

## **University of Wisconsin-Madison**

### **AAE 322 Commodity Markets**

**Credit:** 4

**Canvas Course URL:** <https://canvas.wisc.edu/courses/277567>

**Meeting Time and Location:** TuTh 2:30-3:45PM; Biochem 1125

#### **Course Designations and Attributes:**

**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): Th 1-2pm, or by appointment; 331 Taylor Hall

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

**Teaching Assistant:** Ziheng Liu

**TA Office Hour:** Tu 3:55-4:55pm; 517 Taylor Hal

**TA Email:** [zliu533@wisc.edu](mailto:zliu533@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 Learning Outcomes**

1. Understand the purpose of and major operations in commodity market institutions.
2. Apply economic logic and quantitative techniques to understand price relations in commodity markets.
3. Understand spatial and temporal dynamics of futures prices of agricultural commodities.
4. Analyze risk management strategies using futures and options.

#### **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

A lab session will be held at 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): **05/13/2022 (Friday), 12:25pm-2:25pm** (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.

## **Teaching & Learning Data Transparency Statement**

The privacy and security of faculty, staff and students' personal information is a top priority for UW-Madison. The university carefully evaluates and vets all campus-supported digital tools used to support teaching and learning, to help support success through [learning analytics](#), and to enable proctoring capabilities. View the university's full [teaching and learning data transparency statement](#).

## **Privacy of Student Records & the Use of Audio Recorded Lectures Statement**

View [more information about FERPA](#).

Lecture materials and recordings for this course are protected intellectual property at UW-Madison. Students in this course may use the materials and recordings for their personal use related to participation in this class. Students may also take notes solely for their personal use. If a lecture is not already recorded, you are not authorized to record my lectures without my permission unless you are considered by the university to be a qualified student with a disability who has an approved accommodation that includes recording. [Regent Policy Document 4-1] Students may not copy or have lecture materials and recordings outside of class, including posting on internet sites or selling to commercial entities, with the exception of sharing copies of your personal notes as a notetaker through the McBurney Disability Resource Center. Students are otherwise prohibited from providing or selling their personal notes to anyone else or being paid for taking notes by any person or commercial firm without the instructor's express written permission. Unauthorized use of these copyrighted lecture materials and recordings constitutes copyright infringement and may be addressed under the university's policies, UWS Chapters 14 and 17, governing student academic and non-academic misconduct.

## **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>		
1/25/2022 (Tu)	Introduction	
1/27 (Th)	Introduction to Forwards	KO Ch. 1
<b>Week 2</b>		
2/1	Introduction to Forward	KO Ch. 1
2/3	Introduction to Futures	KO Ch. 1
<b>Week 3</b>		<i>Problem set 1 due</i>
2/8	Introduction to Futures	KO Ch. 1
2/10	Introduction to Futures	KO Ch. 1
<b>Week 4</b>		<i>Problem set 2 due</i>
2/15	Introduction to Futures	KO Ch. 12&13
2/17	(Quiz 1) Introduction to Options	KO Ch. 12&13
<b>Week 5</b>		<i>Problem set 3 due</i>
2/22	Introduction to Options	KO Ch. 12&13
2/24	Synthetic Futures Positions and Put-Call Parity	KO Ch. 12&13
<b>Week 6</b>		<i>Problem set 4 due</i>
3/1	Synthetic Futures Positions and Put-Call Parity	KO Ch. 12&13
3/3	Synthetic Futures Positions and Put-Call Parity	KO Ch. 12&13
<b>Week 7</b>		
3/8	Building Blocks of Technical Analysis	
3/10	Midterm I	
<b>Week 8</b>		
3/15	Spring break; no class	
3/17	Spring break; no class	
<b>Week 9</b>		
3/22	Option Position Strategies	Carter Ch. 8 and

		KO Ch. 12&13
3/24	Option Position Strategies	Carter Ch. 8 and KO Ch. 12&13
<b>Week 10</b>		<i>Problem set 5 due</i>
3/29	Futures Prices Over Time	Carter Ch. 3 and KO Ch. 3
3/31	Futures Prices Over Time	Carter Ch. 3 and KO Ch. 3
<b>Week 11</b>		<i>Problem set 6 due</i>
4/5	Spread	Carter Ch. 3 and KO Ch. 3
4/7	Basis	Carter Ch. 3 and KO Ch. 3
<b>Week 12</b>		
4/12	Introduction to Hedging I	Carter Ch. 7
4/14	Introduction to Hedging II (Quiz 2)	Carter Ch. 7&9
<b>Week 13</b>		<i>Problem set 7 due</i>
4/19	Introduction to Hedging II	Carter Ch. 7&9
4/21	Guest Lecture	
<b>Week 14</b>		
4/26	Guest Lecture	
4/28	Midterm II	Carter Ch. 7&9
<b>Week 15</b>		<i>Problem set 8 due</i>
5/3	Hedging with Options	Carter Ch. 7&9
5/5	Option Pricing	