AGEC 352 Fall 2016
Course Syllabus

Course Name:
Agricultural Economics 352, Quantitative Techniques for Firm Decision Making

Black Board Course Website:

https://mycourses.purdue.edu/

Instructor: Craig Dobbins
Office: Krannert 686
Phone: 494-9041
email: cdobbins@purdue.edu

Secretary: Malissa Allen
Office: Krannert 681
Phone: 494-4201

Office Hours: call or email Malissa Allen or myself for an appointment

Meeting Times:

Lecture:	MW	3:30-4:20	HIKS G980D
Laboratory:	Tuesday	11:30-12:20	Stanley Coulter G046
Laboratory:	Tuesday	12:30-1:20	Stanley Coulter G046

Learning Outcomes

AGEC 352 is an introduction to management science. The course addresses using quantitative tools to support management decision making. The overall learning outcomes for course are for students to

- Integrate economic and business principals with quantitative methods to support business problem solving.
- Appreciate the value analytical models can contribute to decision making.
- Apply Excel, Solver, Precision Tree, and @Risk to support decision making.
- Use optimization, decision analysis, and simulation models to aid decision making.

This course involves

- learning the vocabulary of modeling and management science,
- studying analytic tools used to support the solution of management problems,
- creating mathematical models representing management problems,
- using model results to evaluate problem alternatives, and
- identifying and justifying the most promising alternative.

The course emphasizes construction, solution, and interpretation of mathematical models used to evaluate of alternatives. The emphasis will be on linear programming and related

optimization models, decision models, and simulation models. As such, it requires some knowledge and use of mathematics, statistics, microeconomic principles, and computer spreadsheet software.

STAT 301 is a prerequisite for taking this class. An introductory level course in applied spreadsheet computing (e.g. AGEC 202, ASM 104) will also be helpful. As with almost any upper division AGEC course a working knowledge of microeconomic principles is fundamental. There may be times during the course that you will need to review some of the material presented in prior courses.

Course outcomes are achieved by reading and studying the textbook, applying concepts to example decision cases, and integrating economics with model results to develop a logical problem solution. Application cases will be examples from farm management, agri-business management as well as other fields.

Text

The required text for the class is Johanns, Patrick, *Management Science with Spreadsheet Modeling*, Third Edition, Kendall Hunt, 2012. This text contains reading material and exercises. It is direct and to the point. The reading material provides information about using Excel for solving the kinds of management problems we will be discussing. By today's standards, this is a relatively inexpensive textbook.

Course Structure

Topics: The general structure for the course is to focus on a different decision case(s) each week. There is a text reading assignment on each topic to complete. During class, there will be short lectures, time to work on the decision cases, and time to ask questions. Tuesday, class is in a computer lab, so this will be a time to work on that aspect of the decision problem.

Decision Cases (Team work exercises): During the semester, you will be asked to complete a number of the decision case exercises. These are available on the Black Board course website. Most of these cases will come from the food and agricultural industry.

These decision cases will be completed in teams of three or four students. Team members are identified the first class period and are posted on the class web site. Each individual is asked to initially take one of three roles: 1) Leader – responsible for keeping discussions organized and on topic, keeping me informed of team problems or changes in team membership, and work with Recorder to be sure answers to questions are clear; 2) Checker – makes sure that all members can explain the correct answer to all questions and work with Recorder to be sure answers to questions are clear; and 3) Recorder – review papers to be sure they are well organized, answers address the questions asked, and explanations are clear. Everyone participates in drafting spreadsheet models, interpreting results, answering questions, making sure question answers are correct., and reviewing material before submission making sure words are correctly spelled and proper grammar is used. Rotate these roles every five weeks. For example, the Leader becomes the Recorder, the Recorder

becomes the Checker, and the Checker becomes the Leader. If you happen to be on a team of four, there will be two team members in one of the roles.

Teams are expected to submit answers to decision case questions at the beginning of class on the date due. Place your papers in a neat pile on the table.

Working together, it is often possible to make discoveries that we would not have made on our own and to learn more quickly. Working as a team also brings with it potential problems. Chief among them is the problem of free riders. If this becomes a problem for you, I ask that you try to solve this on your own. If you are unable to get this problem resolved, let me know and we will work together to find a solution.

Due dates of exercises are indicated on the bottom of the exercise. These can be adjusted as needed.

Team member evaluations: You will be asked to evaluate the performance of your team members using the CAT ME website, https://www.catme.org/login/ three times during the semester. This an experiment this semester and is a tool that asks you to evaluate team members on five different attributes. You should have an e-mail from CAT ME explaining how to set up your account. If you don't have the email or deleted the email because you did not know what it was, they indicate that you can go to the logon page and click the "Forgot Password." These evaluations (if this works) are 10% of your course grade.

Quizzes: Unless there is an exam during the week, there will be a five question quiz to complete before class on Mondays and Wednesdays. The quiz questions will come from readings and class work. The quizzes are due at 3:30 pm on Monday and Wednesday. They are located on Black Board in the material for the week. You have two attempts for each quiz. Your grade will be the highest score you achieve. There are no quiz makeups.

Exams: There will be two exams during the semester, one in week six and one in week twelve. The final will be given whenever the final is scheduled. If the final is scheduled for late in finals week, do not expect it to be rescheduled. Questions on the exams will be mostly short answer with a few multiple choice and true/false. All exams are comprehensive with respect to material covered at the time of the exam.

Course Grading: The course grade will be determined from your performance on the three exams, decision problems, and quizzes. The two lowest quiz scores will be dropped. The weights applied to these items to arrive at an overall weighted average score are given in the table below.

Decision cases (team work exercises)	15 %
Quizzes	15 %
Peer Evaluation	10%
Midterm Exam I	20 %
Midterm Exam II	20 %
Final Exam	20 %

Opportunities for extra credit will be provided throughout the semester. A maximum of not more than 20 extra credit mid-term exam points are possible. These points will be added to your exam grades after letter grades have been determined. The new weighted grade and letter grade will then be calculated. Extra credit work is due on or before November 22.

There is no makeup of assignments and quizzes. If a conflict arises that will prevent you from completing an assignment, quiz, or exam, please contact me two weeks prior to the due date. If an emergency occurs that creates a problem associated with completing your work, let me know as soon as possible.

The following grading scale will be applied in the assignment of letter grades with the +/- system. Score cutoffs for grades may be lowered in final grade assignment.

Grade	Greater than or equal to	But less than
A+	97%	--
A	92%	97%
A-	90%	92%
B+	87%	90%
B	82%	87%
B-	80%	82%
C+	77%	80%
C	72%	77%
C-	70%	72%
D+	67%	70%
D	62%	67%
D-	60%	62%
F	--	60%

Attendance Policy

The course is organized to provide you time to work on the decision cases and ask questions during class. If you miss class, then you are not making a contribution to your team. The course attendance policy for AGEC 352 is that you are expected to attend class unless you are sick or have an emergency. If you contract an illness, please take care of yourself and please do what you can to not spread the illness to others.

If you miss class because of the requirements of another class, **you** are responsible for the work missed and **submitting it on time.** Accommodations (such as extended due dates) in the case of an illness or emergency will be handled on a case-by-case basis. A missed quiz is a missed quiz and has a score of zero.

Computer Software

Students are expected to know the basics of Excel spreadsheet software. Excel and Excel add-ins Solver, @Risk, and Precision Tree will be used in class. How to use the add-ins will

be covered in the class. Solver comes with Excel, but you may need to install it. The first exercise that requires Solver will explain the installation process.

Towards the end of the semester, the course will explore using simulation and decision analysis to support business decision making. @Risk and Precision Tree are two additional Excel add-ins that make it easier to use these tools. They are part a package called Palisades Decision Tools. Palisades Decision Tools is available in the ITaP computer labs under Course Software. Go to **Start -> All Programs -> Course Software**. It is under Agriculture. We will be using @Risk for simulation analysis and Precision Tree for decision analysis.

The Palisades software is made available free with the purchase of the text. If you have a Windows computer, (they claim you can use it on a Mac operating in Windows mode) you can download the software from http://www.palisade.com/bookdownloads/johanns/. Once you click on the link, you will need to answer a security question that can be answered using your book. and you will be ready to download

Assistance Outside Class

Class time is limited, so it may not be possible to answer all of your questions during class. If you have questions that you would like to discuss outside class you are encouraged to contact my assistant or me for an appointment. In discussing your questions, please come prepared. Our discussion will be more productive if you have thought about your question(s) and written them out. If your question deals with a computer problem, you will need to bring a copy of the current file or your laptop. Without the file or a copy of the input and output, it is impossible to locate the problem.

It is especially important to hear from you when you are having difficulty with class. If you are frustrated or unhappy with the course for any reason, contacting me will indicate concern and hopefully will result in some relief.

Emergency

In the event of a major campus emergency, course requirements, deadlines and grading percentages are subject to change. These changes to the course will be noted on the course website listed at the beginning of this syllabus.

Course Schedule

The following lists the plan for topics covered in each week in the course. The course is for the most part modular, meaning the two lectures for the week will focus heavily on the decision case(s) you are working. Thus it is important to attend all lectures and complete laboratory assignments in a timely fashion to stay on pace in the course.

	Topic	Reading Assignment	Notes for You & Me
Week 1 Aug 22	Course & Management Science Introduction	Chapter 1	Read before Wednesday Exercise 1
Week 2 Aug. 29	Spreadsheet Model Design in Excel	Chapter 2	Read before Monday Exercise 2
Week 3 Sept 5	Optimization of Liner Models	Chapter 3	Labor Day Read before Tuesday Exercise 3
Week 4 Sept 12	Optimization of Liner Models	Chapter 3	Read before Monday **Exercise 4**
Week 5 Sept 19	Optimization Applications	Chapter 4	Read before Monday Exercise 5
Week 6 Sept 26	Optimization Applications **Exam Tuesday & Wednesday**	Chapter 4 Chapters 1-4	
Week 7 Oct 3	Non-Linear Optimization	Chapter 5	Read before Monday Exercise 6
Week 8: Oct. 10	Non-Linear Optimization	Chapter 5	Fall Break Oct. 12 & 13
Week 9 Oct 17	Integer Modeling & Applications	Chapter 6	Read before Monday Exercise 7
Week 10 Oct. 26	Integer Modeling & Applications	Chapter 6	Exercise 8
Week 11 Oct. 31	Simulation Modeling	Chapter 7	Read before Monday Exercise 9
Week 12 Nov. 7	Simulation Modeling **Exam Tuesday, Wednesday**	Chapter 7 Chapters 1-6	Exercise 10
Week 13 Nov 14	Simulation Modeling	Chapter 7	Exercise 10 Continued
Week 14 Nov. 21	Decision Analysis Thanksgiving Nov. 23-25	Chapter 9	Read before Monday Exercise 11
Week 15 Nov 28	Decision Analysis	Chapter 9	Exercise 12
Week 16 Dec 5	Decision Analysis	Chapter 9	
Dec 12-16	Finals		

Academic Integrity

Each student enrolled in AGEC 352 is encouraged to study and work exercises with others. That said, this class abides by the University policy on academic integrity as embodied in the following statement:

University policy on academic misconduct is clear - academic dishonesty in any form is strictly prohibited. Instances of academic dishonesty will be referred to the Dean of Students for disciplinary action. Penalties are severe and may include failure on the exam, quiz, paper, or project, failure in the course, and/or expulsion from the University. The risks associated with academic dishonesty far outweigh the perceived benefits. Academic dishonesty includes citing someone else's work as your own, using unauthorized "crib sheets" during exams, or giving your answers to someone else. If you are unsure whether an action you are considering constitutes academic dishonesty, seek clarification from your instructor.

Students with Disabilities

If you have a disability that requires special academic accommodation, please make an appointment to speak with me within the first three weeks of the semester in order to discuss any adjustments. It is important that we talk about this at the beginning of the semester. Please note that university policy requires all students with disabilities to be registered with **Adaptive Programs in the Office of the Dean of Students** before classroom accommodations can be provided.

Score Revisions

The instructor or graders will score all of your work. Sometimes errors are made. If the error causes your grade to be lower than it should be, it is your responsibility to inform the instructor of the mistake. Errors can be identified by checking your work against that of classmates, posted answer keys, or discussion with the instructor. This must be done within **one** week of the assignment being returned.

Scores will be posted on Blackboard. If your score for an assignment is not posted after the assignment has been returned, it is your responsibility to notify me. This must be done within **one** week of the assignment being returned.

P.S.
Given this semester is an experiment, I reserve the right to change my mind about any of this at any time. I'm always open to student suggestions for improvement.