



Advanced Energy Options & Derivatives



Course Date: TBD



Course Length:

2 days

8:30 a.m. – 4:30 p.m. EST
each day (includes 60 min.
lunch break)



In-Person Onsite



Instructor/ Host:

Richard Weissman
Nour Zekhmi

Questions?

For more information or to register,
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WHAT YOU WILL LEARN

This in-depth examination of advanced energy swaps and options is presented by Richard Weissman, an energy derivatives trader and highly acclaimed author with over thirty years of real-world trading experience. Learn what complex option and swap strategies are, how they work, why they are used, and where they are traded. Understand the benefits and limitations of various instruments and how they can be applied to speculative trading and commercial hedging strategies.

WHY YOU SHOULD ATTEND

What are the pros and cons of hedging with complex options and swap strategies? What are the benefits and drawbacks to hedging with exotic options vs. vanilla options, option spreads and exotic linear derivatives? How can exotic derivatives hedgers match their physical consumption and production profiles? We will cover all this and more during this dynamic three-day course. You'll gain a thorough and practical understanding of what exotic swaps and options are, how they work, how they are used, and how to measure the risks and rewards associated with them.

Topics covered include:

- A review of basic derivatives strategies
- The mathematics of options premiums, historical and implied volatility, and the Greeks
- Delta hedging and delta neutral
- Real-time trading and hedging examples for all products in energy markets using exotic swaps and options spreads and exotic options
- Options pricing models: Black-Scholes, Cox-Ross-Rubenstein and Monte Carlo
- Commonly employed exotics by energy risk managers: Asian options, rainbow options, puttable forwards, callable forwards, basis and swing swaps, EFPs, monthly power options, daily power options
- Popular options spread strategies used by commercial hedgers and speculators in energy: Collars, vertical debit spreads, backspreads, ratio writes, calendar spreads
- Popular options volatility spread strategies: Straddles, strangles, iron butterflies and iron condors
- Options arbitrage spread strategies: conversions, reversals, box spreads

Course Syllabus – Day One

Morning Session

Session 1: The Basics: A Review

This introductory session will review the basic options and linear derivative strategies. We'll provide you with an overview of why OTC instruments are used and specifically how they aid in minimizing basis risk in today's energy markets.

This session provides a review of options basics including:

- Why options are used by energy hedgers
- Basic options terminology including calls, puts
- Holders vs. writers
- In-the-money, at-the-money, and out-of-the-money options.
- The basic inputs for pricing options.

Session 2: Options basics – trading simulation

Using actual past price history attendees will make speculative options trading decisions. By the end of this trading simulation, you'll understand the difference between calls, puts, being a writer vs. being a holder, in-the-money, at-the-money and out-of-the-money, and how volatility impacts trading decisions in options.

Session 3: OTC energy swaps & other linear derivatives

This session will show how energy futures markets correlate with various spot markets and how hedging with various types of derivatives minimizes outright price risk as well as basis risk. Then we'll examine the two-tier hedging solution where commercial hedgers hedge outright price risk with exchange-traded futures and then hedge basis risk with locational basis swaps. The session also examines:

- EFPs vs. locational basis swaps
- Swing swaps
- Participation swaps
- Callable forwards
- Puttable forward

Session 4: Trading Natural Gas Basis Swaps

- This simulation uses historical natural gas hub pricing differentials to teach attendees how technical analysis is used to trade locational basis swaps.

Afternoon Session

Session 1: The Greeks

This session explores the impact of option delta, gamma, vega, and theta as the underlying asset moves over time. How does each impact price exposure, time decay (options are a depreciating asset), and volatility? We'll examine option hedging techniques, such as delta hedging and delta neutral position management, from both speculative and commercial hedging viewpoints.

Session 2: Directional option spread strategies

This session provides a detailed examination of the most popular various directional spread strategies used by commercial hedgers including collars and vertical debit spreads. We will emphasize matching directional spread strategies with the hedger's directional and volatility forecasts.

Session 3: Trading directional option spread strategies

In this session, attendees will trade collars and vertical debits spreads based on their directional and volatility views.

Session 4: Directional option spread strategies (continued)

This session provides a deeper dive into directional option spread strategies through an exploration of backspreads, ratio writes, Christmas trees and financed spreads. Emphasis is placed on matching the directional and volatility forecasts of the trader with the spread strategy. Lessons learned in this session will be concretized through a trading simulation based on directional and volatility charts.

Course Syllabus – Day Two

Morning Session

Session 1: Digital options

This session looks at one of the most popular and also one of the simplest of the “exotic” option strategies, digitals (aka, “binaries”). We’ll cover why they are popular, why they are a cost-effective alternative to vertical debit spreads, how dealers hedge digitals and how volatility impacts dealer replication.

Session 2: Option pricing models

This session looks at the various models for calculating theoretical option premiums and implied volatility of outright option positions, as well as option spreads. We will discuss the inputs used in calculating theoretical premiums, including the three most widely used models: Black-Scholes, Cox, Ross-Rubenstein, and Monte Carlo. Learn the strengths and weaknesses of each type of model and how traders compensate for these weaknesses.

Session 3: Algorithmic Trading in Energy Markets

This introduction to algorithmic trading in the energy markets discusses the history and evolution of algorithmic trading (including HFT Algos), where it stands today, its limitations and its future.

Session 4: Volatility

Take part in an in-depth examination of one of the most essential aspects of optionality risk and pricing — volatility. See how it is measured for the underlying commodity as well as the implied volatility of options. Learn how traders use technical analysis to help forecast future volatility trends and review appropriate trading strategies based on this information. Finally, we will examine volatility backwardation and skews, and how they help indicate the most appropriate strike prices and expiration dates for trading.

Afternoon Session

Session 1: Option spread strategies: Volatility spreads

This session shows how speculators can express their opinions about the future trend of volatility with a wide array of non-directionally biased option spread strategies including straddles, strangles, iron butterflies, iron condors and calendar spreads. The session includes a trading simulation where attendees analyze directional and volatility charts in order to decide which volatility spread will be most profitable in light of their market view.

Session 2: Trading Simulation: Volatility spreads

In this trading simulation, attendees analyze directional and volatility charts in order to decide which volatility spread will be most profitable in light of their market view.

Session 3: Option spread strategies: Synthetic spreads

This session covers simple synthetic option spreads such as synthetic long calls and puts, synthetic short calls and puts, as well as a review of synthetic long and short futures (aka collars). We then move on to options arbitrage spreads such as conversions, reversals, box spreads and jelly rolls. We also will discuss the risks inherent in implementing these, “riskless” strategies including margin and pin risk.

Session 4: Exotic option strategies

We’ll close the course with an in-depth look at exotic options including Asians, lookbacks, barriers, step-structure digitals, rainbows (spread options and best of options), contingent premiums (aka “pay later”), double barrier box spreads, compounds, one-touch, swing options and embedded swing options. We’ll look at why each strategy is used by hedgers (and/or speculators) as well as how dealers replicate their exposures in exotics (which aids in understanding pricing of these structures).

MEET YOUR INSTRUCTOR

Mr. Richard Weissman is one of the world's foremost authorities and thought leaders in the fields of derivatives, risk management and technical analysis. He is the author of two books: *Mechanical Trading Systems: Pairing Trader Psychology with Technical Analysis* (Wiley, 2004) and *Trade Like a Casino: Find Your Edge, Manage Risk and Win Like the House* (Wiley, 2011) which was a finalist for the 2012 Technical Analyst Book of the Year Award.

Richard has more than 30 years of experience as a derivatives trader and has provided training and consultation services to traders and risk managers at investment banks, hedge funds, energy and agricultural companies for more than 20 years. He has helped train staff from virtually every major firm that uses derivatives including Morgan Stanley, Citicorp, Exxon-Mobil, Shell, Exelon, Cargill, CFTC, EIA, Platts, Intercontinental Exchange and CME Group. He has been the featured speaker at leading industry conferences throughout the world.

Richard provides state-of-the-art training and consulting solutions for traders, risk managers and professionals supporting traders and risk managers. Although his primary focus continues to be serving the needs of the energy and agriculture industries, many of the courses and risk management solutions he provides are applicable to all asset classes including foreign exchange, interest rates, equities, metals and softs.



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