

## Above and Below the Surface: The Caribbean between Climate Change and Tourism. Scuba Explorations in Utila (Honduras).

*“Scuba diving ... was  
Seeing what lies right  
awakening, and it was  
spend the rest of my  
protecting it. If I  
would look very*

*Anna Foltz*



*like looking at a whole new world.  
below the surface was like an  
then that I knew that I wanted to  
life studying this world and  
hadn't gone on this trip, my future  
different.”*



Many people entering the underwater world for the first time share this experience with Anna, who went for the first time on a dive trip during college. What lies beneath the surface provides us with incredible impressions that we hardly ever forget and that continue to provide inspiration for tales and stories woven around the mystery of the sea.

However, the oceans provide more than just impressions and tales to tell. They not only nourish our imagination, but more importantly provide the basis for all life. They do so directly through food cycles, and the provision of oxygen, as well as by controlling the earth's climate. Human use of the oceans includes the harvesting (and breeding) of sea-life, use of seaways for transportation of goods and people around the planet, but also offshore drilling. Through cruise ships and resort hotels tourists come in contact not only with the (under)-water world, but also with local populations, inhabiting places to be imagined, visited, and transformed.

This course intends to raise understanding and awareness of ecologies as wide, interrelated webs of interactions –reaching beyond the water's surface. Students will be immersed into both, the history, culture and the development of the contemporary Caribbean, as well as its famous underwater world. **Above the surface**, students will explore the history of Utila (Honduras), targeting the developments of both socio-economic and ecological conditions.

This includes immediate factors, such as shoreline constructions and run offs into the ocean, as well as more global phenomena, such as global warming and resulting erratic climate events. **Below the surface**, students will acquire scuba skills and (PADI) certificates, steadily improving their competence as save divers. They will explore the underwater world, investigating the health of coral reefs and fish populations, while also reflecting on the role of scuba diving and the tourist industry within which it has developed.

Our observations will be complemented through meetings with local stakeholders, as well as through hands on activities (**hiking to pumpkin hill, kayaking through the mangroves, entering bat cave, or doing beach clean-ups** etc.). In a combination of pre-trip preparations, in situ explorations, meetings and discussions, students will develop a thorough understanding of the complex interactions of humans with their environment, including the interaction of local and global forces (such as tourism and global warming).



Working at Camp Kanahau



Utila below the surface

**While scuba diving constitutes an essential aspect of this course, it is NOT a pre-requisite.** To assure safety of all students, the course combines extensive scuba training (and certification) with underwater excursions, field trips, and “classroom” learning. The course instructor is also a certified PADI (Professional Association of Dive Instructors) dive instructor and teaches scuba

diving at the Vanderbilt Wellness Center. On all dive-excursions an additional dive master / instructor will be present!

The class allows students (1) to become safe and responsible scuba divers; (2) explore and learn about the underwater world; (3) practice scuba skills, and (4) learn important skills of scientific diving techniques; It will allow students to (5) explore complex interactions of the two worlds divided by the ocean's surface, including (6) an understanding of island ecology, as well as (7) a critical assessment of the area's history, its economic development, as well as the respective effects on both, island culture and ecology, tying it to (8) global (economic and ecological developments. Finally, (9) students will acquire important international experience, developing a sense of becoming critical and responsible global citizens.

### **Organization of the Class:**

The course is divided into two parts. Part 1 takes place in the Nashville area, while for part 2 we will travel to the Caribbean island of Utila, Honduras.

**During the Nashville part (05/07 – 05/16)** students will develop several skills: First, students will acquire save scuba diving skills, culminating in a PADI certification of open water diver / advanced open water diver (if students are already PADI Open Water certified). We will achieve this through a combination of classroom teaching, pool, and open water practices (at a regional quarry). Second, we will study and practice scientific diving skills that we will apply in the second part of the course. Third, through readings, presentations, and discussions we will prepare our explorations in Utila, focusing on the cultural history, geography, economy, and ecology of the island and the larger area. Finally, students will explore island ecology (above and below the surface), and how it is affected by human activities (including global warming). All these explorations will be guided by what we will be observing and analyzing ourselves during our above and below the surface island explorations in part two of the course.

**For the second part of the course we will call the Caribbean island of Utila (Honduras) our home.** Utila (*Isla de Utila*) is the smallest of the three main Bay Islands of



Honduras (after Roatán and Guanaja), marking the southern end of the Mesoamerican Barrier Reef System, the largest reef system in the northern hemisphere.

Mesoamerican Reef

“Discovered” by Columbus on his fourth voyage, the Bay islands have been largely ignored by the colonial powers (after the enslavement of the original population), becoming a safe haven for pirates, including the Welsh buccaneer Henry Morgan. Not surprisingly, Utila is rich in pirate lore, and still today scuba divers hope to find Captain Morgan's lost booty.



Diving the Reef

Most of the roughly 4500 islanders are fluent in English with Spanish being the official language. There are over 80 dive sites in and around Utila and several PADI dive centers that will accommodate our needs as scuba divers. **Huffington post listed Utila among the 15 best dive spots in the world** (Jul 19, 2016).

Utila also houses KANAHAU a conservation research facility, working and studying to protect both the above and under water flora and fauna of the island. Located in the forest, Kanahau will serve as our base station for half of our island stay.



Kanahau Fieldstation

In Utila we will conduct inland fieldtrips and conduct interviews about the islands history, as well as its socio-economic and environmental organization. Through tours (guided by local scientists and activists) we will create an understanding of the island's ecological conditions, and how they relate to past and present land use practices.

We will explore issues such as run-off of soil, pesticides, and waste management, the effects of shoreline constructions on coastline ecology, but also energy provision and island economy as experienced by different sectors of the society. We will interview tourists, as well as people working in the tourist industry and critically reflect on our own role as tourists and scuba divers. Building on our readings during part 1 these explorations will create somewhat of a scaffolding effect, allowing us to deepen our understanding.

As we dive in Utila, we will continue to hone our safe diving skills, extending the students' knowledge of scientific diving, and underwater ecology. We will explore the local

fauna through species identification tasks and counts, as well as observations related to the conditions of the coral reef and the overall health of the ocean.

During the course, students will document their experiences in (1) a personal diary, where they also reflect on both their readings and experiences, (2) a dive log, where they document the different dives, and (3) a group visual project telling the story of Utila *above and beneath the surface*. These tasks will be complemented by (4) literature research on specific topics related to our in situ explorations.

### **PRE-REQUISITES:**

While Spanish is the official language in Utila, most everyone speaks some English. Diving skills or certificates are not required for this course. However, participating students must pass a basic swimming test at the time of the scuba certification. Students need a health certificate from their doctor that allows for scuba diving and travel.

### **COURSE OBJECTIVES:**

At the end of the Maymester, students will have improved in the following learning outcomes:

- (1) Mastering open water / advanced open water dive skills.
- (2) Mastering solid understanding of the principles of scientific diving.
- (3) Understanding the history and contemporary setting of Utila, and people's interaction with their marine environment across time.
- (4) Understanding of underwater ecology and how it relates to terrestrial ecologies, sociologies, and economies. (This will include basic identification of coral formations and marine life, as well as how they are affected by different land use practices).
- (5) Understanding the complex interrelations of human-environment interactions in general - with a special focus on the Caribbean and Utila.
- (6) Understanding local realities of climate change and global warming.
- (7) Experiencing the local culture, including folk, and gastronomic traditions of the Caribbean, and how they are represented by and for tourists.
- (8) Increase international experience, global good citizenship, and ethics.
- (9) Experiencing the world in novel ways by exploring it from *below the surface* (figuratively and literally), creating new awareness of ecology, and what it means to be human.

### **EVALUATION:**

Students final grades are based on the following:

- |   |       |
|---|-------|
| - Written Diary                             | (20%) |
| - Class Participation (across both phases)  | (30%) |
| - Oral presentation / paper, (5 page) paper | (30%) |
| - Scuba skills                              | (20%) |

### **ATTENDANCE POLICY:**

The course starts on May 7<sup>th</sup> on the Vanderbilt campus. During the first week students will attend classes, pool, and open water sessions as indicated in the syllabus. Class attendance is obligatory! **During this part students are individually responsible for their housing arrangements, meals, and before and after class conduct.** The weekends are projected for individual study time, yet we might schedule open water training and time for certification if needed. Transportation to and from the local quarry will be provided, yet students will bring their own lunch and drinks. Entrance fee to the quarry is covered by the overall student fee.

We will transfer on the 17<sup>th</sup> of May to the Utila, where we will stay until our return on May 31st.

During our stay in Utila students are expected to stay within the group and follow the instructor during the whole trip. Students are NOT allowed to change the routine, wander off by themselves (or in groups), or go diving on their own (or in groups). After class, small group outings have to be approved by the instructor. Individual outings are not permitted. Any personal change to the routine may adversely affect the class participation component of their final grade. In more severe cases students will not only receive an automatic lower grade, but will be required to send an email to the professor, the dean, as well as their parents -explaining their behavior.

In accordance with the local laws students above the age of 18 are allowed to consume alcohol. However, the instructor can and will take action with respect to the abuse of alcohol at his own discretion, especially where students put themselves or others at risk, or where such behavior interferes with the participation in the course. There is a strict NO ALCOHOL policy on the nights before dive outings. Any drinking incident will automatically lead to the students losing their right to drink during the remainder of the course.

Any personal behavior that affects the safety of the student or the group will lead to an immediate dismissal of the student and an automatic failing of the class.

Students will have to carry private insurance for international travel as well as a special dive insurance (DAN; Divers Alert Network). For the scuba certification, a signed waiver and a health certificate are required. These documents are standard protocol for PADI (Professional Association of Diving Instructors), the largest (and safest) scuba certification program in the world. Certification will be exactly the same as the one provided through the Vanderbilt Wellness Center!

### **CLASS PROTOCOL:**

On the academic side the first week of the course will be a mixture of class presentations and students' discussions of common readings. This will familiarize the students with the history and ecology of Utila as well as broader issues related to Caribbean island life. A second set of readings and classroom times will be assigned to the theory part of the scuba certification.

The in-water aspect for the scuba training and certification will take place at the Vanderbilt pool and a regional scuba quarry (<http://pennyroyalscuba.com/>).

At the end of the first part of the course all students will be PADI certified as open water or advanced open water divers (depending on their entry level). Students will furthermore have a sound preparation for the under and above water explorations of Utila.

In Utila, we will be staying first at the Sea Eye Hotel (with Breakfast, Lunch, Dinner served at La Piccola restaurant). During the second part of our stay we will move into the *Kanahau Utila Research and Conservation Facility* (<http://www.kanahau.com>). Our daily under and above water excursions will be followed up with group meetings in the early evening to discuss and reflect upon our experiences and the knowledge gained.

Students will be asked to bring readings along. They may do so in electronic form or hardcopies. In between trips, students will be required to consult previously specified readings in order to elaborate on a topic or work on their papers. We will have some WIFI access. To use the WIFI students have to bring their own devices!

Students are required to do all the assigned readings and prepare other required materials for the daily group sessions. Participation is more than attendance and students are required to be involved by actively participating in the discussions/reflections, asking relevant questions, being critical, and analytical with the contents presented, sharing their ideas and opinions.

Students are required to maintain a polite demeanor always and under every circumstance.

### **COURSE CONTENT: SUMMARY OF TOPICS TO BE DISCUSSED**

(Not necessarily in this order)

- 1- Utila: History, culture, and socio-economic reality
- 2- Utila: Ecology and human occupation.
- 3- Utila: Human and Ocean interaction: Island life and tourism
- 4- Utila: Corral Reef: natural history, history, and ecology
- 5- Utila: Tourism and ecology, scuba diving, cruises, and the industry of the exotic.
- 6- Divers Safety
- 7- Reefs, corals, and underwater worlds in popular imagination: From *Moby Dick* and *Jaws* to *Free Willy*, and Margaret and Christine Wertheim's *Crochet Coral Reef*.
- 8- Exploring reefs: fish identification
- 9- Exploring reefs: shapes and functions
- 10- Exploring reefs: human-nature interactions
- 11- Realities and politics of global warming, development, and island life

**Preliminary Timeline;** Evening time and dinner is usually reserved for discussions and reflections.

**05/07 Morning:** Students meet at the Vanderbilt campus. Group introduction, discussion of rules and regulations, class goals, and individual and group work assignments.

**Afternoon:** Meeting at the Vanderbilt Pool for swim test; introduction: scuba equipment / video.

**05/08 Morning:** Individual study of PADI material (Part 1).

**Afternoon:** Discussion of PADI material (Part 1), Quizzes.

Lecture: Dive equipment, what you need and how it works.

**05/09 Morning:** Individual study of PADI material (Part 2).

**Afternoon:** Review of the PADI material (Part 2) followed by quizzes and the exam. Passing this exam is mandatory to move on to the water training part of the PADI program and certification; (Students not passing the exam can retake it!)

Lecture: Safe diving.

**05/10 Morning:** Confined water training I; Vanderbilt Pool.

**Afternoon:** The Caribbean in the news: tourism, hurricanes, and global warming.

**05/11 Morning:** Confined water training II; Vanderbilt Pool

**Afternoon:** If needed we will have an additional pool session

**05/12** Open Water Classes at Pennyroyalscuba, Ky. (<http://pennyroyalscuba.com/>).

**05/13** Open Water Classes at Pennyroyalscuba, Ky.

**05/14 Morning:** Student Presentations/Discussion: Ocean Ecology; Oceans as Resources

**Afternoon:** Student Presentations/Discussion: Fish Ecology; Coral reefs

*Netflix movie: Chasing Coral*

**05/15 Morning:** Student Presentations/Discussion: Utila History, Culture & Socioeconomics

**Afternoon:** Student Presentations/Discussion: Utila Ecology & Economy

**05/16 Morning:** Student Presentations/Discussion: Utila Tourist Industry, Culture, and Ecology

**Afternoon:** TRAVEL PREPARATIONS

**05/17 TRAVEL TO UTILA** (Roatan, and by ferry to Utila).

**05/18** Exploration of island life. Going over safety issues, behavioral codes, above and below surface. Prepping for the first dives (dive safety; equipment; coral reef and fish species of the area.

**05/19** **Morning:** Exploring Utila below the surface:  
Boat Dives 1 & 2;



Diving from the Boat

**Afternoon:** Exploring Utila above the surface. Land use, shorelines, and people

**05/20** **Morning:** Exploring Utila below the surface:

Boat Dives 3 & 4: Reefs: Reef bleaching;  
water temperatures; fish species



Meeting the Locals: Dolphins

**Afternoon:** Exploring Utila below the surface: Boat Dives 5 & 6: Reefs: Reef bleaching;  
water temperatures; fish species Presentations / Discussion: Reef ecology; global  
warming; human activities I.



Reef Populations

Movie Night: Jaws

**05/21** Exploring Utila above the surface: Mangroves, iguanas,  
and environmental destruction.

Kayaking the Mangroves.



**05/22 Morning:** Exploring Utila below the surface:  
Boat Dives 7 & 8: Science Diving I

**Afternoon:** Exploring Utila below the surface:  
Boat Dives 9 & 10: Science Diving II



Science Diving: Counting Species

**05/23** Inland Ecology: Hiking Pumpkin Hill & Bat cave. Flora and Fauna of the Island.



View from Pumkin Hill



Inside Bat cave

**05 /24 Morning:** Managing the Island: Tourism and Island representations on Utila.

**Afternoon:** Discussions / presentations on history, tourism and cultural representations.

**Movie Night:** Pirates of the Caribbean

**05/25** Managing the Island: Tourism, Development, Energy, and Waste; Observations and meetings with stake holders and politicians.

**05/26 Morning:** Exploring Utila below the surface: Boat Dives 11 & 12

**Afternoon:** Exploring Utila below the surface: Boat Dives 13 & 14

**05/27** Exploring Utila above the surface Island: Shore line ecology, tourism, development, and waste. Cleaning up the beach with members of Kanahau.

Cleaning up the beach



**05/28** **Morning**: Exploring Utila below the surface: Boat Dives 15 & 16  
**Afternoon**: Exploring Utila below the surface: Boat Dives 17 & 18

**05/29** Exploring Utila above the surface: Tourism; tourist industry, and development.

**05/30** **Morning**: Saying Good bye: Lessons learned, experienced gained  
**Afternoon**: Packing and Poolside chats.

**05/31** **Return to Nashville**

**05/31** Deadline: Written Diary; papers

\*Meetings with local stakeholders and tours are not scheduled yet, so the dates of the syllabus are tentative.

\*\* The syllabus is preliminary. While there are 18 scuba immersions planned (9 boat trips), the exact number will be determined depending on weather conditions and other factors. There will be a minimum of 10 immersions.

**Costs:****Cost per student: \$9,600****Students are responsible for:**

- All living expenses in Nashville during the first part of the Maymester.
- Airfare Nashville to Roatán and back.
- Student will have to have their own scuba mask, snorkel, and fins. These can be purchased during the first days of class. (A 10 % discount is offered at the local dive shop that runs the scuba program at the Vanderbilt Wellness Center)
- Basic Personal Diving Equipment in Utila (Rental or Purchased)  
(full equipment rental in Utila will cost approx. \$300 per student)
- DAN (Diving insurance)
- Snacks for island explorations
- Cell phone service
- WIFI other than the one provided by hotel or the research station
- Local transportation in Utila
- Incidentals
- Tips for dive crew and tour guides

**Costs for the Maymester include:**

- Vanderbilt Tuition
- Costs for Padi Certification
  - Materials (book)
  - Pool Entrance Fee
  - Entrance Fee to quarry (Nashville)
  - Rental scuba equipment (Nashville)
  - All airfills for scuba tanks (Nashville)
- Transportation to and from the quarry (Nashville)
- Transportation from Roatán airport to harbor and back
- Transportation from Roatán to Utila and back (ferry)
- Transportation from Utila harbor to hotel and back
- Accommodation and three meals in Utila.
- All diving expenses Utila (boat, air tanks). This does not include diving gear (see above).
- Guided tours on the island