**ANS 1101 INTRODUCTION TO ANIMAL AGRICULTURE**

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**Course Type**: **CORE for B.Sc. Agric. I and B.Sc. FST I**

**1. COURSE STRUCTURE**

Course Credits (CU): 3 CU i.e. 45 Contact Hours i.e. 30 LH, 30 PH

Course Duration: 15 weeks

**2. COURSE DESCRIPTION**

Definition of agriculture: relate definition to animal agriculture and profession; Importance of animals to man; Types of animals kept by man; Differences between ruminants & non ruminants; The environment in relation to animal production: Tropics vs temperate environment; Systems of animal production; Animal production as a business; Constraints to improved animal production in Uganda; Principles of Livestock Management: Housing and structures, Parasites and disease control, Nutrition and feeding, Care of replacements, Selection of breeding animals and breeding principles; Basic animal genetics; The chromosome theory of inheritance; sex expression; chromosome aberrations; gene mutations; DNA structure; Animal genetics resources; Genetic improvement versus conservation; Policy issues within the livestock sector (breeding policy, Feeds policy, etc).

**3. COURSE OBJECTIVES**

The **overall objective** of this course is to introduce the student to the science and practice of animal production. This course is intended to give a thorough understanding of the relevance of animals in and position in the broader field of agriculture. The course is very useful for future understanding of courses such as Livestock management, Animal nutrition, Livestock and poultry breeding, Dairy production, and other animal science courses.

**Specific objectives:** By the end of the course, the students should be able to:

1. Demonstrate competence in general livestock management.
2. Understand introductory livestock genetics and its role in animal agriculture.

**4. RECOMMENDED REFERENCES FOR READING**

1. Battaglia R.A. 2001. Handbook of livestock management, 3rd Edition, Prentice-Hall, Inc., Upper Saddle River, New Jersey 07458, USA, 620 pp. (available in Department book bank)
2. Herren R. 2000. The Science of Animal Agriculture. 2nd Ed. Delmar Publishers. Thomson Learning, Africa. 371 pp. (available in Department book bank)
3. Nsubuga H.S.K. 1985: Livestock and Poultry Farming in Uganda, Publishing Department, Uganda Bookshop, Kampala (available in Department book bank)
4. Tamarin, R.H. 2002. Principles of Genetics. 7th ed. McGraw – Hill International editions, Boston. 609 pp. (available in Department book bank)
5. Devendra, C. and McLeroy, G.B. 1990: Goat and Sheep Production in the Tropics. Longman Ltd. (available in Department book bank)
6. Eusebio 1990: Pig Production in the Tropics, ELBS Edition. (available in Department book bank)

**5. COURSE CONTENT, METHODS OF INSTRUCTION, TOOLS AND EQUIPMENT REQUIRED**

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| **TOPIC** | **CONTENT** | **METHOD OF INSTRUCTION / Time allocated** | **TOOLS / EQUIPMENT NEEDED** |
| 1. **INTRODUCTION**  | * Definitions
* Importance of animals to man
* Types of animals kept by man
* Differences between ruminants & non ruminants
 | Interactive lectures (3 hrs) | Chalk / BB or Markers / Flip charts |
| 2. **THE LIVESTOCK INDUSTRY IN UGANDA** | * Status of the livestock industry, livestock populations, census and trends.
 | Interactive lectures (3 hrs) | Chalk / BB or Markers / Flip charts |
| 3. **SYSTEMS OF ANIMAL MANAGEMENT** | * Systems of animal management in Uganda
* Animal production as a business
 | Interactive lectures (3 hrs) | Chalk / BB or Markers / Flip charts |
| 4. **CONSTRAINTS TO ANIMAL PRODUCTION** | * Constraints To Animal Production in Uganda
* Possible solutions to the constraints
 | Interactive lectures (3 hrs) | Chalk / BB or Markers / Flip charts |
| 5. ANIMALS & THEIR ENVIRONMENT | * Definitions
* Effect of the environment on animal production
* Livestock’s shadow: environment issues and options
* Effects of animals on the environment
 | Interactive lectures (3 hrs)Field Trip (3 hrs) | Chalk / BB or Markers / Flip chartsTransport |
| 6. **PRINCIPLES OF LIVESTOCK MANAGEMENT I** | * Definitions
* Animal Housing and structures
* Parasites and disease control
* Nutrition and feeding
* Housing of cattle, goats, pigs, chicken
 | Interactive lectures (3 hrs)Practical (2 hrs)Field Trip (3 hrs) | Chalk / BB or Markers / Flip chartsTransportTransport |
| 7. **PRINCIPLES OF LIVESTOCK MANAGEMENT II** | * Care of replacements
* Records and Record keeping
* Selection of breeding animals
* Breeding principles
 | Interactive lectures (2 hrs)Practical (2 hrs)Field Trip (3 hrs) | Chalk / BB or Markers / Flip charts |
| 8. **ROUTINE MANAGEMENT** | * Livestock identification
* Age determination of livestock
* Weight determination of livestock
* Dipping / spraying / foot treatment
 | Interactive lectures (2 hrs)Practical (3 hrs)Seminars (3 hrs) | Chalk / BB or Markers / Flip chartsTagging toolWeigh bridgeWeight tapes |
| 9. **BASIC ANIMAL GENETICS** | * Contribution of genetics to man’s welfare
* Traits in animals and their measurement
* Mendelian Genetics
* Chromosome theory of inheritance
* Sex expression and Sex linked inheritance
* Chromosome aberrations
 | Interactive lectures (5 hrs)Seminars (3 hrs) | Chalk / BB or Markers / Flip charts |
| 10. **FARM ANIMAL GENETICS RESOURCES** | * Animal genetics resources of Uganda
* Characteristics of modern agriculture
* Conservation of animal genetic resources
* Policy issues within the livestock sector (animal breeding act, Feeds policy, Meat master plan, NAGRC etc)
 | Interactive Lectures (3 hr)Practical (3 hr)Field Trips (3 hr) | Chalk / BB or Markers / Flip chartsCopies of Animal policies  |
|  | * Evaluation
 | Tests (2 hrs) |  |

**6. SUMMARY OF TIME NEEDED**

Interactive lectures covering theory 30 hrs

Class and station-based practicals 10 hrs

Field visits 12 hrs

Seminars 06 hrs

Evaluation 02 hrs

**7. OVERALL COURSE EVALUATION**

Continuous Assessment Test 20%

Class practicals, Field work, Write-ups 20%

Final examination 60%