Short-Term Study Abroad Program Information

Please provide the following information:

Study Abroad Program Name:	Insects and Animals of Ecuador and the Galapagos
Study Abroad (SABD) Course ID:	SABD 1147
Study Abroad (SABD) Course CRN:	57957
Semester Program will be Offered:	Summer 2016 Short Session 1
Program Leader/Contact Name:	Marianne Shockley
Program Leader/Contact Phone Number:	706-542-1238
Program Leader/Contact Email Address:	entomolo@uga.edu
Program Start Date (*First meeting with enrolled students*):	6/8/2016
Program End Date (*Last meeting with enrolled students*):	7/1/2016
Travel Start Date:	6/11/2016
Travel End Date:	7/1/2016
Anticipated Number of Total Students Participating in Program:	15
Anticipated Number of UGA Students:	13
Anticipated Number of Transient Students:	2
Anticipated Number of Undergraduate Students in the Program:	15
Total Number of Credit Hours Taken by Each Undergraduate Student:	8
Anticipated Number of Graduate Students in the Program:	0
Total Number of Credit Hours Taken by Each Graduate Student:	NA

Please list each course offered through the program on a separate row below:

Course Title	Course Prefix	Course Number	CRNs	Course Type	Credit Hours	Instructor(s)	Department of Instructor(s)	Course Start Date	Course End Date	Total Lecture Hours	Total Field/ Lab Hours	Total Contact Hours*
Insect Natural History	ENTO	3140-3140L	57435, 57436	Lecture	4	Marianne Shockley	Entomology	6/8/2016	6/28/2016	40	25	52.5
Field Animal Behavior	BIOL	3720L	55082	Supervised Lab	3	Robert Matthews	Entomology	6/8/2016	7/1/2016	29	39	48.5
Special Problems in Entomology	ENTO	3900	58355	Directed Study	3	Marianne Shockley	Entomology	6/8/2016	7/1/2016	Directed Study	Directed Study	Directed Study
Undergraduate Research in Entomology	ENTO	4960	52164	Directed Study	4	Marianne Shockley	Entomology	6/8/2016	7/1/2016	Directed Study	Directed Study	Directed Study

*Total Contact Hours = Total Lecture Hours + (Total Field Hours / 2)
Courses require 12.5 contact hours for each credit hour earned

Please also complete the Academic Itinerary found on the second worksheet of this document.

For questions, please contact the Office of Curriculum Systems at currsys@uga.edu or 706-542-6358.

Academic Itinerary

Study Abroad Program Name: Insects and Animals of Ecuador and the Galapagos
Study Abroad (SABD) Course ID: SABD 1147
Program Start and End Dates: June 8, 2016 - July 1, 2016
Instructors and Courses Taught:

Instructor	Course(s) Taught
Marianne Shockley, Robert W. Matthews	ENTO 3140-3140L and BIOL 3720L

Initial academic itineraries are understood to be tentative and subject to change. Please be as specific and accurate as possible.

For questions, please contact the Office of Curriculum Systems at currsys@uga.edu or 706-542-6358.

ENTO 3114 & 3114L

Date	The Day's Plan	Discussion Question	Assignments Due
8-Jun	**Start 9:00am**		
Athens	° Ice breakers		
	° Syllabi for ENTO 3140 and BIOL 3720L		
	° Presentations		
	° Intro to Ecuador		
	° Taxonomy		
	° Get Collecting Stuff together		
	Lunch 12:00-2:00		
	Collecting at Botanical Gardens (2:00-5:00)		
9-Jun	**Start 9:00am**		
Athens	° Presentations		
	° Morphology		
	° Orders of Insects Pt 1		
	° Intro to Med Ent/Vector Specificity		
	° Medically Important Orders/Families/Species		Night Collecting Reference List
	° Pinning and Mounting		
	Lunch 12:00-2:00		
	Collecting at Lake Herrick (2:00-5:00)		
	Group Night Collecting Project (8:00-11:00)		
10-Jun	**Start 9:00am**		
	° Presentations		
Athens	° Insect Development		
	° Orders of Insects Pt 2		
	° Labeling		Sight ID Quiz
	Lunch 1:00		
	Library Project (2:00-5:00)		
			Assignments:
			Med Ent Question 1 (Due 10:00am)

BIOL 3720L

Date	Location	Activity	Lecture Hrs	Field Hrs	Assigned reading
Wednesday June 8	Athens	Course overview			
		Intro to Behavior	1		Dawkins chapters 2 & 5
		Behavior sampling methods		2	Ploger 2003
Thursday June 9	Athens	Human Vigilance Activity	1	2	Scheib et al. 2003
Friday June 10	Athens	Intro to Fauna of Galapagos	2		
		Discuss Human Vigilance data	1		Resident expert paper
Saturday/Sunday June 11-12	Athens/Ecuador	Travel time			
Monday June 13	Galapagos	Orientation to Galapagos	1		
		Group Snorkle		1	
		Animal observations		2	
Tuesday June 14	Galapagos	Design field study	1		
		Group Snorkle		1	
		Data collection field		2	
Wednesday June 15	Galapagos	Review data - Excel tutorial	1		Tillberg, et al. 2007
		Experimental Design	1		
		Design field study	1		
		Data collection field		2	
Thursday June 16	Galapagos	Group Snorkle		1	
		Design field study	1		
		Data collection field		2	
Friday June 17	Galapagos	Group Snorkle		1	
		Design field study	1		
		Data collection field		2	
Saturday June 18	Galapagos	Discuss lab reports	1		
		Design field study	1		
		Data collection field		2	
Sunday June 19	Galapagos	Group Snorkle		1	
		Design field study	1		
		Data collection field		2	
Monday June 20	Travel tp Maquipucuna				
		Review Galapagos studies	1		
Tuesday June 21	Maquipucuna	Intro to Cloud Forest & Rainforest	1		Dawkins, Chaps. 4,6 & 8
		Design field study	1		Tillberg, et al. 2007
		Observe Hummingbirds		1	
Wednesday June 22	Maquipucuna	Data collection Pollinator exp		2	
		Design field study	1		
Thursday June 23	Maquipucuna	Hike to Santa Lucia		2	
		Ant Communication exp		2	Tillberg, et al. 2007

11-Jun Athens	Meet at UGA (12:00pm) ° Deta Flight 6:00pm ° Discussion while waiting in the airport.	1) What are you expecting about your experience in Ecuador regarding the courses, culture, insect, plants, and/or biodiversity? Is there anything you're nervous about?	**Assignments:** Med Ent Question 2 (Due 10:00am)
12-Jun Athens Quito	**Start 9:00am** ° Orientation ° Flight to the Galapagos **° Dinner 7:00pm** ° Basic Ecology of the Rainforest Presentation 8:30pm	2) What are you expecting about your experience in the Galapagos ?	**Reading:** NC Ch 1 (Tropical climates/ecosystems) **Assignments:** Med Ent Question 4
13-Jun Galapagos	**Start 9:00am** ° Stubborn Plants Part 1 Student Myiasis Presentation (8:30pm)	3) Find a plant you think is particularly adapted for living in the Galapagos. Jot down a brief description (and maybe a sketch). Be prepared to talk about why you think this plant is particularly adapted for the rainforest and its challenges based on the "basic ecology of the rainforest" presentation	**Assignments:** Med Ent Question 4
14-Jun Galapagos	° Bird Watch 6:00am ° **Breakfast 8:00am** ° Natural History Tour ° Free time [Work on assignments] (12pm) ° **Lunch 1:00pm** ° Research Project Discussion (2pm) ° Insect Photography and Identification (3pm) ° Insect Physiology (5pm) ° **Dinner 7:00pm** ° Evolution (8:30pm) ° Group Night Collecting Project (10pm)	4) Find an insect today and sketch it. What structures help it maintain water balance, how does it intake air, and what sensory organs does it have?	**Reading:** NC Ch 2/3 (rainforest structure/function)

		Design field study	1		
Friday June 24	Maquipucuna	Discuss lab reports Design field study Data collection field	1 1	 2	
Saturday June 25	Maquipucuna	Symbiosis/Mutualism Queen of Trees video Termite tunnel repair project Discuss lab reports	1 1	 2 	
Sunday June 26	Travel to Esmeraldas, Las Penas	Orientation/Interpretative hike		1	
Monday June 27	Las Penas	Mangrove animals Design Field Study Data collection field	1 1	 2	
Tuesday June 28	Travel to Playa de Oro	Discuss lab reports	1		
Wednesday June 29	Playa de Oro	Optimal Foraging exp Data analysis	 1	2 	Tillberg, et al. 2007
Thursday June 30	Travel to Otavalo	Ecological & Evolutionary Traps	1		Schlaepfer, et al. 2002
Friday July 1	Otavalo Market - Travel to Quito/ Depart for Atlanta				

Total Contact Hours	29	39

15-Jun Galapagos	Bird Watch 6:00am ° **Breakfast 8:00am** ° Natural History Tour ° Free time [Work on assignments] (12pm) ° **Lunch 1:00pm** ° Meet with instructors about research project methods (6pm) ° **Dinner 7:00pm** ° Living Together – Symbiosis (8:30pm) ° Blacklighting/Identification (10pm)	5) Think about things that make you sick. Do you think you have a symbiosis with them, and if so, what kind? Why or why not? What challenges do you think arise from relationship, both from your side and the pathogen/parasite's side.	**Reading:** NC Ch 13 (pgs 325-33) (Bestiary –invertebrates) NC Ch 4 (Evolutionary patterns) **Assignments:** Med Ent Question 5
16-Jun **Galapagos**	Bird Watch 6:00am ° **Breakfast 8:00am** ° Natural History Tour ° Free time [Work on assignments] (12pm) ° **Lunch 1:00pm** Insect Communication (5pm) ° **Dinner 7:00pm** ° Student Dengue/Yellow Fever Presentation (8:30pm) ° Black lighting/Identification (10pm)	6) Sketch three insects and annotate your sketches with how you think these animals communicate within the species or to other species. What do you think this communication is saying and to whom?	**Reading:** NC Ch 5 (Coevolution) **Assignments:** Assignments: Pitch research project idea (2pm)
17-Jun **Galapagos**	Bird Watch 6:00am ° **Breakfast 8:00am** ° Natural History Tour °° **Lunch 1:00pm** ° Student Chagas presentation (8:30pm) ° Blacklighting/Identification (10pm)	7) Do you feel that most Ecuadorians are concerned with or aware of vector-borne diseases? Why or why not?	**Reading:** NC Ch 12 (Neotropical Birds) Assignments: Med Ent Question 6

18-Jun Galapagos	° Bird Watch 6:00am ° **Breakfast 8:00am** ° Natural History Hike ° **Lunch 1:00pm** ° Work on research project, assignments ° **Dinner 7:00pm** ° Student Leishmaniasis presentation (8:30pm) ° Blacklighting (10pm)	8) Reflect on your time in the Galapagos. Describe two experiences that stand out to you.	**Readings:** Med Ent Ch 14 (Triatomine bugs) **Assignments:** Entomological Arthropod Observation
19-Jun Galapagos	° Bird Watch 6:00am ° **Breakfast 8:00am** ° Natural History Hike ° Work on assignments (12pm) ° **Lunch 1:00pm** ° Work on assignments (2pm) ° Insect Growth and Development (5pm) ° **Dinner 7:00pm** ° Student Onchocerciasis Presentation (8:30pm)	9) What did you think of the hospital we visited? What are some of the challenges the local people may face? What sorts of challenges do you think the establishment faces?	**Reading:** **Assignments:** How do Insects Work?
20-Jun Galapagos Maqui	Travel to Maquipacuna Orientation Dinner 7:00pm ° Group Night Collecting Project (10pm)	10) Have you personally been bitten or affected by any medically important insects or arthropods on this trip? What control measures have you been using?	**Reading:**
21-Jun Maqui	° Bird Hike 6:00am ° **Breakfast 8:00am** ° Natural History Tour ° Free time [Work on assignments] (12pm) ° **Lunch 1:00pm** ° Research Project Discussion (2pm) ° Insect Photography and Identification (3pm) ° Insect Physiology (5pm) ° **Dinner 7:00pm** ° Sacrifices for Flight Presentation (8:30pm) ° Group Night Collecting Project (10pm)	11) Find three immature insects and sketch them. Annotate your sketches (does it have a well-defined head, can it move, does it have legs? [etc…]) What order of insects do you think each belongs to and why?	**Reading:** **Assignments:**

22-Jun Maqui	Bird Hike 6:00am ° **Breakfast 7:00am** ° Hospital (8am) ° Toucanopy (10am) ° **Lunch on the road** ° Mariposas de Mindo (1pm) ° Chocolate Tour (2:30pm) ° Meet with instructors about research project methods (6pm) ° **Dinner 7:00pm** ° Metamorphosis of Color (8:30pm) ° Blacklighting/Identification (10pm)	12) Do you expect to observe any differences in the medically important insects and arthropods on the coast versus in the cloud forests?	**Reading:** NC Ch 14 (Deforestation and Conservation) Med Ent Ch 5 (Sand flies) **Assignments:** Mystery Writing Assignment
23-Jun Maqui	° **Breakfast 7:00am** ° Hike to Santa Lucia and back ° **Lunch at Santa Lucia** ° **Dinner 7:00pm** ° Student Myiasis Presentation (8:30pm) (8:30pm) ° Blacklighting/Identification (10pm)	13) How would you define ecotourism? Is it your opinion that it has become more popular in recent years? What are some of the main advantages and disadvantages of ecotourism?	**Reading:** Med Ent Ch 4 (Black flies) **Assignments:** Med Ent Question 7
24-Jun Maqui	° Bird Hike 6:00am ° **Breakfast 8:00am** ° Natural History Hike ° Work on assignments (12pm) ° **Lunch 1:00pm** ° Work on assignments (2pm) ° Insect Growth and Development (5pm) ° **Dinner 7:00pm** ° Student Onchocerciasis Presentation (8:30pm)	14) What are some major differences between the cloud forests of Maquipacuna and the coastal area of Esmeraldas?	**Reading:** Med Ent Ch 2 (Anopheline) **Assignments:**

25-Jun Esmeraldas	° **Breakfast 8:00am** ° Travel to Esmeraldas ° **Lunch on the road** ° **Dinner 7:00pm** ° Student Malaria Presentation (8:30pm)	15) What are some important roles mangroves have? How do you think this ecosystem compares to the wetlands in the US? Do you think they serve some of the same functions? What do you think are some of the challenges a mangrove plants or animals have to deal with?	**Reading:** NC Ch 11 (Costal Ecosystems) Med Ent Ch 3 (Clulicine) Med Ent Question 8
26-Jun	° **Breakfast 8:00am** ° Mangrove Boat Tour ° **Lunch on the road** ° Maquipucuna Research Project Presentations (6:00pm) ° **Dinner 7:00pm**	16) What benefits do you think the river brings to the ecosystem? What kinds of animals do you think depend on the river?	**Reading:** NC Ch 8 (Rivers through Rainforests) Med Ent Ch 10 (Flies and Myiasis) **Assignments:** Med Ent Question 9
27-Jun Esmeraldas Playa de Oro	° **Breakfast 8:00am** ° Travel to Playa de Oro ° **Lunch on the road** ° **Dinner 7:00pm** ° Group Night Collecting Project (10pm)	17) After spending time in the village what do you think about the culture? What are some of things that surprised you most about the village or the people that live here? What do you think about the educational system here? What do you think it would be like to be completely dependent on the community and community leader to be able to survive?	**Readings:** Med Ent Ch. 11 (Fleas) Med Ent Ch 12 (Lice) Med Ent Ch 13 (Bedbugs) Med Ent Ch 15 (Cockroaches) Med Ent Ch 18 (Ticks) Med Ent Ch 19 (Scabies Mites) Med Ent Ch 20 (Typhus Mites) **Assignments:** Design a Sign Med Ent Question 10 & 11

28-Jun Playa de Oro/ Otavalo	° **Breakfast 8:00am** ° Community Project ° **Lunch** ° Community Project ° Insect Identification ° **Dinner 7:00pm** ° Insect Sociality (8:30pm)	16) What differences in the insects and plants did you notice in the altitude changes? What are some of the advantages or disadvantages of living in the clouds, lowlands, or dry forests? What do you think are the main ways these ecosystems get enough moisture to sustain life?	**Reading:** **Assignments:** Med Ent Question 12
29-Jun Otavalo	° **Breakfast 8:00am** ° Travel to Otavalo ° **Lunch on the Road** ° **Dinner 7:00pm** ° Stubborn Plants Part 2 – Living in Dry Climates (8:30pm)	**17)** What are some main differences you've noticed about the vegetation in Otavalo vs along the beach and at Maquí? What sorts of abiotic factors do you think contributed to the difference in vegetation morphology? How do you think the change in vegetation affects the animals (including insects) you find in these ecosystems?	**Reading** NC Ch 10 (Savannahs and Dry Forests) **Assignments:** Scavenger hunt Night collecting research paper
30-Jun Quito Atlanta	° **Breakfast 8:00am** ° **Lunch** ° Old Town Driving/Walking Tour ° **Dinner** ° Delta Flight 680 – Fly to Atlanta (11:30pm)	18) Jot down one experience that you thought was particularly memorable from our trip. Why does this stand out to you?	**Reading:** **Assignments:** Digital Insect Collection
1-Jul Atlanta	° **Breakfast 8:00am** ° **Lunch** ° Old Town Driving/Walking Tour ° **Dinner** ° Delta Flight 680 – Fly to Atlanta (11:30pm)	18) Jot down one experience that you thought was particularly memorable from our trip. Why does this stand out to you?	**Reading:** **Assignments:** Digital Insect Collection

	Lecture	**Field**
Total Contact Hours	40	25