

AAEC 3316

Applied Risk Analysis and Management

FALL 2020

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Office Hours: Tuesday and Thursday Afternoons at ANYTIME or by appointment
Class Meeting: 9:30 to 10:50 Tu. and Th. - AGSC 311

Prerequisites: AGSC 2301, AAEC 2305, AAEC 2401, and AAEC 3315 or equivalents

TEXT – NO TEXT is required for this course. All notes and materials are available in Dr. Segarra’s departmental website (<http://www.depts.ttu.edu/aaec/>) go to the departmental link, the people link, and then the Eduardo Segarra’s link.

Course Objectives and Learning Outcome(s) – The purpose of this course is to provide students with a strong foundation regarding the understanding and application of risk and uncertainty related issues/factors impacting economic decision making process in the real world. One of the central themes of economics is the optimal use of scarce resources. Hence, this course utilizes graphical and mathematical approaches in presenting economic principles and concepts related to the consideration of risk and uncertainty factors in the economic decision making process. Upon completion of the course, students will be able to:

- Identify varied sources of risk and uncertainty in decision making
- analyze risky decision making within and outside agriculture
- apply risk mitigation techniques to manage risk and uncertainty
- be able to effectively communicate risk related decision making findings/results

Course Format/Learning Outcome Assessment - This course will follow a presentation and discussion format (given the current COVID19 situation, likely to be a hybrid face-to-face and online or just online). Exams – **TWO exams** (take-home) will be given during the semester (the specific dates for these two exams will be provided at least one week in advance). **In lieu of a final exam (i.e., there will NOT be a final exam), a TERM PAPER** will be assigned. The **TERM PAPER will be due on or before 12:00 noon Thursday-December 3, 2020**. There will be NO make-up exams. Any missed exam will have a grade of zero.

Attendance - Class attendance is NOT required, but STRONGLY encouraged. NEW concepts are likely to be covered EVERY CLASS PERIOD in this course. Unavoidable absences (such as university sponsored activities or sick days) are of course OK, but you will be responsible for catching up on your own with whatever material(s) is (are) missed due to your absence.

Grading – Each TEST will be worth 35 percent of the final grade, and the TERM PAPER will be worth 30 percent of the final grade. Again, **at least ONE WEEK** notice will be given before EACH of the TWO within the semester TESTS are scheduled. Grading Scale: First Test (35%), Second Test (35%), Final Paper (30%), final grades will be assigned as follows: A \geq 90%, B 80-89%, C 70-79%, D 60-69%, and F \leq 59%.

Course Outline

1. The Basics

- Assumptions
- Calculus Rules

2. Production Economics Theory: Review and Extension

- Static Profit Maximization and Optimal Input Use Under Perfect Competition
- Static Profit Maximization and Optimal Input Under NON-Perfect Competition
- The Relevance of Input Allocability in Profit Maximization
- Constrained Optimization Basics and Key Relationships
- The Relevancy and Application of Hedonic Pricing of outputs and inputs
- Dynamic Profit Maximization and the Role of Time Preference Considerations

3. Risk and Uncertainty Considerations

- Basic Concepts, Definitions, Assumptions, and Sources of Risk
- The Expected Utility Theorem and Its Relevance
- Risk Perception, Risk Preferences, Certainty Equivalence and Risk Premium
- The Basics of E-V Frontier Analysis
- Static Profit Maximization and Optimal Input Use Under Uncertainty – Agnar Sandmo’s Seminal Article: Key Findings and Extensions
- Dynamic Profit Maximization and Optimal Input Use Under Risk and Uncertainty

4. Approaches Used to Mitigate Risk and Uncertainty

- In the reference materials for this course which are provided in Dr. Segarra’s website, there is a publication entitled “Managing Risk in Farming: Concepts, Research and Analysis by Harwood, Perry, Heifner, Somwaru, and Coble.” In this publication under the **How Farmers Can Manage Risk** section (pages 14 to 57), eleven different approaches to manage risk and uncertainty are highlighted (Enterprise Diversification, Vertical Integration, to Off-farm Employment and Others Types of Off-Farm Income). You can consider this section to be a “summary” of these approaches. For the term paper you will be assigned one of these topics, and you will be responsible to EXPAND on this. Paper guidelines and expectations will be provided later.

Classroom Rules and Behavior

Department of Agricultural & Applied Economics

Students are expected to show respect to classmates, instructors, and especially guest speakers. Consistent with the stated assumptions and beliefs of Texas Tech University, the department has composed and the AAEC Student Association has endorsed the following set of rules for appropriate student classroom behavior.

1. Do not talk during class meetings. Talking is disruptive to the instructor and to your fellow classmates.
2. Do not arrive late to class and do not leave the classroom during class meetings. Exceptions may occur for medical emergency, physiological urgency or situations where prior instructor approval has been granted.
3. Do not use (including viewing of) communication devices (phones, iPad, etc.) during class meetings. All electronic devices should be silenced during class meetings.
4. Do not read/view other unassigned materials (newspapers, magazines, etc.) during class meetings.
5. Do not exhibit disruptive posture during class meetings. e.g. sleeping, slouching, laying, resting feet/head on furniture, etc.
6. Do not use notebook computers or phones during class meetings unless prior instructor approval has been granted.
7. Do not bring/use food and/or tobacco products during classroom meetings unless prior instructor approval has been granted.

As stated above, these guidelines should be followed in every AAEC class meeting, and represent a minimum level of respect expected from AAEC students.

Special Circumstances related to COVID-19 Pandemic

- *If Texas Tech University campus operations are required to change because of health concerns related to the COVID-19 pandemic, it is possible that this course will move to a fully online delivery format. Should that be necessary, students will be advised of technical and/or equipment requirements, including remote proctoring software.*
- Policy on absences resulting from illness (see Attachment A.). Anticipate that some students may have extended absences. To avoid students feeling compelled to attend in-person class periods when having symptoms or feeling unwell, a standard policy is provided that holds students harmless for illness-related absences.
- Policy statement on positive test. [Based on TTU System and University-wide guidance anticipated to be available soon.] Be prepared to review protocol and point students to sources of information so they will know what to expect should a member of the class have a positive case of COVID-19.
- Requesting accommodations as a result of personal health concerns (see Attachment B.). It is important to enable students who have immunocompromising health conditions or concerns for family or other live-in individuals' health risks reasonable accommodations for fulfilling class attendance and assignment expectations.

A. Illness-Based Absence Policy

If at any time during this semester you feel ill, in the interest of your own health and safety as well as the health and safety of your instructors and classmates, you are encouraged *not* to attend face-to-face class meetings or events. Please review the steps outlined below that you should follow to ensure your absence for illness will be excused. These steps also apply to not participating in synchronous online class meetings if you feel too ill to do so and missing specified assignment due dates in asynchronous online classes because of illness.

1. If you are ill and think the symptoms might be COVID-19-related:
 - a. Call Student Health Services at 806.743.2848 or your health care provider. After hours and on weekends contact TTU COVID-19 Helpline at [TBA].
 - b. Self-report as soon as possible using the [Dean of Students COVID-19 webpage](#). This website has specific directions about how to upload documentation from a medical provider and what will happen if your illness renders you unable to participate in classes for more than one week.
 - c. If your illness is determined to be COVID-19-related, all remaining documentation and communication will be handled through the Office of the Dean of Students, including notification of your instructors of the period of time you may be absent from and may return to classes.
 - d. If your illness is determined not to be COVID-19-related, please follow steps 2.a-d below.
2. If you are ill and can attribute your symptoms to something other than COVID-19:
 - a. If your illness renders you unable to attend face-to-face classes, participate in synchronous online classes, or miss specified assignment due dates in asynchronous online classes, you are encouraged to visit with either Student Health Services at 806.743.2848 or your health care provider. Note that Student Health Services and your own and other health care providers may arrange virtual visits.
 - b. During the health provider visit, request a “return to school” note;
 - c. E-mail the instructor a picture of that note;
 - d. Return to class by the next class period after the date indicated on your note.

Following the steps outlined above helps to keep your instructors informed about your absences and ensures your absence or missing an assignment due date because of illness will be marked excused. You will still be responsible to complete within a week of returning to class any assignments, quizzes, or exams you miss because of illness.

B. Addressing Accommodation Requests from High-Risk Students Returning to Campus

Texas Tech University is taking considerable measures to provide effective social distancing and sanitation protocols as we prepare to return to campus in the Fall. We need to be mindful that, because of underlying health conditions, some students will be at higher risk for COVID-19. Other students, although healthy themselves, might live with someone who has compromising health conditions. Students in one or both of these two categories might request accommodations or alternatives to fulfill course requirements to avoid potential exposure to the virus.

The Office of the Provost authorizes instructors of record (IoRs), in coordination with their department chairs, academic advisors, and academic associate deans, with the flexibility necessary to make instructional accommodations for students to avoid exposure to COVID-19. Accommodations might include, as examples, alternatives to face-to-face group assignments, remote learning such as online instruction or off-site activities, changing to an online section of the same course or to an independent study with the same learning objectives as the original course, or approval of a substitute course that is offered online and can fulfill the same degree requirements of the original course.

Keep in mind the following criteria when considering making an accommodation for a student: (1) whether the requested accommodation would make a substantive alteration of the course material or objectives; (2) whether the accommodation provides an equally effective alternative to the original objectives or activities of the class; and (3) whether the accommodation can be uniformly applied should more than one student request it. If the IoR can satisfactorily address these three requirements for accommodation, and is comfortable providing it, then it is appropriate to do so. If the IOR feels unable to

provide accommodation that satisfies these three criteria or is unsure how the requested accommodation can be provided, the IoR is encouraged to contact their academic associate dean's office for guidance. Students should also be advised to follow the steps for reporting illness-related absences outlined on the [Dean of Students COVID-19 webpage](#).

If a high-risk student asks for a substantial alteration to the essential elements of the class, then the IoR, advisor, or associate dean should suggest that the student work with SDS to provide a Letter of Accommodation (LOA).

C. STUDENT CONGREGATION AREAS AND USE OF OUTDOOR SPACES

1. Guidance for use of outdoor spaces:
 - a. All requests to use outdoor spaces for formal class instruction, organizational meetings, and/or any other event should follow the requirements and procedures specified in [OP 61.02](#);
 - b. Before submitting a request to schedule use of an outdoor space, individuals should review the Grounds Use [webpage](#), which includes a calendar of scheduled events.
2. Guidance for students waiting for their classes to begin:
 - a. A system group is planning signage that will be used in academic buildings;
 - b. Operations and Student Disability Services are in the process of touring academic buildings and will work with each department to roll out the signage plan for masks, hand washing, and wellness kiosk stations;
 - c. Students can be encouraged not to queue for classes until at least 10 minutes before start time. Once in line, social distancing, and use of face coverings should be observed.
3. Guidance for exterior doors and building traffic flow:
 - a. Exterior doors must remain open. Academic units may work with Operations concerning routing traffic flow through specific doors, but no exterior doors can be locked (without specific permission from Operations, SDS, and the Fire Marshall);
 - b. Academic units can reach out to Larry Phillippe in SDS and to the Fire Marshall to set up internal review of expected traffic flow patterns;
 - c. Exterior doors may not be propped open because doing so: 1) is against fire code, and; 2) disrupts air flow patterns and exchange rates that are being used by Operations.
4. Guidance for congregating in academic buildings and auxiliary spaces:
 - a. Operations is providing some uniform signage and guidance during tours of buildings;
 - b. Units can work with Lance Rampy to coordinate walk-throughs if they want guidance from Operations on *additional* signage needed for unique common spaces (i.e., no more than two people allowed in copy room at a time);
 - c. Units' building coordinators may contact Operations for help moving furniture as a means of decreasing available seating in common spaces. Units are encouraged to work with Operations so that relocated furniture does not block electrical access points or violate fire code. If furniture cannot be moved, units should indicate that furniture is not available for use.
5. Guidance for students who want to stay on campus and use TTU's internet services:
 - a. The Library and [campus computer labs](#) will have usage guidelines available on their websites and in their physical spaces;
 - b. IT is working (in conjunction with Traffic and Parking) to increase wi-fi signal within parking lots:
 1. R21 – North of Law School, spaces closest to Law School building;
 2. Z4 – Directly east of Law School, spaces closest to Law School building;
 3. R31 – West of Administrative Support Center.

6. Guidance for outdoor space congregation:

Grounds Use is developing guidelines for approved outdoor events – these will be provided to any group whose request for outdoor space reservation is approved; Operations will develop signage for known common congregation areas.

Any student who, because of a disability, may require special arrangements in order to meet the course requirements should contact the instructor as soon as possible to make any necessary arrangements. Students should present appropriate verification from Student Disability Services during the instructor's office hours. Please note instructors are not allowed to provide classroom accommodations to a student until appropriate verification from Student Disability Services has been provided. For additional information, you may contact the Student Disability Services office in 335 West Hall or 806-742-2405.

Absence due to religious observance - The Texas Tech University catalog states that a student who is absent from classes for the observance of a religious holyday will be allowed to take an examination or complete an assignment scheduled for that day within a reasonable time after the absence.

Absence due to officially approved trips – The Texas Tech University Catalog states that the person responsible for a student missing class due to a trip should notify the instructors of the departure and return schedule in advance of the trip. The student may not be penalized and is responsible for the material missed.

“It is the aim of the faculty of Texas Tech University to foster a spirit of complete honesty and a high standard of integrity. The attempt of students to present as their own any work that they have not honestly performed is regarded by the faculty and administration as a serious offense and renders the offenders liable to serious consequences, possibly suspension.” (OP 34.12). See the section on “Academic Conduct” in the Code of Student Conduct for details of this policy.