

## Environmental Research Methods and Ethics

ENVI 3500 (3 credits / 45 hours)

SIT Study Abroad Program:

Madagascar: Biodiversity and Natural Resource Management

PLEASE NOTE: This syllabus represents a recent semester. Because courses develop and change over time to take advantage of unique learning opportunities, actual course content varies from semester to semester.

### Course Description

This seminar prepares students for the Independent Study Project (ISP) through a series of carefully planned, progressive field visits, discussions and lectures on the merits and pitfalls of social and natural sciences research methods. The focus is to equip students with the skills to collect, analyze, triangulate, and report social and ecological data in ways that demonstrates critical understanding of the relationship between the environment and society. The course draws upon SIT's professional network of scholars, practitioners, field guides, and key figures in Madagascar's biodiversity and natural resource management sector, many of whom also serve as independent study project advisors.

Field based practice in observation, interview techniques, group discussions, and ecological census techniques allow students to internalize the research process and engage in critical reflection on the importance of their "positionality" in the Malagasy context. The scientific method is further viewed through a critical lens highlighting the benefits of Participatory Rural Appraisal techniques. Practical considerations specific to the site and literature reviews round out the array of tools used to design the most appropriate combination of methodologies for a biodiversity and natural resource management ISP.

Ethical considerations encompass all aspects of the course, from initial development of cross-cultural competence and observation skills to self-awareness, the development of conceptual frameworks and practical tools needed to analyze Madagascar's ecology and resource management. A series of structured Environmental Research Methods and Ethics (ERME) fieldwork activities and lectures in tandem with many one-on-one discussions conducted prior to the ISP allows students to gain experience using a variety of natural and social science field techniques in different cultural and environmental contexts, while maintaining the highest degree of ethical standards.

## **Expected Learning Outcomes:**

By the end of the course, students will be able to:

- Explain the strengths and limitations of major research methodologies (in-depth interviewing, questionnaires, group discussions, and surveys) and Participatory Rural Appraisal (flow diagrams, participatory observation, transect walks, etc.);
- Apply ethical considerations in working and collecting data with study subjects in Madagascar;
- Apply ecology and field biology data collection skills, including transects, quadrats, Point Center Quarter (PCQ), animal behavioral studies, census taking, ecological assessment techniques;
- Interpret primary data in relation to the scale-defined levels that are connected to the structure & functioning of an ecological system and a range of conservation strategies;
- Demonstrate understanding of Malagasy culture and environmental issues, and apply this to sustainable and effective biodiversity management policy solutions;
- Develop a coherent research proposal for successfully undertaking field research; and
- Articulate research findings in oral and written forms, while adhering to the highest of ethical standards.

Students explore and practice the following topics:

- Observation: subjective and objective
- Participant observation
- Interviewing: structuring interviews, developing questions, cultural considerations
- Interviewing techniques for social and environmental themes
- Ecological census techniques
- Developing a study question
- Recording information: developing a work journal, taking field notes, organizing information
- Performing transects, population counts and density estimates, behavioral studies, and field inventories
- Developing contacts, selecting a study site
- Analyzing information
- Evaluation of field study projects
- Ethics
- Presenting findings orally and in writing

## **Module One: Experiential Learning and Cultural Adaptation**

This module introduces students to the experiential learning process and culturally appropriate norms and behavior. Discussions in French and English regarding taboos, social hierarchy, gender, age, food, dress and the like are paired with field-based activities that enable first-hand experience with cultural norms at home, in urban and rural areas, at the market, etc. Students learn effective strategies for adapting to life in Madagascar through various drop offs, debriefings and a cultural analysis assignment. Reflection on “positionality” and natural bias associated with ethnocentrism helps deepen understanding of local culture and the role of outside researchers.

Assigned Readings:

Batchelder, Donald. "The Green Banana." In Beyond Experience: The Experiential Approach to Cross-Cultural Education. Edited by D. Batchelder and Elizabeth Warner. Brattleboro, VT: Experiment Press, 1977.

Kohls, Robert. "Culture Defined", "The Stereotyped American", and "Primitivism Reconsidered." Survival Kit for Overseas Living. Yarmouth, ME: Intercultural Press, Inc. 1979.

Kohls (1988) Values American Live by, San Francisco State University.

Murray, Gordon. "The Inner Side of Experiential Learning." Beyond Experience: The Experiential Approach to Cross-Cultural Education. Edited by D. Batchelder and Elizabeth Warner. Brattleboro, VT: Experiment Press, 1977.

Hall, Edward T. "The Paradox of Culture." Beyond Culture. New York: Doubleday. 1976.

Jordan, Carl. "Science and Ethics." Conservation. New York: John Wiley and Son, 1995.

## **Module Two: Field Study Design and Contextualization**

This module introduces students to field study design and the norms and expectations of primary data gathering in Madagascar. The module helps students to internalize the experiential learning process and to apply a nuanced understanding of the local context to the research cycle in preparation for independent study. Practical strategies aimed at accomplishing this begin with participant observation, ethnographic approaches and the role of language in fieldwork, and learning how to record notes in the field. Seeing through local eyes and continuous reflection enhances contextual understanding and guides student expectations toward designing feasible projects.

### **Assigned Readings:**

Keising RM (1992) Not a Real Fish The Ethnographer as Inside Outsider, pages 72-78 in deVita PR (ed) The Naked Anthropologist: Tales from Around the World, Wadsworth Publishing

Keller (2009) Who Are "They?": Local Understandings of NGO and State Power in Masoala, Madagascar, pages 76-85, Tsanta No. 14.

Suelzle, Marijean and Frank L. Pasquale. "How to Record Observations: Writing Field Notes." Field Study: A Source for Experiential Learning, eds L. Borzak. London: Sage, 1981.

Wolfinger (2002) On writing fieldnotes, Qualitative Research, SAGE Publications, London, Thousand Oaks, CA and New Delhivol. 2(1): 85-95.

## **Module Three: Introduction to Social Science Methods**

This module builds on the previous ethnographic approach in field study design and contextualization to include questionnaires, interviewing techniques, and group discussions, which are done with fishing peoples near Fort Dauphin. Structured, semi-structured, and key stakeholder interviews are performed on natural resource topics chosen by SIT students in collaboration with Malagasy students from the Regional University Center of the Androy. Further understanding of resource use at the local level is achieved through Participatory Research Appraisal (PRA) alongside

Malagasy student cohorts during the village stay. Teams of Malagasy and SIT students work with village leaders to produce participatory community maps, resource flow diagrams, household activity budgets, and seasonal agricultural calendars for their Natural Resource Issues Portfolio assignment. A market analysis rounds out the array of social science techniques. Each method is analyzed through critical reflection of its utilities and shortcomings.

*Assigned Readings:*

Bernard, HR. Research Methods in Anthropology: Qualitative and Quantitative Approaches, Alta Mira Press, 2006.

Bryman, Alan. Social Research Methods, Third Edition, Oxford University Press, 2008.”

Crane JG and Angrosino MV (1992) “Participant Observation,” Field projects in Anthropology A student handbook, Waveland Press

**Module Four: Introduction to Natural Science Methods**

This module introduces students to designing and carrying out a field study using natural science techniques. Sampling strategies for a variety of ecological census techniques are reviewed for different target species. Botanical methods, done with Malagasy cohorts, focus on species discovery and minimum area, inventories using Gentry plots, Point Center Quarter (PCQ) for habitat and species association, vertical forest structure using Gauthier’s method, and herbarium collection methods. Lemur ecology methods emphasize population density estimates, behavior, and habitat preferences. Marine studies field techniques are conducted under supervision of the Marine Studies Institute in Tulear (spring semester) and the National Center for Oceanographic Research in Vangaindrano (fall semester). Staff lay theoretical foundations, while it is the students’ responsibility to design and carry out their studies, analyze and interpret their data, and reach conclusions based on the evidence. Oral and written presentations are performed in French.

*Assigned Readings:*

Barnard, Chris et al. "Doing Science." Asking Questions In Biology. Essex, England: Longman Group Ltd, 1993.

Davis, P.H. “Hints for Hard-Pressed Collectors,” University Department of Botany, Edinburgh, undated.

Ferguson, Barry. “Vegetation Surveys – Sainte Luce Field Course,” SIT 2016.

Gardner, Toby. Monitoring Forest Biodiversity Earthscan, 2010.

Mittermeier et al. Lemurs of Madagascar, Conservation International, 3<sup>rd</sup> Edition, 2010.

Sutherland, William. Ecological Census Techniques. Cambridge: Cambridge University Press, 1996.

**Module Five: Finding the Best Mix of Methods**

This module focuses on making the most out of data collected through different methods and forms of analysis, cross-referencing, and triangulation. An overview of qualitative and quantitative methods

conducted in conjunction with fieldwork on various assignments enables students to compare and contrast qualitative and quantitative data sets and respective modes of analysis and data presentation. After engaging in different types of natural and social science techniques, students are challenged to make the strongest case possible in answering their research questions based on available results without overstating their conclusions. The best mix of methods allows students to suggest policy guidelines for conservation strategies and development plans appropriate to the needs and rights of local actors.

*Assigned readings:*

Natural and social science methods previously listed in their respective modules.

### **Module Six: Ethics in Fieldwork**

Understanding local livelihoods and cultural practices is essential to all field studies. Issues concerning globalization, modernization/development, livelihoods, gender, political economy, rights, power & privilege and reproductive rights are viewed in local Malagasy cultural contexts while adhering to strict ethical guidelines. Case studies in ethics are discussed to emphasize the importance of cultural sensitivity. Working with human subjects and the role of the Local Review Board are meticulously reviewed to ensure adherence to SIT policy on ethical research.

### **Module Seven: The Independent Study Process: Conception to Completion**

This module takes the student through the research cycle from the beginning conceptual phase through defining questions and understanding the surrounding issues to conducting literature reviews and developing appropriate methodologies for chosen subjects. Students see a variety of past projects and critique a former student's project to set the stage for exploring their own interests. Based on personal and professional objectives, topics are chosen, contacts are facilitated, and students engage in the formal process of proposal writing. Reflection is a critical aspect of the process culminating in recommendations for future study. Students carefully navigate the proposal process in observance of local norms and practical feasibility. The Local Review Board approves successful proposals after careful consideration of working with human subjects, appropriateness, and feasibility to complete a project in the allotted time. Issues related to time and budget management, travel logistics, and working with translators, cultural informants, and independent project advisors are continually rehashed. The core requirements of the written and oral presentations are laid out in relation to the ISP assessment rubric. Students present their proposals to their peers for critical feedback prior to final review meeting with the Local Review Board.

*Assigned readings:*

Bryman, Alan. Social Research Methods, Third Edition, Oxford University Press, 2008.

Ferguson, Barry. "Independent Study Projects: Overview of the Process," SIT 2016.

True, Jane. Finding Out. Belmont, CA: Wadsworth Publishing, 1989.

### **Evaluation and Grading Criteria**

Experiences in and outside of the classroom are integrated into subsequent preparations for independent study. Our sessions address many of the unique challenges faced in the process of

information gathering and field study in Madagascar. Through structured activities, case studies, readings and discussions we will investigate natural and social science field methodologies and their appropriateness for fieldwork in different places in Madagascar.

Various methods of field study will be discussed and tested during the semester. The application of appropriate methods for particular kinds of studies will be examined within local cultural and environmental contexts, along with all of the attendant ethical considerations. Students will have the opportunity to practice methods in many different settings, with the goal of using the most appropriate methods with the greatest efficiency. Assignments and discussions will provide the opportunity for reflection and feedback.

### **Environmental Research Methods and Ethics Assignments**

Assignments must be completed on time. Grades will be assigned for the following according to clarity, cohesiveness, organization, content, depth of analysis, and appropriate use of sources.

ISP Preparation	30%
Analysis of Methods for Environmental Issues	10%
Field Journal	20%
Cultural Analysis Paper	10%
Peer Review Presentation	10%
ISP Critique	10%
Effort & Participation	10%

### **Grading**

Assignments/exercises will require submission of a written document and/or an oral presentation in French or in English. Specifications for each exercise are provided at the time of the assignment. Grades are determined with consideration to both content and mechanics. Participation will be graded by attendance, attitude, preparation, active involvement in discussions, and appropriate cultural behavior.

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

94-100%	A
90-93%	A-
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

## **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.

Name, date, name of the assignment, and the title of the paper (if applicable) are required always. All assignments should be submitted on standard size paper (A4 or US letter size), free from fraying or tears, and typed or written neatly in ink (when applicable for the latter). Proofread all assignments for clarity, organization, spelling, grammar, etc., as these are taken into account for the final grade. Assignments can be written in French or English, unless specified. Grammatical errors in French will not affect students' grades as long as ideas can be clearly understood.

**Disability Services:** Students with disabilities are encouraged to contact Disability Services at [disabilityservices@sit.edu](mailto:disabilityservices@sit.edu) for information and support in facilitating an accessible educational experience. Additional information regarding SIT Disability Services, including a link to the online request form, can be found on the Disability Services website at <http://studyabroad.sit.edu/disabilityservices>.

**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.

If the research has been funded by a U.S. government agency, or if the student plans to take this research back to the home school or community for further dissemination, then the student may be required to follow standards from their home institutions in addition to the Local Review Board and those of the Office for Human Research Protections, with which SIT is registered. For applications that require a full review, the academic director will forward any questions or concerns that cannot be resolved at the program level (through the Local Review Board) to SIT's Institutional Review Board.