

## **Marine Ecology and Blue Carbon Field Project**

### **ENVI-3060 (3 credits)**

### **Panama: Marine Ecology and Blue Carbon Conservation in the Pacific and Caribbean**

*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 course offers students the opportunity to work on field research projects at one of the sites studied on the program: Bocas de Toro, Coiba Island, Contadora Island, or the Guna Yala Comarca, on research topics related to blue carbon, marine biodiversity, or topics pertinent to marine science.

#### **Learning Outcomes**

Upon completion of the course, students will be able to:

- Conduct important field research on the biology, ecology, or conservation of marine ecosystems, coastal ecology, or blue carbon,
- Apply appropriate field research methodologies and collect data for their field work.
- Effectively analyze their field data and generated research results and conclusions.
- Write and present a professional field report with their findings.

#### **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.

### **Required Texts**

Additional readings and articles as assigned.

### **Assignments and Evaluation**

#### Assignment Descriptions and Grading Criteria

##### Research Preparation

In coordination with the program director and through discussions with program professors and participants at the sites visited during the first three weeks of the program, students will choose a project topic. Each student will meet with the director twice during the first three weeks of the program to discuss their progress on topic selection, relevant existing research, and potential research options. It is incumbent upon the student to investigate and explore potential research avenues if the student prefers not to research the suggested topics. It is also the responsibility of the student to follow through with the recommendations made by the director and the research advisors during the meetings. Students should begin to research and collect research articles related to their topic as early as possible.

##### Research Advisors (RA)

###### Research Advisor's Role:

The role of the RA is to guide and direct the student through the research preparation process. The RA will guide the student in defining their specific research topic, establishing realistic and achievable research objectives, and developing their research proposal.

###### Student's Role:

It is incumbent upon the student to fulfill their obligations in submitting their assignments on time, arriving punctually to meetings, in seeking out the resources recommended by the RA, reading the material recommended by the RA, in maintaining communication with the RA, and following the RA's advice.

##### Meetings with the Director and with Research Advisors

Students will be assigned an RA as soon as they have made a final decision on their topics. For this reason, it is helpful for the student to decide on their topic early. Students will meet and communicate periodically with their RA regarding their field projects. The student and the RA will agree upon the time and the location of the meeting. It is imperative that the students arrive prepared to the meeting. Students are required to communicate with the RA once per week while conducting their field research.

##### Field Research

Students will spend a total of 85 hours engaged in research proposal preparation, field work, research paper development, and final oral presentation preparation. Field environments can vary widely from laboratory settings to local communities to national parks. Student should spend a minimum of five days collecting their field data. While in the field, it is imperative that students demonstrate the utmost respect for local norms and cultures as well as continuously reflect on and be mindful of the ethical consequences of their actions. Likewise, it is vital that students make appropriate decisions regarding their personal safety while conducting their fieldwork.

### Communication

Students are required to communicate with program staff twice per week while in the field. Additional information will be provided prior to the research period. In addition, students are required to communicate once per week with their RA during the field projects.

### Realization of the field work

Students will travel to their respective sites in order to undertake this work. A housing and food stipend will be provided. Students are responsible for keeping up with their work, adapting to change, reporting any academic problems or changes to the research, and proactively taking care of their own health and safety.

#### 1) Proposal (20%)

Students will develop their research proposals during the period designated for field project proposal preparation. Final research proposals should include the following sections: introduction (including a one-page, single-spaced literature review), research objective, research question, hypothesis, methods, ethical considerations, logistical information, research calendar, budget, and works cited. Students are not permitted to initiate their research until the final proposal has been approved by the LRB. Proposals will be returned to students with feedback within five days of submission.

#### 2) Research Paper (50%)

The final paper should contain the following sections: Acknowledgments, Introduction (with a two-page, single-spaced literature review, minimum 10 sources), Research Question, Methods, Results, Discussion, Conclusion, and Works Cited. The final paper should be sent electronically to the director and to the Research Advisor.

#### 3) Oral Presentation (20%)

The oral presentation should be approximately 15 minutes in length and discuss the research in which the student engaged. Generally, students prepare power point presentations for the oral presentation. Students should consult the document "Oral Presentation Requirements" provided at the beginning of the semester.

#### 4) Participation (10%)

Participation includes punctual check-ins with program director, punctual check-ins with research advisor, culturally appropriate behavior, and strict adherence to the safety guidelines and program regulations.

## Assessment

- Proposal - 20%
- Final Report - 50%
- 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 discussion and the quality of the activity for everyone.
- Put safety first, your own and others. Being in the water is fun but demands responsibility.
- Comply with academic integrity policies.
- Respect differences of opinion (classmates', lecturers, local constituents engaged with on the visits). Conservation policies can provoke passionate responses. You are not expected to agree with everything you hear, but you are expected to listen across difference and consider other perspectives with respect.

## 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](#), [Accessibility Services](#), [Counseling Services](#), [Title IX information](#), and [Equity, Diversity, and Inclusion](#) resources.