This course covers the foreign exchange market and its related derivative instruments – the later being forward contracts, futures, options, and some exotic options.

What is unusual about foreign exchange is that although it can rightfully claim to be the largest of all financial markets it remains an area where very few practitioners have had any meaningful experience. Virtually everyone has traded stocks, bonds, and mutual funds. Comparatively few individuals have ever traded foreign exchange. In part that is because foreign exchange is an interbank market.

Yet ironically the foreign exchange markets may be the best place to trade derivatives – and, for that matter, invent new derivatives -- given the massive two-way flow of trading that goes though bank dealing rooms virtually twenty-four hours a day. And most of that is transacted at razor-thin margins, at least comparatively speaking, a fact that makes the foreign exchange market an ideal platform for derivatives.

Much of that changed, at least for a time, in the context of the 2008 market crisis and its aftermath. We will discuss is how the crisis disrupted the usual market conditions. Interesting things, many unprecedented, occurred in this period. Understanding what happened is essential for students planning careers in finance.

The emphasis in this course is on getting the student familiar with the nature of the foreign exchange market and on those factors that make it special among financial markets. This hopefully will enable the student to gain a deeper understanding of the related market for derivatives on foreign exchange.

The mathematical requirements for this course are rather on the basic level – we stick to mainstream models that capture most of what is important about currency
derivatives. By necessity we will sometimes find ourselves discussing ideas from economics. But first, to get anywhere the student must adopt correct market terminology as well as acquire some basic knowledge of the history of the market. So that is where we will start.

Each lecture has Powerpoint slides that I use as my cue cards for the presentations. These are posted on our www.courseworks.columbia.edu. I suggest you print out the slides for note taking. There are also postings of the key articles that I want you to read.

This course depends heavily on my book Options on Foreign Exchange, Third edition (2011) ("OFE"). In actual fact, I wrote the third edition for this course. **Warning: Do not try to use previous editions!**

Another volume, one that I edited, Currency Derivatives, contains the scientific papers that are the foundation of the currency derivatives market. You may find this handy.

There are also useful materials in my Central Banking and Monetary Policy in Emerging Markets Nations ("CBMPEM") (published by The Research Foundation of the CFA Institute). This book is posted in its entirety on our www.courseworks.columbia.edu.

And if you have not had enough of DeRosa’s books, there is my new Foreign Exchange Operations (2014). It that can answer questions you may have as to the settlement of foreign exchange transactions, how money “moves” around the world, and the legal framework for this important market. Ever wonder what an IBAN number is? Or how SWIFT messages work? Or need to know how a FX Prime Broker functions? All that stuff and much more is in this book.

Note that I will most likely add materials during the course, so please check the site regularly.

Homework will not be graded.

One more thing. Please do not use the internet during class: No cell phones, IPADS, texting, twitter, Facebook, or NETFLIX. I need your full attention because this is a fairly demanding albeit short course.

**Lecture 1 Monday January 25**
Introduction to the Course
The Foreign Exchange Market
The spot foreign exchange market
A brief history of exchange rates
Alternative foreign exchange regimes
Market conventions

Lecture Notes: Spot FX
Lecture Notes: Foreign Exchange Agreements, Margin and Credit, and Settlement Processes

BIS Triennial Survey of Foreign Exchange 2013 Summary
BIS King and Rime 2010
OFE Chapter 1
CBMPEM Chapter 4
Homework Assignment 1: Foreign exchange exercises that are in the Lecture Notes.

Lecture 2 Monday February 1
Forward foreign exchange
Interest parity theorems
The valuation of forward contracts
Currency futures contracts
Non-Deliverable Forwards
The forward bias and carry trades

OFE Chapter 1
CBMPEM Chapter 4
Lecture Notes: Forward FX
Lecture Notes: NDFs

Froot
Kritzman
Froot and Thaler
Lipscomb

Homework Assignment: Internet Foreign Exchange Roll
Homework Assignment: Chinese RMB Forwards
Homework Assignment: IDR-Linked Note Term Sheet

Lecture Notes: Implications of Uncovered Interest Parity
Lecture 3 Monday February 8

Part I: Emerging Markets and Foreign Exchange Crises

CBMPEM Chapter 5
DeRosa: Congressional Testimony
DeRosa: IFC Seminar
DeRosa: Columbia Seminar April 2007: Ten Years after the SE Asian Crisis
Russian Federation’s Proclamation Aug 1998
IMF on the ERM Crisis
Memorabilia (Lest We Forget):
  - Bretton Woods is Kaput
  - Global Funds take a Fall
  - FT on Sterling Crisis
Lecture Notes: Forward FX in Crisis

Part II: The Swiss Franc 2015
Lecture Notes: Foreign Exchange Policy of the Swiss National Bank 2015
SNB Quarterly Bulletin March 2015

Lecture 4 Monday February 15

Part I: The 2008-2010 Crisis
OFE III pp 26-27

Lecture notes: 2008 Dollar Squeeze and the Fed’s Dollar Swap Lines

Lecture Notes: Cross Currency Basis Swaps

Goldberg, Kennedy and Miu (2011)

Part II: Intro to Currency Options

Put-Call Parity
Black-Scholes-Merton
Implied Volatility
Dynamic Hedging
The “Greeks”
Lecture Notes: Currency Options
OFE Chapters 2, 3 and 4

Lecture 5 Monday February 22

Part I: Currency futures options
Lecture Notes: Currency Futures Options

Part II: Foreign Exchange Option Volatility

Volatility History
Vega
The Volatility Surface
The Sticky Delta Rule
The Vanna-Volga Method

OFE Chapter 5
Lecture Notes: Notes on Vega
Lecture Notes: More on At-the-Money Volatility
Lecture Notes: FX Option Historical Volatility
Lecture Notes: Notes on Vega
Lecture Notes: The Volatility Surface
Lecture Notes: Vanna Volga

Malz: Financial Crises
WSJ: “Option Gauges Suggest Hedging Against USD/JPY Fall”

(Paper on Vanna-Volga)

Lecture 6 Monday February 29

Barrier and Binary Options
Closed-form Models
Binary and Trinomial Models
Finite Difference Methods

OFE Chapter 8 and 9
Lecture Notes: Barrier Options
Lecture Notes: Binary Options

FINAL EXAM: March 7 6:10-8:40 PM