



## Outline for the Permaculture Design Certification Course

The following is the outline for the 72-hour accredited Permaculture Design Certification (PDC) Course Curriculum. The format is derived from the textbook, "Permaculture: A Designers' Manual", by Bill Mollison. While this curriculum is meant to be an in-depth study of sustainable design, it can only serve as an introduction. Only real-world experience can develop true skills as a designer.

After completion of the course and required materials, the participant will receive a Certificate as a Permaculture Design Trainee. Only after several years of practical application can one call themselves a Permaculture Designer. This process is peer reviewed, and ensures a high standard for ecological design.

The course is participatory, and participation is mandatory. A 90% attendance to all lectures and hands-on practicums is required to gain a certificate. Participants will be expected to present a Design Project as part of a design team at the end of the course.

We will work hard, and play hard. The course topics can be depressing- and uplifting. The workload may seem to be a lot, yet your sense of accomplishment at the end will far outweigh this. You get out of it what you put into it... and don't forget to have fun!

### **Course Schedule:**

<b>Session Name</b>	<b>Time</b>	<b>Minutes</b>
I	9:00 - 10:30	90
Tea Break	10:30 - 11:00	30
II	11:00 - 12:30	90
Lunch	12:30 - 2:00	60
III	2:00 - 3:30	90
Tea Break	3:30 - 4:00	30
IV	4:00 - 5:30	90
Dinner	6:00-7:30	90
V	7:30-9:00	90

***\*Sessions I-IV are required. Session V is optional, though recommended.***

## **Day 1:**

### **Session I: Course Introduction**

- Participant Introductions- brief background and course expectations.
- Course administration, timetable, and scheduling.
- Consensus Based Codes of Conduct.
- Description of the Designer's Manual as textbook, and other reading resources.

### **Session II: Tour**

- Tour of site and facilities.

### **Activity- Collecting materials for a compost pile**

### **Session III: Ch.1 - Introduction and Ethics**

- What is and Why Permaculture Design?
- Description of challenges and solutions.
- History and philosophy of permaculture as a taught and applied design system.
- The Ethics.

### **Session IV: The Principles and Examples of PC in the Community**

- The Principles as described by Bill Mollison, David Holmgren, and others.
- Applications and examples of permaculture in landscape, society and community.
- The Bill of Human Rights.
- References.

### **Session V: Movie- The Global Gardener Series**

## **Day 2:**

### **Session I: Ch. 2- Concepts and Themes of Design**

- Tradition, culture, and belief systems.
- Life principles and natural laws stated.
- Methods of design, resources, yields, cycles, food webs, growth.
- Complexity, connections, order, and chaos, permitted and forced functions.
- Inter-active diversity, stability, fertility, sustainable productivity and profitability, time and yield.

### **Session II: Ch. 3- Methods of Design**

- Functional Design Development – Analysis, Observation and Deductions from nature
- Maps and using them.
- Sector Planning
- Slope, Key Points, orientation, aspect, data overlay
- Zones and their placement.
- Designing in zones 1, 2, 3, 4 and 5.
- Incremental design and guilds.
- Succession and evolution
- Establishment and maintenance.
- Designing for Disaster, fire, flood, drought, earthquake, landslip and tsunami.
- The Cultivated ecology and practical procedures of property design.
- Holistic Goal Setting.
- References.

### **Session III: Compost Practicum**

**Activity**– Building the compost pile with optional hot water heater.

### **Session IV: Element Analysis**

- Needs and resources list
- Intrinsic Characteristic Analysis
- Principle summary and summary of Design Methods.
- Client Briefs- working with and for other people.

### **Session V: Observation Exercise**

**Activity**– Sit quietly and observe the landscape noting elements and interactions.

## **Day 3:**

### **Sessions I and II: Ch.4- Pattern Understanding**

- Patterns in nature listed as form, the core model pattern, and properties of media.
- Universal patterns micro to macro, matrices and the strategies of compacting and complexing components.
- Pattern in design, edge effect, boundary conditions, harmonics and geometries of boundaries.
- Compatible and incompatible borders and components, timing and shaping events.
- Flow patterns, open and over landscape and objects, spirals, mnemonics, dimensions and potentials.
- Accretion and expulsion, branching pattern effects, conduits.
- Orders of magnitude in branches, scale of size.
- Orders, dimensions and classification of events, time and relativity model.
- Tessellation of events in the world we live, pattern application.
- Events, toroidal phenomena and the five senses.
- Memory and pattern recognition, companion planting and guilds.
- Traditional use of cultural patterns in society and in the present world society.
- Designer's checklist.
- Review Keypoints & questions

### **Session III: Property Design Exercise**

- Identification of Zones, Sectors, and microclimates.
- Flow Diagrams.
- Creating base maps and overlays.
- Tools of the trade.

### **Session IV: Natural Building**

- Selecting a site for your building.
- Materials and methods.
- Passive heating and cooling designs.
- Roof, wall, and floor materials.

### **Session V: Natural Building Presentation**

**Activity:** Identification of current/potential local use of patterning in relation to key survival information.

## **Day 4:**

### **Session I: Ch.5- Climatic Factors**

- The humid, temperate, cold, arid, continental climates, plus variations.
- Global weather patterns, the engines of atmosphere.
- Humid, arid and minor landscape profiles and orthographic affects.
- Latitude and altitude.
- Precipitation, radiation, and wind.
- References.
- Designer's checklist.

**Activity:** Defining pattern of local climate – seasonal effects & planting seasons (frost dates etc).

### **Session II: Ch.6 - Trees And Their Energy Transactions**

- Definition of forest and the biomass of a tree.
- Temperature, wind, total precipitation, snow and melt water effect.
- Root, mineral and rain interactions.
- Implications for design.
- The many types of forest.
- Establishing forest.
- Maintaining extending and enhancing forest.
- Establishing a nursery seed collection and in ground plant stock.
- References.
- Summary

### **Session III: Native Trees Practicum**

**Activity**– Observing Native trees on the site and their Botanical classifications.

### **Session IV: Forest and Forestry Types**

- Timber Species
- Agroforestry
- Sylvopasture
- Food Forests

### **Session V: Movie- Food Forest**

## **Day 5:**

### **Session I: Ch.7 - Water**

- Chemical & structural properties of water.
- Water in design.
- Regional interventions and the water cycle.
- Water harvesting earthworks for conservation and storage.
- Rain water harvesting systems.

### **Session II: Biological Water Filtration**

- Biological water filtration systems
- Irrigation and gravity designs.
- Water reduction in sewage systems.
- Designers check list.
- References.

### **Session III: Contour Practicum**

**Activity:** Building an A-Frame Level, surveying the site and digging a small swale

### **Session IV: Ch.8 - Soils**

- Soils direct link to health.
- Traditional methods of investigating soils.
- The pH, organic matter content and primary nutrients.
- Soil pores and crumb structure importance.
- Soil structure and its relationship to life elements, water and base rocks.
- Legumes as nitrogen fixers and the phosphate accumulating plants.
- Plants and biological elements as deficiency indicators and mineral accumulators.
- Difficult soils.
- Composting as an easily understood art form of humus creation.
- Seed pelleting, soil erosion and rehabilitation.
- Establishing a worm farm.
- Soils in house foundations.
- Designers check list, References.

**Activity:** testing pH of selected soils, Jar method to investigate soil makeup

### **Session V: Movie- Food Inc.**

### **Day 6:**

**Day Off- optional group outing to local sights**

### **Day 7:**

**Sessions I and II: Tour of local farms**

**Activity:** Field trip

**Sessions III and IV: Designing and Making Profits from Small Farms**

- Crop and livestock selection for your site
- Land forming and Zonation
- Market research
- CSA's and direct marketing
- Planting and harvesting schedules
- Harvesting protocols and food preservation
- Seed saving

**Session V: Movie- Power of Community**

### **Day 8:**

**Session I: Ch.9 - 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 a farmers level, dumpy level, A-frame and water levels.
- Technique of building a dam, swales, earth banks, terraces, roads and drains.
- Using the right machine for the job.

- References.

## **Session II: Keyline Design and Broad Acre Strategies**

- Identification of Key Points.
- Earthen Dam Construction.
- Keyline Plowing.
- Road design for water harvesting.
- Windbreak and paddock design.

## **Session III: Earthworks Practicum**

**Activity:** Sand play – designing water storage features and managing flow.

## **Session IV: Design Project Brief**

- Design exercise presented to students on a real piece of land with realistic design brief for the local area.
- Students are split up into working groups.
- Students pick a client/project and conduct an interview.
- Last session of the day is student group design and after hours in the evening.

## **Session V: Movie- Flow**

**Activity:** Group design work.

## **Day 9:**

### **Session I: Ch.10 - The Humid Tropics**

- Climate types, tropical soils and earth shaping.
- House design and home garden.
- Integrated land management, Elements of a village complex in the tropics.
- Evolving a polyculture, themes on a palm dominant polyculture.
- Pioneering, animal tractor systems and grassland and rangeland management.
- Humid tropical coast stabilisation and shelterbelts.
- Low islands and coral cay strategies.
- Designers check list.
- References.

### **Session II: Ch.12 - 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.
- Designers check list.
- References.

### **Session III: Ecological Sanitation Practicum**

**Activity:** Compost toilet construction, constructed wetlands, and simple grey water systems.

### **Session IV: Seed Saving and Plant Propagation**

- Basics of seed saving.
- Identification of desirable traits and provenances.
- Harvesting and Storage.
- Plant Propagation techniques.
- Nursery Design.

**Activity:** Identification and collection of seed on site.

## **Session V: Movie- Dirt**

**Activity:** Group design work.

### **Day 9:**

#### **Session I: Ch.11 - Dryland Strategies**

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

#### **Session II: Zone 1-3 Animal Systems**

- Backyard poultry
- Pigs, goats, sheep, and cattle
- Beekeeping
- Aqua- and vermi-ponics

#### **Session III: Animal Practicum**

**Activity:** Tending to the chickens/bees/worms/goats/etc.

#### **Session IV and V: Design Projects**

**Activity:** Group design work.

### **Day 10:**

#### **Session I: Ch.13 - Aquaculture**

- The case for aquaculture.
- History and cultural variations.
- Implementing an aquaculture design, species selection and yield.
- Aquaculture as part of design and food supply.
- Aquaculture plant and animal species.
- Farming invertebrates for fish food.
- Appropriate techniques, channel, canal and chinampa.
- Polyculture traditional and new.
- Designers check list.
- References.

#### **Session II: Urban Design Strategies**

- City repair
- Guerrilla gardening
- Seed bombs
- Rooftop gardens
- Metropolitan Buyer's Clubs

#### **Session III: Alternative Energy and Appropriate Technology Practicum**

- Rocket Stoves

- Biogas
- Solar
- Wind

**Activity:** Alternative Energy Practicum- solar hot water heater construction

**Session IV and V: Design Projects**

**Activity:** Group design work.

**Day 11:**

**Session I: Ch.14 - The Strategies of an Alternative Global Nation**

- Invisibles structures
- Alternative global nation.
- Right livelihood.
- Setting up a local permaculture group and working network.
- Community gardens, establishing city farms, urban strategies and land access.

**Session II: Alternative Economies**

- Lets, alternative money, bioregional organization, village development, ethical investment.
- Working in different cultures with sensitivity, effective aid.
- References and resources.

**Session III: Bioregional Organization**

- Transition Town Movement

**Session IV and V: Design Projects**

**Activity:** Group design work.

**Day 12:**

**ALL DAY- DESIGN PROJECTS**

**Evening: Talent Show!**

**Day 13:**

**Sessions I and II: Design Project Presentations**

**Session III: The Permaculture Global Nation**

- Diploma information.
- Permaculture academy.
- Certification and student intention affirmations.
- Feedback opportunity on course materials/teaching/activities
- Photographs and goodbyes.

**Session IV: Pack up and Departure**

- **Good luck to you in your design careers!**
- Thank you for your passion and inspiration!

