JARAMOGI OGINGA ODINGA UNIVERSITY OF SCIENCE AND TECHNOLOGY

SCHOOL OF AGRICULTURAL AND FOOD SCIENCES

SEMESTER EXAMINATION FOR THE DEGREE OF BACHELOR OF SCIENCE IN AGRIBUSINESS MANAGEMENT YEAR 2 BACHELOR OF SCIENCE AGRICULTURAL EDUCATION YEAR 2

2017/2018 ACADEMIC YEAR SEMESTER 2

REGULAR

COURSE CODE: BEN 3225

COURSE TITLE: PRODUCTION ECONOMICS

EXAM VENUE: LAB 8 DATE: April …… EXAM SESSION: 9.00 – 11.00 HRS

TIME: 2 HOURS

Instructions:

1. **Answer ALL questions in section A and ANY other TWO Questions in section B.**
2. **Candidates are advised not to write on question paper.**
3. **Candidates must hand in their answer booklets to the invigilator while in the examination room.**

SECTION A: ANSWER ALL QUESTIONS IN THIS SECTION (60 MARKS)

1. State and illustrate the Law that governs the relationship between inputs and outputs in a classical case of one variable input and one product (10 marks)

2. Differentiate between explicit costs and implicit costs that farmers incur in the course of production, and give an example of each (10 marks)

3. What are the two approaches a farmer can use in deciding on the amount of output to produce to maximize profits or minimize losses. Briefly explain each approach (10 marks)

4. For a given input/output price ratio, explain the effects of improvements in technology for the use of inputs in the production of a given product such as maize (10 marks)

5. Name three ways in which the farmer can determine the optimal or least-cost combination of inputs to use in the production process (10 marks)

6. Name three ways that the producer can utilize in determining the combination of products to maximize profits and to minimize losses (10 marks)

SECTION B: ANSWER ANY TWO QUESTIONS IN THIS SECTION (40 MARKS)

7. The market for agricultural commodities is perhaps the only market in which reality approximates the economist's definition of 'competitive'. Describe the conditions that produce this competitiveness (20 marks)

8. The supply and demand of a product like maize (as opposed to the quantity of maize supplied or demanded) are influenced by a number of factors. Name the factors that influence supply and those that influence demand for maize and briefly explain how they influence the supply or the demand (20 marks)

9. a) Differentiate between risk and Uncertainty (8 marks)
b) Identify and describe three Strategies a farmer can use to ameliorate the impacts of risk and uncertainty (12 marks)

JARAMOGI OGINGA ODINGA UNIVERSITY

OF SCIENCE AND TECHNOLOGY

SCHOOL OF AGRICULTURAL AND FOOD SCIENCES

PRODUCTION ECONOMICS

Course Outline

Class: Bachelor of Science Agribusiness Management (No. 86) & Bachelor of Science Agric Extension (No. 145), Y2S2

Course Title: Production Economics

Course Number & Semester: BEN 3225; Year 2: Semester 2

Course Duration: Jan – Apr 2018, 14 Weeks, 42 Hours Lectures

Lecture Times: Wednesdays 10.00 – 13.00 Hrs

Lecture Hall: LAB 8

Lecturer*:* Professor Adrian Wekulo Mukhebi

Course Description

BEN 3225: Production Economics **42 Hours**

Meaning; Nature and Scope; Objectives; Framework of Analysis; The production function; Costs of Production; Revenues from production; Decision-making: the profit-maximization decision; Decision-making: the factor-product decision; Decision-making: the factor-factor model; Decision-making: the product-product model; Decision making under risk and uncertainty: Decision making with less than perfect information; Reducing risk and uncertainty; The role of government in reducing risk and uncertainty.

Objectives

The objective of this course is to cover the basic economic theory that underpins the economic decision-making process of individuals and firms engaged in agricultural value chains – especially as farmers or producers. This course assumes that students have undertaken a course in microeconomics and in basic statistics.

Learning Outcomes

Upon completion of the course the student should be able to:

- Understand the nature of the production process
- Understand the nature of the decision making process of an agricultural economic unit
- Understand the relationships between inputs and outputs – costs and revenue
- Understand the relationships among inputs
- Understand the relationships among outputs
- Determine how to maximize profit
- Understand how to account for risks and uncertainty in agricultural production

Course Delivery

The course will be delivered through three weekly lectures for a total of 42 contact hours.

There will be one continuous assessment test (CAT) accounting for a total of 30% of the final course mark, and one final examination at the end of the semester accounting for 70% of the final course mark.

Material to be covered in this course will be based on the Text Book by David L. Debertin below. It is expected of you to devote considerable time to reading through the material. The class lectures will cover only highlights of the material you will be assumed to have read. It is therefore necessary that you put serious efforts into reading and studying of the material. But you should attend the lecture sessions for the opportunity to appreciate the highlights, seek clarification on any grey areas of the topics, and compare knowledge with your colleagues.

Text Book*: The Economics of Agricultural Production (1998) by Edward Witkowski and Arnold Wells*, Mankato State College and Minnesota.

Additional Readings:

1. Doll, J and, Orazoen, F. (1978). *Production Economics Theory with application*. Wiley and Sons,
2. Debertin, David L. (2012). *Agricultural Production Economics,* (*Second Edition*, Amazon Createspace 2012), Library of Congress.
3. Bishop, C. E and Toussaint, W.D. (1963). *Introduction to Agricultural Economics Analysis*. Wiley and Sons.
4. Heady, E.O. (1982). *Economics of Agricultural production and Resources.* University Pertanian Malaysia.

Course Outline Schedule

Semester 2: 15 January – 20 April 2018

TOPIC	**WEEK**
1. Introduction	**1-2**
2. The Production Function 2.1 Diminishing Marginal Returns	
2.2 Stages of Production	
2.3 Alternate Production Functions	
2.4 Total, Average, and Marginal Physical Product	
2.5 Relationships Between Total, Average, and Marginal Physical Product	
3. Costs of Production	**2 – 3**
3.1 Explicit and Implicit Costs	
3.2 Fixed and Variable costs	
3.3 Average and marginal costs	
3.4 Relationships between average total, average variable, and marginal cost	
4. Revenues from production	**3 – 4**
4.1 The agricultural market	
4.2 Supply	
4.3 Demand	
4.4 Market equilibrium and price determination	
4.5 Total revenue for the firm	
4.6 Average revenue	
4.7 Marginal revenue	
4.8 Demand for the firm's products	
4.9 Revenue and input use	
5. Decision-making: the profit-maximization decision	**4 – 5**
5.1 The long run and the short run	
5.2 The total-cost, total-revenue approach	
5.3 The marginal-cost, marginal-revenue approach	
5.4 A second example: the total-cost, total revenue approach	
5.5 A second example: the marginal-cost, marginal-revenue approach	

5.6 The supply schedule of the individual producer	
5.7 Long-run adjustments in a competitive market	
CAT to account for 30% of final course grade	
6. Decision-making: the factor-product decision	**6 – 7**
6.1 Competition in the input market	
6.2 The marginal-value-product approach	
6.3 The price-ratio approach	
6.4 Changes in parameters	
6.5 A second example	
6.5 The firm's demand for inputs	
7. Decision-making: the factor-factor model	**8 – 9**
7.1 Production of corn with two factors of production	
7.2 The equal-product curve	
7.3 The marginal rate of technical substitution	
7.4 Inputs substituting in fixed proportions	
7.5 The equal-expenditure line	
7.6 Production with the least-cost combination of inputs	
7.7 The optimum level of output	
7.8 Least-cost combinations for more than two variables inputs	
8. Decision-making: the product-product model	**10 – 11**
8.1 The production-possibilities curve	
8.2 The marginal rate of product substitution	
8.3 Product relationships	
8.4 The equal-revenue line	
8.5 Profit-maximizing combinations of output	
8.6 Expansion paths	
8.7 Revenue- maximizing product mix for more than two products	
9. Decision Making in an Environment of Risk And Uncertainty	**11 – 12**
9.1 Risk and Uncertainty Defined	
9.2 Farmer Attitudes Toward Risk and Uncertainty	
9.3 Actions, States of Nature, Probabilities and Consequences	
9.4 Risk Preference and Utility	
9.5 Risk, Uncertainty and Marginal Analysis	
9.6 Strategies for Dealing with Risk and Uncertainty	
9.6.1 Insure Against Risk	
9.6.2 Contracts	
9.6.3 Flexible Facilities and Equipment	
9.6.4 Diversification	
9.6.5 Government Programs	
FINAL EXAMINATION ACCOUNTS FOR 70% OF COURSE GRADE – to cover all course materials from topic 1 – 9 above	**14**

Signed:

----------Date----------

Lecturer

……Date: ……..…….

DEAN, School of Agricultural and Food Sciences