

# About me

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# About this course

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- Expose you to the very interesting world of derivatives
  - What are derivatives?
    - Financial instruments to manage risks
  - How to understand derivatives?
    - From forwards/futures and swaps to options
    - Black-Scholes Theory
  - What are the applications of derivatives?
    - Structured products, structured finance
    - Risk management
    - Speculation, investment, hedging
  - How's the market for derivatives like?
    - It's getting hotter everyday
  
- Expose you to the views and work of practitioners

# Objectives

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- Grounding in basic knowledge in derivatives
  - What they are
  - How they are priced and hedged
  - How they are used in finance
- An introduction to the more sophisticated part of finance so that you may appreciate the current going-ons and so that you can “take it away” from here
- An direct glimpse into the industry through the eyes of a practitioner

# Study materials

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- Lecture slides
  - Point-form: explanation will be done in class
- Notes that you will take down in class
- Reference textbook
  - Options, Futures and other Derivatives (John C. Hull)
- There's an overabundance of materials – we will not cover everything

# Prerequisites

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- It is assumed that you have basic mathematical skills, up till either the JC or polytechnic level in the Singapore education system, in particular basic calculus
  - Differentiation (product rule, quotient rule, etc.)
  - Integration (area under graph, by-parts, substitution)
- It is assumed that you have some interest in finance and that you will supplement gaps in knowledge by self-reading

# The People

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- AP Tan Chong Hui
  
- Invited Lecturers
  - Dr Chan Onn (Credit Suisse)
  - Mr Max Wong Chan Yue (Std. Chrt.)
  - Mr Tay Teck Chye (United Overseas Bank)

# Dates

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- This is a 12-week course
- Part 1 : 1<sup>st</sup> 7 lectures
  - Lectures 1- 6: Basics of Derivatives
  - Lecture 7: Presentation (+ lecture)
- Part 2 : 2<sup>nd</sup> 5 lectures (after the 1-week break)

# Caveats

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- This is quite a substantial course – there are homework, mini-projects, and an exam. Be prepared to work hard and think hard.
- Don't miss a class if you can. It always takes at least twice the effort to play catching-up
- I wish to take the course at a comfortable pace. Constant feedback and probing from you will help. On the other hand, you need to keep up by reading to make sure you understand.
- In addition to the Questions from the slides which you are required to work on, you are also encouraged to seek out practice questions from the textbook that are relevant to the lecture and do them. Reading newspapers and books on the subject of derivatives is also immensely helpful.

# Assessment

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- Class Test on basic derivatives: 35%
- Product Analysis presentation (class participation): 15%
- Project(s)/test(s) on exotics and structures by Adjunct Faculties: 2x25%

# Getting help

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- Informal discussion sessions in between formal lectures
  
- Office hours: Wednesdays 4pm – 5pm

# Course Outline – Part 1

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- Financial Markets – a Derivative-centric View
- Underlying Assets and Reference Indices
- Forwards and Futures
- Swaps
- Options

# Course Outline – Part 2

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- Part 2A (Mr Tay TC): Market Practice and Implications
  - Credit default swaps
  - Credit indices
  - CDOs
- Part 2C (Dr Chan Onn): Structured Products
- Part 2B (Mr Max Wong): ?

# Main Reference Book

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- Options, Futures and other Derivatives – John C. Hull

# Other Reference Books

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- Derivatives: Markets, Valuation, and Risk Management (Robert E. Whaley)
- FX Options and Structured Products (Uwe Wystup)
- Structured Equity Derivatives (Harry M. Kat)
- Synthetics and Structured Assets (Eric Banks)
- Paul Wilmott on Quantitative Finance (Paul Wilmott)
- Global Securitisation and CDOs (John Deacon)
- Active Credit Portfolio Management: a Practical Guide to Credit Risk Management Strategies (J. Felsenheimer et. al.)
- An Introduction to Repo Markets (M. Choudhry)
- Foreign Exchange: A Practical Guide to the FX Markets (Tim Weithers)
- Trading and Exchanges: Market Microstructure for Practitioners (Larry Harris)

# Crucial dates

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- 13/10, 20/10 – Mr Tay TC
- 27/10, 3/11 – Mr Max Wong
- 10/11 – Dr Chan Onn
- (2<sup>nd</sup> half classes are held between 7-10pm)

# Exam date

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- 29 Nov 2010
- Monday, 5pm

# Relevant chapters from Hull

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- Underlying assets
  - 1, 4
- Forwards and Futures
  - 2, 3, 5, 6
- Swaps
  - 7
- Options
  - 8, 9, 10, 11, 13, 15, 16