

# MIDWEST PERMACULTURE

## Permaculture Design Certification (PDC) Course—An Outline of Expectations and Subjects Covered, whether taking an On-Site, On-Line, or On-Demand Course

### About Midwest Permaculture's PDC Courses:

- The sequence in which each of the subject areas listed below are covered is variable. Our trainings are not designed to be simply linear in their approach but rather take on a natural flow as we explore ideas, concepts, principles, and themes throughout. We interlace subjects with many examples and specific applications to anchor our teaching.
- Many of the early subject areas in this outline are covered in our webinar series, 'Foundations of Permaculture'.
- The "Earth Restorer's Guide to Permaculture" by Rosemary Morrow is the textbook we send out to you. For those who are permaculture beginners, this textbook is invaluable in how it lays out permaculture design and thinking step-by-step. For those who are familiar with permaculture already, it is a great refresher and highlights essential key concepts of permaculture. Either way, we strongly encourage you to read the book to enrich your learning experience. The content of our PDC course is not organized to follow the book exactly, but we feel the book and our course complement each other and absorbing both rounds out the learning experience.
- We have an abundance of additional resources that accompany each subject/session of the course (such as book references, articles, videos, websites, etc.) Studying these resources is not a requirement to earn your certificate, but they are available to you for easy reference. Dive as deep as you want.
- To earn your certificate, you must have been exposed to at least 85% of the course and present an understanding of permaculture concepts in the various design exercises and final design project.

We feel that the richness of quality training comes from three factors:

- The wealth of resources made available to students before, during and after a training (handouts, presentation materials, links to videos, links to websites, recommended books, etc.).
- The richness of the content that provides meaningful context to theory and contains alive and relevant information along with a variety of exercises.
- The skills, experience, and passion of the instructors. We think that who a person is, and what they have done, speaks as loudly as what they can recite.

## Course Outline

### About Permaculture

- Definition of permaculture
- The case for permaculture – Understanding world conditions & system limitations
- History and philosophy of permaculture
- Ethics and Principles
- Permaculture in a landscape, community, and cultural context

### Pattern Understanding and the Importance of Observation

- Patterns, tessellation, and fractals
- Types and examples of patterns
- Patterns in space and time

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- Causes and effects of patterns
- Ethics and Principals as Patterns

## Concepts, Themes and Methods of Design

- Traditions, cultures, and belief systems
- Life principles and natural law
- The methods of design, resources, yields, cycles, food webs, growth
- Complexity, connections, order, and chaos
- Functional Design - observation, analysis, and deductions from nature
- Sector analysis and planning
- Slope, key points, orientation, aspect, data overlay
- Designing in zones 1, 2, 3, 4 and 5
- Incremental design and guilds
- Succession & evolution - Establishment and maintenance
- Cultivated ecology - Practical procedures of property design

## Trees and their energy transactions

- Importance of forests
- Temperature, wind, total precipitation, etc.
- Root, mineral and rain interactions
- Implications for design
- The many types of forest
- Establishing forest
- Maintaining extending and enhancing forests
- Methods of propagation and grafting

## Water

- Chemical & structural properties of water
- Water in design
- Hydrological cycles
- Regional interventions and the water cycle
- Water harvesting earthworks for conservation and storage
- Rainwater harvesting, biological water cleaning systems
- Irrigation and gravity designs
- Greywater systems for home
- Water and sewage

## Soils

- Soil - its relationship to life elements, water and base rocks
- Soil's direct link to health
- The pH, organic matter content, and primary nutrients
- Soil pores and crumb structure importance
- Legumes as nitrogen fixers and the phosphate accumulating plants
- Plants and biological elements as deficiency indicators and mineral accumulators
- Working with difficult soils

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- Composting and humus creation  
Establishing cover crops, soil erosion, and rehabilitation
- Vermiculture (importance of cultivation of worms)

## Earthworks and earth resources

- Earthwork design concept planning
- Planting after earthworks
- Types of earthworks, earth constructions, and earth resources
- Understanding the surveying of basic levels and slope measurement
- Using an A-frame, sight level, and/or transit to find level and contour lines
- Techniques for building dams, swales, earth banks, terraces, roads, and drains
- Using the right machine for the job
- Designing for catastrophe, fire, flood, drought, earthquake, landslip, and tsunami

## Various Climate Factors

### The humid tropics

- Climate types, tropical soils, and earth-shaping
- House/garden design
- Integrated land management
- Evolving a polyculture

### Dryland strategies

- Precipitation, temperature, soils
- Landscape features in deserts, harvesting water in arid lands
- The desert house and garden, garden irrigation systems
- Desert settlement and broad strategies
- Plant themes for drylands, desertification, and the salting of soils

### Humid cool to cold climates

- Characteristics of a humid-cool climate, soils, landform, and water conservation
- Settlement and house design, the home garden, berry fruits, greenhouse growing
- Orchards, farm forestry, free range forage systems, the lawn
- Grasslands, rangelands, cold climates, wildfire

## Gardening and Small-Scale Farming Ideas in Permaculture

- Biodynamic
- Biointensive
- Organic
- Square foot
- Raised Beds
- Plant Guilds & polycultures

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- Multitude of gardening and growing techniques
- Natural Integrated Pest Management (IPM)
- Uncommon/Common resources available to growers
- Forest agriculture
- Food forests
- Alley cropping
- P.A. Yeoman's Keyline System
- Masanobu Fukuoka – One Straw Revolution
- The business of farming or food growing
- Future opportunities

## **The Humane Use of Animals in Permaculture Systems**

- Pros and cons of animal raising
- Responsibilities for the humane use of animals
- How many yields from single or multiple species
- A look at various species (chickens, bees, rabbits, etc.)
- Raising animals in urban & suburban environments
- Healthy use of animals in small-scale farming
- Silvopasture
- Rotational Grazing
- Insect and weed control

## **The Built Environment**

- Alternative and climate-appropriate building possibilities
- Rethinking the resources around us and the soil beneath our feet
- Energy for home and settlement
- Water for home and settlement
- Attached greenhouses

## **Aquaculture & Aquaponics**

- The case for aquaculture and aquaponics
- Some history and cultural variations
- Exploring design, species selection, and yield
- Farming invertebrates for fish food
- Useful techniques: channel, canal, and chinampas
- Small-scale systems from ponds to apartments

## **Strategies for Thinking Globally – Acting Locally**

- The invisible structures
- What is at the heart of permanent cultures?
- What is at the heart of community?
- What is at the heart of permaculture design?

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- Transition Towns
- Right livelihood and your own permaculture business
- Setting up a local permaculture group and working network
- Community gardens, establishing city farms, urban strategies, and land access
- Alternative money, bioregional organization, village development, ethical investment
- Working in different cultures with sensitivity, offering real & effective aid
- The power of cooperation

## Design Exercises Likely to Be in the Course

- ZOE Farm – Water Management Techniques
- Plant Guild Design
- Community Garden Idea
- Residential Design
- Climate Design
- Homestead Design
- 10 Forms of Capital

## Final Design Exercise

- Select a real or sample project and describe the design process. The designer explains project parameters and vision. Collaboration is encouraged. Final work is shared with instructors.

## Closing

- Certification information.
- Permaculture – continuing one's education
- Awarding of Certificate

## Film

We use a variety of carefully selected films that we find to be powerful in content and actual usefulness. Students receive a list with internet links to all of them for viewing again after the course and/or for sharing with others. The links will take students to either the free videos such as those found in YouTube or to where the film can be purchased if it is still a proprietary item.