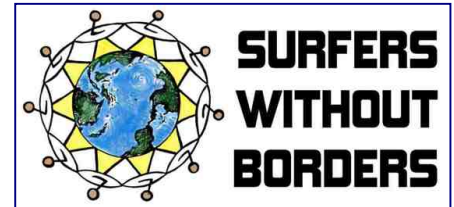


Outline for the Permaculture Design Certification Course

SolScape Eco-Retreat, Raglan Whaingaroa, NZ
March 5th-18th 2012



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, and is accredited by The Permaculture Research Institute of Australia.

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. You will be expected to present a Design Project as part of a group at the end of the course.

We will work hard, and we will play hard. At times the load may seem overwhelming, and the topics depressing. You get out of it what you put into it... and don't forget to have fun!

Course Schedule:

Session Name	Time	Minutes
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: Monday 5th

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 of SolScape

- 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: Tuesday 6th

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 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

Day 3: Wednesday 7th

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: Thursday 8th

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: NZ Native Trees Practicum

Activity– Observing NZ Native trees on the site.

Session IV: Forest and Forestry Types

- Timber Species
- Agroforestry
- Sylvopasture
- Food Forests

Session V: Movie- Food Forest

Day 5: Friday 9th

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,

Session II: Biological Water Filtration

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

Session III: Water Practicum

Activity: Visit the spring, mock water filter

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: Saturday 10th

Day Off- Maui's Dolphin Day

Day 7: Sunday 11th

Sessions I and II: Tour of local farms

Activity: Field trip Kaiwhenua, Rick and Liz's

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: Monday 12th

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. Building an A-frame level and levelling exercise.

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: Tuesday 13th

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: Wednesday 14th

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
- Aquaponics and vermi-ponics

Session III: Animal Practicum

Activity: Tending to the chickens.

Session IV and V: Design Projects

Activity: Group design work.

Day 10: Thursday 15th

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 in Ruapuke

Session IV and V: Design Projects

Activity: Group design work.

Day 11: Friday 16th

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: Saturday 17th

ALL DAY- DESIGN PROJECTS

Evening: Talent Show!

Day 13: Sunday 18th

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!