

PCB 3354 - Tropical Ecology and Conservation

Fall 2015, 3 credits

Instructor: Dr. Gregg Klowden (pronounced "Cloud - in")
Office: Room 202A, Biological Sciences
Office Hours: Tuesdays 10:30-12:20 and Thursdays 10:30-11:30, or by appointment.
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I receive a large volume of emails from several courses. To help me help you, please include:

- Your first and last names
 - Course name
- * I will try to respond to emails within 48 hours however, response time may be greater.
* Please plan accordingly by not waiting to the last minute to contact me with questions or concerns.
* Due to confidentiality, I will only reply to questions emailed from your Knights email.
* Any questions about grades must be discussed in person and cannot be discussed via email.
* Please do not use the Webcourses mail system for correspondence.

Class Meeting Times: Tuesdays and Thursdays 1:30-2:50 pm in BIO 209

Intended Audience: Biological Science majors & minors.

Course Prerequisite: Principals of Ecology (PCB 3044C) with a grade of C or better

Course Description: This course is an introduction to the geography, ecology, and environmental problems encountered in various tropical ecosystems with particular emphasis towards terrestrial systems in tropical rainforests. You will study species diversity, community structure and biogeographic patterns of tropical flora and fauna in various ecosystems and the main abiotic and biotic characteristics that contribute to their distribution, abundance and dynamics including climate, hydrology, soils, nutrient cycles, species interactions and coevolution. In the last part of the course you will study the effects of human activities on species, biological communities and ecosystems and consider various conservation issues and strategies from both theoretical and practical standpoints.

Course Goals: I want you to take several things away from this course. I want to move beyond the "Discovery Channel" approach to the tropics and, while keeping a sense of the wonder of tropical diversity, help you develop a sound background in modern tropical ecology and conservation, and the tools to continue learning about and acting on behalf of tropical ecosystems. Specifically, by the end of the course:

1. You should have an understanding of modern ecological and evolutionary theory that applies to "how the tropics work", and why tropical ecosystems are different (if they are) from temperate systems. For example, why are there are so many species in the tropics? How is species diversity maintained? How do physiological and behavioral adaptations shape interactions among organisms?
2. "The Tropics" are not monolithic – there are high diversity rain forests, low diversity dry forests, coastal mangroves, alpine páramo, seasonally flooded forests, and many kinds of agro-ecosystems - these systems vary widely in what makes them work. I want you to have a working knowledge of ecosystem diversity in the tropics, and its biogeographic distribution.
3. You should come away from the course with a critical understanding of threats to tropical ecosystems - exactly how do land-use change, global climate change, fire and other anthropogenic factors affect tropical ecosystems? How do current human activities differ from those of the last several thousand years?

Required Resources:

A. Text: Kricher, John. 2011. Tropical Ecology. Princeton University Press. Available at Book Store.

B. UCF Library Webpage Access: Necessary in order to be able to download articles from research journals..

C. Webcourses.ucf.edu: Tropical Ecology is a web-enhanced class. Announcements, lecture notes, grades, study tips, and relevant web links will be made available at this site. Use your PID and myUCF password to log in. Before emailing me, please check this site for frequently asked questions.

Student Responsibilities:

Etiquette – Students should show proper classroom etiquette. Students should show up to class on time. *Please do not be late or leave early, this disrupts the class.* If this is unavoidable then you should sit near the door to reduce disruption to the class. All cell phones, pagers, etc. should be turned OFF (not on vibrate) when entering the classroom. Students should not disrupt other students (or the instructor) in class by talking unless instructed to do so by the instructor.

Email and Webcourses:

You will be expected to have daily access to Webcourses since I will be consistently posting assignment updates, additions, changes, clarifications, etc. All students at UCF are required to obtain a Knight's Email account and check it regularly for official university communications. If you do not own a computer, there are computers accessible to you in all UCF's computer labs, and most computer labs have computers connected to the internet. For further information on computer labs, please see the following website:

http://registrar.sdes.ucf.edu/webguide/index_quickfind.aspx.

Readings – Readings are designed to coincide with and supplement the lecture component of the course. The order of reading assignments which generally follow the book chapter order are listed below. You are expected to have read the material prior to class.

Exams – There will be three midterm exams. The questions will be a mixture of multiple choice, fill in the blank and short answer essay. All questions will pertain to material covered in lectures, textbook readings and additional assignments. Please bring a #2 pencil with you to each exam. Cell phones must be turned off and stowed during the exam period. Grades will be posted on WebCourses and I will inform the class when they are posted. Exams can be reviewed individually in my office hours.

Late for the exam policy - If you arrive late for any exam you will be allowed to take the test if no one has yet turned in an exam. However, you must turn in the test paper at the regular scheduled end of the test. You will not be allowed extra time unless a documentable emergency has occurred.

Makeup Exam Policy - If you miss an exam, you will only be granted a make-up with written documentation from a competent authority (physician, coach, counselor, etc.). Make up exams, IF permitted, will be in essay format. Unexcused absence from an exam will result in a failing grade for the missed exam.

Tropical Ecosystems Website – For this assignment you will you will construct a webpage based on your research of a tropical ecosystem and associated conservation issues. This project will be done in a group of 3 to 4 students and will involve 5 phases:

1. Annotated bibliography
2. Draft submission
3. Peer review
4. Oral Presentation
5. Final Submission

Websites:

- can be built and made publicly available using the freely available site building website Weebly.com, other site building websites, or by any other means as long as your website is made publicly available on the internet for class review.
- must consist of at least 5 logically distinct pages (see below) but for good flow should likely have more.
- must incorporate information from at least 12 journal articles (but more are encouraged).
 - Complete PDFs of journal articles should NOT be directly linked as this would violate copyright (unless they are openly available on the web).
- Website may be purely informational or may incorporate other aspects such as petitions, fund raising, etc... (Note that some desired elements may not be free on Weebly.com)
- DO NOT include the group member names or group number anywhere on the webpage.

Required Pages:

1. Overview
2. Detailed ecosystem description
 - Major defining features
 - Worldwide geographical distribution
 - General abiotic components
 - General biotic components
3. Conservation Concerns
 - General
 - IUCN Red listed (Vulnerable, Endangered, Critically Endangered) Animals
 - IUCN Red listed (Vulnerable, Endangered, Critically Endangered) Plants
 - Detailed conservation case study 1 (see description below)
 - Detailed conservation case study 2 (see description below)

4. Links (webpages, paper/book abstracts (on journal/book publisher website), organizations, etc...)
5. Literature Cited and Photo References
 - Make sure all citations are formatted in the the same style.

Groups and Topics:

- Groups may have 3 to 4 people per group (i.e. 18-23 groups total)
- Think of a topic and find like-minded group members (by using the Webcourses Discussion Board)
- Up to 2 groups per ecosystem type permitted.
- Sign up for an ecosystem and group on Webcourses (1st come 1st serve).
- Choose ecosystem and or group members by September 10 or you will be assigned to an ecosystem/group. No switching groups after September 10.
- If your group has fewer than 3 people by September 10 you will be assigned to another group.

A note on groups - While the dynamics of group work can be challenging, it offers many advantages including reduced work load and more effective partitioning of individual interests and abilities. Working well in a group is a skill that will benefit you in your professional life. Please try to act professionally and work out your issues amongst yourselves. If this is not possible then please come see me early and do not wait for the issue to fester. I expect that you will partition the work equally and no one will do more or less than his/her share. You will have the opportunity to anonymously evaluate your group member's adherence to this guideline in the individual contribution statements you will submit for each portion of the project. If it is clear that an individual is not pulling his/her weight, is unnecessarily dominating, or is not playing nicely, his/her grade may be reduced.

Potential Ecosystems:

Terrestrial Ecosystems:

1. Tropical Rainforest
2. Tropical Savannah and Grassland
3. Tropical Dry Forest
4. Tropical Hot Desert
5. Tropical Seashore

Mountain ecosystems:

6. Tropical Cloud Forest
7. Paramo
8. Puna Grassland
9. Polylepis Forest

Aquatic Ecosystems:

10. Tropical River (e.g. Amazon, Congo) and Floodplain:
11. Tropical Estuary
12. Tropical Mangroves and Seagrasses
13. Tropical Coral Reef

Detailed Case studies:

These should be specific examples of conservation issues that describe a conservation concern in a specific location (e.g. the Paramo of southern Ecuador). They can focus on broad aspects (e.g. biological community alteration causes and consequences) or specific plant or animal species (e.g. a specific endangered frog species). You should also discuss specific conservation actions being taken including aspects such as research being undertaken, education programs, preservation efforts, etc. It is likely that the bulk of your journal article references will be associated with these case studies.

Annotated Bibliography (3% of course grade):

1. Deadline: October 8 at 1:30 PM submitted via Webcourses.
2. Each person (not group) must submit:
 - A. An annotated bibliography (see below) of 2 journal articles that will be referenced on your website.
 - B. A PDF copy of these 2 journal articles (complete).
3. No repeated articles should occur among group members. Prior to individuals writing their annotations, the group should agree on the relevance/importance of all citations and who will be summarizing each.
4. Each annotation should be 500-750 words in length, no more, no less and should include the following sections:
 - A. Article Identification: Author(s), article title, year of publication, title of journal, volume and page numbers. e.g. Haffer, J. 1969. Speciation in Amazonian forest birds. Science 165:131-137.
 - B. Summary: A brief summary of the contents of the article. You may summarize section by section but since the review is short it may better to pick up the main themes only.
 - C. Important components: Describe the methods, results, conclusions or other portions that are pertinent to your website and how it is related to, illuminates, or informs your topic.
5. Journal articles used must be a minimum of 3 pages and should not be "notes" or other brief writings.
6. Annotations should clearly demonstrate that you read and understand the entire article and must be entirely your own work. They will be submitted to Turn-it-in to check for plagiarism so be certain that ALL words are your own. You may not quote the material but should instead summarize it in your own words. When taking notes it is recommended to place any copied material in quotes to be sure you avoid using other people's writing in your final summary. Plagiarism will not be tolerated and will result in a failing grade for the course or expulsion from UCF.
7. Submissions will be penalized by 10% for each day they are late.

Draft Submission (3% of course grade):

1. Deadline: November 3 at 1:30 PM submitted via Webcourses. 10% will be deducted per day for late submissions.
2. Submit as a group:
 - a. The URL of your website (e.g. www.YourWebsite.Weebly.com)
 - b. An MS Word (DOCX) document containing ALL of the text (no pictures) from the website. This will be submitted to TurnItIn to check for plagiarism.
 - c. Your 1st and 2nd choice of date for your oral presentation. Dates will be by 1st come 1st serve. Only drafts deemed to be complete will be eligible for date selection.
3. Submit individually:
 - a. A statement of contribution. Each person in each group will fill out a survey on Webcourses (a) describing the contribution (including an estimated percentage) of each group member to the preparation of the draft website, (b) indicating that the content of the website represents the original, collaborative work of the group, and (c) indicating that the content of the website is not currently and has not in the past been considered as partial or complete fulfillment of an assignment for another course or research project.

* Failure to submit the statement of contribution on time will result in a 10% reduction PER DAY in your individual grade for the draft website.
4. DO NOT include the group member names or group number anywhere on the webpage.
5. Grading: Peer reviews (see below) will be used to assist in determining your grade for the draft submission.

GENERAL ADVICE:

Editing and re-editing is essential to the written quality of your website. The best websites are finished well in advance so that all members of the team have ample time to read and reread the contents to improve its quality. As you edit consider each sentence carefully. Does it follow logically from the previous sentence? Is something missing? Is the sentence needed at all? In other words your website should be edited multiple times for clarity and content.

Peer Review (4% of course grade):

1. Deadline: November 12 at 1:30 PM via Webcourses. Late submissions will NOT be accepted for any reason.
2. Following submission of the draft websites, each student will be assigned 4 websites to anonymously critically review (details forthcoming). This means that each site will receive 12-15 reviews.
3. The top 30% ranked draft sites (i.e. 5-7 groups) by your peers will receive a 5% bonus on the final website grade.

Group Oral Presentations (4% of course grade):

1. Each group will orally present their website to the class followed by several minutes for audience comments.
2. All group members must actively (i.e. speak) and equally participate in the presentation.
3. The date of your presentation will be determined 1st come 1st serve by requests received along with the submission of your draft website (see above).
4. The top 30% ranked presentations (i.e. 5-7 groups) by your peers will receive a 10% bonus on the group presentation grade.
5. Your presentation will be critiqued and graded based on both delivery and content. In other words, practice, practice, practice as a group. More details regarding specific criteria will be distributed at a later date.
6. A statement of contribution (see above) is due for each person by 11:59 PM on the day of your group's presentation.
* Failure to submit the statement of contribution on time will result in a 10% reduction PER DAY in your individual grade for the presentation.

Final Submission (11% of course grade):

1. Deadline: Monday December 7 by 11:59 PM via Webcourses. 10% will be deducted per day for late submissions.
2. Submit as a group:
 - A. The URL of your website (e.g. www.YourWebsite.Weebly.com)
 - B. An MS Word (DOCX) document containing ALL of the text (no pictures) from the website. This will be submitted to TurnItIn to check for plagiarism.
3. Submit individually:
 - A. a statement of contribution (see above). * Failure to submit the statement of contribution on time will result in a 10% reduction PER DAY in your individual grade for the website.
4. The top 20% ranked sites (i.e. 4-5 groups) by Dr. Klowden will receive a 5% bonus on the final project grade.

*** A note about plagiarism***

All work must be in your own words. Be extra careful about plagiarizing other's work. You should not quote other's work and must substantially alter the content, sentence structure and order of presentation of the material you are citing. All work submitted is checked for originality by Turn-it-in. Plagiarism will not be tolerated and will result in a failing grade for the assignment or course and referral to the university for further sanctions.

Optional Book Review Assignment: This assignment is OPTIONAL. Due November 30 at 11:59 pm submitted via Webcourses. If you choose to do this, it will be worth 3% of your total grade, replacing 3% of your lowest exam grade (making that one exam worth 22% rather than 25%). If you choose, pick an ecology themed book (see approved books below) of at least 300 pages or more to read and write a summary report demonstrating that you read the entire book and your understanding and opinions of the book. Summaries should be 500 to 750 words, no more, no less. Reviews should be for this class only and not a book used in another class. Summaries must be entirely your own work. Plagiarism will not be tolerated and will result in a failing grade for the course. I reserve the right to orally quiz you about the book if I suspect you have not read it.

Note – Optional assignments are not extra credit however like extra credit can boost your grade. As opposed to extra credit, which can be neutral or help your grade, optional assignments can benefit your grade IF you do a good job but could hurt your grade if you do a poor job. I design it this way to encourage you to do a good job and to not turn in a hastily prepared assignment in hopes of getting a point or two. However, do not be dissuaded from doing this in fear of receiving poor credit. If you take the assignment seriously, you will receive full credit and it will benefit you. Just be sure to take it seriously and do a good job.

Books approved for review are:

1. At the end of most chapters in our text are suggestions for further reading. You may choose from one of these so long as they are at least 300 pages.
2. You may choose one of my suggestions below:

<i>The Beak of the Finch</i> by Jonathan Weiner	<i>Where Worlds Collide: The Wallace Line</i> by Penny van Oosterzee
<i>Voyage of the Beagle</i> by Charles Darwin	<i>The Malay Archipelago</i> by Alfred Russel Wallace
<i>On the Origin of Species</i> by Charles Darwin	<i>Emerging Threats to Tropical Forests</i> by W.F. Laurance & C.A. Peres (Editors)
<i>Diversity of Life</i> by E.O. Wilson	<i>Ever Since Darwin</i> by Stephen Jay Gould
<i>Song of the Dodo</i> by David Quaman (excellent!)	<i>What Evolution Is</i> by Ernst Mayr
<i>The Reluctant Mr. Darwin</i> by David Quammen	<i>The Greatest Show on Earth</i> Richard Dawkins
<i>How and Why Species Multiply</i> by P. Grant and R. Grant	<i>The Extended Phenotype</i> by Richard Dawkins
<i>Wildlife Wars</i> by Richard Leakey and Virginia Morell	<i>Amazon Expeditions</i> by Paul Colinvaux
<i>Ulendo</i> by Archie Carr	
3. You may suggest a book not on either of these lists but it cannot be one you have or are reading for another course and you must first email me for approval.

Performance Evaluation:	Proportion of grade
Midterm exams (3 x 25%)	75%
Annotated Bibliography	3%
Draft website	3%
Peer Review	4%
Oral Presentation	4%
Final website	11%

Grading Scale:

A 93.0 – 100%	B+ 87.0 - 89.9%	C+ 77.0 - 79.9%	D+ 67.0 - 69.9%	F 0 - 59.9%
A- 90.0 - 92.9%	B 83.0 - 86.9%	C 73.0 - 76.9%	D 63.0 - 66.9%	
	B- 80.0 - 82.9%	C- 70.0 - 72.9%	D- 60.0 - 62.9%	

Grade Rounding Policy: The overall semester grade will not be rounded. In other words, either you have the grade or you don't. In other words, a 79.99 is still a 'C'. As there are many students in this class I strive for consistency and fairness. For this reason, there will be no exceptions to this policy and no other adjustments will be made (i.e. No additional curving or extra credit will be offered).

Ethics - UCF faculty supports the UCF Creed. Integrity - practicing and defending academic and personal honesty - is the first tenet of the UCF Creed. This is in part a reflection of the second tenet, Scholarship: - I will cherish and honor learning as a fundamental purpose of membership in the UCF community. - Course assignments and tests are designed to have educational value; the process of preparing for and completing these exercises will help improve your skills and knowledge. Material presented to satisfy course requirements is therefore expected to be the result of your own original scholarly efforts.

Plagiarism and cheating - presenting another's ideas, arguments, words or images as your own, using unauthorized material, or giving or accepting unauthorized help on tests - contradict the educational value of these exercises. Students who attempt to obtain unearned academic credentials that do not reflect their skills and knowledge can also undermine the value of the UCF degrees earned by their more honest peers.

UCF faculty members have a responsibility for your education and the value of a UCF degree, and so seek to prevent unethical behavior and when necessary respond to infringements of academic integrity. Penalties can include a failing grade in an assignment or in the course, the issuance of a 'Z' grade on your transcripts or suspension or expulsion from the university. See <http://www.osc.sdes.ucf.edu/> for more information about UCF's Rules of Conduct.

Dr. Klowden will issue a failing grade of "F" for the entire course for anyone caught cheating.

Disability Access Statement:

The University of Central Florida is committed to providing reasonable accommodations for all persons with disabilities. This syllabus is available in alternate formats upon request. Students who need accommodations must be registered with Student Disability Services, Ferrell Commons Room 185, phone (407) 823-2371, TTY/TDD only phone (407) 823-2116, before requesting accommodations from the professor.

Final Note:

The professor(s) reserve the right to change the syllabus and management of the class at any time during the semester. These changes will be announced in lecture.

TENTATIVE Course Calendar (subject to change)

***Indicates that attendance is mandatory (Each unexcused absence on these days will result in 5% reduction to your final grade)

Week	Date	Reading	Important dates
1	8/25	Syllabus / Chapter 1 – What and Where are the Tropics	
	8/27	Chapter 3 – Inside tropical rainforests: structure	
2	9/1	Chapter 4 – Inside tropical rainforests: Biodiversity	
	9/3	No Class – Football game	
3	9/8	Chapter 4 (continued)	
	9/10***	Guest Speaker: – Dr. William Crampton, UCF Dept of Biology – Electric fish Chapter 4 (continued)	Signup for Website groups ends
4	9/15***	Chapter 5 – Rain forest tree species richness Website working groups	
	9/17	-----	Exam 1 – chapters 1, 3, 4, 5
5	9/22	Chapter 6 - Forest development and dynamics	
	9/24	Chapter 7 - Biotic interactions and coevolution in rainforests	
6	9/29	Chapter 8 - Trophic dynamics in evolutionary context	
	10/1	Chapter 8 (continued) Website working groups	
7	10/6	Guest Speaker – Joe Figel, UCF PhD Student in Conservation Biology -	
	10/8	Chapter 10 - Nutrient cycling and Tropical Soils	Annotated Bibliography Due by 1:30 pm
8	10/13***	Catch up	
	10/15***	Website working groups	
9	10/20	-----	Exam 2 – chapters 6, 7, 8, 10
	10/22	Chapter 11 - Tropical savannas and Dry Forests	
10	10/27***	Guest speaker – Dr. Elizabeth Harris, UCF Dept of Biology, Tropical dry forests and savannas of Guyana. Website working groups	
	10/29***	Website working groups	
11	11/3	Chapter 12 - Other Tropical Ecosystems	Draft Website Due by 1:30 pm Statement of contribution due by 11:59 pm
	11/5	Chapter 12 (continued)	
12	11/10	Chapter 13 – Humans as Part of Tropical Ecosystems	
	11/12	Chapter 14 - Forest fragmentation and biodiversity	Peer Reviews Due by 1:30 pm
13	11/17***	Guest Speaker – Lina Sanchez Clavijo, UCF PhD Student in Conservation Biology; The role of habitat selection by tropical mountain forest birds in adapting to altered landscapes.	
	11/19	-----YES there is class today-----	Exam 3 – chapters 11, 12, 13, 14
14	11/24***	Website presentations	Statement of contribution due by 11:59 pm
	11/26	No class – Thanksgiving	
15	Monday 11/30		Optional book review due Monday 11/30 by 11:59pm
	12/1***	Website presentations	Statement of contribution due by 11:59 pm
	12/3***	Website presentations	Statement of contribution due by 11:59 pm
16	Monday 12/7		Websites due Monday 12/7 by 11:59 pm Statement of contribution due by 11:59 pm
Final	12/15		Final Exam: 1:00 – 3:50 pm