Agricultural and Applied Economics (AAE) 419
Agricultural Finance

1. Administrative Details

Credits:	3.0
Instructional mode:	Lecture
Day & Time:	Tues/Thurs, 11:00 am – 12:15 pm
Semester:	Spring 2025
Dates:	January 21 – May 2, 2025
Room:	209 Animal Science Building
Instructor:	Jing Yi, PhD
E-mail:	jing.yi@wisc.edu
Office:	Taylor Hall Room 218
Office hours:	Tues/Thurs (2:15 pm – 3:15 pm) or by appointment
Class website:	https://canvas.wisc.edu/courses/432144
Course designations/ attributes:	50% graduate credit
Instructional mode:	Face-to-face
Prerequisites:	AAE 215, ECON 101, or 111, or graduate/professional standing

Feel free to reach out to me by email if you have any questions or concerns. I'll do my best to respond within 24 hours, so don't hesitate to send a follow-up if you don't hear back from me in that time.

You're also welcome to drop by during my office hours—I'd love to chat and help out.

2. Course description

Introduction to fundamental and advanced finance and accounting concepts, methodologies and applications related to agricultural business. Topics include financial statements, ratio analysis and interpretation, investment analysis, capital budgeting, risk management, credit markets and forecasting.

3. Learning Objectives & Outcomes

This course aims to provide students with an in-depth understanding of financial

principles and methods as they apply to managing the financial resources of agricultural businesses. It integrates advanced quantitative financial analysis, decision-making, and strategic management specific to the agricultural sector. Students will be required to apply their knowledge to complex issues in the discipline, engage with the latest research, and demonstrate a higher level of synthesis and analysis.

With these objectives in view, students will delve into topics encompassing quantitative financial analysis, decision analysis, and firm management. Special emphasis is placed on financial management challenges specific to agricultural businesses, yet the concepts covered in this course are universally applicable to various business forms. Throughout the course, students will harness Microsoft Excel to acquire proficiency in utilizing formulas, functions, graphs, and other statistical methods relevant to financial analysis and financial management.

The course is divided into three distinct sections. In the first section, we explore in-depth financial analysis and control, covering complex accounting principles, advanced financial strategies, and key ratios used for assessing firm performance. The second section delves into advanced capital budgeting techniques, with a focus on evaluating complex short and long-term investments using discounted cash flows and time value of money concepts. The final section delves deep into credit markets, covering various financing sources, credit risk analysis, and forecasting. It also introduces students to international agricultural finance and modern finance trends.

In completing this class, students will:

- Correctly interpret accounting and financial statements.
- Explain the time value of money and how this concept relates to interest rates.
- Conduct firm-level investment analyses and develop capital budgeting strategies.
- Summarize characteristics of agricultural credit and capital markets for both borrowers and lenders.

Additional Learning Goals for Graduate Students:

- Construct comprehensive financial analyses of agricultural enterprises, employing advanced quantitative methodologies and techniques that extend beyond basic financial statement interpretation.
- Integrate recent literature in financial analyses to support informed decision-making in management.

4. Textbook & Software

4.1 Recommended Textbooks

1) Barry, P.J., and Ellinger P.N., Financial Management in Agriculture, 7th Edition, Publisher: Pearson Prentice Hall
   Print ISBN: 9780135037591, 013503759X
   eText ISBN: 9780133003666, 0133003663

2) Ronald Kay, William Edwards, and Patricia Duffy, 9th or 10th Edition, Publisher: McGraw-Hill Education
   ISBN10: 1264532644
   ISBN13: 9781264532643

3) Mayes, Timothy R. Financial Analysis with Microsoft Excel, 9th Edition
   Publisher: Cengage
   ISBN: 9780357442050

Generally, you will be required to complete the associated reading of the Barry and Ellinger text each week. The Mayes text will serve as a resource for the related Excel exercises. Unless otherwise noted, you are not required to complete the Mayes readings before class as I will cover the important material during class time. However, you will find it a useful resource to review after class and for the take-home assignments.

4.2 Software

We will use Microsoft Excel for our assignments in this course, which is available to download for free from the UW Campus Software Library. A basic understanding of Excel will be necessary to succeed in this course. Some students may find it useful to take AAE 335: *Introduction to Data Analysis using Spreadsheets* to develop the required knowledge of Excel to succeed in this class. I will also provide a review of the basics of Excel during the first week of class. Nonetheless, if you have challenges with the Excel assignments, please e-mail me or see me in my office hours.

Note that you are expected to bring a laptop to class with Excel in order to follow-along with the lecture material and in-class assignments. If you do not have a laptop you can borrow or rent one from the UW-Madison Computer Lending Program or UW-Madison Libraries. If you use UW-Madison laptops, you should make sure to save your work online, such as in your Wisc Box.

If you use a Mac computer, please note that some of the Excel displays, functions and formulas may be slightly different from what I teach in class. If you have trouble following a

particular example, please e-mail me or see me during office hours. Alternatively, students are usually able to find a solution online by searching for the particular topic with "Excel in Mac". A final option is to borrow a PC laptop from the above resources, but this is usually unnecessary.

5. Course Requirements & Grading

The distribution of points for your final grade in this course is as follows:

Quizzes (4)	20% (5% each)
Take-home Assignments (5)	30% (6% each)
Mid-term	25% (Undergraduate); 20% (Graduate)
Final exam	25% (Undergraduate); 20% (Graduate)
Case study	-- 10% (Graduate)

Grades will be allocated as follows:

A	94% - 100%
AB	87% - 93%
B	80% - 86%
BC	74% - 79%
C	68% - 73%
D	60% - 67%
F	< 60%

- *Late Assignments:* Late assignments receive a 10% deduction of the total grade for each day that they are turned in past the deadline up to three days.

- Each student is allowed one instance of a late submission without penalty. This grace period allows for a delay of up to 12 hours after the original deadline.

- Case study (Graduate: 10%)

A case study will be required for graduate students to practice and demonstrate additional applied financial analysis skills. This includes the ability to integrate current research in financial analysis to make management decisions. Graduate students are expected to provide a presentation and a written report with the following objectives:

- Develop a profitability analysis model of a firm.
- Calculate and interpret at least one profitability, liquidity, solvency, and efficiency ratio.

- Discuss the strengths and weaknesses of a firm as identified by ratio analysis.
- Present any other information that could be helpful in improving a firm's financial performance.
- Integrate recent literature in financial analyses to support informed decision-making in management.

6. Course Outline

Week	Topics	Readings
Week 1	*Introduction:* 1. Nature and scope of Financial Management 2. Excel Review	BE Ch. 1 Mayes Ch. 1
Week 2	*Financial Statements:* 1. Balance Sheet 2. Income Statement 3. Cash Flow Statement	BE Ch. 2 Mayes Ch. 2
Week 3	*Financial Analysis & Control* 1. Profitability 2. Risk 3. Liquidity	BE Ch. 3 Mayes Ch. 3
Week 4	*Financial Planning & Feasibility Analysis:* 1. Financial feasibility 2. The cash budget 3. Debt structure 4. Asset financing 5. Credit scores	BE Ch. 4 Mayes Ch. 4
Week 5	*Credit Risk* 1. Risk rating systems 2. Break-even analysis 3. Leverage analysis	BE Ch. 5 Mayes Ch. 5
Week 6	*Capital Structure, Leverage & Risk* 1. Cost of capital 2. Capital budgeting	BE Ch. 6 Mayes Ch. 7
Week 7 & 8	*Time Value of Money:* 1. Present value 2. Compounding 3. Future value	BE Ch. 8 Mayes Ch. 8
	Case Study: United Agricultural Cooperative: considering the sale of the agronomy division *Courtney Berner* *executive Director, UW Center for*	

	Cooperatives	
Week 9	*Risk Management:* 1. Diversification 2. Portfolio theory 3. Liquidity management	BE Ch. 7 Mayes Chs. 13 - 14
Week 10	*Spring Break*	
Week 11	*Investment Analysis & Costs of Financial Capital:* 1. Internal rate of return 2. Net present value 3. Interest rates 4. Borrowing costs 5. Costs of equity capital	BE Chs. 9 - 10 Mayes Ch. 12
Week 12	*Investment Analysis: Inflation, Risk, and Financial Planning*	BE Chs. 11
Week 13	*Ownership & Leasing of Farm Land & Non-Real Estate Assets:* 1. Characteristics of farm land 2. Analyzing land investments 3. Leasing farm land 4. Capital leasing	BE Chs. 12 - 13
Week 14	*Credit Markets & Financial Intermediaries in Agriculture:* 1. Loan pricing & profitability 2. Farm credit system 3. FinTech 4. Behavioral Finance	BE Chs. 17
Week 15	*Final exam review* *Financial Markets in a Global Setting*	BE Chs. 15
Finals Week		

7. How Course Hours are Met by the Course

In accordance with the UW-Madison Credit Hour Policy (b), it is expected that students in this course will engage in at least 135 hours of learning activities (45 hours per credit). For this course, that includes 3.0 hours per week in lecture (45 total hours), 2.0 hours per week spent on weekly assignments (30 total hours), 3.0 hours per week reading and studying the lecture notes, textbooks or other outside materials in preparation for class participation and quizzes (45 total hours), and 1.0 hour per week (on average) preparing for the final presentation and the final exam (15 total hours).

8. Regular and Substantive Student-Instructor Interaction

This course provides two 75-minute live instructor-led face-to-face lectures per week throughout the semester. The instructor will provide students with qualitative feedback on assignments and the final presentation. Additionally, the instructor will facilitate group discussions periodically and lead in-class practice problems as part of the lecture period.

9. 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.wiscweb.wisc.edu/academic-integrity/.

10. Accommodations for Students with Disabilities

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 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. I will work either directly with the 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

11. Diversity & Inclusion

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/