:	Voice & text	English
❖ Including:	Examination	Certification upon passing

COURSE:**OPTIONS – VALUATION MODELS**

This course provides learners a perfect overview of the pricing or valuation of options or option positions. Different models are covered and their features are compared to the characteristics of other models. Meanwhile attention is given to price volatility as it is crucially important for the option premium.

This course covers the following video lessons:

1. Introduction
 2. Volatility – Skew
 3. Volatility – Smile
 4. Volatility – Kurtosis
 5. Binomial model – Introduction
 6. Binomial tree – Normal distribution
 7. Binomial tree – Skewed distribution
 8. Black & Scholes model – Introduction
 9. Black & Scholes model – Formulas
 10. Black & Scholes model – Limitations
 11. Black-76 model – Introduction
 12. Black-76 model – Formulas
 13. Monte Carlo simulations
 14. Application – Applicability
 15. Application – Comparison – Binomial model vs. Black & Scholes
 16. Application – Models for commodity options
- A. Examination
B. Certification

❖ Level:	Advanced	Prerequisite: "Options – Introduction"
❖ Intensity:	40 minutes	Excluding examination
❖ Language:	Voice & text	English
❖ Including:	Examination	Certification upon passing

COURSE:**OPTIONS – REAL OPTIONS**

This course explains what real options concern. It is set out that the right to undertake a certain business initiative can be modelled in terms of financial options. In particular, this can be applied to physical assets in the portfolio of commodity or energy players, or their supply contracts. This way, the risks can be identified better, alike hedging them. Besides, the valuation of these assets also becomes easier.

This course covers the following video lessons:

1. Introduction
2. Project size – Option to expand
3. Project size – Option to contract
4. Project size – Option to expand or contract
5. Project life & timing – Growth options
6. Project life & timing – Option to initiate
7. Project life & timing – Option to abandon
8. Project life & timing – Sequencing option
9. Project operations – Output mix option
10. Project operations – Input mix option
11. Project operations – Operating scale options
12. The real option approach – DCF & NPV
13. The real option approach – Financial options versus real options

- A. Examination
- B. Certification

❖ Level:	Advanced	Prerequisite: "Options – Introduction"
❖ Intensity:	25 minutes	Excluding examination
❖ Language:	Voice & text	English
❖ Including:	Examination	Certification upon passing

COURSE:**SWAPS – INTEREST RATE SWAPS**

This course explains what interest rate swaps are. It provides an overview of the fundamentals of these instruments and how they can be applied by companies. Furthermore, quite some essentials are set out that are important to know before using these tools to perform treasury management. This includes the valuation of the instruments, as well as their settlement.

This course covers the following video lessons:

1. Forward rate agreement – Introduction
 2. Forward rate agreement vs. interest rate swap
 3. The first swap ever
 4. The two legs
 5. Exchange of cashflows
 6. Application
 7. Specifications
 8. Fixed rate loan vs. floating rate loan
 9. Hedge interest rate exposures or alter fixed payments to floating obligations
 10. Varieties
 11. Fixed-for-Floating interest rate swap – Same currency
 12. Fixed-for-Floating interest rate swap – Different currencies
 13. Floating-for-Floating interest rate swap – Same currency
 14. Floating-for-Floating interest rate swap – Different currencies
 15. Fixed-for-Fixed interest rate swap – Different currencies
 16. Overnight indexed swaps – Fundamentals
 17. Overnight indexed swaps – Valuation
 18. Application of interest rate swaps
 19. Valuation of interest rate swaps – Introduction
 20. Valuation of interest rate swaps – Valuation based on bond prices
 21. Valuation of interest rate swaps – Valuation based on FRA pricing
 22. Valuation of interest rate swaps – Discounting future cashflows to today's value
 23. Valuation of interest rate swaps – Yield curve
 24. Valuation of interest rate swaps – Dirty & clean value
 25. The trading of interest rate swaps – The role of broker-dealers
- A. Examination
 - B. Certification

❖ Level:	Basic	No prerequisites
❖ Intensity:	55 minutes	Excluding examination
❖ Language:	Voice & text	English
❖ Including:	Examination	Certification upon passing

COURSE:**SWAPS – FX FORWARDS & FX SWAPS**

This course explains what FX forwards are, as well as what FX swaps concern. It provides an overview of the fundamentals of these instruments and how they can be applied by companies. Furthermore, quite some essentials are set out that are important to know before using these tools to perform treasury management. This includes the valuation of the instruments, as well as their settlement.

This course covers the following video lessons:

1. FX forwards – Introduction to FX forwards
 2. FX forwards – Time option forward contract
 3. FX forwards – Closing an FX forward
 4. FX forwards – Valuation of an FX forward
 5. FX swaps – Introduction to FX swaps
 6. FX swaps – Comparative advantage
 7. FX swaps – Par, premium & discount
 8. FX swaps – Spot-forward FX swap
 9. FX swaps – Forward-forward FX swap
 10. FX swaps – Interest rate parity
 11. FX swaps – Short leg & long leg
 12. FX swaps – Pricing & valuation of FX swaps – Swap points
 13. FX swaps – Pricing & valuation of FX swaps – Forward-Forward FX swaps – Forward points
 14. FX swaps – Pricing & valuation of FX swaps – Valuation in terms of bond positions
 15. FX swaps – Today-Tomorrow FX swaps
 16. FX swaps – Overnight FX swaps & Tomorrow-Tomorrow FX swaps
 17. FX swaps – Hedging FX exposures with FX swaps – Tool to optimise cash management
 18. FX swaps – Hedging FX exposures with FX swaps – Forward points – Calculations
 19. FX swaps – Hedging FX exposures with FX swaps – Hedge with an FX spot deal & an FX swap
 20. FX swaps – Cash management with an overnight FX swap
 21. FX swaps – Rolling an FX forward with an FX swap – An FX swap to change the value date
 22. FX swaps – Rolling an FX forward with an FX swap – Opening & closing positions
 23. FX swaps – Rolling an FX forward with an FX swap – Market liquidity
 24. FX swaps – Rolling an FX forward with an FX swap – Valuation
 25. FX swaps – Cross-currency interest rate swap – Introduction
 26. FX swaps – Cross-currency interest rate swap – Valuation
 27. FX swaps – Cross-currency interest rate swap – Application
- A. Examination
B. Certification

❖ Level:	Basic	No prerequisites
❖ Intensity:	40 minutes	Excluding examination
❖ Language:	Voice & text	English
❖ Including:	Examination	Certification upon passing

COURSE:**SWAPS – COMMODITY SWAPS**

This course explains what commodity swaps are, which types are used by market participants and for what purpose. It covers both physical swaps and financial swaps. It is also set out for how these instruments can be applied to solve physical challenges and to meet financial desires.

This course covers the following video lessons:

1. Physical & Financial Commodity Swaps
2. Producer & Consumer Hedges
3. Financial Commodity Swaps - Vanilla Cash Settled Swaps
4. Financial Commodity Swaps - Swap Types & Application
5. Financial Commodity Swaps - Differential Swap
6. Financial Commodity Swaps - Margin Swap
7. Financial Commodity Swaps - Participation Swap
8. Financial Commodity Swaps - Double Up Swap
9. Physical Oil Swaps
10. Financial Oil Swaps
11. Physical Gas Swaps
12. Financial Gas Swaps
13. LNG swaps
14. Physical Coal Swaps
15. Financial Coal Swaps
16. Physical Power Swaps
17. Financial Power Swaps
18. Physical Carbon Swaps
19. Cross-commodity Swaps - Spark Spread
20. Cross-commodity Swaps - Dark Spread
21. Cross-commodity Swaps - Crack Spread
22. Cross-commodity Swaps - Crush Spread
23. Swaps for Commodity Consumers - Swap On Average
24. Swaps for Commodity Consumers - Capped Swap
25. Swaps for Commodity Consumers - Participation Swap
26. Swaps for Commodity Consumers - Range Out Swap
27. Swaps for Commodity Producers - Swap On Average
28. Swaps for Commodity Producers - Floored Swap
29. Swaps for Commodity Producers - Participation Swap
30. Swaps for Commodity Producers - Range Out Swap
31. Pricing Methodologies - Fixed-for-Floating Swaps
32. Pricing Methodologies - Floating-for-Floating Swaps
33. Pricing Methodologies - Settlement Dates
34. Participation Swaps
35. Single Payment Swaps & Prepaid Swaps

- A. Examination
- B. Certification

❖ Level:	Basic	No prerequisites
❖ Intensity:	100 minutes	Excluding examination
❖ Language:	Voice & text	English
❖ Including:	Examination	Certification upon passing

COURSE: SWAPS – SWAPTIONS

This course covers the fundamentals and quite some essentials of swaptions. Hence, the course covers different types plus contract specifications and relevant aspects, as well as the valuation of these instruments.

This course includes the following video lessons:

1. Swaptions – Introduction
 2. Swaptions – Payers & receivers swaption
 3. Swaptions – Contract specifications
 4. Swaptions – Extendables
 5. Swaptions – Swaption styles – Introduction
 6. Swaptions – Swaption styles – European style swaption
 7. Swaptions – Swaption styles – American style swaption
 8. Swaptions – Swaption styles – Asian style swaption
 9. Swaptions – Swaption trading – Participants
 10. Swaptions – Swaption trading – Collateralisation & margining
 11. Swaptions – Swaption trading – Settlement
 12. Swaptions – Energy swaption – Oil-indexed gas supply contract
 13. Swaptions – Valuation of swaptions – Introduction
 14. Swaptions – Valuation of swaptions – Valuation models
- A. Examination
B. Certification

❖ Level:	Basic	No prerequisites
❖ Intensity:	35 minutes	Excluding examination
❖ Language:	Voice & text	English
❖ Including:	Examination	Certification upon passing

COURSE:**SWAPS – CREDIT DEFAULT SWAPS**

This course covers the fundamentals of credit default swaps. Hence, the course covers different types plus contract specifications and relevant aspects, as well as the valuation of these instruments.

This course includes the following video lessons:

1. Credit default swaps – Introduction
 2. Credit default swaps – Trigger
 3. Credit default swaps – Credit event
 4. Credit default swaps – Settlement
 5. Credit default swaps – Pricing of CDS & payment
 6. Credit default swaps – Default & auction
 7. Credit default swaps – Counterparty risk
 8. Credit default swaps – Regulation
 9. Credit default swaps – Since the Credit Crisis
 10. Credit default swaps – Pricing & valuation of CDS – Introduction
 11. Credit default swaps – Pricing & valuation of CDS – Probability model
 12. Credit default swaps – Pricing & valuation of CDS – Illustration
 13. Credit default swaps – Credit ratings
 14. Credit default swaps – Credit rating agency – Introduction
 15. Credit default swaps – Credit rating agency – Business model
- A. Examination
B. Certification

❖ Level:	Basic	No prerequisites
❖ Intensity:	30 minutes	Excluding examination
❖ Language:	Voice & text	English
❖ Including:	Examination	Certification upon passing