

# VTPB - 411 - ICD

## One Health and Ecology in the Tropics

Sample Syllabus

Instructor: Donald J. Brightsmith

Course location: Soltis Center, Costa Rica

Credits: 2 hr lecture, 1 hr lab

### Description

This course will mix traditional lectures, guest lectures, field excursions, field laboratories, discussions, readings, student oral presentations and case studies to introduce students to the fields of One Health and Tropical Ecology. The course will introduce students to the form and function of healthy ecosystems, the various forms of ecosystem perturbation, and how these perturbations influence ecosystem, animal, and human health. Lecture material will draw heavily on examples relevant to Costa Rica and Latin America. These examples will then be illustrated and reinforced through field activities.

### Course location

The course will be based at the Soltis Center in Costa Rica as part of the BIMS Semester in Costa Rica program. The course will also travel to various locations in Costa Rica.

### Instructor

Donald J. Brightsmith, PhD (brightsmith1@tamu.edu)

### *Guest lecturers*

To be determined

### Learning outcomes

By the end of this course students will be able to do the following:

1. Identify and describe key topical ecosystems, organisms and ecological processes and describe the threats that they face
2. Describe the leading environmental threats and explain how they can affect human health, animal health and biodiversity conservation
3. Be able to use smartphone technology to identify nearby environmental opportunities and challenges
4. Describe how management and mitigation actions can be used to reduce and respond to environmental threats at the local, national and international scales

### Required texts

Specific readings from the internet will be assigned

## Contact Hours

Lectures	20
Discussions	8
In class activities	5
Lab activities	27
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Total in lecture hour equivalents	42

## Course Grades

Exams	
Quizzes	10%
Midterm Exam	15%
Final Exam	10%
Field notebook I	5%
Field notebook II	15%
One Health Threat Project	
Core Scientific Components	10%
Public Perception	10%
Oral presentation	5%
Mitigation plan	10%
Participation and compliance with rules	10%

The final grading scale is as follows: A = 100-90%; B = 89-80%; C = 79-70%; D = 69-65%; F = 64-0%.

### ***Exams***

Two exams will be given, a midterm and a final. The final will be cumulative. The Midterm Exam will be given on 3 September and the final on 8 November.

### **Re-grading policy**

Re-grade requests will be entertained on an individual basis. Students seeking a re-grade on their exam must give specific reasons why their response should be considered request. Referencing specific class notes, field journals, or outside sources is highly encouraged.

### ***Assignments***

#### **Field notebook**

Each student will be required to maintain a field notebook throughout the course. Students will be presented a variety of formats and will be encouraged to experiment and come up with a style that matches their needs and interests. Field notebooks will be evaluated at three points throughout the semester. In the journal, students will need to write about each of their their efforts to live and work in different rural and urban communities. In the second and third iterations, students will be asked to draw

upon class activities, class discussions, readings, and previous experience to write two “Integrative reflection” entries that address a single One Health concept from multiple, diverse points of view.

### **One Health Threat Project**

Each student will be required to complete a case study on an important health or environmental threat. The case study will 1) discuss how this threat can affect human health, animal health and/or biodiversity conservation, 2) show how perceptions of this threat change among different cultures and information sources, and 3) develop a plan to mitigate the effects of this threat. The assignment will be broken down in to independently graded sections which will be integrated across three courses: One Health, Medical Communication, and Biomedical Writing. Four sections will be evaluated as part of One Health: one oral presentation and three written sections (Core Scientific Components, Public Perceptions, and Mitigation Plan). Details of these assignments will be given in a separate handout. As part of the public perceptions assignment students will be required to speak with people in Costa Rica and the USA to help them recognized and explore the different opinions and practices of people in these two different cultures.

### **Discussions**

During the semester, there will be a total of 10, 30-minute class discussions. During these discussions, we will reflect upon the One Health related activities we engage in throughout the semester. We will also discuss in detail living and working in a diverse and global society. During these discussions, we will also encourage students to share their own cultural perspectives and previous experiences as related to these topics and help them understand and articulate the value of diverse and global perspectives.

### ***Compliance***

In the field and in the station, compliance with rules and regulations set by the faculty and staff of the program is vital to create a safe and productive learning environment. Tardiness can cause logistical delays which affect the entire course. Unsafe behavior can endanger the lives of students and those around them. Irresponsible behavior can damage the reputation of TAMU and the Soltis Center. Students will be given a set of guiding rules at the beginning of the semester. Appropriate behavior in the field and social settings in any area, including Latin America are vital for the ability to live and work overseas. As a result, learning to live by the rules will provide students with valuable skills for the future. Students who are tardy and do not follow the rules set by the faculty and staff of the Soltis Center will be warned and then be docked up to 2% of their grade per infraction (removed from the 10% Participation and compliance with rules portion of the grade).

### ***Attendance and make-up policies***

Given that this course is part of an integrated semester program, all students are required to participate in all “required activities” which includes lectures, discussions, exams, field trips and outings unless it is explicitly stated that an activity is optional. Students will be excused from “required activities” for illness or other university approved excused absence. For more information on attendance please see <http://student-rules.tamu.edu/rule07>. If students choose not to participate in course required activities

and do not have an illness or excused absence they will lose up to 1% off from their grade (removed from the 10% Participation and compliance with rules portion of the grade).

If students have an illness or university approved excused absence and are forced to miss exams or assignments they will be given a chance to retake the exam or hand in the assignment at the earliest date convenient for the professor.

## **Study Abroad Course Itinerary**

See attachment for proposed course itinerary in Costa Rica

## **Americans with Disabilities Act (ADA) Policy Statement**

If you have a disability that requires special accommodation, please inform the instructors upon application to this semester program and provide a memo from the Student Disability Services Office that verifies the disability and recommends specific accommodations.

The Americans with Disabilities Act (ADA) is a federal anti-discrimination statute that provides comprehensive civil rights protection for persons with disabilities. Among other things, this legislation requires that all students with disabilities be guaranteed a learning environment that provides for reasonable accommodation of their disabilities. If you believe you have a disability requiring an accommodation, please contact Disability Services, currently located in the Disability Services building at the Student Services at White Creek complex on west campus or call 979-845-1637. For additional information visit <http://disability.tamu.edu/>.

## **Academic Integrity Statement**

*"An Aggie does not lie, cheat, or steal or tolerate those who do."*

For more information on the Aggie Honor Code and the Honor Council Rules and Procedures please visit the following website <http://www.tamu.edu/aggiehonor>. Students who break the Aggie Honor Code and fail to comply with the Honor Council Rules and Procedures will receive zero points on the assignment or exam in question and will be officially reported to the Aggie Honor System Office.

## Course Schedule

Dates and activities are based on a typical semester but are subject to change based on logistics and unique opportunities that arise during the semester.

Date	Time	Academic code	Contact hours	Activity
24-Aug-21	9:30	Distance lecture	1.5	Introduction to One Health and Tropical Ecology
25-Aug-21	13:00	Distance lecture	0.5	The role of field notes and the field journal
30-Aug-21	11:00	Discussion	0.5	Pre-arrival expectations
31-Aug-21	9:30	Distance lecture	1.5	Emerging Infectious Diseases
31-Aug-21	11:00	Distance lecture	0.5	One Health Threat: Introduction and potential topics
1-Sep-21	11:00	Distance lecture	0.5	COVID in Costa Rica
2-Sep-21	9:30	Distance lecture	1	Introduction to Costa Rican climate and life zones
7-Sep-21	8:00	Activity	1	Soltis Center surroundings, common plants, birds, Google Earth Location, how to focus binoculars, etc.
7-Sep-21	16:00	Lecture	1	CR deforestation and conservation history
7-Sep-21	17:00	Lecture	0.5	Introduction to remote images and Regional Context
8-Sep-21	7:00	Activity	3	Introduction to Costa Rican tropical forest
8-Sep-21	15:30	Lecture	1.5	Disturbance and its role in tropical ecosystems
8-Sep-21	16:30	Lecture	1	Introduction to Costa Rican Birds
9-Sep-21	7:00	Activity	2	Introduction to Costa Rican Birds in Sendero Bogarin
9-Sep-21	16:30	Lecture	1.5	Conservation and Ecosystem Services
10-Sep-21	9:00	Lecture	0.75	Bananas and Costa Rica: Economic, Social and environmental impacts (two lectures in one file)
10-Sep-21	16:30	Exam	0.5	Field Journal review and Quiz
11-Sep-21	9:30	Activity	1.5	Boat trip in Sarapiquí
11-Sep-21	15:30	Activity	2	Walking around La Selva
11-Sep-21	20:00	Activity	2	Night walk

12-Sep-21	8:00	Activity	3	Introduction to tropical wet forest ecology II La Selva (This is the guided walk at La Selva)
12-Sep-21	15:00	Lecture	1	La Selva regional context
12-Sep-21	16:00	Discussion	0.5	First impressions (ecosystems)
12-Sep-21	20:30	Activity	1	Optional night walk
13-Sep-21	7:30	Activity	1	Optional AM walk
13-Sep-21	15:00	Activity	1	Tour of Toucan Ranch Wildlife Rehabilitation Center
13-Sep-21	15:00	Activity	1	Tour of Toucan Ranch Wildlife Rehabilitation Center
13-Sep-21	20:30	Discussion	1	Talk about rehabilitation with Leslie
14-Sep-21	9:00	Activity	0.5	Observation at Toucan Ranch
14-Sep-21	9:00	Activity	0.5	Observation at Toucan Ranch
15-Sep-21	22:00	Assignment		Google earth pre departure assignment for Monteverde due
16-Sep-21	9:30	Lecture	1.5	Amphibian decline
16-Sep-21	11:00	Discussion	0.5	First impressions
16-Sep-21	22:00	Assignment		One Health Threat: Topic Selection and draft questions to ask in CR
17-Sep-21	10:30	Lecture	1.5	Climate change
18-Sep-21	16:00	Review session	1	Review session for One Health Midterm
19-Sep-21	8:00	Exam	1	One Health Midterm
24-Sep-21	14:00	Activity	1	Forest walk at station
25-Sep-21		Assignment		Don't forget to do your reading before arrival at Manuel Antonio
25-Sep-21	20:00	Assignment		Monteverde Google Earth Quiz Due
25-Sep-21	8:00	Activity	1	Visit to LIFE Monteverde
26-Sep-21	10:00	Activity	2	Crocodile tour
26-Sep-21	14:00	Activity	0.25	Stop to look for macaws above Jaco
28-Sep-21	7:00	Activity	1	Walk through Manuel Antonio National Park
30-Sep-21	10:30	Lecture	1.5	Alternative energy sources
30-Sep-21	17:00	Discussion	0.5	Reflections on Monteverde trip
2-Oct-21	16:30	Discussion	1.5	With Cory Arcak
5-Oct-21	10:30	Lecture	1	Environmental Sentinels
5-Oct-21	11:30	Discussion	0.25	One Health Threat: Discussion of Core Scientific Concepts Assignment
6-Oct-21	10:30	Distance lecture	1.5	Vector Born diseases (not confirmed)
6-Oct-21	22:00	Assignment		One Health Threat: Core Scientific Concepts draft

17-Oct-21	7:00	Activity	0.5	Canopy tower Subset of students can go to the tower at Soltis
17-Oct-21	8:30	Activity	0.5	Canopy tower Subset of students can go to the tower at Soltis
17-Oct-21	10:00	Activity	0.5	Canopy tower Subset of students can go to the tower at Soltis
17-Oct-21	22:00	Assignment		Google Earth Pre-departure due
18-Oct-21	22:00	Assignment		One Health Threat: Core Scientific Concepts final
19-Oct-21	10:30	Lecture	1	Macaw management, Peru and Costa Rica
22-Oct-21	22:00	Assignment		One Health Threat: Public Perception draft
28-Oct-21	14:00	Lecture	1	Topic TBD
29-Oct-21	14:00	Discussion	0.5	Reflections on Heredia so far with CD topics
2-Nov-21	15:00	Lecture	1.5	Wildlife trade (where to put this depends on final schedule)
5-Nov-21	20:00	Assignment		Google Earth Heredia Assignment due
8-Nov-21	9:30	Discussion	0.5	COVID revisited
8-Nov-21	10:30	Discussion	0.5	One Health Threat: Review of Mitigation Plan assignment
8-Nov-21	16:00	Discussion	0.75	Discussion on Heredia and Punta Leona
9-Nov-21	16:00	Review session	1.5	Review session for One Health Final
10-Nov-21	10:00	Exam	2	One Health Final
11-Nov-21	9:30	Discussion	1	Debate (topic TBD)
11-Nov-21	22:00	Assignment		One Health Threat: Mitigation Plan draft
12-Nov-21	15:00	Assignment	1	One Health Threat: Final Presentations
19-Nov-21	22:00	Assignment		One Health Threat: Public Perception final
24-Nov-21	22:00	Assignment		One Health Threat: Mitigation Plan final