

Permaculture Design: Ecosystem Mimicry

Instructor: Michael Burns, mb756@cornell.edu

Purpose:

To examine the basics of permaculture design and understand the potential for ecological design on a multitude of scales and contexts. Students will cultivate ecological literacy by looking at the complex symbiotic relationships in both natural and cultivated systems. Students will explore and apply systems thinking to their own gardens, farms, and backyards.

Course Objectives:

Upon completion of this course, you will be able to:

- Define permaculture and describe key elements of permaculture systems.
- Read the patterns of natural landscapes and apply them to design.
- Discover living soil and how to regenerate and maintain soil health.
- Apply water-harvesting techniques and mitigate water issues.
- Appreciate the role of trees and forests in productive conservation systems.
- Describe the important role of animals and aquatic systems in permaculture.

Course Philosophy:

Permaculture is a philosophy with three explicit ethics; Care for Earth Resources, Care for People, and Redistribution of Surplus.

This course engages students in learning a foundational perspective that guide you towards designing backyards, gardens, businesses, and communities in the frame of regeneration; the process of healing and restoring ecological health.

Our approach:

This course will present a wide range of information including historical perspectives, ecology, landscape design, and activities to apply content to a student's daily life. The content acknowledges the existence of climate change, ecosystem degradation, and decline in human health factors in order to understand how we can overcome these challenges.

Students will engage in presentations, readings, and hands-on activities to make positive changes in their daily lives.

Philosophy of the Instructor

As this is an online course, I will be relying on your own self-motivation to complete assignments, ask questions, and participate in community dialogues around the material presented. I will ask you to spend a considerable of time outside, in your backyard or a local park or forested area. There will be minimal requirements to complete the course, as well as optional readings and activities to take your learning further. As we discuss complex and emotional issues during the class, please be

sensitive and supportive of other classmates. Rude or offensive language, and overly critical commentary will not be tolerated.

Expectations

You are expected to begin learning permaculture wherever you live; no previous experience in the natural sciences, ecology, landscape design, farming, gardening, etc. is required. However, these disciplines can help you expand your understanding of permaculture.

The most important expectation is that you keep up with weekly assignments and activities as they deliberately build on and refer to previous lessons. How much you can learn from this course is dependent on how much time and effort you put into it. Permaculture attracts people from a wide variety of backgrounds. The more the instructor knows your personal interests and goals the better they can be addressed through lessons, journals and discussion forums.

Readings are critical part to understanding the content. The activities will compliment readings and expand your understanding.

Plan on spending 10 - 15 hours per week working through course lessons.

Picking a site an outdoor site gives a point reference for your activities in this course and the other two permaculture courses offered if you choose to take them. Your own property might be ideal. If you are not a landowner then consider a site that would benefit from some design consideration such as a community park, garden, or the land of a friend or relative. A place that is close to where you live or work is best, as you will visit it often.

Lessons

Each week's lesson contains the following components:

- Presentations of the core material, usually as a video or series of videos.
- Readings to reinforce or expand upon the material presented.
- Activities conducting around your chosen site; some with deliverables to share with the instructor or your classmates.
- Reflective writing to allow you to develop a thoughtful perspective and a dialogue with the course instructor. More on this below.
- Discussion forum questions and topics for discussion.
- Optional additional readings, activities and resources.

It is important that you work through each lesson assigned for a particular week. Please complete and submit to the course instructor the required assignments before the stated deadline which will typically be 12:00am each Thursday. Late assignments will be accepted but instructor feedback may be delayed and your satisfactory completion of the course compromised. Consider optional activities only after completing and submitting required assignments.

If you cannot meet the deadline it is highly recommended that you send a quick message or email to the instructor. Please include in your message when you estimate you will catch up with the late assignment(s).

Suggested Readings

There is no required textbook for the course. Readings, journal articles, and videos will be offered from a variety of sources. Since students like to use a book as an anchor or guide there are some suggested texts. Each of the books listed below has different strengths and speaks to a different audience.

- Introduction to Permaculture by Bill Mollison and Rena Mia Slay (the “original” or first permaculture text book)
- Earth User’s Guide to Permaculture by Rosemary Marrow (general, great for teachers)
- Gaia’s Garden by Toby Hemenway (garden scale)
- The Resilient Farm and Homestead by Ben Falk (homestead scale)
- The Permaculture Handbook by Peter Bane (suburban and peri-urban)
- Paradise Lot by Eric Toensmeier/Jonathan Bates (urban)
- Farming the Woods by Ken Mudge & Steve Gabriel (agroforestry and forestry)

Supplies

- A computer with reliable Internet access (to view videos) and the ability to compose and submit written assignments is essential.
- A roll of 24” – 36” tracing paper.
- A set of your preferred markers or colored pencils.
- A clipboard for field assignments.
- A space to keep a large (minimum 24” x 36”) base map.
- You may also want to start a binder for assignments, handouts and other resources.

Detailed Course Timeline

Introduction Week: Welcome & Introductions

Become familiar with the distance learning interface Moodle as you:

- Read through entire set of resources, readings in the introduction.
- Introduce yourself.
- Practice uploading and sending a file.
- Make a base map of your site. (if you haven’t already)

Week 1: Key Permaculture Concepts & Tools

- Presentation: Permaculture Key Concepts (Narrated Lecture Video)..
- Reading: Essence of Permaculture
- Activity: 1.1: Develop (or refine) a base map of your site
- Activity: 1.2: Ethics, Principles, Strategies, Techniques
- Forum: Respond to the posted forum question and other student responses.
- Reflective Writing: Permaculture Design Principles
- Optional: Additional videos and articles.

Week 2: Reading the Landscape & Pattern

- Presentation: Reading the Landscape (Narrated Lecture Video)
- Presentation: Pattern #2 (Narrated Lecture Video)
- Reading: What is a Pattern Language, Anyway
- Activity: Worksheet 2.1 – Design from Patterns to Details
- Forum: Patterns
- Reflective Writing: Pattern Languages
- Optional: Additional videos, articles, etc

Week 3: Building & Sustaining Living Soil

- Presentation: Soil Basics (Narrated Lecture Video)
- Presentation: Compost Happens! (Narrated Lecture Video)
- Presentation: Vermicompost (YouTube Video)
- Presentation: Ray Archuleta on Soil Health (Vimeo Video)
- Forum: Soil Health
- Reflective Writing: Personal response to lesson materials and activities.
- Optional: Additional videos and articles.

Week 4: Working With Water

- Presentation: Water (Narrated Lecture Video).
- Presentation: Water in Permaculture Systems (Videos)
- Activity: 4.1 – Your Water Budget
- Activity: 4.2 – Contour Mapping: A-frame, Water Level
- Forum: Contour Mapping
- Reflective Writing: Personal response to lesson materials and activities.
- Optional: Additional videos and articles.

Week 5: Forestry & Agroforestry

- Presentation: Trees & Forests (Narrated Lecture Video).
- Presentation: Agroforestry Systems (Videos).
- Presentation: Agroforestry with Steve Gabriel (Podcast)
- Activity: 5.1 – Tree Research
- Activity: 5.2 – Stacking in Time and Space
- Forum: Your Tree Polyculture
- Reflective Writing: Personal response to lesson materials and activities.
- Optional: Additional videos and articles.

Week 6: Animals & Aquaculture

- Presentation: Animals in Permaculture Systems (Narrated Lecture Video)..
- Presentation: Aquaculture and Aquaponics (Video)
- Reading: Rabbits Love Roses, Stella Jane
- Activity: 6.1 – Design Wrap Up
- Forum: Open discussion
- Reflective Writing: Personal response to lesson materials and activities.
- Optional: Additional videos and articles.

Grading

All work submitted is evaluated and assigned outstanding, satisfactory, or unsatisfactory as a grade for the effort. Please note that to be eligible for Permaculture Design Certification through Finger Lakes Permaculture Institute you must complete all lessons and assignments in the three courses.

Certificate of completion

Successful completion of this course earns you a certificate of completion and continuing education credits from Cornell.

Permaculture Design Certification through Finger Lakes Permaculture Institute

Participants who complete all lessons and assignments in the three courses are eligible to submit a portfolio to Finger Lakes Permaculture Institute to receive the Permaculture Design Certification. This certification is recognized around the globe and would be a useful addition to any resume especially for those looking to complete international development work (e.g. Peace Corps) and enter the fields of ecological and landscape design or various land management, farming and field-work positions. See the PDF file on certification in the course docs for more information.

Questions

Please direct inquiries on the course to the instructor, Michael Burns at mb756@cornell.edu