



Siendo Naturaleza
Regenerative Learning and Living
Valle del Tiracu, San Martin, Peru

Placement on Regenerative Engineering Solutions (PRES)

An opportunity to practice 'deep green' regenerative engineering. Build solutions that bridge the gap between human and natural systems to solve real world problems. Come find the key to merging your purpose and career - the journey begins in the jungle of Peru!

Siendo Naturaleza (Being Nature) is an "Amazon Life Project for Life" in the tropical cloud forests of the Tiracu Valley near the city of Tarapoto. We are based on 24 hectares of deforested and degraded land situated at the edge of *Cordillera Escalera*, Peru's first Regional Area of Conservation (2005) and a watershed of the Amazon River.



Business plan workshop, 2022. Eitan Buffaz, McGill Graduate on furthest right.



@siendo_naturaleza



@SiendoNaturaleza

Program Goals

1. Learn and practice an ecological and a human-centered design approach related to your engineering/architecture practice.
2. Hone your teamwork, leadership and communication skills
3. Experience living ecologically with the land, in the jungle
4. Engage with the community through cultural immersion
5. Bring a global dimension to your career
6. Improve ecoliteracy, an ability to understand and empathize with natural systems, and work with natural patterns.

Project Areas

At Siendo Naturaleza we work with the jungle as a laboratory, where we prototype regeneration through agriculture, reforestation, infrastructure, and technical and social systems. The jungle teaches us to create the conditions for ecosystem health.

Potential Projects:

1. Micro Hydro-Electric

- Currently Siendo Naturaleza operates 100% off of solar energy. During the rainy season charging our batteries is significantly less efficient and this yields insufficient power.
- Goal: Prototype a micro hydroelectric system to compliment solar power
 - System research, design and documentation
 - Breakdown of cost of implementation
 - Risk analysis
- Learning Outcomes:
 - Develop site surveying skills, by learning to observe natural patterns.
 - Develop the ability to design site appropriate interventions
 - Mechanical and electrical engineering skills

2. Biochar (Yana Allpa- Terra Preta)

- The ancient method of farming in the jungle involved the production of an extremely high quality black soil. A major ingredient of the fertilizer is biochar, produced through pyrolysis of organic matter. There are ongoing efforts around the world to recreate the ancient recipes, and Siendo Naturaleza is engaging in this investigation with local materials and methods, seeking low tech replicable methods to produce, and spread knowledge of this important component of soil health.
- Goal: Ideate and investigate a context-appropriate methodology to produce biochar
- Learning Outcomes:
 - Develop low tech pyrolysis methods
 - Streamline Yana Allpa production to be scalable
 - Knowledge and practice of biochar production - one of the best solutions for sequestering carbon in the soil.
 - Design and build an oven that can perform pyrolysis without contaminating the environment

- Desired skills: Data Collection, mechanical engineering, materials engineering, bio-engineering, systems design

3. Liquid Fertilizer Systems

- Microbially rich liquid fertilizers are a valuable component of an agro ecological system. Methods to produce these compost teas have been trialed at small scale at Siendo Naturaleza, and are ready to be scaled up.
- Goals: To produce liquid fertilizers to augment agro-ecology production systems
 - Analyze efficacy of products, and recommend alternative approaches to production.
 - Document learnings and develop training material to scale production.
- Learning outcomes: Soil biology, develop knowledge of technically advanced microbe production, eco-literacy.
- Desired skills: Bio-engineering, chemical engineering

4. Animal Systems

- Animals play an important role in all natural ecosystems as agents of nutrient cycling. In conventional agriculture, animals are severed from their environments, creating many ecosystem issues related to waste and fodder production. Better understanding how animals can be integrated into an agro-ecology system requires site specific methods and practices. This project offers an opportunity to take a systems approach to animal husbandry, considering sustainable solutions to inputs and output to benefit the environment.
- Goals: Design and prototype animal systems to integrate into existing agroecology systems.
 - Design enclosures and production systems which promote the health of animals and the environment.
- Learning outcomes: Systems design, construction, ecology.
- Desired skills: Agronomy, problem-solving skills

5. River Pollution Mitigation & Riparian Restoration

- Riverway pollution is a world-wide problem, stemming from agricultural runoff, poor sewage management, and plastic littering. Siendo Naturaleza is situated on a tributary of the Amazon river, and rural communities in the area are a source of river pollution.
- Goals:
 - Understand the sources and causes of river pollution in this context.
 - Develop and prototype alternatives to reduce the impacts of sources of pollution.
 - Design and prototype methods to clean rivers, and collect plastic pollution.
 - Design and implement community workshops around pollution.
- Learning outcomes: Systems thinking, community engagement skills, wicked problem analysis, bioremediation.

- Desired skills: Community engagement, presentation skills, materials science. Spanish language is a requirement for this project.

6. Living Architectural Design

- Our project philosophy and context presents a unique opportunity to design closely with the landscape, using natural materials. There are ample opportunities to envision upgrades to current infrastructure, and to envision new projects to undertake in the future. In addition to design and planning, there is opportunity to be hands-on with projects in process.
- Goals:
 - To design a site specific structure integrated into the natural landscape.
 - Assist with ongoing construction projects.
- Learning outcomes: Natural building, site analysis, structural analysis.
- Desired skills: Architectural design, landscape design, structural engineering.

7. Materials bank

- What: In the natural world, there is no waste; every material byproduct from a process is food for another. Siendo Naturaleza values a cradle to cradle approach to material use, capitalizing on existing geometry of materials to reduce energy use for new products. Proper infrastructure and processes are needed to improve the recycling systems at Siendo Naturaleza.
- Goals: Design a system to organize, categorize, process and upcycle non-organic materials, (plastic, metal, glass...). Design and implementation of a fabrication lab for common 'waste' materials in the region.
- Learning outcomes: Systems design, material upcycling, product design, interior design.
- Desired skills: Material science, industrial design, mechanical engineering.



Reforestation workshop, October 2022

Experience Timeline

You will begin virtually to co-create with our team the scope and goals of your selected project. Depending on the project scope you will be welcomed to the land for a period of 8-12 weeks during the period of May 2024-August 2024.

To Apply

We are accepting applications from engineering and architecture undergraduate students at McGill with an interest in learning and practicing ecological solutions. Please note that while Spanish is not a prerequisite to apply, this is a strong asset. Nonetheless, the most important quality we are seeking in potential visiting students is open-mindedness and adventurous enough to live in the jungle. This includes embracing all beings of our community (such as this little fellow)!



International Universities & Siendo Naturaleza

Our team are alumni of various global educational institutions including graduates from UC Berkeley, McGill University, Florida Atlantic University, Imperial College and Schumacher College. We value collaborating with other students and alumni who are seeking to merge their work with purpose, and we are committed to enacting a culture of love and regeneration through learning and co-creating.



Construction of the main classroom, Schumacher placement, 2022.

What our Alumni say



Brooks Tyrell - USA
University of Notre Dame - BA Management
Schumacher College - MA Engaged Ecology
Hearth Co. - Founder

"My time at Siendo Naturaleza reminded me how intimately all peoples can connect and care with land, even in a new environment. My experiences tending the land and working with the community inspired my life's work moving forward to vitally link restoration practices with cultural development. The example set by the team at Siendo Naturaleza set an inspiring foundation for this work. Even in a short time, just one week, I felt filled with a sense of family that was doing meaningful work, aligned with my own highest aspirations."



Mateo Jeanneau - USA

McGill University - BCom
Retail Mgmt & Entrepreneurship
Co-Founder - Keen to Help

“Siendo Naturaleza is the perfect place to get out of the classroom and get your hands dirty (literally). The team pushes the boundaries of what it means to live sustainably; from projects like creating Biochar from human waste as an organic fertilizer, to relying on rain water capturing and solar systems for everyday living. This gave me the opportunity not only to understand how to be sustainable in my daily life but also what it means to be a social entrepreneur for my business.”



Fernanda Kalil - Brazil

Federal University of Rio Grande do Sul -
BA Pedagogy & Education
MA Applied Linguistics

“Collaborating with the Siendo Naturaleza team has been incredible and I cannot wait to return in 2024.

As an educator, I believe that learning thrives when it's connected to our surroundings. At Siendo Naturaleza's school, we are inspired by nature, which fosters connections not only with the world around us but also with our inner selves and other people. Education there feels natural and brings us closer to both the jungle and the community in a magical way.”

We look forward to receiving your application.

The Siendo Naturaleza Team