

Ecology and Culture of South Africa and North America – Summer 2005

INSTRUCTORS

Drs. Arthur L. Buikema, Jr. and Richard D. Fell have taught this course since summer 2002. The first course filled by Christmas, the second by Thanksgiving, and the course for 2004 was filled within two weeks of the study abroad fair and before we had our information session. The summer 2005 course was filled by Thanksgiving 2004. Drs. Buikema and Fell have also had experience studying abroad prior to teaching this course. Dr. Buikema spent six months as a Fulbright Scholar teaching at the National University of Science and Technology in Zimbabwe and had visited game preserves in South Africa. He has also led a Tropical Ecology course for four years to Costa Rica. Dr. Fell spent four months teaching and studying at the University of the Free State in South Africa, and he also co-leads the Tropical Ecology course to Costa Rica.

NEED

Through the Tbilisi Declaration, the Rio Accord and Agenda 21, the nations of the world have alerted mankind of the need to be informed about the interaction of culture and conservation for future sustainable development and survival of the planet. Our goal is to introduce students to this need through a study of biology and culture in South Africa in comparison to that of North America, especially the United States.

While in South Africa, we will travel to national parks and nature reserves, and work with students and faculty from the University of the Free State in Bloemfontein. The educational opportunities for students are tremendous, not only with regard to learning biology, but also with respect to gaining new insights into a different culture, as well as our own culture. South Africa is a country in transition, changing from a white dominated society to one governed by the black majority. The history of South Africa parallels our own, and provides an opportunity to examine how settlement by European nations impacted indigenous peoples and to compare this history with what happened to Native American peoples in the United States. We will also look at the issues of apartheid and civil rights, and how changing governments may affect conservation and other wildlife issues. Further, South Africa, like many third world countries has a host of economic problems that threaten it both socially and environmentally. Last, Africa presents a unique opportunity to learn about indigenous art, especially Bushman cave paintings and petroglyphs that are estimated to be over 4,000 years old.

This course fulfills several graduation requirements for Virginia Tech students. This course has helped students fulfill Area 2 and Area 7 core requirements, and served as a writing/oral presentation intensive course. In addition, this course adds another laboratory course to the limited number available to biology students. Biology students who take this course receive credit for both a biology elective and a laboratory course.

BRIEF COURSE DESCRIPTION

Required texts

- 1) Michener, J. 1980. *Covenant*. Fawcett Press, New York.
- 2) Estes, R. D. 1999. *The Safari Companion: A Guide to Watching African Mammals*. Chelsea Green Publishing Co., White River Junction, Vermont.

Advance Preparation for the Class

Students are expected to begin working on this course before the summer term begins. This means enrolling in a 2-hr course during spring, reading and presenting a summary of a chapter of the Covenant, and discussing the current South African news. Students are expected to do much of their library research and presentation preparation before we leave for South Africa so we can spend our time observing people and ecosystems. Most of the books listed under additional readings below can be checked out from Buikema.

Summer Course Assignments

Presentations. Before we leave, students will prepare three presentations. Each student will present their work in Africa, usually the night before we intend to see various cultural settings, organisms or ecosystems. The first presentation will be on a cultural, economic or civil rights issue comparing and contrasting three cultures: indigenous Africans, American Indians and contemporary United States. The second will be on the biology and ecology of a select animal. In addition, each student will prepare a behavior check list for that animal. These checklists will help students understand the behavior of individuals as they interact within their own grouping, other groups of the same species and with other species. The checklist will be presented in Africa and distributed to each member of the class. The student who prepared the checklist will be expected to point out major behaviors when we are observing animals. For these assignments students will prepare an outline of their talk to be distributed to each member of the class when they give their talk.

Social behavior of the jackass penguin. Students will observe the social behavior of jackass penguins at their nest site at the Boulders, South Africa. Building on their experience studying cockroach behavior, students will be asked to determine a behavioral sequence and then quantify the behavior of penguins. When completed, the student will write a short report outlining their methodology and interpreting their data (in their ecology journal).

Other Behavioral studies. At a minimum, students will observe the behavior of elephants, giraffes, baboons, small antelopes and zebra.

Reading the environment. In Africa, students will participate in field exercises to learn to read the environment. Activities will include observing the influence of animals on vegetation (eating, marking territory, rutting behavior, etc.), reading animal tracks, observing the relationship between the people, their dwellings and their environment, etc.

Understanding current issues. Students will be assigned online newspapers to read from South Africa and the United States. Students must be prepared to lead a discussion of pertinent events from these readings. While we are in South Africa we will continue to buy a national newspaper and keep up with current events.

Marine Intertidal Ecology. The class will study the intertidal ecology of the South African coast. The students will work in groups and each group will set a transect from the low to high tide line, and then collect and identify the species present in the different tidal zones. Each group will construct an ecological transect map and present their findings to the class.

Culture Journal and Final Project: We will read excerpts from various books and discuss the cultures of Southern Africa (Zulu, Bushman and Afrikaans), American Indian (Sioux and Cherokee), and contemporary United States (Anglo-Saxon and African-American). Special emphasis will be placed on how each of these cultures use or used their environmental resources, what each culture's attitudes are or were toward conservation and preservation, and how racial prejudice, civil rights movements and governmental policies may have altered each cultures' perspective of the environment.

As we discuss the readings, each student will begin a culture journal by recording pertinent information from the presentations given by their peers and invited speakers. When we travel through southern Africa, students will be expected to maintain a daily culture journal comparing the cultures they observe to the cultures we discussed in class. At the end of the course, each student will be asked to write a summary paper comparing some aspect of the culture they experienced to the cultures discussed in class and to the (sub)culture they were raised in.

Ecology Journal and Final Project: Students must maintain a field journal that has daily entries and includes data from the laboratory and field projects. This journal will include results of behavior studies, analyses and interpretation of data, and detailed observations about a species biology, behavior and/or ecosystem. For each ecosystem students will be expected to note any environmental degradation that has occurred and make notes on how this degradation can be prevented or mitigated. Students will be asked to consider the actions an individual and a society can take to preserve each specific resource. At the end of the course the student will write a summary paper comparing two African ecosystems of their choice.

Photographic Journal and Final Project: All students must have access to a 35 mm camera with a telephoto lens. Students will be asked to take photos that best illustrate US and South African culture and biology. Each student will take pictures of local ecology and their culture. Students will then select their best US culture and biology pictures and write a one page essay on each describing what they intended to portray as a photographer, and how each picture captured their intent. Then the US photos will be critiqued in class by professional photographers and class members. For a final project each student must select his/her best African culture and biology pictures and write a paper describing what they intended to portray in each picture as a photographer, and how each picture captured their intent.

CLASS PARTICIPATION

Class participation is defined as attending class and participating in discussions, group activities, and field projects, being on schedule, passing surprise quizzes if needed, and acting as a responsible ambassador of Virginia Tech. Students who do not meet these criteria will receive a reduced course grade.

TERMINATION OF STUDENT STATUS

Under certain circumstances, students may be terminated from the course without refund and a final course grade of F. Possible reasons for termination include willful non-participation in class activities, unwillingness to work within the restrictions of another culture, use of illegal substances and irresponsible behavior. Students who are

terminated will be dropped off at the nearest South African airport and Virginia Tech will be notified of their dismissal from the class. It will be the student's responsibility to schedule their flight home.

SUBMISSION OF FINAL REPORTS

All behavior sheets and presentation papers, except for the field journals, must be submitted in electron form before we leave the country for South Africa. All documents must be in Word. Backup copies must also be given to the professors. **For all students, the three final journals and summary papers are due by Friday, July 1, 2005.** Please send them to Arthur Buikema, Dept. of Biology (0406), Virginia Tech, Blacksburg, VA 24061

GRADING

<u>Assignment</u>	<u>Percent of Final Grade</u>
Class presentation of cultural issue	15%
Class presentation of biological issue and behavior	15%
Field Journal	20%
Culture Journal	20%
Photo Journal (1 picture and essay on biology and 1 on culture)	20%
Class Participation	10%
Total	100%

TENTATIVE ITINERARY - 2005

- May 20 Leave Roanoke and fly to South Africa
- May 21-23 Cape Town SA (Tour city, Robben Island, penguin study, Stellenbosch)
- May 24-25 De Hoop Nature Reserve (marine intertidal study, bontebok and eland studies)
- May 26 Monteco (Khoisan Reserve)
- May 27-28 Karoo National Park (animal observation, field hike)
- May 29 Oudtshoorn (Cango caves, rock paintings, ostrich farming)
- May 30 Knysna (artist community)
- May 31 Tsitsikamma National Park (intertidal studies, river trip)
- June 1-2 Addo Elephant Park (animal observation)
- June 3-4 Bloemfontein (University Free State lectures, Boer War memorial)
- June 5 Kimberley (historical mining town, McGreagor Museum, Khoisan petroglyphs)
- June 6-7 Golden Gate National Park (field studies, rock paintings)
- June 8 Zululand (Zulu culture)
- June 9 Hluhluwe National Park (observational studies on wildlife)
- June 10 Mlilwane Wildlife Sanctuary (wildlife studies, horseback ride through park)
- June 11-14 Kruger National Park (game walk, open vehicle night drive)
- June 15 Hoedspruit Cheetah Centre (breeding center for cheetah, wild dogs)
- June 16 Pretoria Tour, route to airport for flight home