

## **University of Wisconsin-Madison**

### **AAE 322 Commodity Markets**

**Credit:** 3

**Canvas Course URL:** <https://canvas.wisc.edu/courses/125242The>

**Meeting Time and Location:** TuTh 2:30-3:45PM; Russell Lab 184

**Course Designations and Attributes:** General education

**Instructional Mode:** Lecture and discussion

**How Credit Hours are met by the Course:** This class meets for two 75-minute class periods and one discussion section each week over the spring semester and carries the expectation that students will work on course learning activities (reading, writing, problem sets, studying, etc) for about 4 hours out of classroom for every class period. The syllabus includes more information about meeting times and expectations for student work.

**Instructor Title and Name:** Associate Professor Sheldon (Xiaodong) Du

**Instructor Availability (Office hours):** TuTh 1-2pm, or by appointment; 331 Taylor Hall

**Instructor Email:** [xdu23@wisc.edu](mailto:xdu23@wisc.edu)

**Teaching Assistant:** Itzel De Haro Lopez

**TA Office Hour:** MW 10:30-11:30am; 221 Taylor Hal

**TA Email:** [deharolopez@wisc.edu](mailto:deharolopez@wisc.edu)

### **Course Description**

Principles and practices in marketing systems for U.S. agricultural commodities. Vertical organization; forward contracts, future markets, agricultural options and price formation. Alternate management at the farm, processor, wholesale and retail levels.

### **Requisites**

AAE 215 or ECON 101 or equivalent

### **Course Objectives**

The intentions of this course are twofold: to (1) explain the purpose of and major operations in commodity market institutions, and (2) apply economic logic and quantitative techniques to understand price relations in commodity markets. We will learn,

- (i) Mechanics of trading commodities and related assets, mainly forward, futures and options.
- (ii) Strategic approaches to trading activities,

- (iii) Information and risk management when trading goods, and
- (iv) Valuation of claims on commodities.

After taking this course, you should be able to

1. Understand the operations of institutions of commodities,
2. Be familiar with trading terminologies commonly used,
3. Analyze temporal and spatial hedging, arbitrage, and speculation strategies,
4. Value positions in forward, futures, and options markets using arbitrage analysis.

### **Grading**

The final grade for the class will be calculated using the following weights:

Participation	5%
Problem sets	30%
In-class quizzes	25%
Exams	40%

The final grade will be determined by the following percentages: A:  $\geq 90\%$ , AB: 85%-89%, B: 80%-84%, BC: 75%-79%, C: 70%-74%, D: 60-69%, F:  $<60$ .

### **Discussion Sessions**

Discussion sessions will be led by TA on Friday.

### **Laboratory Sessions**

One lab session will be held on March 8<sup>th</sup> in the CALS computer lab (Animal Science 204). We will discuss details of using the TT platform for trading commodity futures.

### **Recommended Textbooks and Other Course Materials**

1. Carter, A. Colin. 2003. *Futures and Options Markets: An Introduction*. Prentice-Hall: Upper Saddle River, NJ. ISBN: 978-1-57766-553-3. (*Carter*)
2. Kolb, W. Robert, and Overdahl, A. James. 2006. *Understanding Futures Markets (6<sup>th</sup> ed.)*. Blackwell Publishing. ISBN: 978-1-4051-3403-3. (*KO*)

The following book and materials are also useful,

1. Hull, John C. 2011. *Fundamentals of Futures and Options Markets, (7<sup>th</sup> ed.)*. Pearson, Prentice-Hall. (*Hull*).
2. Chicago Mercantile Exchange. 1992. *An Introduction to Futures and Options*. CME Education Department: Chicago. (*CME*) [http://www.cmegroup.com/files/intro\\_fut\\_opt.pdf](http://www.cmegroup.com/files/intro_fut_opt.pdf)

### **Exams, Quizzes**

There will be two closed notes, in class quizzes and two midterm exams.

Make-up exams will be given only under extenuating circumstances, for which appropriate documentation will be required, and if advance arrangements are made with the instructor.

Final exam (optional; comprehensive): **05/06/2020 (Tuesday), 2:45pm-4:45pm** (Location: TBD). If you choose to take the final, your score will be averaged with that of the lowest midterm.

### **Homework**

About eight problem sets will be assigned. Students are required to finish independently.

Late assignments will be penalized with 10 points for each day of lateness, unless you have obtained prior approval, or in the case of an unforeseen emergency. Written notification from your advisor or doctor will be required in both instances.

### **Academic Integrity**

By enrolling in this course, each student assumes the responsibilities of an active participant in UW-Madison's community of scholars in which everyone's academic work and behavior are held to the highest academic integrity standards. Academic misconduct compromises the integrity of the university. Cheating, fabrication, plagiarism, unauthorized collaboration, and helping others commit these acts are examples of academic misconduct, which can result in disciplinary action. This includes but is not limited to failure on the assignment/course, disciplinary probation, or suspension. Substantial or repeated cases of misconduct will be forwarded to the Office of Student Conduct & Community Standards for additional review. For more information, refer to [studentconduct.wisweb.wisc.edu/academic-integrity/](http://studentconduct.wisweb.wisc.edu/academic-integrity/).

### **Accommodations for Students with Disabilities**

**McBurney Disability Resource Center syllabus statement:** "The University of Wisconsin-Madison supports the right of all enrolled students to a full and equal educational opportunity. The Americans with Disabilities Act (ADA), Wisconsin State Statute (36.12), and UW-Madison policy (Faculty Document 1071) require that students with disabilities be reasonably accommodated in instruction and campus life. Reasonable accommodations for students with disabilities is a shared faculty and student responsibility. Students are expected to inform faculty [me] of their need for instructional accommodations by the end of the third week of the semester, or as soon as possible after a disability has been incurred or recognized. Faculty [I], will work either directly with the student [you] or in coordination with the McBurney Center to identify and provide reasonable instructional accommodations. Disability information, including instructional accommodations as part of a student's educational record, is confidential and protected under FERPA." <http://mcburney.wisc.edu/facstaffother/faculty/syllabus.php>

### **Diversity & Inclusion**

**Institutional statement on diversity:** “Diversity is a source of strength, creativity, and innovation for UW-Madison. We value the contributions of each person and respect the profound ways their identity, culture, background, experience, status, abilities, and opinion enrich the university community. We commit ourselves to the pursuit of excellence in teaching, research, outreach, and diversity as inextricably linked goals.

The University of Wisconsin-Madison fulfills its public mission by creating a welcoming and inclusive community for people from every background – people who as students, faculty, and staff serve Wisconsin and the world.” <https://diversity.wisc.edu/>

**Tentative Course Schedule:**

<b>Week 1</b>		
1/21/2020 (Tu)	Introduction	
1/23 (Th)	Introduction to Forwards	KO Ch. 1
<b>Week 2</b>		
1/28	Introduction to Futures	KO Ch. 1
1/30	Introduction to Futures	KO Ch. 1
<b>Week 3</b>		<i>Problem set 1 due</i>
2/4	Introduction to Futures	KO Ch. 1
2/6	Introduction to Options	KO Ch. 12&13
<b>Week 4</b>		<i>Problem set 2 due</i>
2/11	(Quiz 1) Introduction to Options	KO Ch. 12&13
2/13	Introduction to Options	KO Ch. 12&13
<b>Week 5</b>		<i>Problem set 3 due</i>
2/18	Guest Lecture	
2/20	Synthetic Futures Positions and Put-Call Parity	KO Ch. 12&13
<b>Week 6</b>		<i>Problem set 4 due</i>
2/25	Synthetic Futures Positions and Put-Call Parity	KO Ch. 12&13
2/27	Building Blocks of Technical Analysis	
<b>Week 7</b>		
3/3	Guest Lecture	
3/5	Midterm I	
<b>Week 8</b>		
3/10	Option Position Strategies	Carter Ch. 8 and KO Ch. 12&13
3/12	Option Position Strategies	Carter Ch. 8 and KO Ch. 12&13

<b>Week 9</b>		
3/17	Spring break; no class	
3/19	Spring break; no class	
<b>Week 10</b>		<i>Problem set 5 due</i>
3/24	Futures Prices Over Time	Carter Ch. 3 and KO Ch. 3
3/26	Spread	Carter Ch. 3 and KO Ch. 3
<b>Week 11</b>		<i>Problem set 6 due</i>
3/31	Basis	Carter Ch. 3 and KO Ch. 3
4/2	Introduction to Hedging I	Carter Ch. 7
<b>Week 12</b>		
4/7	Introduction to Hedging I	Carter Ch. 7
4/9	(Quiz 2) Introduction to Hedging II	Carter Ch. 7&9
<b>Week 13</b>		<i>Problem set 7 due</i>
4/14	Introduction to Hedging II	Carter Ch. 7&9
4/16	Guest Lecture (Katie Burgess; Blimling)	
<b>Week 14</b>		
4/21	Hedging with Options	Carter Ch. 7&9
4/23	Midterm II	Carter Ch. 7&9
<b>Week 15</b>		<i>Problem set 8 due</i>
4/28	Option Pricing	
4/30	Final Review	