

Environmental Research Methods and Ethics

ENVI-3500 (3 credits)

Madagascar: Biodiversity and Natural Resource Management

This syllabus is representative of a typical 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.

Learning Outcomes:

Upon completion 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 and 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

Language of Instruction

This course is taught in English, but students will be exposed to vocabulary related to course content.

Instructional Methods

SIT's teaching and learning philosophy is grounded in the experiential learning theory developed by Kolb (1984; 2015) and informed by various scholars, such as Dewey, Piaget, Lewin, among others. Experiential learning theory recognizes that learning is an active process that is not confined to the formal curriculum; "knowledge is created through the transformation of experience" (Kolb, 2015, p. 49). Learning involves both content and process. Learning is holistic and happens through various life experiences upon which students draw to generate

new ways of knowing and being. Learning involves a community and is a lifelong endeavor. Learning is transformational. The suggested four step-cycle of a *concrete experience, reflective observation, abstract conceptualization, and active experimentation* embedded in the experiential learning model is not linear and might not always happen in that specific order, as any learning is highly context dependent. These stages of taking part in a shared experience; reflecting on that experience by describing and interpreting it; challenging their own assumptions and beliefs to generate new knowledge; and ultimately applying new knowledge, awareness, skills, and attitudes in a variety of situations and contexts are important for students to engage in to become empowered lifelong learners.

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.

Readings:

- Batchelder, Donald. (1977). “The Green Banana.” In *Beyond Experience: The Experiential Approach to Cross-Cultural Education*. Edited by D. Batchelder and Elizabeth Warner. Brattleboro, VT: Experiment Press.
- Kohls, Robert. (1979). “Culture Defined”, “The Stereotyped American”, and “Primitivism Reconsidered.” *Survival Kit for Overseas Living*. Yarmouth, ME: Intercultural Press, Inc.
- Kohls. (1988). *Values American Live by*, San Francisco State University.
- Murray, Gordon. (1977). “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.
- Hall, Edward T. (1976). “The Paradox of Culture.” *Beyond Culture*. New York: Doubleday.
- Jordan, Carl. (1995). “Science and Ethics.” *Conservation*. New York: John Wiley and Son.

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.

Readings:

- Keesing, R.M.(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, Wadworth 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. (1981). "How to Record Observations: Writing Field Notes. "Field Study: A Source for Experiential Learning", eds L. Borzak. London: Sage.
- 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.

Readings:

- Bernard, HR. (2006). Research Methods in Anthropology: Qualitative and Quantitative Approaches, Alta Mira Press.
- Bryman, Alan. (2008). Social Research Methods, Third Edition, Oxford University Press.
- Crane, J.G. and Angrosino, M.V. (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 National Center for Oceanographic Research Nosy be (spring semester) and the Marine Studies Institute in in Tulear (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.

Readings:

- Barnard, Chris, et al. (1993). "Doing Science." Asking Questions In Biology. Essex, England:

Longman Group Ltd.,
Davis, P.H. "Hints for Hard-Pressed Collectors," University Department of Botany, Edinburgh, undated.
Ferguson, Barry. (2016). "Vegetation Surveys – Sainte Luce Field Course," SIT.
Gardner, Toby. (2010). Monitoring Forest Biodiversity, Earthscan.
Mittermeier, et al. (2010). Lemurs of Madagascar, Conservation International, 3rd Edition, 2010.
Sutherland, William. (1996). Ecological Census Techniques. Cambridge: Cambridge University Press.

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.

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.

Readings:

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

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

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

Assignments and Evaluation

Assignment Descriptions 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.

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.

1) Independent Study Project (ISP) Proposal (30%)

Students will design their project of interest and write their ISP proposal. The ISP Proposal will be written following the IMRaD (Introduction, Methods, Results, and Discussion) structure with clear research question and objectives.

2) Analysis of Methods for Environmental Issues (10%)

There are a multitude of environmental issues analysis methods such as the risk analyses methods or the life cycle analysis. students will analyze data in order to get an overview of the results obtained using these different methods on environmental issues.

3) Field Journal (20%)

Field journals are a critical tool of conducting field study projects. You will design your own data collection methods according to their goal. You will construct a large wall chart with columns in which students will record their sensory observations. In addition, prepare different scents in vials. Evaluation will include the ability of student to adjust their designed collection methods to reality in the field.

4) Cultural Analysis Paper (10%)

Based on reading and personal experience, students will do a cross-cultural analysis. You have to choose the topic of your choice according to the thematic culture that you want to relate to. You should provide a succinct and clear description of the topic. Students will be evaluated by the ability to settle on a topic and then narrowing that topic sufficiently to be able to describe the Malagasy culture and the study abroad experience that they have been experiencing.

5) Peer Review Presentation (20%)

Student will review assigned articles and will present their own perspective. You will present how you see the article. The work is carried out independently, with guidance from the AD or local staff.

6) Participation (10%)

This includes active involvement in lectures, readings, discussions, and excursions using the following criteria:

- Attendance - promptness to class and positive presence in class.
- Active Listening - paying attention in class and during field excursions, asking appropriate questions, showing interest and enthusiasm (this includes body language), entertaining contradictory perspectives, taking notes.
- Involvement in Class Discussions - either in small or large groups, sharing knowledge. This means challenging yourself to speak up if you usually don't, and also means allowing others to speak if you are a person who tends to dominate class discussions.
- Group Accountability – positive participation in the group during field excursions and classes; not keeping others waiting.
- Displaying Respect – culturally appropriate interaction with hosts, SIT program staff, SIT lecturers and communities.

Assessment

Independent Study Project (ISP) Proposal – 30%
Analysis of Methods for Environmental Issues – 10%
Field Journal – 20%
Cultural Analysis Paper – 10%
Peer Review Presentation – 20%
Participation – 10%

Attendance and Participation

Due to the nature of SIT Study Abroad programs, and the importance of student and instructor contributions in each and every class session, attendance at all classes and for all program excursions is required. Criteria for evaluation of student performance include attendance and participation in program activities. Students must fully participate in all program components and courses. Students may not voluntarily opt out of required program activities. Valid reasons for absence – such as illness – must be discussed with the academic director or other designated staff person. Absences impact academic performance, may impact grades, and could result in dismissal from the program.

Late Assignments

SIT Study Abroad programs integrate traditional classroom lectures and discussion with field-based experiences, site visits and debriefs. The curriculum is designed to build on itself and progress to the culmination (projects, ISP, case studies, internship, etc.). It is critical that students complete assignments in a timely manner to continue to benefit from the sequences in assignments, reflections and experiences throughout the program.

Example: Students may request a justified extension for one paper/assignment during the semester. Requests must be made in writing and at least 12 hours before the posted due date and time. If reason for request is accepted, an extension of up to one week may be granted at that time. Any further requests for extensions will not be granted. Students who fail to submit the assignment within the extension period will receive an 'F' for the assignment.

Grading Scale

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

Program Expectations

- Show up prepared. Be on time, have your readings completed and points in mind for discussion or clarification. Complying with these elements raises the level of class discussion for everyone.
- Have assignments completed on schedule, printed, and done accordingly to the specified requirements. This will help ensure that your assignments are returned in a timely manner.
- Ask questions in class. Engage the lecturer. These are often very busy professionals who are doing us an honor by coming to speak.
- Comply with academic integrity policies (no plagiarism or cheating, nothing unethical).
- Respect differences of opinion (classmates', lecturers, local constituents engaged with on the visits). You are not expected to agree with everything you hear, but you are expected to listen across difference and consider other perspectives with respect.
- Storing Your Work: Keep several copies of your work as back up and keep one copy accessible to you through an online forum, such as an attachment in your email, the course learning management system, or cloud-based storage. This way your work will always be available to despite technical issues. Lost files, deleted drives, or computer crashes are not excuses for late, missing work.

- Personal Technology Use: Cell phones and other personal electronics can be used for taking notes and other class activities. Off-task usage is not acceptable. You may be marked as absent for habitually using them for something other than classroom activities.
- Content Considerations: Some texts and activities you will encounter in this course delve into sensitive topics that may be emotionally and intellectually challenging. Our classroom is a space where we can engage with challenging ideas, question assumptions, and navigate difficult topics with respect and maturity. As possible, I will flag content and activities that are especially graphic or intense, so we are prepared to address them soberly and sensitively. If you are struggling to keep up with the work or participate in the course because of the nature of the content and activities, you should speak with me and/or seek help from counseling services.
- Classroom recording policy: To ensure the free and open discussion of ideas, students may not record classroom lectures, discussion and/or activities without the advance written permission of the instructor, and any such recording properly approved in advance can be used solely for the student's own private use.

SIT Policies and Resources

Please refer to the [SIT Study Abroad Handbook](#) and the [Policies](#) section of the SIT website for all academic and student affairs policies. Students are accountable for complying with all published policies. Of particular relevance to this course are the policies regarding: academic integrity, Family Educational Rights and Privacy Act (FERPA), research and ethics in field study and internships, late assignments, academic status, academic appeals, diversity and disability, sexual harassment and misconduct, and the student code of conduct.

Please refer to the SIT Study Abroad Handbook and SIT website for information on important resources and services provided through our central administration in Vermont, such as [Library resources and research support](#), [Disability Services](#), [Counseling Services](#), [Title IX information](#), and [Equity, Diversity, and Inclusion](#) resources.