

Agricultural Economics 346 – Applied Risk Analysis Spring Semester 2012

Time and Place	9:00 – 10:15 am MW in Barry Hall, Room 124 9:00 – 10:15 am W in Barry Hall, Room 124 (LAB – twice a month)
Professor:	Dr. Saleem Shaik, 504 Barry Hall Phone: 231-7459 E-mail: Saleem.Shaik@ndsu.edu .
Method of Instruction.	Classroom sessions are used for lectures, discussions, some problem solving, and estimation—reward student participation. Students are expected to prepare for each class by reading the assigned materials.
Prerequisites	Stat 330
Course Description	Development of tools to analyze production and financial risk problems unique to agriculture. This course is a three credit course and it is divided into four modules. Module 1 provides a review of basic statistics and probability theory. Module 2 focuses on identifying risk and sources of risks (Production, Financial and Institutional) faced by agriculture producers and agribusinesses. Module 3 covers strategies and tools used for managing risk. Module 4 covers risk and crop insurance; emphasis will be placed on the kinds of risk, methods and asymmetric information issues in crop insurance.
Course Objectives	<ol style="list-style-type: none"> 1) Understand the concepts of basic statistics, probability theory and analysis. 2) Understand risk as it relates to production, financial and policy risk decision making. 3) Understand the principles of risk management in developing procedures and practices to analyze, evaluate and control risks. 4) Understand risk and crop insurance and application of risk analysis methodologies.
Text	<p>Anderson, Sweeney, and Williams. <i>Quantitative Methods for Business</i>, Published by Thomson South-Western.</p> <p>Barry, Ellinger, Hopkin, and Baker. <i>Financial Management in Agriculture</i>, Published by Interstate Publishers. 6th Edition (2000).</p> <p>David Vose. <i>Risk Analysis, A Quantitative Guide</i>, Published by John Wiley & Sons Inc. 2nd Edition (1997).</p> <p>M. Granger Morgan and Max Henrion. <i>Uncertainty, A Guide to Dealing with Uncertainty in Quantitative Risk and Policy Analysis</i>, 4rd Edition (1998)</p> <p>http://mathworld.wolfram.com/</p>

Software Excel Spreadsheet for smaller datasets, SAS for larger or huge datasets.

GRADING The course grade will be computed on the basis of a term paper, homework and case study assignments, two midterm exams and a final exam. In addition to these requirements, all students will also need to submit an empirical research paper (term paper).

Grade Components	Weight	Material Covered
6 or more problem sets and case studies	25%	
1 Term paper	15%	
1 st midterm	20%	Week 1-7
2 nd midterm	20%	Week 8-11
Final exam	20%	?????
Total Score	100%	

Grading Scale:

90% or above	A
80 – 89%	B
70 – 79%	C
60 – 69%	D
59% or lower	F

Office Hours Open.

Class Attendance Attendance is expected. If you have to miss a class, you may want to obtain any important information from one or more of your classmates. I will not provide any make-up quizzes or exams unless you have an excused absence. If possible, please tell me about potential attendance problems before they occur.

Assignments Assignments and class projects will be assigned on a regular basis throughout the semester. There will be approximately six (6) problem sets, including case studies. You are permitted to work with other students on the homework assignments. You must turn in your work on time. A penalty of 2 points will be assessed for each day the assignment is late. Assignments handed in after solutions discussed by the instructor will receive no credit.

Code of Conduct Students are expected to attend all classes, complete all assignments, work in a respectable class room environment, and participate in class.

UNIVERSITY POLICY

- Honor Code** All students taking any course in the College of Agriculture are under the Honor System. The Honor System is a system that is governed by the students and operates on the premise that most students are honest and work best when their honesty and the honesty of others is not in question. It functions to prevent cheating as well as penalize those who are dishonest. It is the responsibility of the students to report any violations of the honor pledge to the instructor, the honor commission, or the Dean of the College of Agriculture.
- ADA** Any students with disabilities who need accommodations in this course are encouraged to speak with the instructor as soon as possible to make appropriate arrangements for these accommodations.

Course Outline

Agricultural Economics 346 – Applied Risk Analysis

I. Introduction to the course sections (first class)

Course Outline:

Module 1 DETERMINISTIC AND PROBABILITY ANALYSIS

Week 1-3 Basic statistics
Probability theory and statistical estimation

1st MID-TERM

Module 2 IDENTIFYING RISK AND SOURCES OF RISKS

Week 4-8 Concepts, Sources and Types of Risks

- 1) Production Risk – this involves income statement and balance sheet risks
- 2) Financial Risk and Ratios, Risk and Preferences, Investment Analysis and Asset Valuation: IRR, NPV, and MIRR
- 3) Policy Risk this include farm programs and farm policy

Module 3 MANAGING RISK

Week 9-10 Portfolio Diversification: Application to Horizontal and Vertical Integration
Financial Risk Management
Farm Policy Risk Management

2st MID-TERM

March 12-16 Mon-Fri **Spring Break Week**

April 6-9 Fri-Mon **HOLIDAY/Recess**

Module 4 RISK and CROP INSURANCE

Week 11-17 Principals of Crop Insurance
Kinds of risk insured by current crop insurance policies
Crop Insurance demand analysis
Asymmetric issues – adverse selection and moral hazard

Apr 30- May 4 Mon-Fri **Dead and Overview Week**

May 7-11 Mon-Fri **FINALS**

Project Presentation
or
Term Paper Guidelines

The research paper should contain:

1. A problem statement giving a description; objectives; and hypotheses of the topic and making clear the nature and importance of the study.
2. A section on previous literature, in particular the approaches and results of previous studies on your topic.
3. A section on the method of analysis, including model definitions, assumptions and specification; the choice of model should be clearly defined.
4. A section documenting data development and cite your data sources.
5. A results section emphasizing major findings and providing details of results in tables and/or figures; contrast your findings to previous work.
6. A conclusions section focusing on implications and offering suggestions for future studies.
7. A bibliography including complete references for all citations; follow *AJAE* style.