

MIDWEST PERMACULTURE

Permaculture Design Certification (PDC) Course An Outline of Subjects Covered

About Midwest Permaculture's PDC Courses:

- The sequence in which each of the subject areas listed below are covered, and the specific content of each area, varies somewhat from course to course. 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 them with many examples and specific applications to anchor the teachings, but we do touch on everything at least once.
- Many of the early subject areas in this outline are covered in our webinar series, 'Foundations of Permaculture' which students' study before any on-site PDC course begins or are the first subjects they cover when taking the Online PDC course.
- For students who are new to permaculture, we recommend reading the *Earth Restorer's Guide to Permaculture*, by Rosemary Morrow, which is available online everywhere or through us.
- We feel that the richness of a quality and enjoyable 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 PDC Course content containing alive and relevant information along with a variety of exercises, discussions, short videos, hands-on projects and actual design experience.
 - 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 know and teach.

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
Causes and effects of patterns
Ethics and Principles as patterns
Systems Thinking
Pattern observation exercise

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, permitted and forced functions

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- 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
- Flow diagrams, options and decisions
- Incremental design and guilds
- Succession & evolution - Establishment and maintenance
- Cultivated ecology - Practical procedures of property design

Trees and their Energy Implications

- Importance of forests
- Temperature, wind, total precipitation, etc.
- Root, mineral and rain interactions
- Implications for design
- 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 and Roots

- Soil - its relationship to life elements, water and base rocks
- Soils 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
- Composting and humus creation
- Seed balls, 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 of 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

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Various Climate Factors

The humid tropics

- Climate types, tropical soils and earth-shaping
- House design and home garden
- 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, glasshouse growing
- Orchards, farm forestry, free range forage systems, the lawn
- Grasslands, rangelands, cold climates, wildfire

Gardening and Small-Scale Farming Ideas in Permaculture

Various Gardening Methods

- Biodynamic
- Biointensive
- Organic
- Square foot
- Raised Beds
- Plant Guilds & polycultures
- 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 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
 - Silvopasturing
 - Rotational Grazing
 - Insect and weed control

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The Built Environment and Alternative Energy

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

Aquaculture & Aquaponics

- The case for aquaculture and aquaponics
- Some history and cultural variations
- Exploring design options
- 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 invisibles structures – Who holds the power?
- What is at the heart of permanent cultures?
- What is at the heart of community?
- What is at the heart of permaculture design?
- 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
- Financial Permaculture - ethical investments
- The power of cooperation – Mondragon Cooperative in Spain
- Bioregional organizing
- Working in different cultures with sensitivity, offering real & effective aid

Design Exercise for the Course

Design Exercise: Instructor and student(s) decide on an appropriate design project that can be worked on either individually (for home study online students) or in small groups of 2-4 students during an in-person PDC course.

Students coordinate their efforts into a final design that includes the require parameters as clearly outlined in the course materials.

Closing

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

Course Videos

We use a variety of carefully selected short videos that we find to be powerful in content and actual usefulness. Students receive a link to all these videos for viewing later if desired. The links, if still active, 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.