Biodiversity and Natural Resource Management

ENVI-3000 (3 Credits / 45 class hours)

SIT Study Abroad Program:
Madagascar: Biodiversity and Natural Resource Management

Course Description
The Biodiversity and Natural Resource Management seminar is a thematic, interdisciplinary course taught mostly in French, exploring Madagascar's environmental realities, conservation strategies and possibilities for sustainable livelihoods in the southern region. First-hand academic and experiential knowledge is achieved through an integrated set of lectures, discussions, readings, field inquiries, and independent observations, providing insight into the economic, political, social and cultural contexts for these realities. Throughout the Seminar, students will record, analyze, synthesize and reflect upon their impressions of the host culture in order to deepen their understanding of current issues related to resource management and development.

Course Objectives
The Biodiversity and Natural Resource Management seminar has an interdisciplinary and critical focus encompassing 45 academic hours (3 credits). Its main objectives:

- To introduce Madagascar’s human and natural environment through a broad interdisciplinary seminar
- To introduce you to the unique, primary resources available in Madagascar through contact with local professionals and excursions;
- To encourage you, through written work and discussion sessions, to process and integrate substantial amounts of information, different schools of thought, and varied types of presentations;
- To delegate academic and social skill-building activities in such a way that you take initiative in and responsibility for your own learning

Learning Outcomes
By the end of the course, students should have attained the ability to:

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• Identify a variety of human occupations in varied ecosystems and understanding of inter-relationships between humans and their many environments;
• Express understanding of local land use over time from traditional to colonial and modern independence, and how people and the environment are impacted in rainforests, spiny forests, gallery zones, coastal areas, and transitional zones;
• Articulate a nuanced, multi-faceted understanding of the challenges of preserving unparalleled biodiversity while attempting to ensure sustainable livelihoods;
• Exhibit greater awareness of the intricacies of governance and management of natural resources at various levels, from local to regional to national and international; and
• Consider and engage in experiential learning that leads to a fuller understanding of complex issues concerning ecology, conservation, and natural resource management through a combination of primary field research backed by appropriate secondary sources.

Course Requirements
The objectives of the Biodiversity and Natural Resource Management seminar are accomplished through a multidisciplinary approach and a variety of formats. Seminar activities include lectures, discussions, interviews, student presentations, and excursions to locations of importance in the realm of Madagascar’s contemporary ecology and conservation. You also participate in urban, rural and semi-urban home stays. These provide an important opportunity for cross-cultural understanding. The seminar necessarily covers a broad range of topics and includes a variety of speakers. Lectures and excursions are organized under various themes to give you exposure to a broad range of ecosystems, perspectives and issues. These courses are delivered in Fort Dauphin, Tulear, Antananarivo and in the various field locations in between.

Readings
You are responsible for all the required readings, and should be prepared to bring them to bear on discussions in class. The readings will help you place the classes in their context, to challenge and engage lecturers, to generate questions for class discussions and to deepen your knowledge of particular aspects discussed in class. They are not necessarily tailor-made for each and every class. Additional readings are available to allow you to broaden your knowledge and for supplementary information for the completion of assignments – see the extended bibliography in your reading pack for a list of suggested additional resources, or peruse the library.

Required reading (prior to arrival in Madagascar):

Highly recommended:


Additional readings by theme, class, and activity: see a selected (partial) reading list below:

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Ravoavy, Toky. “Gestion des revenus miniers de l’exploitation du sable minéralisé des gisements de Mandena, Petriky et Sainte Luce (Region de Fort Dauphin), Proposition d’alternatives equitables au projet ilmenite de Rio Tinto – le plus important investissement de Madagascar," Janvier 2004, published by author. projetilmenite@yahoo.fr


PLEASE NOTE: COURSE CONTENTS, LECTURERS AND READINGS MAY BE MODIFIED AS NEEDED. SHOULD ANY CHANGE OF CLASS TOPICS OR LECTURERS BE NECESSARY, STUDENTS WILL BE PROMPTLY NOTIFIED.

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Evaluation and Grading Criteria
Each individual sets different learning goals for herself or himself. Therefore, you should personalize your learning experience to the greatest extent possible. To this end, there will be no multiple choice or short answer tests or assignments; all will be open-ended essays.

Objectives for each assignment are clearly stated at the beginning of each assignment’s description. You may further personalize these objectives if you wish, but you should state your goals very clearly at the outset of your write up.

Grades will be based on the extent to which you realize these objectives and are able to communicate your learning in a clear and concise manner. Concise means that you have communicated all relevant information without being verbose or adding irrelevant details; it does not mean that you are to be brief at the expense of providing full context for your comments.

In evaluating your work, we are looking for analysis of information from varied sources and evidence of reflection on your experiences. Process is important when considering the product; therefore, you should provide enough background information and description to make clear how you arrived at your written product.

You will receive written comments on each assignment, including comments on how the information is presented. All work must turned in by the due date unless prior arrangements are made with the Academic Director.

Biodiversity and Natural Resource Management Seminar Assignments
Environmental Issues Assignment 40%
Community Ecology Study 25%
Lemur Ecology Study 25%
Class attendance and participation 10%

1. Environmental Issues Assignment: Each student will investigate and develop a theme of their choice over the first six weeks of the program under Environmental Issues. The goal is to weave together various facets of what you learn about Madagascar’s peoples and environments that optimizes academic and experiential learning from seminar classes, field excursions, the village stay, your home stay, interviews with people, participant observation, newspapers, magazines, books, and so forth. Students are to present findings in a carefully constructed analysis paper. You should explain how your topic is an environmental issue, present the information you found (remember to use graphs, charts, maps, etc to show different aspects of your data), discuss this information and its implications, and draw your conclusions. Be sure to cite your sources in a consistent manner, including interviews. Before writing, give considerable thought to what you want the reader to understand about your topic. Your reports should be easily understood by someone who knows nothing about your topic as well as the areas of your study. You do not need to include everything you found out if it does not relate to the main ideas (this is not permission to exclude information that is relevant to your topic but contrary to your hypothesis – instead, use that as a discussion point). Length is not a grading consideration; attention should be paid to presenting the important learning from your efforts and not to writing a particular number of pages or doing a particular number of graphs. An excellent paper can be 5 or 40 pages long, as can a weak paper.

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2. **Community Ecology Study: Assignment:** Your group, consisting of American and Malagasy students from SIT and CEL, will be given an area of the forest to study. In your assigned area, mark off a 10m x 10m plot. Do an ecological inventory of your plot as a team: physical features, species present, frequency of species, age structure, succession, influence of disturbance (human or otherwise), etc. Select an aspect that interests you to explore at greater depth individually. Discuss as a group the overall aims of your study and how individual contributions will fit in. Record all of your information in your field journal. Your team will be responsible for:

   a. An oral presentation of your findings to the group, presented in French for SIT and CEL students. Each team member will contribute to a discussion on the salient aspects of your study, including an overview of your methods, ecological inventory, physical characteristics, ecological setting, and any other distinguishing factors. Think also about what future research could be done in order to broaden the body of knowledge in this area. This presentation will be with all students present. Team members should contribute equally; and

   b. a write up your experiment in French (one write-up per group, for SIT students only), clearly stating your hypothesis, study design, methodology, results, and analysis. Provide a truthful assessment of your experimental design and use of time in the field. Include background information on the species you are studying, and any ecological and cultural information that you deem important. Work should be divided equally amongst group members.

3. **Lemur Ecology Study: Assignment:** Students will be divided into three groups in order to facilitate learning of each of three scientific field techniques. Each group will perform population density estimates, habitat use, and time allocation of *Propithecus verreauxi verreauxi*. From your readings about and observations of the lemurs around Ifotaka, formulate questions that can be answered by performing each of these field techniques. The questions will attempt to increase our understanding of how the *Propithecus verreauxi verreauxi* functions in its ecological system. Next, groups are to produce a clear, testable hypothesis from your question. Finally, groups go out and test your hypothesis. Since groups only have two days to conduct fieldwork, the goal is to learn how to apply the field techniques, and to assess their effectiveness. Students must deliver:

   a. an oral presentation as a group on your methods, findings, and analysis of what you did, how you did it, and its relative effectiveness—where each team member should contribute equally to your presentation; and

   b. a write-up of your experiment, clearly stating your hypothesis, study design, methodology, results, and analysis. Provide an objective assessment of your experimental design and use of time in the field. Include background information on the species you are studying, and any ecological and cultural information that you deem important. Each member should put their name on the part that they write. The oral presentation and write up will be done in French, one per group, with work divided equally among group members.

**Grading Scale:** The grading scale for all classes is as follows:

<table>
<thead>
<tr>
<th>Score Range</th>
<th>Grade</th>
</tr>
</thead>
<tbody>
<tr>
<td>94-100%</td>
<td>A</td>
</tr>
<tr>
<td>90-93%</td>
<td>A-</td>
</tr>
</tbody>
</table>

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Grading Criteria
All grades assigned will take into account the students’ special circumstances and challenges they face as foreign students. An “A” grade for an assignment entails superior (not just “very good”) performance in terms of structure and organization of assignments, analysis, logical argumentation and consistency, and the provision of factual, numerical and/or historical evidence. In terms of Class Participation, an “A” grade refers to full attendance, punctuality, attentive listening and active engagement in all academic seminar lectures, discussions, field trips and other activities. It also means polite and respectful behavior. The level, frequency, and quality of the students’ participation will be monitored and taken into account.

Student Expectations

Class Participation
Participation in class refers to attendance, punctuality, attentive listening and active engagement in all Academic Seminar lectures, discussions, field trips and other activities. It also means polite and respectful behavior.

Please refer to the SIT Study Abroad handbook for policies on academic integrity, ethics, warning and probation, diversity and disability, sexual harassment and the academic appeals process. Also, refer to the specific information available in the Student Handbook and the Program Dossier given to you at Orientation.

87-89%  B+
84-86%  B
80-83%  B-
77-79%  C+
74-76%  C
70-73%  C-
67-69%  D+
64-66%  D
below 64  F