Home page: https://sites.google.com/site/kiiscostarica2015envissues/
Readings and news articles are posted from this home page. You are encouraged to become familiar with these materials before departure. Hardcopies of this content will be provided to you upon arrival in Costa Rica.

Course Description: This cross-listed course presents an introduction to environmental science through an issue-based curriculum that links concepts from the biological, ecological, and social sciences. Through local trips and student-centered activities, participants will develop and analyze questions revolving around three topics: 1) the environmental costs and benefits associated with nature-based tourism; 2) the role of landscape ecology in conservation planning; and 3) the challenges of defining, measuring, and comparing biodiversity.

Purpose: To introduce students to key questions, concepts, and methods in environmental science through the local context of Costa Rica.

Course Objectives: Upon successful completion of this course, students will be able to:
1. Explain the advantages and disadvantages of ecotourism, agricultural tourism, and rural tourism in relation to conservation goals, environmental change, and economic development.
2. Illustrate how habitat fragmentation impacts ecological processes and biological diversity.
3. Define different kinds of biodiversity and discuss issues over its measurement.

Course materials: Journal article readings, a word list, and a set of news articles about Costa Rica will be made available to the students upon arrival. No laptop is required. A bound blank journal book is required for recording and keeping track of your course content.

Instructional Activities: Group discussions of readings and field experiences; instructor lectures (infrequently, when mandated by the topic); guest lectures (when available and appropriate); field excursions.
Field Experiences: Independent research; organized group visits to natural and human-modified habitats, sometimes involving hiking and snorkeling; field mapping

Grading: Student performance in the course will be evaluated as follows:

<table>
<thead>
<tr>
<th>Graded Work</th>
<th>Grading Scale</th>
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<tbody>
<tr>
<td>Ecotourism discussion</td>
<td>20 points</td>
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<tr>
<td>Land use mapping</td>
<td>10 points</td>
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<tr>
<td>Biodiversity measurement</td>
<td>10 points</td>
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<tr>
<td>Biological classification</td>
<td>10 points</td>
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<tr>
<td>Participation</td>
<td>10 points</td>
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<tr>
<td>Final written exam</td>
<td>40 points</td>
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<tr>
<td><strong>TOTAL</strong></td>
<td><strong>100 points</strong></td>
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<td>Grading Scale</td>
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<tr>
<td>&gt; 90</td>
<td>A</td>
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<tr>
<td>80-89</td>
<td>B</td>
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<td>70-79</td>
<td>C</td>
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<tr>
<td>60-69</td>
<td>D</td>
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<td>≤59</td>
<td>F</td>
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Participation: Participation will be assessed regularly throughout the course by the instructor. Quizzes will be periodically given to formalize the assessment for participation.

Final Exam: The final examination will consist of questions based on 1) a word list provided at the start of the semester

Ecotourism discussion: Each student will lead a 15 minute oral discussion that synthesizes perspectives on the costs and benefits of ecotourism, agricultural tourism, and rural tourism. How might their costs or benefits be measured? Material for this discussion will be assimilated throughout our month-long stay. You may use photos, interviews, and textual analysis, but be prepared to lead this discussion without use of a computer or projector. Discussions will be ranked from 1-10 based on how well they incorporate local observations with the content originating from our readings and discussions.

Land use mapping, biodiversity measurement, and biological classification: These field labs will be assigned and completed at times and places to be determined once we are in Costa Rica. Each will require submission of a summary in written or oral form at some point prior to the final exam period.

Attendance Policy: Students are expected to attend every class and to participate in out of class activities as directed by the instructor. KISS requires that any unexcused absence result in grade reduction, and multiple unexcused absences may result in expulsion from the program.

Academic Honesty Policy: Cheating, plagiarism (submitting another person’s material as one’s own), and doing work for another person which will receive academic credit are not permitted. Your signature on each assignment and exam represents a pledge that you have adhered to this policy.
Course Outline: (The sequence of topics will be adjusted in order to capitalize on opportunities offered by the travel itinerary and in coordination with activities of other courses.)

Week 1: Ecotourism, conservation, and environmental change

Curriculum: Word list, readings and news articles


Activity: Teach these questions as part of an oral final discussion: what are the costs and benefits of ecotourism, agricultural tourism, and rural tourism. How might these costs or benefits be measured? These student-led discussions will be conducted during exam week.

Week 2: Landscape ecology and conservation

Curriculum: Word list

Activity: Land use classification and mapping exercise. Grade will be based on submission of exercise and in-class discussion of your findings.

Week 3: Biodiversity and its measurement

Curriculum: Word list

Activities: 1) Morphospecies identification and calculation of diversity indices  2) Folk and scientific classifications. Grades for each activity will be based on submission and in-class discussion of your findings.

Week 4: Wrap up, ecotourism presentation, and final exam
Word list

agricultural tourism  
Blue Flag Program of Costa Rica  
CST Program of Costa Rica  
debt for nature swap  
eco-certification  
ecotourism  
green neocolonialism  
green washing  
gringo trail  
nature-based tourism  
noble savage  
NTFP  
pristine myth  
REDD  
rural tourism  
socionature  
sustainable development  
tragedy of the commons  
underdevelopment  
wilderness debates  
commodity chain  

anthromes  
disturbance patch dynamics  
ecological corridors  
edge effects  
environmental heterogeneity  
extinction debt  
gap analysis  
grain and extent  
habitat fragmentation  
habitat matrix  
hyperdynamism  
islam biogeography  
landscape ecology  
metapopulation  
SLOSS  
novel ecosystems  
population  
primary rainforest  
secondary rainforest  

alpha diversity  
beta diversity  
binomial nomenclature  
biological species concept  
cryptic diversity  
functional diversity  
gamma diversity  
habitat diversity  
interaction diversity  
landscape diversity  
morphological species concept  
neutral-based ecological models  
phylogenetic diversity  
phylogenetic species concept  
species diversity  
species evenness  
species richness  
taxonomic diversity  
taxonomic hierarchy