

ARE 425 Contracts and Organizations in Agriculture

Fall 2018: Tuesdays & Thursdays, 1:30-2:45 PM, Classroom.

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Course Description:

This course deals with agricultural contracts and organizational structures in agriculture and food industries. The covered material relies on the economic theory to explain observed empirical phenomena. The approach also relies on the use case studies of different contractual arrangements observed in the U.S. agriculture. The content delivery consists of instructor's lectures, guest lectures and students' presentations. Grading is based on exams, presentations and a class project.

Prerequisites:

Intermediate microeconomics (ARE/EC 301) or an equivalent course from another institution is required. This requirement could be waived by instructor.

Course Objectives:

In contrast with historical reliance on spot or cash markets, various type of contracts as hybrid organizational forms are becoming increasingly popular in many sectors of agriculture, food industries and elsewhere. The main objective of the course is to educate students about the role and functioning of contracts as hybrid organizational forms that span the space between markets and firms. The main objective of the course is to train students in economics of contracts thereby preparing them to successfully compete in modern job markets.

Student Learning Outcomes:

At the conclusion of this course, students are expected to be able to:

- explain the difference between the transactions cost and agency theories of the firm,
- identify the problems associated with asymmetric information;
- explain the role contracts play in the organization of modern agriculture and food industries,
- compare and explain the difference between production and marketing contract,
- construct a simple enterprise budget for a contract operator,
- design a payment scheme that would correctly align the incentives of contracting parties in light of asymmetric information problems.

Readings:

Regrettably, there is no single textbook for this course, so the readings will include individual chapters from different books and scientific journal articles, all of which will be timely provided via Wolfware/Moodle. Students are strongly encouraged to take comprehensive lecture notes as these will serve as the principle guide when studying for the exam.

Policies and Procedures:

1. **Academic integrity.** Students should refer to the University policy on academic integrity found in the Code of Student Conduct (found in Appendix L of the Handbook for Advising and Teaching). It is the instructor's understanding and expectation that the student's signature on any test or assignment means that the student contributed to the assignment in question (if a group assignment) and that they neither gave nor received unauthorized aid (if an individual assignment). Authorized aid on an individual assignment includes discussing the interpretation of the problem statement, sharing ideas or approaches for solving the problem, and explaining concepts involved in the problem. Any other aid would be unauthorized and a violation of the academic integrity policy. This includes referring to homework from previous semesters. All cases of academic misconduct will be submitted to the Office of Student Conduct. If you are found guilty of academic misconduct in the course, you will be on academic integrity probation for the remainder of your years at NCSU and may be required to report your violation on future professional school applications. It's not worth it!
2. **Test grading questions.** If you believe that an error was made in grading the exam or a homework, you should contact the instructor immediately after the graded assignment in question has been returned to you. The "statute of limitations" for submitting such claims is one week after the assignment is returned.
3. **Missed Exams:**
 - a. Make up exams will not be given for unexcused absences. If you have no documentation for your absence, it will be unexcused and the assessment will be scored a zero.
 - b. Make-up exams will be given for excused absences. Excused absences are defined by NCSU under REG 02.20.03 – Attendance Regulations and are listed below.

"NC State University has a commitment to all students, including those who represent the University in official capacities. Students shall receive excused absences for a reasonable number of anticipated absences as well as for emergencies as specified below.

3.1 Anticipated Absences. Excuses for anticipated absences must be cleared with the instructor before the absence. Examples of anticipated situations where a student would qualify for an excused absence are:

- 3.1.1 The student is away from campus representing an official university function, e.g., participating in a professional meeting, as part of a judging team, or athletic team. These students would typically be accompanied by a University faculty or staff member.
- 3.1.2 Required court attendance as certified by the Clerk of Court.
- 3.1.3 Students will be allowed a minimum of two excused absences per academic year for religious observances as verified by the Division of Academic and Student Affairs (DASA) absence-verification@ncsu.edu **This link will open in a new window** and <https://dasa.ncsu.edu/students/absence-verification-process/> **This link will open in a new window**). For more information about a variety of religious observances, visit the **Diversity Calendar**.
- 3.1.4 Required military duty as certified by the student's commanding officer.
- 3.2 Unanticipated Absences. Excuses for unanticipated absences must be reported to the instructor as soon as possible, but not more than one week after the return to class. Examples of unanticipated absences are:
- 3.2.1 Short-term illness or injury affecting the ability to attend or to be productive academically while in class, or that could jeopardize the health of the individual or the health of the classmates attending. Students must notify instructors prior to the class absence, if possible, that they are temporarily unable to attend class or complete assignments on time.
- 3.2.2 Death or serious illnesses in the family when documented appropriately. An attempt to verify deaths or serious illness will be made by the Division of Academic and Student Affairs (absence-verification@ncsu.edu **This link will open in a new window** and <https://dasa.ncsu.edu/students/absence-verification-process/> **This link will open in a new window**).
- 3.3 There is no University-wide definition of a reasonable number of permissible excused absences. The instructor, in lieu of a University policy, is responsible for determining the acceptable number of excused absences in his/her class. The instructor may wish to use the elements of the Add Policy (e.g., the number of class meetings normally held during the Add period at the beginning of the semester; see **NCSU REG02.20.02 - Adding and Dropping Courses**, as a guideline in making this determination.)
- 3.4 Because each instructor has the responsibility to implement grading procedures that are fair and equitable, the instructor shall devise a system for making up missed assignments and examinations that does not unfairly penalize the student when an excused absence is accepted. Such make-up work shall be at a comparable level of difficulty with the original assignment or examination. Make-up examinations shall be at a time and place mutually agreeable to the instructor and student.
- 3.5 When excused absences are accepted, the instructor shall hold all students with excused absences to the same standard for making up missed assignments or examinations.
- 3.6 In a case where the student realizes in the first two weeks of class that the anticipated number of absences will exceed the number of excused absences permitted in the course, the student shall discuss the situation with the instructor, the student's adviser, or the

academic dean in the college in which the student is enrolled. It is anticipated that a suitable resolution shall occur before the end of the second week of the semester.”

4. Attendance and Tardiness.

- a. You are allowed to have 1 unexcused absence during the entire semester. For each additional unexcused absence, you will lose 1% of the grade up to maximum of 5%. For more then 6 unexcused absences you will receive a final grade F for the course.
- b. Documented excused absences should be presented to the instructor. For a full statement of the university attendance policy see <https://policies.ncsu.edu/regulation/reg-02-20-03>. Examples of anticipated situations where a student would qualify for an excused absence are:
 - a. The student is away from campus representing an official university function, e.g., participating in a professional meeting, as part of a judging team, or athletic team. These students would typically be accompanied by a University faculty or staff member.
 - b. Required court attendance as certified by the Clerk of Court.
 - c. Religious observances as verified by Parents & Constituent Services (515-2441). For more information about a variety of religious observances, visit the Diversity Calendar.
 - d. Required military duty as certified by the student's commanding officer.

5. Calculation of course grade. A weighted average grade will be calculated as follows:

| | |
|--------------------------------|-----------|
| a. Exam | 40% |
| b. Term paper and presentation | 40% |
| c. Homework assignments | 15% |
| d. Class participation | <u>5%</u> |
| Total | 100% |

One should expect the following performance/grade schedule:

$97 \leq A+ \leq 100$; $93 \leq A < 97$; $90 \leq A- < 93$

$87 \leq B+ < 90$; $83 \leq B < 87$; $80 \leq B- < 83$

$77 \leq C+ < 80$; $73 \leq C < 77$; $70 \leq C- < 73$

$67 \leq D+ < 70$; $63 \leq D < 67$; $60 \leq D- < 63$

$0 \leq F < 60$.

Note: I do not curve grades in this course. It is theoretically possible for everyone in the class to get an A (or an F). Your performance depends only on how you do, not on how everyone else does. It is therefore in your best interest to help your classmates within the limits of the academic integrity policy.

Requirements for Credit-Only (S/U) Grading:

In order to receive a grade of S, the students have to complete the same assignments as for the letter grading and earn a grade of C- or better. Conversion from letter grading to credit only (S/U) grading is subject to university deadlines. Refer to the Registration and Records calendar for deadlines related to grading. For more details refer to <http://policies.ncsu.edu/regulation/reg-02-20-15>.

Requirements for Auditors (AU):

Information about and requirements for auditing a course can be found at <http://policies.ncsu.edu/regulation/reg-02-20-04>.

Policies on Incomplete Grades:

If an extended deadline is not authorized by the instructor or department, an unfinished incomplete grade will automatically change to an F after either (a) the end of the next regular semester in which the student is enrolled (not including summer sessions), or (b) the end of 12 months if the student is not enrolled, whichever is shorter. Incompletes that change to F will count as an attempted course on transcripts. The burden of fulfilling an incomplete grade is the responsibility of the student. The university policy on incomplete grades is located at <http://policies.ncsu.edu/regulation/reg-02-50-3>.

Exam. There will be only one exam for the course. The exam will be based on understanding the basic theoretical concepts developed in the course and will consist of a combination of short essays and problem solving questions.

Class project: term paper and presentation. The class project has two parts: (a) class presentation which will take place according to the announced schedule, and (b) final paper which is due by 5:00 PM on Friday, May 5.

(a) Each student will have approximately 20 minutes for presentation and 5 additional minutes for questions. You should prepare Power Point or some other type of slides that you can go over in 20 minutes. I am guessing that about 15 slides would be the right amount. You should bring the slides with you to the classroom on a memory stick or email them to me on the day before your scheduled presentation and I would upload them on Moodle.

(b) Based on your presentation and questions and answers you receive during your presentation as well as my comments, you should prepare the final version of your class project which should be about 10-15 typed pages in length including references, tables, graphs, etc.

The content (material covered) in your presentation and final paper should consists of the following sections:

1. Basic description of the contract: who originates the contracts (Aquaculture International), who is the receiving end (Independent producer in Wake county) and what is the object of the contract (i.e. the production of catfish).
2. The contract duration (e.g., one cycle, one year, 10 years, renewable, automatically renewable until cancelled, etc.).
3. Detailed description of responsibilities for providing inputs, i.e., who brings what to the project.
4. Detailed description of the payment mechanism used to compensate the producer.
5. Enterprise budget from the perspective of the contract receiver (producer) prepared according to the template we went over in class. To the extent that some information could be proprietary and not regularly available, you should make educated guesses (reasonable assumptions) and then state that these are your assumptions, not actual data. Make sure you highlight the difference between the profitability (return on investment) versus the cash flow.
6. Finally, with all this information in hand, you should answer the following questions:
 - a) Why do we see contracts in this particular segment of the economy (agriculture), i.e. why would the spot (cash) market not work well under these circumstances and also why don't we see complete vertical integration (activity moved within the company proper).
 - b) Why is the payment mechanism used in this contract a good solution for the incentives/income insurance trade-off problem or perhaps the transaction costs minimization problem, or could you come up with an alternative payment scheme that would (based on your expertise gained in this class) work even better than the one actually being used.

6. **Instructors' commitment.** You can expect your instructor to be courteous, punctual, well-organized, and prepared for lecture and other class activities; to answer questions clearly; to be available during office hours or to notify you beforehand if they are unable to keep them; and to grade uniformly and consistently according to the posted guidelines.
7. **Accommodations for Disabilities.** Reasonable accommodations will be made for students with verifiable disabilities. In order to take advantage of available accommodations, student must register with the Disability Services Office (<http://www.ncsu.edu/dso>) located at 1900 Student Health Center, Campus Box 7509, 515-7653. For more information on NC State's policy on working with students with disabilities, please see the Academic Accommodations for Students with Disabilities Regulation at http://www.ncsu.edu/policies/academic_affairs/courses_undergrad/REG02.20.1.php.

Tentative Course Outline and Reading Assignments:

Week 1: Introduction: Organizing agricultural production and marketing

- MacDonald, J. et al. Contracts, Markets and Prices: Organizing the Production of Agricultural Commodities. USDA-ERS, Agricultural Economic Report Number 837, Washington D.C. November 2004. (CMP), Chapter 1.

Week 2: The use of contracts in agriculture: and overview

- MacDonald, J. and P. Korb (2011), *Agricultural Contracting Update: Contracts in 2008*. USDA Economic Research Service. Economic Information Bulletin No. 72. Feb. 2011.

Week 3: Introduction to Theories of the Firm

- 3.1. Relationship between ownership and control
- 3.2. Make vs. buy problem
- 3.3. Models of organization
- Eaton, B.C., D.F. Eaton and D.W. Allen (2002), *Microeconomics*, 5th edition, Prentice Hall, Chapter 19: 596-623.

Week 4: Transactions cost approach to contracting and organization

- Coase, R. (1937), The Nature of the Firm, *Economica*, Vol. 4 (Nov. 1937): 386-405
- Coase, R. (1960), The Problem of Social Cost, *The Journal of Law and Economics*, Vol. 3 (Oct. 1960): 1-44.
- Vavra, P. (2009), "Role, Usage and Motivation for Contracting in Agriculture", *OECD Food, Agriculture and Fisheries Working Papers*, No. 16, OECD Publishing. doi: 10.1787/225036745705

Week 5: Agency theory approach to contracting

- 5.1. Decision making under uncertainty
- 5.2. Principal-agent model
- 5.3. Problem of moral hazard
- 5.4. Problem of adverse selection
- Perloff, J.M. *Microeconomics*. Addison, Wesley, Longman, Inc. 1999, Chap.17: 620-633.
- Perloff, J.M. *Microeconomics*. Addison, Wesley, Longman, Inc. 1999, Chap.20: 726-754.

- Akerlof, G.A. “The Market for “Lemons”: Quality Uncertainty and the Market Mechanism.” *The Quarterly Journal of Economics*, Vol. 84 (August 1970): 488-500.

Week 6: Agrarian (farming) contracts

- 6.1. Land contracts
- 6.2. Equipment and custom contracts
- 6.3. Labor contracts

- Allen, D. and D. Lueck. Agricultural Contracts. In C. Menard and M. Shirley (eds.) *Handbook of New Institutional Economics*, Chapter 18, pp. 465-490.
- Akerberg, D. and M. Botticini. The Choice of Agrarian Contracts in Early Renaissance Tuscany: Risk Sharing, Moral Hazard or Capital Market Imperfections. *Explorations in Economic History*, Vol. 37 (2000): 241-257.

Week 7: Broiler contracts

- 7.1. Why production contracts?
- 7.2. Why tournaments?
- Knoeber, C.R. A Real Game of Chicken: Contract, Tournaments, and the Production of Broilers. *Journal of Law, Economics and Organization*, Vol. 5 (1989): 271-292.
- Levy, A. and T. Vukina. The League Composition Effect in Tournaments with Heterogeneous Players: An Empirical Analysis of Broiler Contracts. *Journal of Labor Economics*, Vol. 22 (2), 2004: 353-377.

Week 8: Swine Industry Contracts

- 8.1. History and explanation of swine industry contracting in North Carolina
- 8.2. The comparison of production and marketing contracts

- Vukina, T. and X. Zheng. Bargaining, Search, and Price Dispersion: Evidence from the Live Hogs Market. *Agricultural and Resource Economics Review*, Vol. 39 (October 2010): 534-546.
- Vukina, T. Quality Differences and Risk Shifting Associated with Alternative Marketing Arrangements in the Swine Industry. *Journal of Food Distribution Research*, Vol. 39 (2), (July 2008): 77-91.

Week 9: The Basics of Enterprise Budgeting for Contract Producers

- Vukina, T. “Broilers: Enterprise Budget for a Contract Grower.” NC Cooperative Extension. Excel spreadsheet.

Week 10: Market Power and Hold-up

- Vukina, T. and P. Leegomonchai. Oligopsony Power, Asset Specificity and Hold-Up: Evidence from the Broiler Industry. *American Journal of Agricultural Economics*, Vol. 88 (3), (August 2006): 589-605.
- MacDonald, J.M. and N. Key. Market Power in Poultry Production Contracting? Evidence from a Farm Survey. *Journal of Agricultural and Applied Economics*, Vol. 44 (November 2012): 477-490.

Week 11: Livestock contracts and environmental externalities

- Vukina, T. The Relationship between Contracting and Livestock Waste Pollution. *Review of Agricultural Economics*, Vol. 25 (1), 2003: 66-88.
- Palmquist, R. B., F. M. Roka, and T. Vukina. Hog Operations, Environmental Effects, and Residential Property Values. *Land Economics*, Vol. 73 (1), 1997: 114-124.

Week 12: Review of the Core Concepts and the Exam

Week 13-14: Case Studies: Guest Lectures (up to maximum 3, TBA)

Week 14-15: Class Projects Presentations