

EMGT 4013: *Fundamentals in Energy Commodity Trading*
Spring 2011

Professor: Tom Seng

Office – Helmerich Hall, 2nd Floor Adjuncts' Office

Office Hours: N/A

Phone: (918) 858-4937 8 am – 5pm. Cell phone: 918-809-2755

E-mail: tom-seng@utulsa.com

Course Outline: This course has been designed to give students, who are considering a career in the energy industry, a keen understanding and appreciation of the physical chain of natural gas from the “wellhead-to-burnertip” with all economics along the way. In addition, they will learn the regulatory background of the industry, contracts, physical and financial trading (NYMEX contract, Basis Swaps, Option and Hedging), elementary technical analysis, risk control and weather derivatives.

Course Goals: At the end of the semester, students will have developed:

- A strong foundation in understanding how the commodity gets to market and, once there, how it is priced and traded.
- A working vocabulary of industry related terms and terminology
- An understanding of how natural gas and related services can be hedged to minimize risk.
- An appreciation of the diverse opportunities in physical and financial trading, scheduling and, risk control.
- Students will be able to walk into any Energy Trading Floor and understand what is going on around them.

Attendance Policy: Attendance is **mandatory** and will be taken at the beginning of class and immediately after break. If you have two absences, your grade will automatically be lowered one letter at the end of the semester. This course is heavily geared toward the lectures as there are few resources that are available which can cover this material.

Dress Code: Please maintain a clean, neat appearance.

Seating Assignments: Students will choose a seat the first night of class and will be assigned that seat for the remainder of the semester.

Cell Phones: All cell phones are to be turned off or put in the silent mode. Should you receive a call that you need to answer, please leave the classroom. Texting during class is prohibited. Anyone who is obviously using their cell phone for this purpose will be asked to leave that session.

Use of Classroom PCs: Computers in the classroom are to be used for this course only. There is to be no “web surfing”, instant messaging or, checking email during scheduled class time.

Grades: Grades will be determined by the following scale:

Grade Calculation

1) Mid-term Exam	35%
2) Final Exam	40%
3) Weekly Assignments & Quizzes	10%
4) Trading Log	10%
6) Class Participation	5%
Total	100%

A= 90-100, B= 80-89, C= 70-79, D= 60-69, F= 60 & below

Weekly Class Format:

6:00- 6:05	Class begins & attendance taken
6:05 -6:15	Quiz over reading assignments (1 st 10 weeks)
6:30 -7:15	Weekly Topics

Required Text: *“Fundamentals of Trading Energy Futures & Options”*
Errera & Brown – PennWell Publishing.

“Pipe Dreams” Robert Bryce – Harcourt

“Introduction to Technical Analysis” Martin Pring

Student Conduct:

Students are expected to maintain the highest standards of conduct both in and outside of the classroom. Dishonesty such as cheating, plagiarism, forgery, or disruption of the class in any way will not be tolerated, and may subject students to penalties ranging from failing grades to dismissal. See the University of Tulsa Undergraduate Bulletin for more information.

Students with Disabilities:

Students should contact the Center for Student Academic Support to self-identify their needs in order to facilitate their right under the Americans with Disabilities Act. The Center for Student Academic Support is located in Room 59 of the Holmes Student Center.

Spring 2011 Tom Seng

TEXTBOOKS

<u>Title</u>	<u>Author</u>	<u>Required</u>
“Fundamentals of Trading Energy Futures & Options”	Errera & Brown	YES
“Pipe Dreams”	Robert Bryce	YES
“Introduction to Technical Analysis”	Martin Pring	YES
“The Prize...”	Daniel Yergin	NO

Recommended Websites

www.naturalgas.org

“Beginning the Search for Natural Gas” thru
“Distribution”

www.nymex.com

www.aga.org

www.eia.doe.gov

Phone # - Work 918-858-4937 Cell 918-809-2755 Email – tom-seng@utulsa.edu

Fundamentals in Energy Commodity Trading

COURSE OUTLINE

01/10&12 *Discussion of the overall Energy Industry*

- 1) Overview of Course Outline and Assignments
 - a. Weekly Assignments
 - b. Trading Journal
- 2) Renewable Energy Sources
 - a. Wind
 - b. Hydro
 - c. Nuclear
 - d. Biomass
- 3) Non-Renewable Energy Sources
 - a. Coal
 - b. Crude Oil
 - c. NGLs
 - d. Natural Gas
- 4) Supply/Demand Fundamentals
 - a. Economic
 - b. Weather
 - c. Market Impact
- 5) Natural Gas – A Template
- 6) Definition of Natural Gas and Components & MMBtu Conversion Factors
- 7) Supply/Demand Picture
- 8) Initial Pricing Discussion - Historicals

01/19 *Understanding the Physical Path of NatGas/Crude/NGLs from Supply Areas to Market Areas*

- 1) “Wellhead to Burner-tip”: Wellhead/Gathering/Processing/Transport/Storage/Distribution
- 2) Exploring Cost/Revenue Economics Along the Path
- 3) Supply Basins & Market Areas
- 4) Examples of End-Users
- 5) Regulatory History of Natural Gas (How did the “spot” market develop?)

01/24&26 *Various Costs Associated with Transporting Nat Gas/Crude/NGLs*

- 1) Pipeline Tariffs – Minimum/Maximum Rates & Fuel
- 2) Levels of Service – FT/IT, FSS/ISS, “PALS”
- 3) Costs for Storage Service
- 4) Transportation Contracts – Key Provisions
- 5) Gas Pipeline Scheduling – Nominations
- 6) Crude delivery systems/rates
- 7) NGL delivery systems/rates

01/31&02 *Contracting For Natural Gas*

- 1) NAESB Standard
- 2) Gathering Agreements
- 3) Processing Agreements
- 4) Joint Operating Agreements

02/07&09 *Pricing Methodologies*

- 1) Historical
- 2) Survey Method
- 3) Publications – *Inside F.E.R.C, Gas Daily, NGI, OPIS*
- 4) Online Data

02/14&16 *NYMEX Contract for Nat Gas/Crude/RBOB/Heating Oil*

- 1) History of the Exchange
- 2) Commodities Traded
- 3) Contract Specifications
- 4) “Pit” Trading
- 5) “Floor” Personnel
- 6) Types of Orders and Order Flow

02/21&23 *Technical Analysis (Martin Pring – “Introduction to Technical Analysis”)*

- 1) Fundamental vs. Technical
- 2) Chart Types and Usages
- 3) Trendlines and Market Signals
- 4) Momentum Indicators

02/28&03/02 *Mid-Term Exam/Lecture on Deal Structure*

- 1) Components of a Natural Gas Transaction
- 2) Wellhead to Burner-tip Delivery Costs
- 3) Trade Journal Commencement – NatGas/Crude/RBOB/HO

03/07&10 *Basic Hedging*

- 1) Establishing Fixed-Price
- 2) Use of “Basis” (for Natural Gas)
- 3) Producer Hedging
- 4) End-User Hedging
- 5) Transport Hedging
- 6) Storage Hedging

03/14&16 – *Spring Break*

03/21&23 *Advanced Hedging*

- 1) Hedge Problems
- 2) Swaps
- 3) Options

03/28&30 *Introduction to the Power Industry and Electricity Trading*

- 1) Infrastructure
- 2) NARCs
- 3) Wheeling/Tolling/Transmission
- 4) Trading Specifications
- 5) Pricing
- 6) Tariffs

04/04&06 *“Demand-side” Energy Management*

- 1) Demand Response
- 2) “Time of Day” rates
- 3) “Peak Shaving”
- 4) “Best Practices”

04/11&13 *Introduction to Weather Derivatives*

- 1) Heating Degree Days
- 2) Cooling Degree Days
- 3) Contract Specifications
- 4) Uses (Hedging)

04/18&20 *Introduction to Risk Control*

- 1) Background – Case Studies
- 2) Implementation in the Energy Industry
- 3) Responsibilities
- 4) New Reporting Requirements

04/25&27 Second-half Semester Review & Practice Hedging Problems

05/02/10 Final Exam