

VETM 1003 Animal Production I
Year 1 Semester II School of Veterinary Medicine

**VETM 1003 – Animal Production I
Animal Nutrition, Animal Breeding and
Farm Management/Agribusiness**

VETM 1003 Animal Production I
Year 1 Semester II School of Veterinary Medicine

COURSE TITLE: **Animal Production I**
COURSE CODE: **VETM 1003**
LEVEL: **I**
CREDITS: **3**
SEMESTER: **II**
COURSE COODINATOR: **Prof. Gary Wayne Garcia**
Professor of Livestock Science
Department of Food Production
Faculty of Food and Agriculture
garygwg1@gmail.com
662-2002 Ext. 83328
Room 212, Sir Frank Stockdale Building

LECTURERS: **Prof. Gary Wayne Garcia**

Dr Shamjeet Singh
Biochemistry Unit
Dept. of Pre-Clinical Sciences
Faculty of Medical Sciences
shamjeet.singh@sta.uwi.edu
Tel: 868-645-2640 (4653, 4645, 2867)
Fax: [868-662-1873](tel:868-662-1873)
Mobile: [868-393-7257](tel:868-393-7257)

Dr. Ridley Holder
Lecturer - Swine Medicine
Clinical Veterinary Sciences
School of Veterinary Medicine
ridley.holder@sta.uwi.edu
645-2640 ext.4322

Dr. Govin Seepersad
Lecturer in Agribusiness
Department of Agricultural Economics &
Extension
Faculty of Food and Agriculture
govind.seepersad@sta.uwi.edu
662-2002 ext.83274

YEAR: **2012 - 2013**

Office hours: All students can communicate on line with the Course Coordinator and Course Lecturers on Line through the Google Group e-Mail account. I would like to advise ALL students that they also

get a GMail e-mail address. It has very useful electronic information storage and Transfer Features.

Communication policy: Use the course group email account. In this manner we could all communicate with each other 24 hours a day. All discussions must be polite.

1. Crouse Schedule

January 21 to February 22, 2013

Lectures: Tuesday 10:00am-12:00pm (SVM AMPHI)

Wednesdays 9:00am-10:00am (SBB 001)

February 25 to April 19, 2013

Lectures: Monday 9:00am-10:00am (???????)

Tuesdays 10:00am-12:00pm (SVM AMPHI)

2. Purpose of the Course

This course is to introduce the student of Veterinary Medicine to the World of Animals from the standpoint of production, growth, economics and farm management. It is the one of three courses in which the student will be exposed to domestic and non-domestic animal species. It was designed specifically for the students in the five (5) year degree programme in Veterinary medicine.

3. Course Content

This course contains an introduction to and concepts involved in Animal Nutrition and Feeding (the Nutritional Factors), Animal Breeding and Genetics (Animal Breeding and Genetic Factors), and Agribusiness Management (the Economic and Socio-economic Factors).

4. Letter to you the students of VETM1003

Hello and Welcome to all students of this class. We are sure that you would never regret having signed up for Veterinary Medicine, but it is going to be a long haul. In addition we would like to let you know that this will be your first and only course in Animal Production. We will also like to let you know that it would be one of the most enjoyable and exciting courses that you will ever take at the University of the West

VETM 1003 Animal Production I
Year 1 Semester II School of Veterinary Medicine

Indies. This year is the second time that this course is being offered in this manner and we have tried our best to present the different disciplines to you in a very logical and organized manner. Therefore it will be important for you to work slowly but systematically throughout the semester. This semester we have planned for you to cover the material in this course in parallel with the Problems or Cases presented to you in the Problem Based Learning [PBL] sessions. Your PBL sessions this semester will be drawing on the materials that you would be given in this course. We also have a group email account for this course so that for the first time we shall be introducing you to an **“Open Classroom”**. When you visit the website of the “Open School of Tropical Animal Science and Production” you can download most of the Teaching Material for this course from the Website of “The Open School of Tropical Animal science and Production”. We do hope that you would have a wonderful time with Animal Production this semester. Good luck and welcome to our **“Open Classroom”**. This [your first handout] in this course is going **to describe for you the way in which this course has been organized and how it will be conducted for your enjoyable learning. Please do enjoy !!!!!!!!!!!!!!!**

Please read carefully and understand the contents of this communication!!!!!!!!!!!!!!

5. Course Organization

This course is organized into three parts that would be taught by different persons as follows:

Part 1: Introduction to Animal Nutrition – *Prof. Gary Wayne Garcia and Dr. Shamjeet Singh* (50% of this course)

Part 2: Principles of Animal Breeding and Genetics - *Dr. Ridley Holder* (35% of this course)

Part 3: Principles of Agribusiness Management - *Dr. Govin Seepersad* (15% of this course)

6. Course Objectives

List of Topics

Part 1: Principles of Animal Nutrition

- 1.1 The Animal and its Food
- 1.2 Comparison of the Digestive Systems of Farm Animals and their practical implications for the feeding of animals and the balancing of Rations
- 1.3 What is a Feed?
- 1.4 Components of Feeds/ Feed Nutrients
 - 1.4.1 Lipids/Fats
 - 1.4.2 Carbohydrates [Soluble (Sugars, Starches), Structural (Fibre)]
 - 1.4.3 Proteins
 - 3.4.3.1 Amino Acids
 - 3.4.3.2 True Proteins
 - 3.4.3.3 Non Protein Nitrogen
 - 1.4.4 Vitamins
 - 3.4.4.1 Fat Soluble Vitamins
 - 3.4.4.2 Water Soluble Vitamins
 - 1.4.5 Minerals
 - 3.4.5.1 Macro Minerals
 - 3.4.5.2 Micro Minerals
 - 1.4.6 Water
- 1.5 Classification of Feeds and Feedstuffs with particular reference to the Caribbean Region
- 1.6 Feed Additives
 - 3.5.1 Probiotics
 - 3.5.2 Essential Amino Acids

VETM 1003 Animal Production I
Year 1 Semester II School of Veterinary Medicine

- 1.7 Ideal Protein Concept
- 1.8 Anti Nutritional Factors
- 1.9 What is a Ration?
- 1.10 Evaluation of Foods and Feeds:
 - 3.9.1 Chemical Composition
 - 3.9.2 Digestibility
 - 3.9.3 Energy Content
 - 3.9.4 Partitioning of Feed Energy within the Animal
 - 3.9.5 Systems of expressing the Energy Value of Feeds
 - 3.9.6 Feed Protein
- 1.11 Feed Intake
 - 3.10.1 As Fed
 - 3.10.2 Dry Matter
 - 3.10.3 Voluntary Feed Intake
- 1.12 Feeding Standards
- 1.13 Ration Formulation
 - 3.12.1 Mono-gastrics
 - 3.12.2 Ruminants
- 1.14 Feed Conversion Ratio
- 1.15 Feed Conversion Efficiency
- 1.16 Economics of Feeding Animals

Part 2: Principles of Animal Breeding and Genetics

- 2.1 Introduction to Mendelian Genetics
 - Mendel's first law
 - Mendel's second law
 - Co-dominance
 - Lethal genotypes
 - Pleiotropy
 - Incomplete penetrance
- 2.2 Quantitative Genetics
 - Difference between quantitative and qualitative traits
 - Partitioning of phenotypic variance
- 2.3 Heritability (h^2)
 - Definition estimation (see biostatistics)
 - Uses
- 2.4 Repeatability (r)
 - Definition
 - Uses
- 2.5 Phenotypic correlation (r_p)
 - Definition
 - Uses
- 2.6 Genetic correlation (r_g)

Definition

Uses

2.7 Response to selection and its prediction

Breeding value and its estimation

EPDs

Indirect selection

Multiple trait selection

Tandem selection

Independent culling level

Index selection

2.8 Crossbreeding

Specific crossbreeding systems

2.9 Inbreeding

Uses

Disadvantages

2.10 Transgenic animals in animal production

Part 3: Principles of Farm Management/ Agribusiness Management

3.1 The Farm or Animal enterprise as a Business

3.2 The Components of a Farm Business

3.3 The Nature of the Products on an Animal Farm

3.4 The Elements of the Cost of Producing Animal Products

3.5 The Law of Supply and Demand

3.6 Factors affecting the Demand for Livestock Products

3.7 Factors Affecting the Supply of Livestock Products

3.8 The Types of Markets

3.9 The Importance of Records and Record Keeping on the Livestock farm

7. Learning Outcome

- I. to have an understanding of the Basic Principles of Animal Nutrition and to be able to explain the concepts as outlined in Part 1 of the course outline.
- II. to have an understanding of the Basic Principles of Animal Breeding and Genetics and to be able to explain the concepts as outlined in Part 2 of the course outline.
- III. to have an understanding of the Basic Principles of Animal Farm Management and to be able to explain the concepts as outlined in Part 3 of the course outline.

VETM 1003 Animal Production I
Year 1 Semester II School of Veterinary Medicine

8. TENTATIVE COURSE CALENDAR

VETM 1003 Animal Production I Course Schedule 2012-2013 Semester II

| Date | Time & Place | Topic | Name |
|---|------------------------|--|----------------------|
| Week 1 Tuesday 22 nd January | 10am-12pm SVM AMPHI | Course Introduction and General Introduction to Animal Production VETM1003, VETM1004 and VETM1005 | Prof. Gary Garcia |
| Wednesday 23 rd January | 9am-10am SBB001 | 1.1 and 1.2 [1.3 to be done by Dr Garcia electronically] | Prof. Gary Garcia |
| Week 2 Tuesday 29 th January | 10am-12pm SVM AMPHI | 1.4 Components of Feeds/Feed Nutrients | Dr Shamjeet Singh |
| Wednesday 30 th January | 9am-10am SBB001 | 1.4 Components of Feeds/Feed Nutrients | Dr Shamjeet Singh |
| Week 3 Tuesday 5 th February | 10am-12pm SVM AMPHI | 1.4 Components of Feeds/Feed Nutrients | Dr Shamjeet Singh |
| Wednesday 6 th February | 9am-10am SBB001 | 1.5 Classification of Feeds 1.6 Feed Additives | Dr Shamjeet Singh |
| Week 4 Tuesday 12 February | 10am-12pm SVM AMPHI | <i>Carnival Tuesday</i> | |
| Wednesday 13 th February | 9am-10am SBB001 | 1.7 Ideal Protein Concept and 1.8 Anti-nutritional Factors | Prof Gary Garcia |
| Week 5 Tuesday 19 st February | 10am-12pm SVM AMPHI | 1.9 What is a Ration? 1.10 Evaluation of Foods and Feeds and 1.11 Feed Intake | Prof Gary Garcia |
| Wednesday 20 th February | 9am-10am SBB 002 | 1.12 Feeding Standards and 1.13 Ration Formulation | Prof Gary Garcia |
| Week 6 Monday 25 th | 9am-10am | 1.14 Feed Conversion Ratio 1.15 Feed Conversion Efficiency | Prof Gary Garcia |

VETM 1003 Animal Production I
Year 1 Semester II School of Veterinary Medicine

| | | | |
|---|-------------------------|-----------------------------------|--------------|
| February | ???? | 1.16 Economics of Feeding Animals | |
| Tuesday 26 th February 2012 | 10am -12pm SVM AMPHI | | Dr Holder |
| Week 7 Monday 4 th March | 9am-10am ????? | | Dr Holder |
| Tuesday 5 th March | 10am -12pm SVM AMPHI | | Dr Holder |
| Week 8 Monday 11 th March | 9am-10am ????? | | Dr Holder |
| Tuesday 12 th March | 10am -12pm SVM AMPHI | | Dr Holder |
| Week 9 Monday 18 th March | 9am-10am ???? | | Dr Holder |
| Tuesday 19 th March | 10am -12pm SVM AMPHI | | Dr Holder |
| Week 10 Monday 25 th March | 9am-10am ???? | | Dr Holder |
| Tuesday 26 th March | 10am -11am SVM AMPHI | | Dr Holder |
| Tuesday 26 th March | 11am -12pm SVM AMPHI | | Dr Seepersad |
| Week 11 Monday 1 st April | 9am-10am ?????? | EASTER MONDAY | Dr Seepersad |

VETM 1003 Animal Production I
Year 1 Semester II School of Veterinary Medicine

| | | | |
|---|-------------------------|----------|--------------|
| Tuesday 2 nd April | 10am -12pm SVM AMPHI | | Dr Seepersad |
| Week 12 Monday 8 th April | 9am-10am ????? | | Dr Seepersad |
| Tuesday 9 ^h April | 10am -12pm SVM AMPHI | | Dr Seepersad |
| Week 13 Monday 15 th April | 9am-10am ?????? | | Dr Seepersad |
| Tuesday 16 th April | 10am -12pm SVM AMPHI | Revision | Dr Seepersad |

9. TEACHING STRATEGIES

This is a blended course, presented face to face in the classroom and the materials will be available on the Website of “The Open School of Tropical animal science and Production” (for Professor Garcia’s lectures (Animal Nutrition). In the classroom, we will use the traditional lecture, interspersed with short individual, pair, or small-group activities (PBL – Problem Based Learning) to ensure active learning.

10. REQUIRED READING

The respective lecturers will provide the directed reading along with the readings from the website.

11. ASSESSMENT

- **Coursework (40%)**
- **Final Examinations (60%)**

Coursework breakdown

| Assessment | Weight |
|---|---------------|
| Mid Semester Quiz #1 | 25% |
| End of Semester Quiz #2 | 10% |
| Field Trips (2%) & Field Trip Report (3%) | 5% |
| Final Exam | 60% |
| Total | 100% |

12. ATTENDANCES/ABSENCES

Students are expected to attend most (75%), if not all, classes. Students absent during an exam or when an assignment is due must have an excused absence (requested in writing) to avoid being awarded a zero mark. Discuss any planned absences with the lecturer **prior** to the absence. Emergency absences should be discussed immediately after return to class. Medical excuses must be signed by a physician.

***** *Enjoy your course and Best Wishes* *****