

## **Permaculture: Fundamentals of Ecological Design**

Instructor: Michael G. Burns

### **Purpose:**

To examine the basics of permaculture design and understand the potential for ecological design on a multitude of scales and contexts. Students will learn the foundational ethics, principles, and planning tools to design ecological sites in the context of their local ecosystem and future environmental change (climate change).

### **Course Objectives**

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

- Define permaculture and describe examples of permaculture sites.
- Apply permaculture ethics and principles to a variety of contexts.
- Discuss impacts of climate change and adaptation strategies.
- Consider appropriate use of energy and technology in sustainable systems.
- Understand a range of multi-purpose plants and design multi-kingdom polycultures.

### **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.

### **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 is honest and acknowledges the existence of climate change, ecosystem degradation, and decline in human health factors not to dwell on them but 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 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 are as a human living on earth; no previous experience in the natural sciences, ecology, landscape design, farming, gardening etc is required, but will certainly be helpful in expanding 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. Put into the course what you want to take out of it by participating as much as you are able. Permaculture attracts a wide variety of people and the more we know your personal interests and goals the better we can address them through lessons, journals and discussion forums.

The readings are a critical part to understanding content. The activities you will be asked to complete outside and in your home will compliment readings and expand your understanding of the natural world and your impact on it.

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

### **Picking a site**

An outdoor site gives reference for you for all of the activities in this course and the other permaculture courses you choose to take. If you own property this might be the ideal site. 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 (midnight) 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.

### **Required Readings**

There is not a required textbook for the class, through it is highly recommended that students purchase Introduction to Permaculture by Bill Mollison and Reny Mia Slay (2nd printing, 2000) as an excellent supplementary text. A list of optional books to be used with this course can be found in the 'Additional Resources' topic at the end of the course.

### **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 favorite 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.
- View introduction video
- Introduce yourself.
- Complete a Self-Assessment of current knowledge
- Practice uploading and sending a file.

### **Week 1: History of Permaculture & Terms**

- Presentation: What is Permaculture? (Narrated Lecture Video).
- Presentation: Global Gardener (YouTube Video).
- Reading: What makes a site “Permaculture”?
- Activity: 1.1: Make a Base Map of Your Site
- Forum: Respond to the posted forum question and other student responses.
- Reflective Writing: Your impressions of Permaculture
- Optional: Additional videos and articles.

### **Week 2: Ethics & Case Studies**

- Presentation: Ethics (Narrated Lecture Video).
- Presentation: Case Studies of Permaculture (Narrated Lecture Video).
- Presentation: Greening the Desert (YouTube Video).
- Reading: Finding a Sense of Surplus – Hemenway.
- Activity: Worksheet 2.1 - Permaculture Site Research.
- Activity: Worksheet 2.2 – Personal Goals.
- Forum: Respond to the posted forum question and other student responses.
- Optional: Additional videos, articles, etc

### **Week 3: Ecological Principles**

- Presentation: Permaculture Principles (Narrated Lecture Video)
- Presentation: Applied Ecosystem Design (Narrated Lecture Video)
- Presentation: Pattern in Permaculture Design (Narrated Lecture Video)
- Video: City Repair
- Reading: Ecology 101
- Activity: Worksheet 3.1 – Permaculture Site Visit
- Activity: Worksheet 3.3 – Pattern Scavenger Hunt.
- Forum: Respond to the posted forum question and other student responses.
- Optional: Additional videos and articles.

### **Week 4: Climate, Energy, & Technology**

- Presentation: Climate & Adapting to Climate Change (Narrated Lecture Video).
- Presentation: Appropriate Technology (You Tube).
- Reading: Carbon Sequestering Agriculture - Toensmeier

- Activity: Worksheet 4.2 – Weather Station & Phenology
- Forum: Respond to the posted forum question and other student responses
- Reflective Writing: Personal response to lesson materials and activities.
- Optional: Additional videos and articles.

### **Week 5: Zone, Sector, and Elevation Planning**

- Presentation: Zone, Sector, Elevation Planning (Narrated Lecture Video).
- Reading: Zones & Sectors in The City – Anderson
- Activity: Worksheet 5.1 – Making a Sector Map
- Activity: Worksheet 5.2 – Random Assembly & Zone Mapping
- Forum: Respond to the posted forum question and other student responses
- Optional: Additional videos and articles.

### **Week 6: Permaculture Plants & Polycultures**

- Presentation: Permaculture Plants (Narrated Lecture Video)..
- Presentation: Polycultures vs. Guilds (Narrated Lecture Video)..
- Reading: EFG: Invitation to Adventure – Jacke & Toensmeier.
- Activity: Worksheet 6.1 – Plant Niche Analysis.
- FINAL PROJECT:– Polyculture Design.
- 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 tree 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 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](mailto:mb756@cornell.edu)