

**COURSE AGLS6502:
TROPICAL ZOO AND
WILDLIFE PRODUCTION & MANAGEMENT
[TROPICAL WILDLIFE MANAGEMENT
IN CAPTIVITY AND THE WILD]**

2012-2013: Semester II

**COURSE AGLS6502:
TROPICAL ZOO AND
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[TROPICAL WILDLIFE MANAGEMENT
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In

The MSc. In TROPICAL ANIMAL SCIENCE AND PRODUCTION Programme

**DEPARTMENT OF FOOD PRODUCTION
FACULTY OF SCIENCE & AGRICULTURE,
THE UNIVERSITY OF THE WEST INDIES,
ST. AUGUSTINE CAMPUS,
TRINIDAD & TOBAGO, WEST INDIES.**

By

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Gary Wayne Garcia (2012-2013)

The Open School of Tropical Animal Science and Production

www12.brinkster.com/ostasp/index.aspx

<http://ostasp.rizontt.com/>

Virtual Centre for Neo-tropical Animal Wildlife

<http://vcnaw.rizontt.com/>

The Electronic Journal of Neo-tropical Animal Wildlife

<http://ejneaw.rizontt.com/>

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1.1 Introduction

Welcome to this very compact and interesting course on the Neo-tropical Zoos, Animal Wildlife Management and Production!!!

Some of you will be taking this as your only course on Animals and Neo-tropical Wildlife. While for others this may lead you into a very interesting and rewarding world of Neo-tropical animals. *Here you may choose to spend the rest of your life.*

I do hope that all students enjoy this course as much as I have enjoyed developing it for you **and** teaching it to wonderful learners like yourselves over the last fourteen (14) years. This course was first offered in 1995-96 academic year and for me the teaching of the course has been more enjoyable each year.

A very important feature of this course [that was specially designed by me to help make your learning enjoyable] was/is that the course has five (5) learning and teaching approaches. They are as follows:

- **Lectures -Didactic or the Face to Face mode** i.e. You listening to the lecturers, but this year for the very first time, they will be doing very little talking [most of your notes will be given to you in advance as PDF files];
- **Field Trips - involving visits to a Farm, a Livestock Research and Development Facility and to the Emperor Valley Zoo [EVZ]** i.e. You will be making your own observations within a real Animal Production Environment;
- **Slide Session - at the beginning of the Semester to bombard you with visual images** [this will be an evening session and would also include the second year students from the School of Veterinary Medicine];
- **A Week End Camp**, this has been designed to give you an appreciation of the outdoors and to experience a Camp Under the Stars.
- **A Game- The Playing of a Game that would involve Problem Solving and a Presentation** i.e. You will be doing some learning by playing a futuristic business game that would involve problem solving, group discussions, and a Final Presentation and Formal Report. This will be a new teaching initiative being used this academic year.

I assure you, that if you work on the activities within the group to which you will be assigned this semester, by the end of the 13th week of the semester you can walk out of the classroom and write the exam with ease!!

I would also like you to study in detail the Course Cover. It contains a lot of information!!!!!!!!!!!!!!

1.1.1 COURSE RATIONALE

- There are only a few places in the world where university courses in the “Management of Tropical Wildlife” and the “Management of Neo-tropical Wildlife” are offered. There are even fewer courses available in the world on the husbandry of captive Neo-tropical animal wildlife species. Most of these

courses when offered are not easily available and when and where they are available they typically need substantial funding to bring together participants from wide geographic locations.

- The widespread international interest at present being generated in conservation and environmental management has stimulated the need for an available course such as this one. In addition, the initiatives of **AGENDA 21** have created [**and would further create**] the need for people to be further informed on wildlife management and conservation within the Neo-tropical context. This course could help to fill this gap and the need for information of this nature.

- This course is an elective within the M. Sc. in Tropical Animal Science and Production Program within the Faculty of Science and Agriculture of the University of the West Indies and is at present being offered in the face-to-face mode to both undergraduate and post graduate students.

1.1.2 COURSE DESCRIPTION

The history and role of zoos. Endangered species and the Convention on International Trade in Endangered Species of Wild Fauna and Flora [CITES] accord. Local laws for the protection of wildlife and endangered species in the world with particular reference to the Neo-tropics. The management of non-domestic animals in captivity. Approaches to the management of zoos and wildlife conservation. What is Wildlife Management? Strategies and Methods used in Wildlife Management with special reference to the Caribbean and Latin America [Neo-tropical species]. The present state of knowledge of our Neo-tropical Animals and their potential for Domestication. Future Horizons for Neo-tropical Wildlife Conservation, Management, Production and Utilization.

1.1.3 COURSE OBJECTIVES

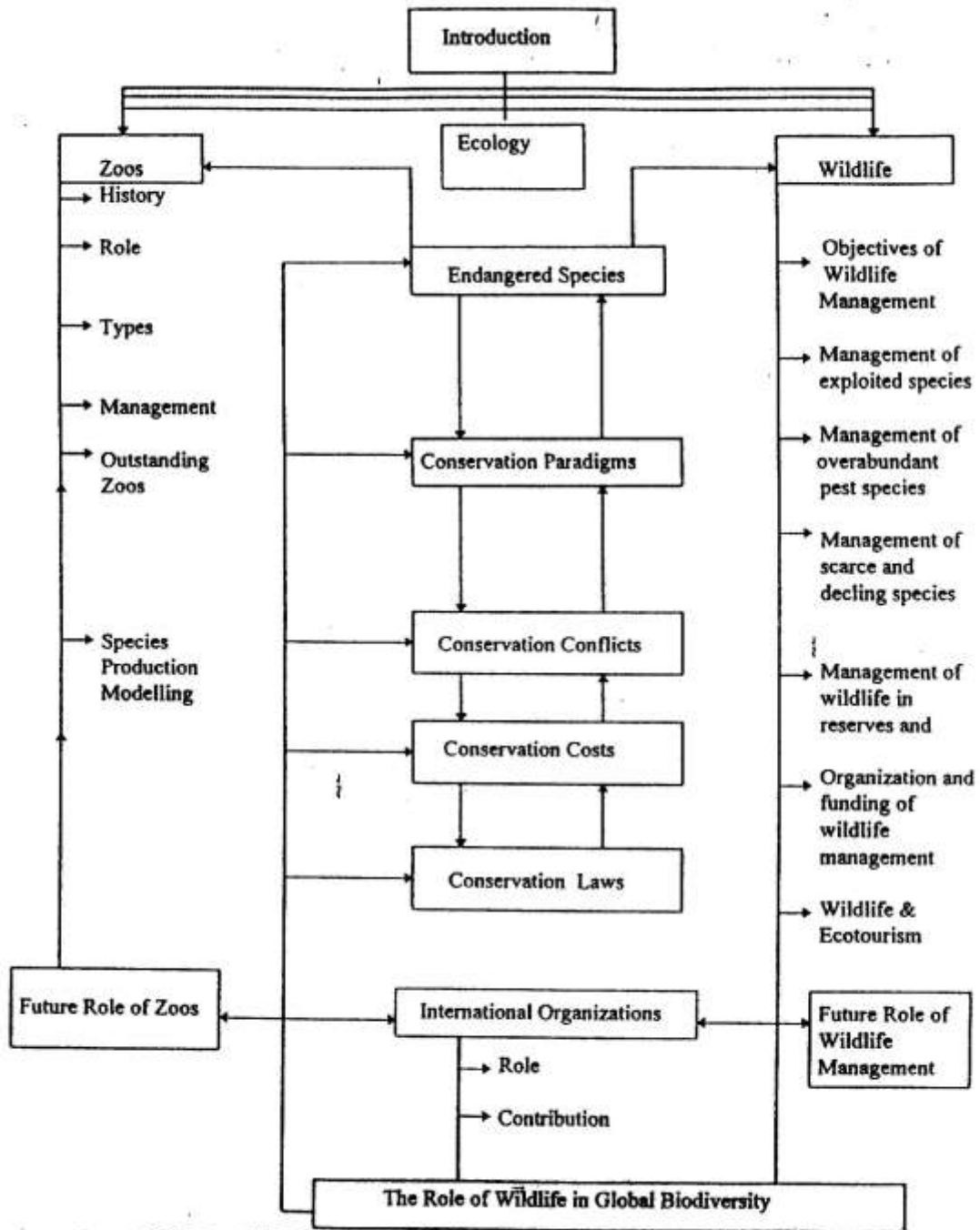
- ⇒ To provide an appreciation of the role and function of zoos.
- ⇒ To provide an understanding of the components of management of zoos and animal display facilities.
- ⇒ To describe the forms of wildlife management and explain their importance to conservation efforts.
- ⇒ To highlight different approaches at Neo-tropical Conservation.
- ⇒ To highlight the laws and organizations involved in international wildlife conservation

⇒ To highlight wildlife utilization in Latin America and the Caribbean [Neo-tropics]

1.1.4 LEARNING OBJECTIVES

- (i) To be able to describe the role, function and management of zoos.
- (ii) To be able to describe the four basic traditional goals of wildlife management and how they are achieved.
- (iii) To be able to describe the CITES accord, and to explain how it is implemented.
- (iv) To be able to describe some of the major international issues affecting wildlife in the world.
- (v) To be able to describe the anatomy, physiology, health, nutrition, environmental requirements and possible approaches to the management of some selected Caribbean Tropical wildlife species in captivity and in the wild, livestock production from selected wildlife species.
- (vi) To be able to describe the areas of conflict between different schools of thought on wildlife management and conservation.
- (vii) To be able to describe approaches at wildlife utilization within the Neo-tropics.

1.1.5 COURSE LOGIC



1.1.6 COURSE MODULES AND UNITS

Module I Introduction

- Unit 1 Introduction.
How is this course organized?
- Unit 2 The Animal Kingdom
- Unit 3 An Introduction to Ecology

Module II Zoos

- Unit 4 What are Zoos?
 - History of Zoos.
 - Type of Zoos.
 - Role of Zoos.
- Unit 5 Zoo Management.
 - Management of Zoos.
 - Zoo Organizations.
 - Zoos highlighted (world zoos).
- Unit 6 Zoos of the Caribbean.

Module III Wildlife Management

- Unit 7 The Practice of Wildlife Management
 - History and development of wildlife management
 - Definition of modern wildlife management
 - Goals of wildlife management.
- Unit 7 Different Approaches at Wildlife Conservation and Management
Extension
- Unit 8 Management of Exploited Wildlife Species
 - Sustained Yield Harvesting
 - Estimating Sustainable Harvest Rates
 - Achieving Sustained Yields
 - Hunting of Wildlife in Trinidad and Tobago
- Unit 9 Management of Overabundant Wildlife Pests
 - When is Wildlife overabundant?
 - Management to reduce population size.
 - Management to modify behavior
- Unit 10 Management of scarce and Declining Wildlife
 - When is Wildlife too scarce?
 - Increasing population size through the manipulation of birth, death and recruitment
 - Special challenges posed by endangered species
- Unit 11 Management of Wildlife in Nature Reserves and Parks.
 - Why do we need to manage wildlife in nature reserves?
 - Designing Reserves to accommodate Wildlife

- The Internal and External Threats to Wildlife in reserves
 - Protected Natural Areas in Trinidad and Tobago
- Unit 12 Organization and Funding of Wildlife Management
- Who is responsible for Wildlife Management?
 - How is Wildlife Management Funded?
 - Public attitudes and perceptions.
 - Eco-tourism and Wildlife Management
- Unit 13 The Future of Wildlife Management in a Human Dominated World
- The Biodiversity Crisis
 - Can wildlife Management cope with the impending Crisis?

Module IV Wildlife Production Systems

- Unit 14 Introduction to Species Production Modeling.
- Unit 15 Species Model: The Agouti [*Dasyprocta leporina*].
- Unit 16 Species Model: The Capybara [*Hydrochoerus hydrochoeris*]
- Unit 17 Species Model: The Iguana [*Iguana iguana*]
- Unit 18 Species Model: The Opossum [*Didelphis marsupialis insularis*]
- Unit 19 Aquatic Species Production
- Species Model: Cascadura [*Haplosternum littorale*]
- Species Model: Tilapia [*Tilapia sp.*]
- Unit 20 Species Model: Quenk [*Tayassu tajuca*]
- Unit 21 Species Model: Boa constrictor [*Boa constrictor constrictor*]

Module V Wildlife and Conservation Issues

- Unit 22 The Future Role of Zoos in Wildlife Conservation
- Unit 23 International Organizations which Contribute to Wildlife Preservations.
- Unit 24 The Different Conservation Philosophies.
- Unit 25 The Role of Wildlife Management in Protecting Global Bio-diversity
- Where does humanity go from here? .
- Unit 26 Wildlife and human health.
- Unit 27 Wildlife and domestic livestock health.
- Unit 28 Laws Governing Wildlife
- Unit 29 Wildlife Utilization in the Neo-tropics [Latin America and the Caribbean].

1.1.7 STUDENT EVALUATION

| Student Evaluation Activity | % | Date Due |
|--|--|--|
| Coursework | 50 | |
| Slide Show Report | 2 % | Friday 15th February |
| Field Trip #1 and #2 (Visit to EVZ and SFC, (Centeno, UFS) Sunday 5 th February | 8 % [4 % Attendance; 4 % Report] | Friday 15th February |
| Week End Eco-Tourism and Wildlife Camp Friday 15 th Saturday 16 th and Sunday 17 th March to Las Hermanas Estate, Santa Cruz Experience and Write up | 5 % Participation 10 % Report | Wednesday 27th March |
| Company Presentation and Report | 20 % (5 % oral 15 % write up) | Friday 26th April |
| Usability Computer Test | 5% | |
| Final Exam Written 3 hours | 50 | |
| Total | 100 | |

1.1.8 COURSE PROJECT/ THE GAME

The coursework project will be the output from a GAME. This game approach was developed by Nick Marsh and Ian Ivey of the NEXT Cooperation of New Zealand.

The Methodology is called “FutureSim™”.

The class will be divided into companies with business plans related to some aspects of Neo-tropical Animals and Zoos. The general objectives would be to link the concepts of Conservation, Management, Production and Utilization within an integrated holistic framework. In addition it will be for you to use your understanding of the material contained within the course to plan your Company’s or Unit’s Future.

The Components of the Game will be as follows:

1. The Companies/Units
2. The Company's/Unit's Main Mission
3. The Team's Development of the Company/Unit
4. The Game
5. The Outcome and Presentation by each Company/Unit
6. The Presentation
7. The Formal Report
8. The Evaluation of the Student's Participation
9. The Evaluation of the Learning Outcome by the Students

How will the course be taught and how will the Game be played?

At the start of the course you will be given the following:

- 1] **Course Outline and Lecture Schedule** [which is this document]
- 2] **Your course lectures notes would be obtained in PDF format from the Group G Mail Website** [you will then print out the material for you to read or you can store it on your computer]
- 3] **The Information on the Companies and how the game will be played will be given to you in a separate document** [this is the **Game Manual**]
- 4] **The Game this year will be centred around the Development of Thompson's Conservation Centre [TCC].**

1.1.9 SEMESTER II SCHEDULE (January to April 2013)

All classes will be 5.00 to 7.00 p.m. on Wednesdays and Fridays. Lecture Room B1 Sir Frank Stockdale Building, Faculty of Science and Agriculture

Week #1

| | |
|--|---|
| <p>Wednesday 23rd January:</p> | <p>[I] Introduction to Course WELCOME TO ALL Handout of Course Outline and Description of how the course would be conducted Collection of Background Information on the Students</p> <div style="border: 1px solid black; padding: 5px;"> <p>Unit 1 –Course Introduction [GWG] from Website Unit 2 - The Animal Kingdom [GWG]</p> </div> <p><i>FFA Computer Lab</i></p> |
| <p>Friday 25th January :</p> | <p>Feedback from Students Organizing of the Class into The Companies/Units of The Wildlife Industry of Trinidad and Tobago: Company #1: T&T Hunting Association [Hunters’ Association Unit] Company #2: Wildlife Unit, Forestry Division [Wildlife Unit] Company #3: The Caroni Bird Sanctuary [Caroni Swamp Unit] Company #4: Emperor Valley Zoo [Zoo Unit] Company #5: Veterinary Public Health and Public Health Division, Ministry of Health [Public Health Unit] Company #6: T & T Association of Neo-tropical Animals Farmers [Wildlife Farmers Unit] Company #7: Animal Production and Research, Ministry of Agriculture [AP&R Unit] Company #8: Thompson’s Conservation Centre [TCC Unit] Company #9: Eco-Tourism Association of Trinidad and Tobago [Eco-tourism Unit] Company #10: T&T Cuisine [Cuisine Unit] Company #11: Pointe a Pierre Wild Fowl Trust [Wild Fowl Trust Unit]</p> |

Week #2
Wednesday 30th
January

NOTE

Thursday 31st
January
7 to 10 PM

Friday 1st February:

Company #12: Agricultural Development Bank

[ADB Unit]

[GG and Michele Singh]

Module [I]

Unit 3 - An introduction to Ecology [Directed Reading]

FFA W [Building in Front Bank]

Student Usability Testing and Course Information Navigation

9:00 to 12:00 Computer Laboratory

The State of Knowledge on Neo-tropical Animal Wildlife Conservation, Management, Production and Utilization in Trinidad and Tobago

By: Gary Wayne Garcia

FFA Computer Lab

Module [II] Zoos:

Unit 4 – What is a Zoo? [WM]

Unit 5 – Management of Zoos [WM]

Unit 6 – Zoos of the Caribbean [WM]

Special Slide Session on Zoos and Animal Facilities [VETM1111 Animal Production and AGLS6502]

Special Slide Session Activity

[Gary Garcia]

- 1. Slides on Domestic Animal Facilities**
- 2. Slides on Zoos of the World**

Lecture Room B, Sir Frank Stockdale Building

The Zoo through the eyes of a child, A video presentation featuring Aryann Garcia.
Special Guest lecture: Miss Aryann Garcia:
The changing perspectives of an adolescent on Zoos.

FFA W [Building in Front Bank]

**Saturday 2nd
February
5:30 AM- 3PM
All Day Field Trip**
[Meet in Front of Sir
Frank Stockdale
Building at 5:30 am]

**Saturday Field Trip is
Field Trip Report #1**

**Sunday 3rd February
7AM- All Day Field
Trip**

**Sunday Field Trip is
Field Trip Report #2**

1] UFS Dairy Milking and Milking Management
[6:00 to 8:00 am]

Objectives:

1. to observe milking and milking management;
2. to observe and critique the milking practices;
3. to observe the animals and milking facilities.

2] Centeno Livestock Station: Small Ruminant
Production [9:00 to 11:00 am]

Objectives:

1. to observe the housing, feeding and intensive management of tropical Hair Sheep and Goats

3] Emperor Valley Zoo

[8:30 to 11:00 am]

1. to observe the functional elements of a tropical Zoo;
2. to observe the importance, role and function of the Kitchen in the Zoo;
3. to observe the elements of a Zoo Exhibit; and
4. to be able to appreciate the Role of Zoos within the Modern day society.

4] Sugarcane Feeds Centre [12:00 to 4:00]

1. to observe the building design and features of an intensive zero grazing beef and dairy cattle facility;
2. to observe the housing, feeding and intensive management of tropical hair sheep and goats;
3. to observe pig housing design for the tropics to facilitate the management of pig waste for biogas production;
4. to observe the integration of sheep and aquaculture production;
5. to observe the integration of crop and livestock production;
6. to begin the first group/company meetings

[Gary Garcia, Dean Avril, Michele Singh]

Week #3

**Wednesday 6th
February**

**[III] Wildlife Management (Gary Garcia)
Unit 7 Extension**

The Classical North American OR Euro-Centric Approach to Wildlife Management

Unit 7 - The Practice of Wildlife Management

Unit 9 - Management of Overabundant Wildlife Pests

Unit 8 - Management of Exploited Wildlife Species: Some Points of View

Unit 10 - Management of Scarce and Declining Wildlife

Unit 11 - Management of Wildlife Reserves and Parks

Unit 12 - Organization and Funding of Wildlife Management and Ecotourism

This would be a Major Item to be discussed at the Eco-tourism Class Camp

Alternative Approaches at Neo-tropical Animal Wildlife Management:

Unit 7 Extension

[1] The Small Island States

[2] French Guyana [Red, Yellow and Green Animals]

[3] The Ojasti Approach for Latin America and the Caribbean

Unit 29 - Present and Future Horizons for Wildlife Utilization in Latin America and the Caribbean

Computer Lab

GAME TIME

[Company Planning Strategy]

[Michele Singh]

FFA W [Building in Front Bank]

**Friday 8th
February**

Week #4

**Wednesday 13th
February
[Ash Wednesday]**

Neo-tropical Animals as Alternative Animal Production Systems and Protein Sources for the Americas

By: Gary Garcia

Computer Lab

**Friday 15th
February:**

IV] Wildlife Production Systems [WM]
Unit 14- Introduction to Species Production Modeling
[IV] Wildlife Production Systems [Michele Singh]
Rodents:
Unit 15- The Agouti [*Dasyprocta leporina*]
Unit 16 -The Capybara [*Hydrochoerus hydrochoeris*]

FFA W [Building in Front Bank]

Week # 5

**Wednesday 20th
February:**

IV]Wildlife Production Systems [Michele Singh]
Unit 17 - The Iguana [*Iguana iguana*]

Unit 18 - Species Model: The Opossum [*Didelphis marsupialis insaluris*]

FFA E [Building in Front Bank]

**Friday 22nd
February
[possible lecture by
Wendy Townesend]**

Module [V] Some Issues [WM]
Unit 22 - The Future Role of Zoos in Wildlife Conservation
Directed Readings
[Michele Singh]

FFA W [Building in Front Bank]

Week #6:

**Wednesday 27th
February**

GAME TIME

Friday 1st March

IV]Wildlife Production Systems [Michele Singh]
Unit 19 - Aquatic Species Production
The Cascadura [*Hoplosternum littorale*]
The Tilapia [*Tilapia sp.*]
Unit 20 - Species Model: Quenk [*Tayassu tajuca*] [To be elaborated on at the Camp Week End]
[Michele Singh]

FFA W [Building in Front Bank]

Week #7

Wednesday 6th March:

Unit 21 – The Boa Constrictor
[Boa constrictor constrictor] and **Know More about Snakes :**

[Sg Anthony Garcia, Lyndon Pierrepont, Christopher O’Keeffe and Michele Singh]

FFA E [Building in Front Bank]

Friday 8th March:

SURVIVAL KITS and SURVIVAL PREPARATION
Retired Sgt. Anthony Garcia
Sgt. Miguel Reyes

FFA W [Building in Front Bank]

Week #8

Wednesday 13th March

March

Camp Site Protocol and Development:
Retired Sgt. Anthony Garcia and Sgt Miguel Reyes, Practical in establishing a campsite.

FFA E [Building in Front Bank]

Friday 15th March

Eco-tourism Camp

Experience to be

written up: 10%

Course Mark

[The Critical Component of the Game and Company Activity]

Class Eco-tourism Field Trip

Retired Sgt. Anthony Garcia

Field Trip #3

Two and a half day camp experience at Santa Cruz Eco Park/Las Hermanas Estate

Objective:

- 1. To have the learner experience Eco-tourism and its idiosyncrasies.**

Friday 15th March:

Depart St Augustine: Friday 11 am to Camp site

Arrive at Campsite: 2 pm

Establish Camp: 2-5pm

Lecture Friday Evening:

Survival Skills: Sgt. Anthony Garcia

Saturday 16th March:

5:30 am: Rise and Prepare Breakfast

7:00 am: Hike to Wild Hog Farm

| | |
|--|---|
| | <p>8:00 am: Appreciate and evaluate an intensive production system for the Collared Peccary 11:30 am: Prepare Lunch at Peccary Farm 2:00 pm: Depart to Las Hermanas Farm 4:00 pm: Kill Class, Fire Procurement and Dinner at Las Hermanas 7:00 pm: Dinner 8:00 to 10:00 pm: [III] Wildlife Management Unit 12 - Organization and Funding of Wildlife Management and Ecotourism WM] Companies to work on their Assignments at Las Hermanas Estate, Santa Cruz [III] Wildlife Management [WM] Unit 13 - The Future of Wildlife Management</p> <p>Sunday 17th March: 5:30 am: Rise and Prepare Breakfast 7:00 am: Break Camp 8:00 am: Hike to Maracas Beach over the Mountain</p> <p>Depart Maracas: 3pm Arrive Campus: 6pm</p> |
| <p>Week #9</p> <p>Wednesday 20th March :</p> <p>Friday 22nd March</p> | <p>Module [V] Some Issues [] Unit 26 – Wildlife and Human Health Module [V] Some Issues Unit 27 – Wildlife and Domestic Livestock Health [Gary Garcia]</p> <p>Module [V] Some Issues [WM] Unit 22 - The Future Role of Zoos in Wildlife Conservation Directed Readings Module [V] Some Issues [WM] Unit 26 – Wildlife and Human Health [Dr. WM] Module [V] Some Issues Unit 27 – Wildlife and Domestic Livestock Health</p> |

Week #10
Wednesday 27th
March:

[Dr. WM)

Module [V] Some Issues [Romano Mac farlane]

Unit 24 - The Different Conservation

Philosophies and CITES

[Romano Mac farlane]

Unit 28 - Laws Governing Wildlife

Friday 29th March

GOOD FRIDAY

[V] Some Issues

**Unit 23 - International Organisations which
Contribute to Wildlife Preservation**

[V] Some Issues

**Unit 25 - The Role of Wildlife Management in
Protecting Global Biodiversity.**

Directed Readings

Week #11

Wednesday 3rd
April:
Note: XICIMFAUNA
Local Committee
Meeting
Friday 5th April:

**Cocrico and other Non-domestic Species of
importance**

Week #12

Wednesday 10th
April
Friday 12th April

GAME TIME

GAME TIME

Week #13

Wednesday 17th April

PRESENTATIONS

**Company #1, Company #2, Company #3,
Company #4**

Friday 19th April

**Company #5, Company #6, Company #7
Company #8**

**Saturday 20th April 7-10 pm Final Presentations Company #9,
Company #10, Company 11, Company 12,
Grading and Course Review:**

All Typed Reports Friday 26th APRIL 4PM

1.1.10 TEXTS/RECOMMENDED READINGS

TEXTS

- (1) Anderson, S. H. (1999) : *Managing our Wildlife Resources*. Prentice Hall, New Jersey, USA, Third Edition, 23 chapters , 440 pages.
- (2) Roxann C. Brown-Uddenberg, Gary W. Garcia, Quinn S. Baptiste, Terrence Counand, Andrew O. Adogwa & Terry Sampson (2004): *The Agouti [Dasyprocta leporina, D. aguti] Booklet and Producers' Manual*, Wildlife Farmers' and Producers' Booklet #1, First Edition, GWG Publications, Trinidad and Tobago, West Indies, 98 Pages
- (3) Bolen, E. G. and Robinson, W. L. (1999): *Wildlife Ecology and Management*. Prentice Hall, New Jersey, USA, Fourth Edition, 23 chapters, 605 pages.
- (4) Clark, T. W; Reading, R. P. and Clarke, A. L. (1994) (Editors) : *Endangered Species Recovery*. Island Press, Washington D. C, USA, 18 chapters >439 pages.
- (6) Garcia, G. W, et al (2005): *The Collared Peccary/ Javelina/ Sajino/ Poco do Monte/ Wild Hog/ Pakira/ Patira/ Taitetu/ Catete/ Catto/ Quenk/ [Tayassu tajacu, Pecari tajacu] Booklet and Producers Manual*. Wildlife Farmers' and Producers' Booklet #2, First Edition, GWG Publications, Trinidad and Tobago, West Indies, 238 pages.
- (5) Primack, R (1995): *Primer of Conservation Biology*, Sinauer Associates, Sunderland, Massachusetts, USA
- (6) Nyhuis, A. W. (1994): *The Zoo Book: A Guide to America's Best*. Carousel Press, California, USA. >262 pages.
- (7) Caughley, G and Sinclair, A (1994): *Wildlife Ecology and Management* Blackwell, Massachusetts, USA.
- (8) Ojasti, J. (1996): *Wildlife Utilization in Latin America: Current Situation and Prospects for Sustainable Management*. FAO Conservation Guide 25, FAO Rome.[Down Load from Internet]

RECOMMENDED READINGS

- Animal Production in Australia: *Proceedings of the Australian Society of Animal Production - 1954 to 1994*.
- Anon. 1978. *Fauna*. Proceeding #36, February 1978. Post Graduate Foundation in Veterinary Medicine. Sydney, South N.S.W., Australia. 784pp.
- Anon. (1989): *Invertebrates in Aquaculture*. Proceeding #117. May 1989. Post Graduate Foundation in Veterinary Medicine. Sydney, South N.S.W., Australia. 266pp.
- Anon. (1990): *Rodents and Rabbits*. Laboratory Animal Science. Proceeding #142, September 1990. Post Graduate Foundation in Veterinary Medicine, Sydney, N.S.W., Australia. 559pp.
- Anon. (1992): *Urban Wildlife*. Proceeding #204, Oct. 1992. Post Graduate Foundation in Veterinary Medicine. Sydney, South N.S.W., Australia. 138pp.
- Anon. (1994): *Australian Wildlife (Abridged)*. Proceeding #104, September 1978. Post Graduate Foundation in Veterinary Medicine. Sydney, South N.S.W., Australia. 493pp.
- Anon. (1994) *Wildlife*. Proceeding 233, September 1994. Post Graduate Foundation in Veterinary Medicine. Sydney, South N.S.W., Australia. 675pp.
- Brown, R; Boos, H. and Garcia, G.W. (1992) A Repository of Indigenous Wildlife genes at the Emperor Valley Zoo. *6th Annual Seminar on Agriculture Research*. NIHERST, Trinidad and Tobago. 177-194.
- Brown, R.C.; Garcia, G. W. ; Manick, M. ; and Poujade, S. (1998):
A case study: Wildlife farming in Trinidad. *Proceedings of TA2000*, 4-9 September, 1994.
Tropical Agriculture, Special Issue : 171-174
- Benirschke, K; Lasley, B. and Ryder, O. (1980) : The Technology of Captive Propagation. Chapter 13 in *"Conservation Biology"* Soul and Wilcox Editors, Sinauer Association pp 225-242.
- Benirschke, K (1991): Zoo Research in the World Wide Effort. *AA ZPA 1991 Annual Conference Proceedings*, pp 66-71.
- Benirschke, K. (1983): The Impact of Research on the Propagation of Endangered Species in Zoos. Chapter 24 in *"Genetics and Conservation: A Reference for Managing Wild Animals and Plant Populations"*. Editors C. M. Schonewalk-Cox, S. M. Chambers, B. Mac Bryde and W. L. Thomas. The Benjamin/Cummings Publishing Co. Inc., California USA, pp 402-413.
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- Buchsbaum, Ralph et Al (1986): *The Audubon Society Encyclopedia of Animal Life*. Portland House, New York. 606 pages.
- Edwards, M. S.; Crissey, S. D.; Oftedal, O.T. and Rudran, R. (1990): Fiber Concentrations of Natural Vegetation fed upon by various sympatric

- species in the llanos of Venezuela. *Proceeding of the American Association of Zoo Veterinarians Annual Meeting* , Senior Editor: Richard C. Cambre pp 74-80.
- Edwards, M. S.; Oftedal, O.T. and Crissey, S. (1990): Using Natural Diet Composition in Formulating Diets for Captive Animals: Fiber Concentrations. *American Association of Zoological Parks and Aquariums Regional Conference Proceedings, Wheeling, WV.*
- Fiedler, P.L. and Jain, S. K. (1992) (Editors) : *Conservation Biology : The Theory and Practice of Nature Conservation, Preservation and Management.* Chapman and Hall, New York and London, 18 chapters, >495 pages.
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