

# **BSC 2362-Tropical Ecology-2010**

**INSTRUCTOR:** James A. Wallis, MA

**ACADEMIC DEPARTMENT:** Natural Science Department, Seminole Campus.  
James Wallis-727-394-6024  
John Vaughn-Academic Dean

## **COURSE PREFIX AND NUMBER: BSC 2362**

The primary goal of the course is to introduce course participants to rainforest & Central American ecology by combining lectures, labs, and discovery-oriented investigative experiences of rainforest & coastal environments of Belize. Several topics will be covered in depth. These include the general ecology of Belize, ecology of rainforests, identification of rainforest fauna & flora, marine ecology, coral reef ecology, identification of vertebrates, invertebrates and tropical plants.

## **STUDY ABROAD APPLICATION REQUIREMENTS:**

Approval for participation in the program is subject to the participant

- being 18 years old or older
- having a GPA of 2.75 or higher
- being enrolled for credit in an approved study abroad program course
- being approved by the International Programs office
- obtaining a positive faculty recommendation for participation in the program
- paying all deposits and fees according to the fee schedule
- obtaining all immunizations required by the Centers for Disease Control (CDC).

In addition, participants are strongly encouraged to get all immunizations and preventative treatments recommended for the particular country and regions through which they will be traveling.

## **MEETING INFORMATION/ATTENDANCE POLICY:**

### **Attendance and Class Participation**

Class participation is critical and lack of participation will seriously impact your grade. You are not allowed to miss any activities except with course instructor's permission.

You must:

1. Come to each field trip/meeting with an in-depth understanding of the readings and in addition you must bring two written questions that you would like to discuss.
2. Ask questions when you don't understand some aspect of the reading or discussion.
3. Be prepared to lead or jump-start discussions.
4. Disagree with your colleagues if your interpretation is different.

The program plan for this class (class meetings and activities, etc.) meets or exceeds the requirement of 45 contact hours for the course.

## **COURSE CONTENT:**

### **Learning Objectives:**

1. To gain an understanding of the ecology of rainforests and to learn about the rainforest community and the biology of its organisms. The student needs to be able to discuss tropical system function and diversity.
2. To observe rainforest biodiversity and seek examples of important interactions.
3. To learn about the natural history of designated rainforest organisms.
4. To develop an appreciation of the factors in the conservation and management of rainforests.
5. To conduct an observation project of rainforest ecology
6. To observe human interaction with the environment and impacts related to those interactions on tropical ecosystems-including tourism, and to investigate the role of these tropical systems in local culture and economy.
7. Learn and identify the most common forms of animals and plants seen in Belize and Guatemala. Students will acquire the ability to identify common species.
8. Understand how tropical systems formed and diversified.
9. Review current trends in tropical research.

### **PREREQUISITES (IF APPLICABLE):**

Acceptance into International Studies and Consent of the instructor. College level reading and writing skills. You must under go an interview and be accepted to be allowed on this trip.

### **GRADING:**

#### Grading

|   |       |
|---|-------|
| * Topic Presentation (in Belize)                | = 25% |
| * Participation                                 | = 15% |
| * Topic Research and Support (for presentation) | = 25% |
| * Journals                                      | = 15% |
| * Cultural Interaction                          | = 10% |
| * Pre-orientation Meetings and assignments      | = 10% |

### **ACADEMIC HONESTY:**

St. Petersburg College has an Academic Honesty policy. It is your responsibility to be familiar with the policies, rules, and the consequences of violations. Read about the policy at: <http://www.spcollege.edu/webcentral/admit/honesty.htm>. There is no tolerance for cheating and academic dishonesty. Discipline can range from a zero on that specific assignment to expulsion from the class with a grade of F. Note that copy/pasting published information, whether it's from your textbook or the Internet, without citing your source is plagiarism and violates this policy. Even if you change the words slightly, the ideas are someone else's, so you still have to cite your sources. Cheating, plagiarism, bribery, misrepresentation, conspiracy and fabrication are defined in Rule 6Hx23-4.461, Student Affairs: Academic Honesty Guidelines, Classroom Behavior.

## **TEXTBOOK INFORMATION:**

There will be no formal text for the course.

Here is a recommendation:

A Neotropical Companion by John Kricher, William E. Davis (Illustrator), Mark J. Plotkin. Paperback - 504 pages 2nd Rev edition (August 16, 1999) Princeton Univ Pr; ISBN: 0691009740 ; Price: \$ 17.59.

The following are resources, but not required. Please see website for details.

Belize: And Northern Guatemala (Travellers' Wildlife Guides) (Paperback) Les Beletsky, David Dennis (Illustrator), David Beadle (Illustrator), Pricilla Barrett (Illustrator), Colin Newman (Illustrator).

Tropical Environments: the Functioning and Management of Tropical Ecosystems. Kellman, Martin, and Tackaberry, Rosanne. Routledge, New York. 1997.

Amphibians and Reptiles of Northern Guatemala, the Yucatan, and Belize. (Animal Natural History Series, 4) (Paperback). Jonathan A. Campbell.

Birds of Belize (Corrie Herring Hooks Series) (Paperback) by H. Lee Jones, Dana Gardner (Illustrator).

Neotropical Rainforest Mammals: A Field Guide by Louise H. Emmons, Francois Feer (Illustrator)

The Tropical Rain Forest: An Ecological Study by Paul W. Richards

Tropical Nature: Life and death in the rain forests of Central and South America. 1984. A. Forsyth and K. Miyata. Charles Scribner's Sons, New York.

In addition I will be bringing several books as references and you will be welcome to use them on the trip.

## **What is this all about?**

The primary goal of the course is to introduce course participants to rainforest & Central American ecology by combining lectures, labs, and discovery-oriented investigative experiences of rainforest & coastal environments of Belize. Several topics will be covered in depth. These include the general ecology of Belize, ecology of rainforests, identification of rainforest fauna & flora, marine ecology, coral reef ecology, identification of vertebrates, invertebrates and tropical plants.

You are part of a trip to look at the function and diversity of tropical systems. This is not simply a walking tour, but observation of some of the most diverse systems seen on the planet. It is a class about both form and function. How the systems work and interact and how you begin to understand them. It requires active participation, inquiry, and interest. It is not a sight-seeing tour. You are expected to become involved in the systems we will see.

**Oral Presentations:** Each student will present the results of his/her individual project as part of a presentation. The presentation will be 25 minutes long, with 5 minutes allotted for questions. It should entail a relatively brief but interesting overview of the findings of your project. You should treat this like you would a professional presentation. Speak clearly. Be organized. Be prepared with good visuals. You do not need to present every dimension of your results; rather, use the material that best lends itself to oral presentation.

## **Potential Research Topics**

As part of our course expectations, each student will present a 15-20 minute talk on a tropical ecology topic of your choice during the course. These presentations will be in the evenings or at lunch time. We expect you to research a topic of interest to you and share what you know with the class.

### Possible Topics:

1. Introduction to geography, weather patterns and life zones of Belize
2. Tropical botany: plant morphology and forest characteristics.
3. Introduction to Neotropical mammals, birds and arthropods.
4. Evolutionary ecology.
5. Herbivory in the rain forest.
6. Community structure and competition.
7. Biodiversity - why the tropics are so special.
8. Seed dispersal and frugivory.
9. Principles of predation and anti-predator behavior.
10. Introduction to Neotropical herpetology.
11. Vocal communication in the forests.
12. Life history studies
13. The impact of deforestation.
14. Conservation of the rain forests.
15. Estuary, Riverine, and Salt Marsh Ecology
16. Bioluminescence
17. Any tropical insect species-leaf-cutter ants, sting-less bees, Leaf-cutter ants, army ants, termites, Butterflies & moths, beetles, Grasshoppers/Katydid, Light-producing insects, Spiders, Centipedes and Millipedes
18. Rainforest mammals
19. River and stream fish
20. Amphibians
21. Snakes-any type
22. Birds-Neotropical
23. Tropic Structure
24. Competition
25. Mutualism
26. Volcanism and plate tectonics
27. Plants-medicinal and commercial, ecology-Epiphytes, Bromeliads & Orchids, Coconut tree (*Cocos nucifera*), Orchids, Cassava (*Manihot.esculenta*), Red mangrove (*Rhizophora mangle*), White mangrove (*Laguncularia racemosa*), Black mangrove (*Avicenia nitida*), Cacao (*Theobroma cacao*), Sugar cane (*Saccarum officinarum*), Mahogany (*Swietenia mahogoni*), Indian almond (*Terminalia cattapa*), Yucca (*Yucca aloifolia*), Mango (*Mangifera indica*), Gumbo limbo (*Bursera simaruba*), Almonds, Breadfruit (*Artocarpus altilis*).
27. Themes-  
Archeology of Belize  
Alternative agriculture in the tropics

Agroforestry  
Banana cultivation (Musa sp.)  
Pineapple cultivation (Ananas comosus)  
Coffee (Coffea arabica)  
Sustainable Development of the tropics  
Ecotourism  
Cattle Ranching  
Climate Change

**ITEMS TO PACK:**

In these days of constantly changing airline regulations, checked baggage weight allowances, etc; we'll let you know the airline's maximum weight allowance several weeks before departure.

PASSPORT and a couple of photo-copies of the photo page. Keep one in your luggage and carry one with you. Leave your passport in the hotel safe.

Photo-copy of plane ticket (keep separate from plane ticket)

2 swim suits

4 shorts

4 short-sleeved shirts/T-shirts

1 long pants

2 long-sleeved shirts

6 pairs of socks

1 pair of sneakers for everyday use

1 pair of sneakers for walking through mud - may be left behind Boots for hiking-good quality!

1 hat

1 bandana for sun protection

1 raincoat (or poncho)

sunglasses

sun-tan oil/lotion

lotion for insect bites

sunburn lotion or cream

insect repellent

soap, shampoo

wash cloth

bath towel

travel alarm clock

enough money for personal use - souvenirs, drinks, etc)

mask, snorkel, fins

water bottle

camera & Film, or digital camera

field notebook

pencils, pens

hand lens

day pack

flashlight with spare batteries and bulb or head lamp (better for night hikes)

plastic garbage bags for laundry

Toiletries in zip-lock bag

any personal medication in zip-lock bag and copies of the script

chap stick (w/sunscreen)

Extra pair prescription glasses

**STUDENT CONDUCT / ALCOHOL AND DRUG POLICY:**

Please refer to important information about student conduct and related policies in your study abroad application package.

**EMERGENCIES/HEALTH & SAFETY:**

Please refer to important information in pre-departure orientation materials.

**LINK TO DEPARTMENT OF STATE ADVISORY FOR STUDY ABROAD DESTINATION(S):**

[www.state.gov](http://www.state.gov)

This information is subject to change; please check this source again as departure time nears.

**SPECIAL ACCOMMODATIONS:**

If you anticipate requesting of the Learning Specialist an accommodation for a **documented** disability, it is important to notify the International Programs office as soon as possible that you plan to make a request. Please also make an appointment with the Learning Specialist on campus to make your request as soon as possible. The Learning Specialist can be reached at 791-2628 or 791-2710 (CL), 341-4758 (SP/G), 394-6108 (SE), 712-5789 (TS), or 341-4532 (AC).