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Office Hours: 1:00-3:00 pm Mondays and Wednesdays and or by appointment.

Textbooks: Farm Management
 Ronald Kay, William Edwards, and Patrica Duffy
 McGraw Hill, 8th Edition, 2016. (previous editions acceptable)

Applied Mathematical Programming Using Algebraic Systems
 Bruce A. McCarl and Thomas H. Spreen

<http://agecon2.tamu.edu/people/faculty/mccarl-bruce/books.htm> (also on Canvas)

Selected readings posted on Canvas (<http://canvas.colostate.edu>)

Description: Economic principles of agricultural production decisions with linear programming (LP) analysis of production choices and business planning with emphasis on applications in farm and ranch production and beyond the farm gate.

Prerequisites: AREC 305 Agricultural Business and Resource Enterprise Analysis

Objective: This course will provide you with the analytic tools and practice to systematically evaluate management decisions that are pervasive in agriculture (inside and beyond the farm gate). Some of the approaches investigated may not be directly applicable to your future career, but they will all enhance your ability to wrestle with the complexity so pervasive in agricultural decisions and business in general.

Grading Policy: Course grades will be based on examinations, quizzes, and problem sets. Two one-hour exams will be given. The components will be weighted as follows:

| | | | |
|-----------------------|------------|--------|-------------------------------|
| Lab Problems | 260 | points | (13 @ 20 pts. each) |
| Quizzes | 100 | points | (Best 3 of 4 @ 33 pts. each) |
| Mid-term Exams | 300 | points | (Exam I - 100, Exam II - 200) |
| Final Project Prelims | 40 | points | (2 @ 20 pts. Each) |
| Final Project | <u>100</u> | points | |
| Total | <u>800</u> | points | |

Exams will be announced at least two weeks prior to being held. Some quizzes will be announced while others may not be. Failure to attend exams or quizzes without prior permission of an instructor will result in a score of zero. Problem sets will be considered late beyond the beginning of the class period prescribed due and will not be graded if not received before the solutions are posted.

Absences will be excused ONLY when (1) you initiate an oral conversation regarding an up-coming absence, (2) you send me an email stating the particulars of your absence, summarizing our prior oral agreement, and (3) you receive my email confirmation that the absence is excused. Exceptions only at my discretion.

Final grades will be assigned based on total point accumulations as follows: A = 90-100%; B = 80-89%; C = 70-79%; D= 60-69%; F = <60%. Requirements for each grade category may be adjusted downward but will not be raised. Pluses and minuses will be awarded at the instructors' discretion. ***IMPORTANT: To pass the course a student must receive a passing grade on the final project. A failing grade on the final project will result in a failing grade for the course irrespective of total points earned elsewhere in the course.***

Academic Integrity: We take academic integrity seriously. At minimum, academic integrity means that no one will use another's work as their own. The CSU writing center defines plagiarism this way:

Plagiarism is the unauthorized or unacknowledged use of another person's academic or scholarly work. Done on purpose, it is cheating. Done accidentally, it is no less serious. Regardless of how it occurs, plagiarism is a theft of intellectual property and a violation of an ironclad rule demanding "credit be given where credit is due." Source: (Writing Guides: Understanding Plagiarism. <http://writing.colostate.edu/guides/page.cfm?pageid=311&guideid=17> Accessed, December 14, 2015)

If you plagiarize in your work you will lose credit for the plagiarized work, fail the assignment, or fail the course. Plagiarism can result in expulsion from the university. Each instance of plagiarism, classroom cheating, and academic dishonesty in general will be addressed according to CSU published policies. (See <http://catalog.colostate.edu/general-catalog/policies/students-responsibilities/>)

Of course, academic integrity means more than just avoiding plagiarism. It also involves doing your own reading and studying. This includes regular class attendance, careful consideration of all class materials, and engagement with the class and your fellow students. Academic integrity lies at the core of our common goal: to create an intellectually honest and rigorous community. Because academic integrity, and the personal and social integrity of which academic integrity is an integral part, is so central to our mission as students, teachers, scholars, and citizens, we will ask to you sign the CSU Honor Pledge as part of completing all of our major assignments. You will be prompted to write and sign the following statement on all of your graded assignments, quizzes, and exams:

"I have not given, received, or used any unauthorized assistance."

You can visit <http://tilt.colostate.edu/integrity/pledge/index.cfm> to read more about CSU's Honor Pledge as well as finding links to a number of other resources that address academic integrity.

Violations: There is no chance for accidental violation of academic integrity in this course. The activities here are designed for a single core purpose—to support your learning and growth of understanding of the material presented. As you will learn, I encourage collaboration in your laboratory exercises. You should feel free to discuss and ask questions of your classmates in these exercises. What is NOT acceptable is copying other's work, whether that be simply typing what they've typed on the screen or obtaining electronic copies of full or partial work that they've completed (from this semester or previous terms). In no case will copied work be acceptable. For each instance where work is determined to have been copied, those involved (meaning the copier and anyone facilitating the copying) will receive a score of zero for the exercise AND the reduction of a **minimum of a full letter grade for the course**. For severe violations, failure of the course and expulsion from the University are possible consequences.

Need Help? CSU is a community that cares for you. If you are struggling with drugs or alcohol and/or experiencing depression, anxiety, overwhelming stress or thoughts of hurting yourself or others please know there is help available. Counseling Services has trained professionals who can help. Contact 970-491-6053 or go to <http://health.colostate.edu>. If you are concerned about a friend or peer, Tell Someone by calling 970-491-1350 to discuss your concerns with a professional who can discreetly connect the distressed individual with the proper resources (<http://safety.colostate.edu/tell-someone.aspx>).

Course Outline

| <u>Week</u> | <u>Topic</u> |
|-------------|--|
| 1-3 | I. <i>Introduction & Review of Microeconomic Production Theory</i> Production Theory (Kay, Ch 7-9) |
| 4 | II. <i>Mathematical Programming</i> Linear Programming (McCarl & Spreen) |
| 5-8 | III. <i>LP Modeling of Farm Production</i> The Basic Farm Plan (Kay, Ch 11) Linking Intermediate Activities Introducing the BUY and SELL activity Heterogeneous Resources |
| | Exam I, Friday, March 11, 11:00a-12:50p (note <u>EXTENDED</u> time) (Note: Last day to withdraw from the course: Monday, March 21) |
| 9-13 | III. <i>Applications</i> Transportation Models Blending Problems (Least Cost Ration Formulation) Equilibrium Asset Replacement Models Multiperiod Models Incorporating Risk |
| | Exam II, Monday, April 25, 11:00a-12:50p |
| 14-15 | IV. <i>Presentation of Student Projects</i> (see <i>Project</i> assignment for specifics) |
| 16 | Final Exam Periods: (conclude presentations) Wednesday, May 11, 4:10-6:10 pm and Thursday, May 12, 7:30-9:30 am |

I have an "open door" policy for visitors in my office. You are always welcome to drop by if you have an issue that you wish to discuss with me. However, please realize that I have many other responsibilities beyond teaching this class, so I may be forced to schedule to meet with you later. I schedule office hours each week that are set aside for meeting with students from this class. If at all possible, I prefer that you use this time to meet with me. I will make every attempt to be in the office during these hours and will announce the days that I will not be available during this time.

I welcome you to this course and look forward to sharing the next 16 weeks with you. I hope for you a fruitful and prosperous semester. Good luck to you!