Landscape Mathematics University

Landscape Mathematics

Landscape Architecture + Mathematics + Engineering

Landscape Mathematics (STEM Field) Program

Landscape Mathematics = Landscape Architecture + Mathematics + Engineering™. Complex mathematical systems exist in nature. We must mimic these systems, and create original ones to solve environmental and educational issues worldwide.

Instructor := Landscape Mathematician + Civil Engineer, Yafreisy Carrero.

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Biography: Yafreisy Carrero is the first Landscape Mathematician, who creates original Landscape Mathematics systems using the beauty and logic of numbers. One of her passions is introducing people to her mundo de números. She is a Dominican-born American raised in the Bronx in New York City since age four. Multilingual in English, Spanish, and Portuguese, she considers Mathematics her first language, and is currently perfecting her

Greek and Turkish. She is the Founder and Creator of Landscape Mathematics: a STEM field that combines knowledge of landscape architecture, mathematics, and engineering used to design, build, and perceive this world of numbers. She was an Ambassador for Community in Action, an NGO in the favelas of Brazil. Aside from the many awards, honors, and distinctions she has earned nationally and globally; Yafreisy holds a Bachelor of Arts in Mathematics with a Minor in Fine Arts from the College of Mount Saint Vincent. Her background is also in Architecture and Landscape Architecture, and she has a Master's of Science in Civil, Environmental, and Water Resources Engineering from George Mason University; and a Ph.D. pending; a Harvard University Graduate School of Design Alumni, Career Discovery. She is also an exemplary Commitment Maker at the Clinton Global Initiative and the Clinton Global Initiative University. Yafreisy takes on all challenges and provides solutions to environmental and educational issues globally.

What is Landscape Mathematics?

Landscape Mathematics is an interdisciplinary STEM field that combines knowledge in landscape architecture, mathematics, and engineering used to design, build, and perceive this world of numbers.

Nature already uses the language of mathematics, so why not work with the environment instead of against it. We need to start mimicking the mathematical logic that occurs in the landscape,

identify existing systems, and out of those concepts create new ones.

What is a Landscape Mathematician?

Landscape Mathematicians, *Matemáticos Paisajistas,* are mathematical thinkers, designers, philosophers, scientists, and inventors, and can easily recognize and understand the beauty and logic of this world of numbers.

Nature illustrates the language of mathematics; and
Landscape Mathematicians translate this beauty and logic.
We are the common denominators in all fields.

Mathematics is our first language! By translating the mathematical systems we see in colors, shapes, and numbers, we reveal the logic of this beautiful world.

Landscape Mathematicians see a world of numerical solutions. We see a world of Landscape Mathematics!

PROGRAM DESCRIPTION

Program Description :=

Imagine a world composed of mathematically designed solutions. A world of numbers structurally expressed not only on buildings but in the landscape, and all over the globe. A world, where people can recognize and understand the seen and unseen logic of mathematics

in nature. A world of theory, philosophy, beauty, and logic that functions naturally and systematically as a whole. This is my world of numbers! A world created and designed with numbers. A hidden world—that is yet to be uncovered by all.

Landscape Mathematics is an interdisciplinary STEM field that combines knowledge in landscape architecture, mathematics, and engineering used to design, build, and perceive this world of numbers.

Landscape Mathematics teaches about the seen and unseen beauty and logic of mathematics in nature.

THE LAWS OF LANDSCAPE MATHEMATICS

My world of numbers is Landscape Mathematics, *mi mundo de números,* and these are my laws.

The Future of STEM Education and Design is Landscape Mathematics.

The Carrero's Laws of Landscape Mathematics

l. The First Law of Landscape Mathematics

Mathematics is the language of nature. If you understand nature, you understand mathematics.

ll. The Second Law of Landscape Mathematics

Nature already uses the language of mathematics, so why not

work with the environment instead of against it. We need to start mimicking the mathematical logic that occurs in the landscape, identify existing systems, and out of those concepts create new ones.

lll. The Third Law of Landscape Mathematics

The moment you start to recognize and understand that mathematics is the language of nature, and see the unseen laws of this beautiful world of numbers, and mimic its logic to create original systems, you are a Landscape Mathematician.

PROGRAM SCHEDULE TOPICS

[ ] **Main**

[ ] Chapter 1. Decoding and Mimicking Nature: Yafreisy's Fractals

- Laws
- Axioms
- Formula
- Algorithms

[ ] **Other topics**

- Plato
- Euclid
- Mathematicians
- Philosophers

- Landscape Architects
- Civil Engineers
- Artists

[ ] **Central topics**
- Mathematics
- Design
- Nature

***Modifications of the curriculum may be necessary and will be announced by the instructor to the class.**

ACTIVITIES

[•] Classes outdoors.

[•] Field trips on campus.

[•] Translating the language of mathematics in nature.

[•] Designing with numbers.

[•] Computer lab access.

ACTIVITIES OBJECTIVES

[ ] CLASSES OUTDOORS

Humans have an intrinsic connection with nature.

• **Outdoor Activities := Students can use natural materials to learn about the language of mathematics, operations, properties, axioms, postulates, and geometry.**

• **Nature journaling := Students can write about what they see, think, and wonder about in nature. Identity shapes, colors, and numbers to decode and code beauty and logic.**

Interpret algorithms and laws solving the beauty and logic of mathematics in nature.

[ ] FIELD TRIPS ON CAMPUS

• **Field Studies := Students can learn about plants, i.e. trees, animals, water, and soil.**

- **Photography := Students can take pictures of this beautiful world of numbers in the landscape mathematics of nature.**

[ ] TRANSLATING THE LANGUAGE OF MATHEMATICS IN NATURE

Nature is an illustration of the language of mathematics.

- **Painting := Students can mimic the seen and unseen beauty and logic of mathematics in nature with their words and actions and in paintings.**

- **Temperature exploration := Students can explore the different temperatures and microclimates around the campus based on the species of plants mathematically.**

- **Plant growth := Students can learn about how plants grow using patterns and the role they play in ecosystems.**

- **Measurements := Students can use their creativity and different instruments to measure and estimate values in nature.**

[ ] DESIGN WITH NUMBERS

- **Recognize and understand the shapes, colors, and numbers to decode and code beauty and logic in nature.**

[ ] COMPUTER LAB ACCESS

- **Optional for certain activities when learning Adobe Creative Suite; since humans already design with numbers naturally.**

PROGRAM OBJECTIVES AND ASSESSMENT OF STUDENTS

Program Objectives and Assessment of Students :=

Students will learn about the language of mathematics as a primary language and how its beauty and logic surround us. How humans and nature communicate with the language, and how mathematics is our primary language already. We use the language of mathematics in every aspect of our lives.

Students will learn about the field of Landscape Mathematics and what it is to be a Landscape Mathematician, since we are all our own unique Landscape Mathematicians.

- **What kind of Landscape Mathematician are you?**

- **What other logic or laws of mathematics can you recognize and understand in nature and the built environment?**

PROGRAM MEETINGS AND REQUIREMENTS

Program Meetings and Requirements :=

Enjoy all the beauty and logic of numbers!

Meeting :=

The Landscape Mathematics summer program will meet every week on Mondays and Wednesdays for 1 hour and 17 minutes.

Requirements :=

• To be present, participate, and enjoy a unique classroom setting in nature created and designed with the language of mathematics.

• To embrace seeing the world as a Landscape Mathematician.

• What kind of Landscape Mathematician are you?

• As you explore the world, can you solve Yafreisy Fractals?

***Outdoor classrooms will be announced. It is required for the students to have comfortable attire and gear and have water handy, as well as a journal, compass, pencils, and a camera.**

• Occasional homework.

• Quizzes from time to time.

• No final exams.

FINAL PRESENTATIONS

Final Presentations :=

Students will select a law of mathematics, properties, or postulates they have observed in nature and present it to the class; they can create or design the landscape mathematics. Imagination and creativity are limitless!

TEXT AND READING MATERIALS

Text and Reading Materials :=

Landscape Mathematics, Design with Numbers, 1st edition, by Yafreisy Carrero.

Intermediate Algebra: Functions and Authentic Applications, 6th edition, by Jay Lehmann.

Publications :=

ResearchGate.Net is an international scientific network, collaborative, research, and publication platform.

You can access my publications and research on this network.

Articles :=

LinkedIn.Org is a professional networking platform. You

can access articles about my autobiography on LinkedIn.

The Landscape Mathematics (STEM Field) program of the Landscape Mathematics University is completely independent of the University of Mount Saint Vincent.

Stores

Michaels := michaels.com recommended for art supplies.

Office Hours

I am available before or after class or by appointment. I can be reached by Email or mobile at +1 571/516-2911.

ADDITIONAL INFORMATION

Have a phenomenal and beautiful landscape mathematical infinite summer semester!