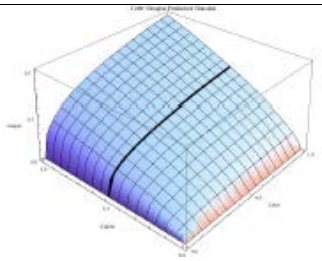
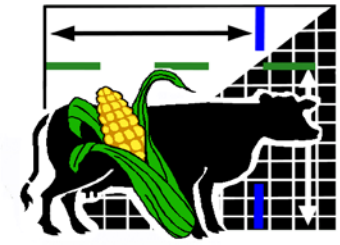
FALL 2014

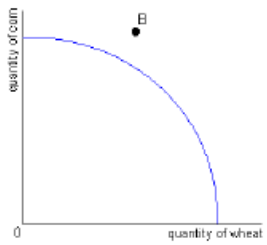
AECN 832

ECONOMICS OF AGRICULTURAL PRODUCTION

FILLEY HALL, ROOM 302
TUESDAYS AND THURSDAYS 1:00-2:30 PM
INSTRUCTOR: PROF. AZZEDDINE AZZAM







Purpose: This course is about how to use microeconmic principles for making agricultural production decisions. It is tailored for entering MS students in agricultural Economics and MS and PhD students in other agricultural sciences. The course employs Excel graphics and differential calculus. Familiarity with basic algebra is necessary. The necessary differential calculus is covered at the beginning of the course.

Reading Material:

Primary Textbook: David L. Debertin. *Agricultural Production Economics,* 2012.
Supplemental Textbook (for Ag Econ Students): Bruce R. Beattie, C. Robert Taylor, and Myles J. Watts. *The Economics of Production*. 2009.
Case studies (see page 3 of the syllabus).

Grading: Course grade will be assigned based on the following weights:

Assessment tool	Total points	Percent of grade
10 take-home assignments	100	50%
Midterm	100	20%
Final	100	30%
Total	300	100%

Grading Scale: Course letter grades will be assigned based on the following scale:

Grade	Percentag of total points
A+	90-100
A	80-90
B+	75-79
B	70-74
C+	65-69
C	60-64
D	50-59
F	<50

COURSE OUTLINE						
Day	**Lecture**	**Reading[1]**	**Reading[2]**	**Assessment tool**		**% of grade**
8/26	Introduction	Chapter 1	Chapter 1			
8/28	Review of univariate calculus	Hand out				
9/2	Review of multivariate calculus	Handout				
9/4	Review of constrained and unconstrained optimization	Handout		Take-home assignment 1		5%
9/9	Production with one variable input I	2	2			
9/11	Production with one variable input II	2	2			
9/16	Profit maximization with one input and one output I	3	3			
9/18	Profit maximization with one input and one output II	3	3	Take-home assignment 2		5%
9/23	Costs, returns, and profits on the output side I	4	4			
9/25	Costs, returns, and profits on the output side II	4	4	Take-home assignment 3		5%
9/30	Production with two inputs	5	4			
10/2	Maximization in the two input case	6	4			
10/7	Maximization subject to budget constraints	7	3			
10/9	Further topics in constrained optimization	8	3	Take-home assignment 4		5%
10/14	Returns to scale, homogenous function, and Euler's theorem I	9	2			
10/16	Returns to scale, homogenous function, and Euler's theorem II	9	2	Take-home assignment 5		5%
10/21		**No Class (Fall Break)**				
10/23		**MID TERM**				**20%**
10/28	The Cobb-Douglas Production function	10	2			
10/30	Other agricultural production functions	11	2			
11/4	Elasticity of substitution	12	2			
11/6	The demand for inputs in the production process I	13				
11/11	The demand for inputs in the production process II	13	3,4	Take-home assignment 6		5%
11/13	Production of more than one product	15	5.1			
11/18	Maximization in a two output setting	16	5	Take-home assignment 7		5%
11/20	Enterprise budgeting and marginal analysis I	19				
11/25	Enterprise budgeting and marginal analysis II	19		Take-home assignment 8		5%
11/27		**No Class (Thanksgiving Vacation)**				
12/2	Linear programming and marginal analysis I	22				
12/4	Linear programming and marginal analysis II	22		Take-home assignment 9		5%
12/9	Decision making in an environment of risk and uncertainty I	20				
12/11	Decision making in an environment of risk and uncertainty II	20		Take-home assignment 10		5%
TBD				**FINAL EXAM**		**30%**

[1] Readings from Debertin's textbook

[2] Readings from Beattie et al.'s textbook.

Bibliography[3]

Azzam, A., M. Baker, I.Berry, and J. Campbell. "An Exploratory Bio-economic Model of Pesticide Use for Controlling Feedlot-cattle Pests." *Agricultural Systems* 48(1995):503-513.

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Wang, Q., E. Thompson, R. Parsons, R. Rogers, and D. Dunn. "Economic Feasibility of Converting Cow manure to Electricity: A Case Study of the CVPS Cow Power Program in Vermont." *Journal of Dairy Science* 94(2012):3937-4949.

[3] Tentative list. It may change depending on the major of the registered students.