

2. National Institute for Occupational Safety and Health (N.I.O.S.H.)
3. National Safety Council (N.S.C.)
4. Farm Industrial Equipment Institute (F.I.E.I.)
5. National Fire Prevention Association (N.F.P.A.)
6. National Institute for Farm Safety (N.I.F.S.)
7. American Society of Agricultural Engineers (A.S.A.E.)

### Summary

In general, the courts have held that faculty members have a direct responsibility to provide a safe learning and working environment for the students.

## Designing a Senior Level Livestock Marketing Course

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Teaching an effective livestock marketing course has been and continues to be a difficult task because of the rapidity of change in markets and market structure. For example, in 1983, just five years ago, no one was predicting a consolidation in the meat packing industry such as we have today. The effects of this consolidation have changed the way cattle are marketed and the strategies used to defer risk in livestock operations. Ongoing changes in consumer attitudes and lifestyles will undoubtedly cause further adjustments in our marketing methods. A livestock marketing course for senior level students must be one that provides them with the knowledge they need to responsibly market their product. Thus, a livestock marketing course must contain realism, practicality, foresight, and a technical knowledge of cash and futures markets. Because students usually have little or no background experience in livestock marketing, fundamental concepts must be taught as well as the more sophisticated techniques of risk management. A new livestock marketing course has been developed at Texas A&M to accomplish this objectives. The format of that course is discussed in this paper.

### Description

The senior level livestock marketing course at Texas A&M is a two-credit hour, fifteen-week course taught during the senior year. The students have two hours of lecture per week in which they are presented the concepts, strategies, procedures, and practical information needed in the development of a marketing program. Accompanying the lecture course is a separate, one-credit hour laboratory course that meets once per week for two hours. The laboratory is designed to compliment the lecture course by providing hands-on experience in a problem-solving type environment relating to the material covered in lecture. For example, in the week in which breakevens

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Granted that college students are, for the most part, mature and responsible adults; however, the fact remains that many of the activities of agricultural classes are potentially hazardous and that faculty members have a moral, professional and legal responsibility to provide this.

### References

Connors, Eugene T., "Educational Tort Liability and Malpractice," Phi Delta Kappa Publications, Bloomington, Indiana, 1981.

Hazard, William B., *Education and the Law*, 2nd Edition. Collier MacMillan Publishing Company, New York, 1978.

Kern, Alexander, et al, *Public School Law*, West Publishing Company, 1969.

are covered in the lecture, the laboratory will provide hands-on calculations of various breakeven problems (attachment 2).

The laboratory portion of the course is dominated by a problem handed out on the first day of class. In the problem, (attachment 3), the student is given a ranch through inheritance that carries a rather large debt. Cattle production costs are provided along with guidelines as to how much operating capital can be borrowed during the course of the problem. The student is then charged with the marketing of the calves produced and the total financial risk of the operation. Current cattle prices and futures and options markets are used by making available video quote machines with time and date stamp machines to verify trades. The students may use any marketing or risk management approach they wish.

At the end of the semester, a three- to four-page paper is written detailing the reasons behind their various marketing decisions as well as profit/loss statements showing the results of their trading in the cash market as well as the futures market. The entire problem comprises forty percent of their grade in the laboratory course. The portion of the grade determined strictly on profit/loss is curved from highest to lowest so that the student making the most money receives the maximum number of points while the student making the least receives the least number of points. Thus market fluctuations and opportunity for profitability are leveled. Students are allowed to speculate in the markets if they wish, but if they lose all their borrowed money, they are foreclosed on and must accept last place in the futures part of the problem. Students may day trade the market, but they must respond to margin calls, pay interest on money borrowed for margins and pay brokerage commissions.

The lecture course (attachment 1), is designed to provide the students with as many tools as possible early in the course to allow them the opportunity to use the tools in the laboratory problem. The lectures covering breakevens, futures markets, options markets, and market information are presented before the student is faced with weaning the calves from the ranch and making a marketing decision. The second

portion of the lecture course is devoted to technical trading techniques, basis contracting, and the practical problems and opportunities that exist in the livestock industry for many of the people who make marketing a career.

During the first half of the semester when most of the lectures are concerned with new concepts such as futures and options, it is a great deal easier to create mental images in the minds of the students if reference can be made to their laboratory problem in terms of the lecture material being presented. In each subject area presented, some reference to the laboratory problem is presented.

Additionally, during each lecture, a 25-inch video quote machine with futures market quotations, market information, and options quotes is in front of the class for use by the instructor in order to keep the lecture current to today's market reality. Thus, when hedging examples are used, real-time prices and breakevens can be used to show how marketing decisions would be made at that point in time. In addition, telephone connections with speakers are used to talk to people such as brokers, order buyers, packer buyers, and market reporters. This gives the students a sense of what goes on in the day to day operations of many of these businesses and how each segment of the market views the market on that particular day.

The testing procedure in the lecture course is designed to split the course into thirds with two one-hour exams and a one-hour final exam. The final exam covers only the last third of the course. Each test covers only a portion of the course; but, because of the order in which the material is presented, each test builds upon the previous test. For example, if futures are not understood, it will be difficult to understand basis and forward contracting. In addition, lab quizzes are staggered between lecture exams to help the students prepare for their lecture exams.

A determined effort is made throughout the lecture portion of the course to instill in the students the idea that it is not necessary for them to learn to be professional futures traders, but it is necessary to be aware of the futures market and the risk and opportunity it provides. The goal of the teaching effort is to allow the student to be able to assemble and evaluate all of the possible alternatives whenever a marketing decision needs to be made in their home or employers operations.

**Attachment 1: Lecture Topics**

1. Introduction . . . . . A history of marketing
2. Terminology . . . . .
3. Information Networks . . . . . How to assemble and what to believe
4. Breakevens . . . . . Calculating, inputs, and variables
5. Breakevens . . . . . Output and interpretation
6. Futures . . . . . Mechanics of hedging
7. Futures . . . . . Hedging strategies and basis
8. Futures . . . . . Spreads, arbitrages
9. Price Discovery . . . . . Livestock
10. Price Discovery . . . . . Meat
11. Hour Exam
12. Options . . . . . Mechanics in hedging

13. Options . . . . . Strategy, puts, calls
14. Options . . . . . Futures combinations
15. Technical Trading . . . . . Theories, computer programs
16. Technical Trading . . . . . Charting, formations
17. Technical Trading . . . . . Systems and indicators
18. Brokerage . . . . . Broker relationships
19. Forward Contracting . . . . . Basis and pricing
20. Hour Exam
21. Retained Ownership . . . . . When, how, with whom
22. Basis Trading . . . . . Forward pricing
23. Weighing Conditions . . . . . Buyer and seller
24. Buying Feeders . . . . . How to, and what to watch for
25. Buying for Slaughter . . . . . How to, and what to watch for
26. Financial Management . . . . . Money movement and float
27. Current Topics . . . . . Beef
28. Current Topics . . . . . Beef
29. Current Topics . . . . . Pork
30. Current Topics . . . . . Lamb

**Attachment 2: Laboratory Topics**

1. Introduction . . . . . Marketing problem orientation
2. Terminology . . . . . Sorting by class, grade, etc.
3. Breakevens . . . . . Calculation
4. Futures . . . . . Hedging problems-single
5. Futures . . . . . Hedging problems-multiple
6. Problem Update . . . . . Decision making
7. Options . . . . . Mechanics and problems
8. Technical Trading . . . . . Interpretation of information
9. Guest Lecture . . . . . Broker
10. Contracts . . . . . Feds, feeders, grazing
11. Marketing Purebreds . . . . . Techniques and methods
12. Guest Lecture . . . . . International marketing
13. Field Trip . . . . . Auction barn marketing
14. Problem Wrapup . . . . . Profit/loss statement
15. Final Exam . . . . . Hand in problem

**Attachment 3: Laboratory Problem**

You have been given the Broken Dollar Ranch by your late Uncle Harry ("Bet A Million") Gotrocks. The ranch is a 500-cow operation located in central Texas. The management of the ranch over the years has been good but not spectacular. The cow herd will wean about a 90% calf crop on the eighth week of the semester. Weaning weights of the steers will be 500 pounds and the heifers will average 450 pounds. You are located 25 miles from your nearest sale barn, 125 miles from the nearest custom wheat pasture operator, and 375 miles from the nearest commercial feedyard.

The cost of production of the calves averages \$.65/lb. for each pound of calf weaned. Uncle Harry also left you with a mortgage of \$500,000 at a fixed rate of 12% payable Jan. 1 each year.

You are now responsible for managing the risk of this ranch this semester. You may do whatever you wish to do with the calves. We are assuming that you buy replacements, so all calves are for sale. You may sell at local auction, graze on wheat pasture, retain ownership into a custom feedyard, graze on wheat pasture followed by a feedyard, hedge as feeders, hedge as finished cattle, contract to sell feeders, contract to sell finished cattle, or any combination for any or all of the calves.

Since weaning occurs in the eighth week of the semester, this is the deadline for your decision. Your actions must be taken using San Angelo, Texas, market quotes on the day you take the action. If futures or option are involved, interest on borrowed money must be calculated as well as brokerage fees. Your banker has said that you may only borrow a total of \$150,000 to finance both your initial margin and your margin calls in any futures trading that you might do. In addition, he says that;

1. You may only trade in live cattle, feeder cattle, hog, corn, or pork belly contracts.
2. If you lose the entire \$150,000, he will foreclose on you; and you will be forced to place last in the futures ranking at the end of this project.
3. All contract position limits must be observed.

4. You are required to make at least one trade in both the futures and options markets.

You are required to write a three- to four-page paper that discusses your reasoning for making the marketing decisions you used in the project. At the end of the paper, one page should be devoted to a profit/loss statement on the cash sale of your cattle. One page should show profit/loss on your futures and options trading activity. One page should consolidate both cash and futures activity.

Fifteen percent of your grade in this course will depend upon the profit/loss from the sale of cash cattle. Fifteen percent of the grade will depend upon the profit/loss from futures and options trading. Ten percent of your grade will be based on the written paper turned in at the end of the course. The balance of your grade in laboratory will depend on tests, quizzes, and problems.

GOOD LUCK

MAKE UNCLE HARRY PROUD

# The Introduction of Experimental Economics in the Agricultural Marketing Classroom

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## Abstract

*The use of experimental economics methods in teaching agricultural marketing concepts was illustrated. An example experiment was presented comparing private treaty, price reporting, and English auction market types. Five concepts were taught using the experiment; supply, demand, equilibrium, price discovery, and economic surplus.*

The use of laboratory equipments in economics in the areas of industrial organization and market performance is well documented (Plott, Smith). In recent years, experimental economic methods have been adopted by agricultural and resource economists. Among these applications are an investigation by Buccola into efficiency in centralized and non-centralized markets, a comparison of oral and electronic auctions by Forster and Roberts, and an application of experimental economic methods to the design of contingent markets by Bergstrom and Stoll. The purpose of this paper is to illustrate the use of experimental methods as a tool for teaching agricultural marketing.

The marketing concepts of price discovery, price determination and market performance are traditionally taught using combinations of lectures, observing market trading, and trading simulation such as a futures market trading program (Drinka, et al.). Initially students are introduced to these ideas using the theoretical construct and assumptions of a perfectly competitive model. But since many students rarely recognize their participation in markets, they have difficulty in understanding how market structure, different institutional trading mechanisms, and the informational environment can alter market outcomes (prices and quantities).

The current trend of greater numbers of students in agricultural economics courses coming from nonagricultural backgrounds may contribute to the need for helping students bridge this gap. A student who has never attended a cattle auction, or sold produce at a farmers market, or sold grain at an

elevator may be at a disadvantage in being able to apply the concepts he is being taught to actual situations. Under such circumstances it may be profitable for teachers of agricultural marketing to seek means of enhancing the learning process by providing personal experiences for students that reinforce and clarify the ideas being taught.

One means of achieving greater comprehension of these concepts by students is to allow them to participate in experimental markets designed to simulate various market scenarios. Hudson et al, described a project for using microcomputer based networks in teaching agricultural marketing. The program was designed to meet educational needs in developing an effective mix of theory and practical applications of such theory. Experimental markets can also be designed for classroom use that do not require the use of computers. Many hypotheses tested using experimental economics methods may simultaneously be presented to students in a teaching format. After presenting an overview of experimental economic methods, an example is reviewed, followed by a discussion of the presentation and value of the results.

## Experimental Economic Methods and Procedures

The methods in economic experiments follow standard scientific methods, which include developing a hypothesis, designing and conducting an experiment, analysis (test hypothesis), and drawing inferences. Procedures are defined as a particular way of doing something. They are a means of accomplishing a method therefore each of the subparts of the scientific method has alternative procedures.

Developing hypotheses often is the most difficult task of any experiment. This is the case because the hypothesis defines the experiment. Furthermore, quantitative measurements are required to test the desired hypothesis. In the experiment illustrated here, distribution of rewards under different market mechanisms was one of the foci. The hypothesis was that under an asymmetric English auction where only buyers bid, buyers would capture less of the total surplus than under private negotiation markets. The development of a testable measurement, an index of buyers' surplus, enabled the above hypothesis to be tested.

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