Coastal Ecology and Natural Resource Management Seminar

ENVI 3000 (4 credits / 60 class hours)

SIT Study Abroad Program:
Tanzania: Zanzibar - Coastal Ecology and Natural Resource Management

Course Description
The Coastal Ecology and Natural Resource Management Seminar is an intensive, interdisciplinary course that examines the unique issues of coastal ecology and resource management in Tanzania, with a focus on Zanzibar. The seminar will provide an interesting mix of social and natural sciences, also introducing students to the life and culture of Zanzibar and Tanzania through lectures on history, politics, economics, religion, and law. The course offers a combination of a lecture series given by local academics and field experts complemented by educational field excursions.

Course Objectives
The Coastal Ecology and Natural Resource Management Seminar has an interdisciplinary and critical focus encompassing 60 academic hours (4 credits). Its main objectives:

- To introduce the student to issues in coastal ecology, conservation, marine biology, forestry, alternative technology and natural resource management the islands and in coastal Tanzania;
- To develop a critical understanding of the ecological issues on the islands and in coastal Tanzania pertaining to marine environments, wildlife habitats, human settlements, and the various ways in which environmental problems are being addressed;
- To gain knowledge of the natural history, behavior, biology, and ecology of Zanzibar island and coastal mammals, fish, and birds;
- To gain an understanding of the relationship of local people with the environment and to examine issues of sustainability and development in balancing human needs with resource management and environmental conservation; and
- To introduce students to a variety of institutions, individuals, geographical locations, and viewpoints in Tanzania, contributing to a broad understanding of issues.

*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.*
Intended Learning Outcomes:
By the end of the seminar, students will be able to:

- Demonstrate a good understanding of current and historical issues in coastal ecology, conservation, marine biology, forestry and natural resource management in the coastal areas of Tanzania;
- Critically appraise the ecological issues on the islands and in coastal Tanzania pertaining to marine environments, wildlife habitats, human settlements, and the various ways in which environmental problems are being addressed;
- Show a basic knowledge of the natural history, behavior, biology, and ecology of Zanzibar Island and coastal mammals, fish, and birds;
- Explain the complex relationships between local people with the environment particularly in terms of balancing human needs with natural resource management and conservation; and
- Critically examine multiple perspectives of a variety of issues in Zanzibar and coastal areas of Tanzania and be able to have informed opinions.

Course Requirements

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.

General Required readings


Crawford, Brian, “Seaweed Farming: An Alternative Livelihood for Small-Scale Fishers,” Working Paper, University of Rhode Island Coastal Resources Center, N.D.


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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.

Evaluation and Grading Criteria

Coastal Ecology and Natural Resource Management Seminar Assignments

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Students are expected to prepare for, attend, and participate fully in all lectures, discussions, activities, and excursions—including periodic seminars with the Academic Director for discussion sessions to process, question, and integrate material covered in the lectures and field experiences. In addition to completing the required readings, students are encouraged to read local newspapers and other media for more local context. Performance is evaluated on the quality of analysis, the variety of sources, and the clarity of expression exhibited in the midterm and final exams and in various course assignments throughout the semester, along with participation in class discussions, activities, and the completion of assigned readings. Timely completion of all assignments is expected. Late hand-ins will be penalized. All assignments are evaluated according to organization, analytical quality, depth of understanding, argumentation and presentation of evidence. The Academic Director assigns all grades.

**Evaluation**

<table>
<thead>
<tr>
<th>Assignment</th>
<th>Weightage</th>
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<tr>
<td>Midterm Exam</td>
<td>25%</td>
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<tr>
<td>Final Exam</td>
<td>25%</td>
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<tr>
<td>Coral Reef Conservation Plan</td>
<td>25%</td>
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<tr>
<td>Species assignment</td>
<td>10%</td>
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<tr>
<td>Jozani Forest team assignment</td>
<td>15%</td>
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**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.

*All written assignments should be typed unless permission is given otherwise. Texts sent by e-mail will not be accepted. Make sure you have a flashdrive, laptop or computer available and keep back up files so nothing gets accidentally lost or erased.*

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Program Calendar
The seminar is divided into six interrelated components:

1. Two-week lecture series and field practicals at the Institute of Marine Sciences (a Zanzibar-based research institute affiliated with the University of Dar es Salaam).
2. One-week lecture series presented by the Faculty from appropriate departments of the University of Dar es Salaam.
3. Three-day Coral Reef Ecology course conducted in Dar es Salaam and Zanzibar by Dr Matt Richmond (author of course text).
4. Ten day educational visit to Pemba Island including lectures, field trips, environmental field study assignments, and visits to environmentally significant sites.
5. A four day forestry field study residential at the Jozani-Chwaka Bay National Park.
6. Three-day excursion on mainland Tanzania involving a variety of activities in the Mikumi National Park, complemented by lectures from experts in the field and park officials.

1. Institute of Marine Sciences: a two-week lecture series with integrated field practicals, based at the Institute of Marine Sciences (a Zanzibar-based research institute affiliated with the University of Dar es Salaam).

   Possible topics include:
   Coral Reef Ecology
   Water quality
   Solid waste management and pollution
   The use of coastal Structures in beach erosion and climate change
   Fisheries resources of Zanzibar
   Mangrove Biology and Ecology
   Ecology of Dolphins Seaweed Farming
   Water Quality
   Coastal Erosion
   Aspects on Physical Oceanography, and
   Integrated Coastal Zone Management

   External lecturers present topics on:
   Islam and Culture
   Social conflict regarding tourism development in Zanzibar
   Zanzibar History (Omani and Colonial)

2. University of Dar es Salaam: a one-week lecture series presented by the Faculty at the Department of Zoology and Marine Biology in conjunction with The Faculty of Aquatic Science and Technology at the University of Dar es Salaam. This lecture series will also include an integrated set of field trips which will enhance the lecture material.

   Possible topics will include:
   Background to Biodiversity in Tanzania
   Introduction to Coastal Forests and research methodology
   Coastal People, Social organization and Production Systems
   Aquatic resource management in Tanzania
   The development of Alternative Technologies in Tanzania
   History of Nature Conservation in Tanzania

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Impact of Economic Development and Tourism on the Natural Environment
Land Based Pollution in Dar es Salaam, and
Research Ethics and Environmental Law and Policy making in Tanzania

3. Coral Reef Ecology: Students will complete an intensive three-day course on Coral Reef Ecology conducted in both Dar es Salaam and Zanzibar by Dr Matt Richmond (the author of the course text, "A Guide to the Seashores of Eastern Africa and the Western Indian Ocean Islands").

Possible topics include:
Reef creature identification,
Reef coral identification and methodologies.
Natural resource management – Drilling for Oil in S.Tanzania and impacts on marine parks and life.
The development and history of Marine Park Areas in Tanzania

4. Pemba Island: Ten-day educational visit to Pemba Island including lectures, field trips, environmental field study assignments, and visits to environmentally significant sites. The excursion offers an opportunity for a comparative look at environmental issues between the Zanzibar's two main islands. Lectures and field trips relating to the Pemba Channel Conservation Area (PECCA) will take place in the Chake Chake and Wete regions, and will include visits to Misali Island, Ngezi Forest, and Vumawimbi Beach. The Pemba component will also include a week long Homestay in Chake Chake.

Topics for exploration include:
Sea Turtle Biology and Ecology
Land/Environmental and Tourism Issues on Pemba
Salt Farming and Environmental Issues
Rubber production and plantation management in Pemba
Essential Oil production on Pemba
Village and community forestry
Traditional House construction using local resources and the environmental impact
Charcoal production and its environmental and social impacts in Pemba
Pemba Public Health
Ngezi Forest Conservation
Pemba Fisheries, and
Agriculture and plant protection on Pemba

5. Jozani-Chwaka Bay National Park: Students will complete a four-day residential forestry field Study at the Jozani-Chwaka Bay National Park.

Possible topics include:
History of Jozani-Chwaka Bay National Park
Forestry resources, survey techniques and analysis
Jozani Chwaka Bay Conservation Area: Pete Mangrove Trail practical research including methodologies.
Practical observation of primate behavior
Status of fauna with emphasis on bird monitoring and census in Jozani, and
Jozani Vegetation

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6. Mikumi National Park: Three-day excursion on mainland Tanzania involving a variety of activities in the Mikumi National Park. The excursion will be complemented by lectures from experts in the field and park officials.

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.