

# BI 222: Field Studies in Tropical Biology

## Course Syllabus

### Summer 2015

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#### Course description

BI 221: Tropical Biology and BI 222: Field Studies in Tropical Biology constitute a four-credit, two-course sequence that introduces students to the biological complexity of tropical ecosystems. BI 221 is a 2-credit course offered during spring semester (odd years) that examines the fundamental scientific concepts and theories that describe tropical systems. Course work will cover a variety of topics, including the natural history of tropical biota, patterns of species diversity, rainforest ecology and conservation, coral reef ecology, and Belizean history and culture. BI 222 is a 2-credit course offered the following summer that complements the understanding of tropical biology students have gained in the classroom by providing a hands-on field experiences in the ecologically diverse Central American country of Belize. Throughout the trip, Saint Anselm faculty and local experts will lead field exercises in two of the most species rich ecosystems on the planet, the neo-tropical rainforest and coral reef. With its emphasis on Belizean ecosystems and travel within the country, this course provides students a unique opportunity to learn about and then experience the ecology and culture of a different country.

**Prerequisite:** BI 221 Tropical Biology; permission to register by instructor.

**Course dates:** May 18-29, 2015

#### Attendance

Attendance is required at all lectures, class meetings, and activities. Unexcused absences or tardiness will directly affect a student's overall course grade.

#### Academic honesty

The standards of academic honesty are very high at Saint Anselm, and it is recommended that you review the policy set forth in your College Catalogue. Depending on the severity of the infraction cases of cheating or plagiarism may result in a failing grade of the assignment/exam in question, failing grade in the course, or expulsion.

#### Course grade

Grade	%	Grade	%	Points Distribution	
A	>93	C	74-76	Quizzes <sup>a</sup> (2 @ 50 points)	100
A-	90-93	C-	70-73	Belizean organism presentation <sup>b</sup>	20
B+	87-89	D+	67-69	Field notebook <sup>c</sup>	50
B	84-86	D	64-66	Participation / Attitude <sup>d</sup>	30
B-	80-83	D-	60-63		
C+	77-79	E	<60		
				<b>Total Points</b>	<b>200</b>

<sup>a</sup>Quizzes will include any of the following: multiple choice, matching, true/false, fill-in-the-blank, short answer, and essay questions.

<sup>b</sup>Belizean organism presentations. Each student will present to the class a brief synopsis of their Belizean organism papers from BI 221.

<sup>c</sup>Final Assessment. In lieu of a final examination (with permission from Dean's office), the final assessment in BI222 will be your field notebook, which is a cumulative record of all course activities. Each student will be given a waterproof notebook to record field observations in the form of numerical data, sketches, tables, graphs, and personal notes. Notebooks will be graded for both content and organization, so keep a neat and well-ordered record of each field exercise.

<sup>d</sup>Participation / Attitude. Due to the hands-on nature of this course and the extended time spent in the field with classmates it is extremely important that each student participates in the field exercises and maintains a positive attitude throughout the coursework.

### **Courtesy and respect**

This course is conducted in remote areas of a developing country, and many of the conveniences we take for granted at home (long hot showers, flushing toilets, etc.) may not be available. You will observe people and things that are very different from our own culture. Always be respectful of the cultural differences you encounter among your hosts, and avoid judging others in a narrow-minded way.

### **Be flexible**

As is typical in field courses (particularly one in a developing country), things may not always go as planned. Being flexible and maintaining a positive attitude will make the adventure enjoyable and memorable.

### **Drug/alcohol abuse**

Any drug or alcohol abuse will not be tolerated and violates the Course Participation Agreement. Anyone caught abusing drugs or alcohol will be returned home immediately at his/her own expense. Such action will constitute withdrawal from the course with a 'W' being recorded on the student's transcript.

## BI 222: Field Studies in Tropical Biology

### Tentative Course Schedule

Date	Time	Lecture Topics / Field Activities
May 22	Morning	Meet at (BOS) Boston Logan International Airport for check-in at 6:30am Depart #####am UA Flight #####: Boston, MA to Houston, TX Arrive ##### Depart 1##### UA Flight ##### Houston, TX to Belize City, Belize Arrive #####
	Afternoon	Monkey Bay Wildlife Sanctuary (MBWS) check-in and orientation <b>Organism presentation: Harpy Eagle, Morelet's Crocodile, Boa Constrictor</b>
	Evening	Exercise: Nocturnal zoo hike
May 23	Morning	Intro: MBWS Savanna structure and composition Exercise: Field data collection and analysis
	Afternoon	<b>Organism presentation: Baird's Tapir, Scarlet Macaw</b> Exercise: Canoe Sibun river
	Evening	Discussion: Savanna structure and composition / Riparian forest ecology
May 24	Morning	Travel to Cockscomb Basin Wildlife Sanctuary (CBWS) Introduction to CBWS
	Afternoon	<b>Organism presentation: Jaguar, Fer de Lance</b> Exercise: Leaf cutter ants data collection and analysis
	Evening	Discussion: Rainforest soils and fertility / Nocturnal adaptations Exercise: Nocturnal trail hike
May 25	Morning	Exercise: Rainforest data collection and analysis
	Afternoon	<b>Organism presentation: Coati, Howler Monkey</b> Exercise: Montane data collection and analysis 3km hike to ridge-top overlook / hike and swim at waterfall
	Evening	Discussion: Rainforest / Montane forest structure and composition
May 26	Morning	Travel to Mama Noots Bocawina Eco-resort Discussion: Rainforest canopies
	Afternoon	<b>Organism presentation: Puma, Red-Eyed Tree Frog</b> Exercise: Zip-line rainforest canopy tour
	Evening	Class discussion: quiz review / study time
May 27	Morning	<b>Quiz 1 - Tropical Savanna and Rainforest Ecosystems</b> Bus to Dangriga (11:00am), Water taxi to Tobacco Caye, Island Orientation
	Afternoon	Island orientation, Snorkeling do's and don'ts Snorkel: Patch reef Exercises: 1) Coral Identification, 2) Fish Ethogram and Time Budget
	Evening	Lecture: Belizean Coral Reef
May 28	Morning	Snorkel: Patch reef and channel Exercises: 1) Fish movement, 2) Fish color and patterns <b>Organism presentation: Samson, Fandunyan</b>
	Afternoon	Snorkel: Patch reef Exercises: 1) Coral habitats, 2) Distribution of <i>Spirobranchus giganteus</i>
	Evening	<b>Organism presentation: Kuttner</b> Data analysis and discussion

<b>May 29</b>	Morning	Snorkel: Carrie Bow reef; Whale Shoal Exercises: 1) Coral transects (site 1 = Carrie Bow) – live coral cover and r-K-S ; 2) Coral Disease (Part 1 = Whale Shoal)
	Afternoon	Snorkel: Reef cut Exercises: 1) Coral transects (site 2 = Reef cut); 2) Plankton tow
	Evening	Data analysis and discussion <b>Organism presentations: Stanko</b>
<b>May 30</b>	Morning	Brief lecture: Bird Identification and behavior <b>Organism presentation: Spicer</b> Boat excursion: Frigate and booby colony Snorkel: Mangroves (Man-O-War Caye) Exercise: Bird survey
	Afternoon	Lecture: Mangrove and Seagrass biology <b>Organism presentation: Marino</b> Snorkel: Seagrass bed Exercise: Seagrass structure and composition
	Evening	Brief Lecture: Nocturnal Adaptations <b>Organism presentation: Stokes, de Pierre</b> Exercise: Night snorkel
<b>May 31</b>	Morning	<b>Organism presentation: Johnson, Brown</b> Brief lecture: Fish Behavior Snorkel: Patch reef Exercise: 1) Damselfish behavior, 2) Damselfish territoriality
	Afternoon	Snorkel: Whale Shoals, Forereef; Reef Cut Exercises: 1) Fish Schooling, 2) Coral Disease (Part 2 = Reef Cut)
	Evening	<b>Organism presentation: Cecere</b> Data analysis and discussion
<b>June 1</b>	Morning	<b>Quiz 2 - Tropical Reef Communities</b> / Pack and clean
	Afternoon	1 PM Boat ride to Dangriga (brief shopping) Bus transfer to Hotel in Belize City
<b>June 2</b>		<b>Notebooks Due</b>  Depart ### UA Flight ###: Belize City to Houston, TX Arrive ###  Depart ### UA Flight ####: Houston, TX to Boston, MA Arrive ###