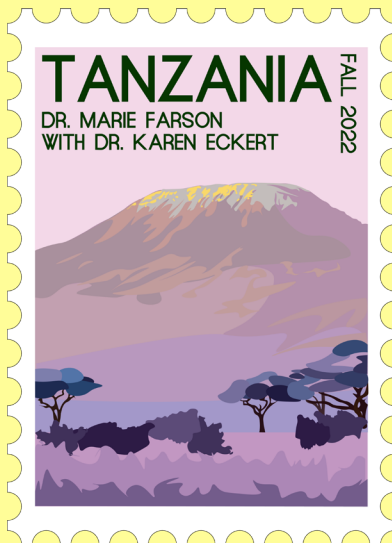




Sustainable Development in Tanzania

**Fall
Semester
2022**



Study Abroad Office

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Program Description

Tanzania is a country with a rich and diverse culture, breathtaking natural beauty, and a host of local and national resources, talent, and entrepreneurship. Leveraging their geographic resources, energy resources, and cultural heritage, Tanzanians strive to develop their country and move beyond the country's status as a United Nations-designated least developed country (LDC). The *Sustainable Development in Tanzania* Study Abroad program explores the place-based influence of environmental landscapes and resources on technological development and sustainability in one of Africa's poorest countries.

The East African Rift is unique in that an incipient continental rift zone is visible on land, and this unusual form of a divergent plate tectonic boundary leads to equally unique surroundings. Similarly, indigenous peoples in Tanzania have developed unique lifestyles to adapt to the unusual landscape, as seen in their choice and utilization of food, energy, raw materials, and land.

Tanzania has been forced to innovate technological developments that leverage diverse assets – and the degree to which they have been able to do this in sustainable ways, drawing on customs but advancing swiftly into a more technologically developed world, will be the focus of our abroad.

Students will investigate ways in which Tanzanians practice sustainable food and energy production and compare these to the United States and elsewhere. Students will also participate in a sustainable development program, called Jamii Tech, which focuses on technological innovation and includes a service project at the Twende Lab in Arusha. This is an ongoing collaborative program that is organized each fall. This program is designed to challenge you to think about sustainability holistically.

Key questions we will be addressing during this abroad include: How does the unique setting of the East Africa Rift impact the geography, sustainability, culture, and ultimately social and technological advancement of Tanzania? What does it mean to be “prosperous”, to be equitable, to be resilient?

This program is open to all students and all majors.

Applications

Applications are available online at: <http://bit.ly/study-abroad-app-F21>

Completed applications must be submitted to the Principia Study Abroad Office no later than 5:00 pm on Wednesday of Week 4, September 22, 2021.

No late or incomplete applications will be accepted.

Academics

This program includes 16 total semester hours of credit – 1 SH in spring 2022 and 15 in fall 2022. Final grades will be determined by program faculty. Students on this program can complete two physical sciences LADRs in different departments, as well as a course that contributes to a Sustainability major or minor.

Spring 2022

SPST 280: Orientation Seminar: Tanzania

SH 1 Attribute: None

The orientation seminar is an opportunity for students to prepare academically, culturally, and logistically for the Tanzania Study Abroad program. This covers the overarching goal of the abroad by providing them with an introduction to the country, culture, Swahili language, and natural history of Tanzania. The UN Sustainable Development Goals (SDGs) will be introduced as scaffolding for in-country learning. Students will also be introduced to the geology and technology aspects of study on the program.



Fall 2022

ERTH 170: Earth Science: Geology of Rift Zones

SH: 4 Attribute: GESL

This course grounds students in the basic geology topics normally taught in an introductory course: rock identification, faulting, earthquakes, volcanoes, plate tectonics, fossils, and ground water. It also includes a more in-depth study of the physical geological processes occurring at incipient continental rifting zones in particular: hydrothermal circulation, hot springs, lava tubes, volcanism, faulting, grabens, etc. Connections will be made to the various types of resources, as well as food and energy assets associated with the topography created by divergence. The unique geography of places like Ngorongoro Crater (largest volcanic crater in the world), Mt. Tanzania, and the Serengeti Plains offers rich opportunities to study widely varying ecosystems and therefore sustainable development practices.

SUS 280: Topics in Sustainability: Sustainable Development in LDCs

SH: 4 Attribute: None

This course examines the United Nations Sustainable Development Goals (SDG) and the various approaches being taken to meet those goals in Tanzania. This course will give the students a framework for evaluating the degree to which what they are learning about the history, culture, and economic development of Tanzania measures up to the international framework of sustainable development. Each student in the class will select a single SDG “lens” (e.g., poverty, climate, equity, food or energy systems, biodiversity conservation) as an analytical framework to carry with them throughout the program, then bring their observations into the academic conversation throughout the experience. *The SUS 280 TOPX course would fulfill the SUS 260 Sustainable Development course required for the sustainability major. SUS 280 TOPX and ENGR 242 are suitable electives for the sustainability minor.*

ENGR 242: 3-D Printing Technology

SH: 4 Attribute: GESL

ENGR 242 provides an overview of open-source hardware and appropriate technology in theory and practice. Students will build an open-source 3-D printer from scratch on campus before departing on the in-country program, bringing materials to teach the build of one or more 3-D printers at Twende tech lab in Arusha. Students on this program will spend three weeks on a service project to build sustainable 3-D printers (using locally sourced sustainable materials: e-waste, wind and solar power, recycled materials) with Tanzanian students and collaborate on open-source designs. The Jamii Technology Program (JTP) seeks to develop the competence and confidence of all involved; specifically, in the design process, creative problem solving, sustainable local solutions, and cross-cultural collaboration.

ENGR 242: 3-D Printing Technology – OR –

ENGR 242: 3-D Printing Technology – OR – *ENGR 442: Open Source Hardware*

SH: 4 Attribute: GESL SH: 4 Attribute: None

Engineering students and/or students who have already taken ENGR 242 may take ENGR 442 to participate in this program. This course is an extension of the ENGR 242 course which focuses on applications of the 3-D printer to develop other open source pieces of hardware (besides 3-D printers) that are considered appropriate technology. These students will be great mentors of the students in the ENGR 242 class.

SPST 285: Country Studies: Tanzania

SH: 3 Attribute None

This course provides an interdisciplinary survey of contemporary issues in Tanzania including geography, cultural history, politics, economics, religion, foreign relations, environment, the arts, etc. The course will make explicit connections with sustainability and tie together all of the courses included in this program. Students will become aware that sustainable development is a very broad mandate, and that no country is likely to successfully tackle all aspects of the agenda.



Program Staff

Dr. Marie Farson, assistant professor of Earth Science and of Engineering, will lead the Tanzania abroad. She has led two student groups on abroads to Iceland and to Den Haag in the recent past. She traveled to Kenya and Tanzania two summers ago to research the abilities and needs of engineering labs in rural Africa. She participated in a semester-long study abroad to Israel while in College herself and has lived, traveled, and worked abroad, including regions of the Middle East (UAE, Oman, Greece, Turkey, Israel, Egypt, Libya) for the last 25 years. Prior to traveling to Africa two summers ago, she undertook a program of self-study in Swahili. She has varying degrees of fluency in French, Dutch, Spanish, Hebrew, and Arabic. Linguistics and language study has been a long-time passion of hers.

Dr. Karen Eckert, professor of Sustainability, will be a drop-in faculty for this program. Dr. Eckert has more than three decades of experience in sustainability-related fields, including field research, national policy planning, project management, nonprofit management, classroom teaching (undergraduate, graduate), curriculum development, and presentations to both lay and professional audiences around the world. She also has teaching experience in non-traditional settings, including as an Earthwatch Expedition Leader and many years as a trainer for biologists, teachers, law enforcement officers, park personnel, policymakers, and first responders in more than three dozen countries. She has studied and lived abroad, traveled to more than 40 nations, and consulted extensively with foreign governments and intergovernmental entities. She is experienced in cross-cultural abroad/expedition planning and execution, mentoring students in and out of the classroom, identifying and organizing in situ experiential education opportunities, and dealing cheerfully and effectively with the obstacles and uncertainty that can sometimes characterize group travel abroad.

The resident counselor accompanying the group will be announced at a later date.

Preliminary Itinerary

Four weeks will be spent on campus preparing for the in-country program. There we will focus on foundational knowledge and skill development in geology, 3-D printing and appropriate technology, the SDGs, and country studies.

The group will travel together to Tanzania for the 8-week, in-country part of the program.

During the first week, the group will spend a couple of days in the capital, Dar Es Salaam, visiting technology labs at two schools, followed by a couple of days on Zanzibar visiting sustainable fishing farms, a sea turtle sanctuary, and learning about the spice trade. The group will then take a four-day trip to Selous with a visit to the Rufiji hydro-power plant.

The next four weeks will be based in Arusha. The group will visit Godwin Ndosi's sustainable farm and the Culture and Geology Museum. There will be day trips to sites of geological interest: Ngurdoto crater in Arusha National Park, Mt. Meru Waterfall, and Mt. Kilimanjaro. The main focus of our time in Arusha will be collaborating with students at Twende lab for the Jamii Technology Program (JTP). This includes a service project to build sustainable 3-D printers and other open source appropriate technology designs.

After Arusha, the group will travel to the East Africa Rift Valley where the group will do geologic site visits and observations at the Rift Valley, Rift Lakes, Calderas, carbonatite lavas of Ol Doinyo Lengai; and visits to Lake Manyara, Lake Eyasi, Ngorongoro Crater and Conservation area. The group will stay overnight in the town of Mto wa Mbu and will do home visits with Hadzabe families, conducting interviews to determine sustainable lifestyles of hunter-gatherers vs. herdsman like the Maasai.

The group will then move to the Serengeti Plains to focus on sustainable communities and the impact of tourism (economy of Tanzania and protection of the land and the natural resources here). Then the group will stay at a geology camp at Oldupai Gorge and Laetoli, working with Professor Masau of Dar es Salaam Geology Department focusing on energy sources from the Rift Valley.

The final week in-country will take the group on safari in Serengeti National Park, then up to Mwanza on the shores of Lake Victoria where the group will visit the local C.S. society.

The group will return to campus together to complete the last two weeks of the program, including a presentation to the community and completion of final projects and papers.

Selection

Selection will take place during spring fall semester 2021. Each applicant will be interviewed by professors Dr. Marie Farson and Dr. Karen Eckert, and potentially the program resident counselor. Equal consideration will be given to all applications submitted by the application due date. See the [Student Selection and Eligibility Criteria](#) for more details.

The Study Abroad Office will notify applicants at the end of Week 8, fall semester, regarding the decision on their selection.

Those eligible but not accepted in the initial selection process may be placed on a waiting list.

Participation in this program may be denied to any accepted student if their grades put them on academic probation. Your academic transcript may be reviewed during the process. Students must also be in good standing with regard to the *Principia Conduct Standards* and the [Study Abroad Student Code of Conduct](#).

Cost

The cost of this abroad program will be the same as tuition room, and board for fall semester 2022, plus airfare and a \$500 study abroad fee.

The following expenses will be **INCLUDED** in the cost: all accommodations and meals (room and board) and transportation; academic instruction and lectures; admission to scheduled sites, museums, and cultural activities planned as part of the program; and student travel insurance.

Costs **NOT INCLUDED**: Domestic US and international airfares up to \$1,500; \$500 fee; personal expenses; optional activities not planned as part of the program; and any other expense not specifically noted as included in the cost of the program.

Please see the “Financial Aid and Responsibility” section to the right to see what is included in your PrinBill, how financial aid is applied, and when payment is due.



Eligibility and Prerequisites

The program director seeks students who have a sincere interest in issues related to culture, geography, engineering, and sustainability, as well as those who are self-motivated learners who can adapt successfully to different learning environments.

Preference will also be given to students with a 2.0 GPA or higher. Student must meet the Study Abroad Student Selection Criteria (see [website](#)) to apply for and remain on this program. This program is open to all enrolled students in good academic and social standing. This program is open to all majors.

Financial Aid & Responsibility

Students who will be eligible to receive financial aid for the 2022-2023 academic year will have their loans, scholarships, and grants automatically applied toward tuition, room and board. Your PrinBill will also include the Study Abroad administrative fee (\$500).

Payments for past and current tuition, room, and board must be up-to-date, or a satisfactory payment schedule must be arranged with the Student Billing Representative, in order for a student to be allowed to participate in this program.

If accepted, students will be required to sign a financial commitment agreement stating that if they withdraw from this program, either voluntarily or involuntarily, after **Wednesday, November 24, 2021**, they agree to pay to Principia a penalty fee of the amount equal to the non-recoverable expenses incurred by their withdrawal plus Principia Abroad administrative fees. Even if all prepaid expenses are recovered, a minimum \$500 fee may be levied.

The program cost, less any applicable financial aid, will be billed to each participant's Principia account, and payment will be due by **August 26, 2022**.

Study Abroad Application Instructions

- Applications can be found on the Study Abroad website: [Application Process](#), or directly from this link: <http://bit.ly/study-abroad-app-F21>
- To authenticate the Google Form application submission, you must use your **Principia email address**.
- **DUE DATE:** Your study abroad application, as well as the online signature forms from your resident counselor and academic advisor, **MUST BE SUBMITTED BY 5:00 pm on Wednesday, Sept. 22 (Week 4)**. *No late applications will be accepted!*
- The application has **9 sections**, and you must complete each section before moving to the next:
 1. **Personal Information:** The first section includes **basic personal information** including P01 number, date of birth, citizenship, email, phone number, address, emergency contact(s), declared/expected major and minor, and expected graduation date.
 2. **References:** The second section includes **listing two references**, their emails and phone numbers. One is your personal/character reference and the other is for group learning.
 3. **Academic Advisor Meeting:** The third section confirms that you **met with your academic advisor** to discuss this study abroad program and that it does not conflict with any graduation requirements. You will send your academic advisor this signature page to confirm the meeting: <https://bit.ly/studyabroad-advisor-signature>
 4. **Resident Counselor Meeting:** The next section confirms that you **met with your resident counselor** to discuss your ability to demonstrate emotional maturity, personal responsibility, and commitment to adapt to different living and learning conditions. You will send your RC the signature form to confirm this meeting: <https://bit.ly/studyabroad-rc-signature>
 5. **Additional Questions:** The next section includes **additional questions** including previous international travel and previous abroads for which you have applied and been accepted or not accepted
 6. **Essay Questions:**
 - a. Why are you interested in participating in this particular study abroad program?
 - b. Some of the experiences abroad may be challenging emotionally, physically and intellectually, as you are pushed out of your comfort zone and travel/work with a group. How do you recharge?
 - c. Please think of an experience where you needed to work to accomplish something with a group. Describe how you are a team player.
 - d. Travel in general, and travel to a developing country like Tanzania in particular, often demands patience and flexibility in working within an unfamiliar environment with limited resources. Please share an example of how you have adapted your expectations or behavior to the needs of the situation in which you found yourself.
 - e. Your willingness to be responsible for your own learning, as well as your willingness to be flexible and experiential in your learning, will be key to success on this program. Please provide examples illustrating your ability to be a self-motivated, adventurous and empathetic learner.
 - f. Describe your spiritual practice, including how it would support your participation in this study abroad program.

The last three sections include signing off on your understanding of the following topics:

7. **Financial Responsibility** – including commitment and withdrawal deadlines
 8. **Academic & Social Responsibility** – including that you have read the Study Abroad Student Code of Conduct and the Study Abroad Student Selection & Eligibility Criteria
 9. **Statement of Expectations** – including abiding by the standards set forth in the previous documents, Principia's standards, additional standards stipulated by the program faculty or international laws and custom, and expectation that you will fully participate in all aspects of the program.
- Again, the application and two online signature forms must be received by **5:00 pm on Wednesday, Sept. 22 (Week 4)**. Please be in touch with Study Abroad Program Manager Allison Terry with any questions – allison.terry@principia.edu or 618-374-5215.