



72 Hour Permaculture Design Course Syllabus

Brief Outline

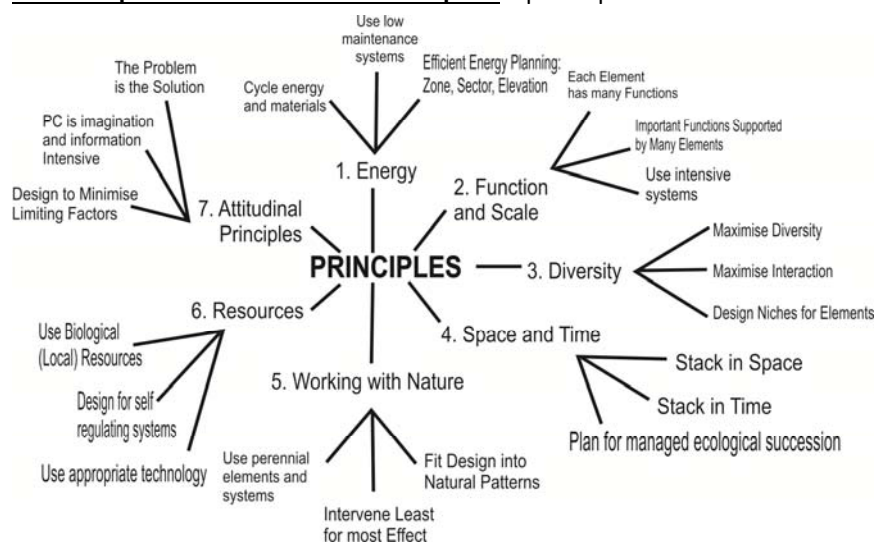
Alex McCausland (January 2013)

Introduction

This PDC outline has been developed over the course of 28 PDCs in which I have had a role to date: 2 as a participant, 19 as a host/administrator, 3 as a co-facilitator and 4 as a lead facilitator. I have integrated what I have learned from the various different teachers I have worked with over the course of 6 years since I took my first PDC with Richard Wade in Catalunya, Spain, including Rosemary Morrow and Dan Palmer, Tichafa Makovere, Rhamis Kent and Steve Cran. I also drew inspiration from the various approaches of UK based teachers who offer information in the Permaculture Teacher's Guide (Permaculture Association - Britain) [Joanne Tippet, Patrick Whitefield, Mike Feingold, Andy Goldring and Bryn Thomas].

The course format divides fairly neatly into two halves with the first week largely expounding the ethical and ecological basis of Permaculture, while the second week is built on the practical enactment of the design process, in the form of 2 design exercises, one individual and one cooperative. The first week further divides into 6 days, each of which follows a theme relating to the 7 branches of a tree of 21 Permaculture Principals, which have been collated from the works of different authors by Bryn Thomas.

Mind Map of 21 Permaculture Principals Super-imposed over this dendric branching pattern (mind map) of



principals, is the concentric-ring pattern of the zone system, with each day in the first week of the course broadly adhering to a zone-theme. When the radial and concentric patterns are combined we find ourselves moving along a spiral trajectory, from the inner to outer parts of the design, covering different principals, technical concepts and practical illustrations as we go. The end of the first week then sees us moving into the design process itself.

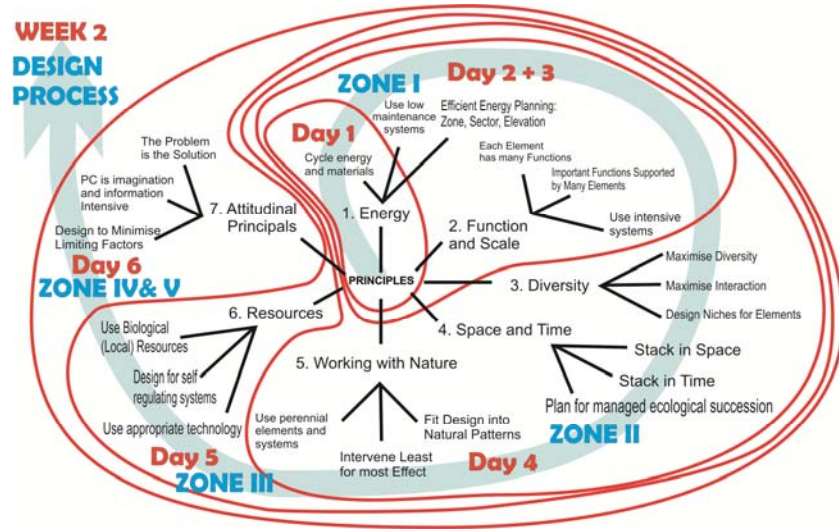
[Adapted from Permaculture Teacher's Guide (Permaculture Association - Britain) Ch 2.2 Bryn Thomas]



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The Course Pathway follows a spiral trajectory through the principals and zone-themes from inner to outer.

- Day 1: Overview of PC, Ethics, Energy and Cycling.
- Day 2: Zone, Sector, Elevation, Function and Scale. Zone I Garden design
- Day 3: Soils and Water
- Day 4: Diversity, Working with nature, Space and time, Zone II Food forests
- Day 5: Resources, Zone III Broad-scale and Animals Systems
- Day 6: Trees and Energy transactions; Zone IV: wind-breaks and harvest forest; Attitudinal principles; Zone V



I believe practical demonstration illustrates theoretical concepts much better than simply unloading large amounts of information onto students in the class-room setting, so I use a lot of practical exercises relating to the material covered, as well as videos: composting, raised beds, surveying and digging a small swale, grey water systems, planting a small food-forest and making seed balls with scarified seed all occur in the first week. I also give a mapping assignment to produce a base map on which mini design exercises can be done, such a chicken forage system and/or small food forest. The sequential connections between these exercises link them together (e.g. we survey and dig a swale on an area, we then map that area, plan a food forest planting on the swale, plant the tree seedlings, then plan a windbreak for that food forest, scarify seed of the windbreak species, pellet them and plant then down-wind of the swale.) making the course flow practically and conceptually as a narrative to be more engaging than just passing through the theoretical concepts themselves.

Week 2 of the course is more flexible in format, depending on the interests and priorities of the students and how well we have progressed with covering the material. Firstly they are given two observation exercises. One is non-specific, the other is situation analysis. Next we expound the design process, before they begin their individual design work. Immediately following this we cover climactic influences, since this will be relevant for individual design work, as students usually come from different parts of the world. The third day of the second week is spent on a field trip which gives them a chance to see some local practical Permaculture in action – and to experience what is important in developing a design in the local social environment. I also ask them to think about which of the sites they would like to do their main design exercise on, as a group. The following day the students finish and present their individual designs, and begin the group design, performing their survey in the afternoon. The last two days are fairly open, they can chose to focus on developing their group design work, or we can tie up any loose ends in terms of the information they want to get out of us before the end of the course. We cover aquaculture and we can do different practical activities with them if they are interested. Since it's their course, I like to leave it up to them to decide what they really want to get the most out of it before it ends.

Each day of the course I set recommended reading from one of 3 texts. See the PDC timetable below. During the first week I also show a video related to the daily theme of the course content each evening. During the second week the evenings are open for the students to work on their designs.



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Permaculture Design Course Timetable

Day	08:30 – 10:00	10:30 -12:00	13:30 – 15:00	15:30 – 17:00	Evening	Recommended Reading
Week 1	1 15/5	Welcome, Introductions, Expectations, House-keeping.	Permaculture Ethics A Tale of 2 Chickens	ENERGY: Cycling and Low Maintenance Systems	ACTIVITY: Making Compost	Video: Permaculture – the true way of life EUG 1.2 pp 9 – 13 IPC Ch 1.7 pp17-19
	2 16/5	Principals: Function and Scale Sector and Elevation	Zones	Zone 1: Garden Design	ACTIVITY: Raised beds and clay pot irrigation	Video: Holtzer's terraced agriculture EUG Ch 10 IPC pp9-16
	3 17/5	Soils: Components, theory and basic tests	Activity: A-frame construction and digging a swale	Water in Permaculture design	Activity: Setting up a grey water system	Video: Water Harvesting the PC way IPC p20-30, IPC Ch3, EUM pp6-7 DM 3.4 pp44-46
	4 18/5	Principals: Diversity Space and time working w. Nature	Video: How to establish a food forest (Geoff L)	Nursery Establishment and Propagation Techniques	ACTIVITY: Basic Mapping Exercise	Prepare Assignments DM Ch 2.4 pp16 – 18, IPC pp 16,17. IPC Ch 7.3 p149-55 EUG Ch20
	5 19/5	Activity: Planning and planting a food forest	Principals 3: RESOURCES	Integrating Animal Systems: Joel Salatin PolyFace Farm (video)	ACTIVITY: Designing a chicken forage system	Video: Global Gardner Dry-lands EUG Ch 5 EUG Ch 7
	6 20/5	Trees and their energy transactions Designing a wind-break	Activity: Preparing seed balls and seed scarification	Attitudinal Principals and Zone V in design	OBSERVATION as a guide to design	Video: Global Gardener Temperate IPC 4.2&5.5 or 4.3&5.6 or 4.4&5.7
SUN	Assignment:	Research on your	Observations			
Week 2	7 21/5	Situation Analysis	THE DESIGN PROCESS	Intro Small DE	Work on small design exercise	Work on SDE
	8 22/5	Temperate Permaculture	Tropical Permaculture	Dry-lands Permaculture	ACTIVITY: sustainable building	Work on SDE
	9 23/5	Field Trip	Field Trip	Field Trip	Field Trip	Work on SDE
	10 24/5	Work on small design exercise	Present Small Design Exercises	Introduce Main Design Exercise	Work on Main DE	Work on MDE
	11 27/5	Aquaculture	ACTIVITY: Wood saving Stoves	Activity: wood-fired water heater	Open for catch up or interests	Work on MDE
	12 28/5	Work on Main DE	Finalise Main DE	Presentation of designs	End of course feedback	PARTY!

References

- EUG = Earth User's Guide to Permaculture (*Rosemary Morrow*)
- DM = Permaculture Designer's Manual (*Bill Mollison*)
- IPC = Introduction to Permaculture (*Bill Mollison and Reny Mia Slay*)
- TG = Permaculture Teachers Guide (*Permaculture Association Britaion; Edited by Andy Goldring*)



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PDC Course Outline

DAY 1

DAY 1 SESSION 1: INTRODUCTIONS, EXPECTATIONS AND HOUSE-KEEPING

INTRODUCTIONS

EXPECTATIONS

ASSIGN COURSE ROLES

DAY 1 SESSION 2: INTRODUCTION TO PERMACULTURE

PERMACULTURE ETHICS

(20 min)

Animated talk and discussion

[RE TG pp 67, 192]

Define an Element: - Needs, Products & Functions.

Objective of PD Design: Provide needs, maximise functions of elements by emulating natural patterns

A TALE OF TWO CHICKENS

DAY 1 SESSION 3: Principals 1 – ENERGY

Principals 1a) USE CYCLES

LOW MAINTENANCE / SMALL INTENSIVE SYSTEMS

Principals 1b) LOW MAINTENANCE SYSTEMS

Principals 2c) USE SMALL INTENSIVE SYSTEMS

DAY 1 SESSION 4: ACTIVITY – Making Compost

- 1) Video (15 min) Making the heap (75min)

EVENING VIDEO: VIDEO: “PERMACULTURE, THE TRUE WAY OF LIFE” (Geoff Lawton)

DAY 2

DAY 2 SESSION 1: Principles

Principles 2: FUNCTION AND SCALE

Principles 2a) EACH ELEMENT PERFORMS MANY FUNCTIONS

Principles 2b) IMPORTANT FUNCTIONS SUPPORTED BY MANY ELEMENTS

INPUT OUT-PUT ANALYSIS

RELATIVE LOCATION

DAY 2 SESSION 2: ZONE, SECTOR, ELEVATION

Principles 1c) EFFICIENT ENERGY PLANNING

SECTOR AND ELEVATION

ZONES

DAY 2 SESSION 3: Zone 1 – Garden Design

- 1) **Elements**
- 2) **Situation:** sectors, structures and topography.
- 3) **Planning:** access, water source and distribution, deflecting harmful energies, harnessing useful ones.
- 4) **Typical lay-out**
- 5) **Techniques**
- 6) **Pest management:** Diversity, companion planting, compost teas, bio-fertilizer, bio-pesticides.
- 7) **Seed bank:** Seed saving and importance of non-hybrid seed.

DAY 2 SESSION 4: MAKING RAISED BEDS AND CLAY POT IRRIGATION

- 1) Video and some explanation
- 2) Making the bed

DAY 3

DAY 3 SESSION 1: SOILS – Components, Theory and Basic Tests

- 1) Soil tests: Jar test and infiltration test done on 3 selected spots
- 2) Talk with **HANDOUT (Appendix A)** 60min
 - o What is soil? Discuss... The conventional approach – mineral content/particle size
 - o Primary nutrients - N, P, K
 - o Legumes as nitrogen fixers and the phosphate accumulating plants.
 - o pH
 - o Organic Matter
 - o Soil structure and its relationship to oxygen and water
 - o The Soil Biota



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DAY 3 SESSION 2: ACTIVITY - Swale Construction

- 1) A-frame construction and demonstration
- 2) Marking a level swale
- 3) Digging out the swale

DAY 3 SESSION 3: Water in the Design

- 1) Piped water system
- 2) Run-off water in dams, ponds and swales.
 - o Yoeman's system

DAY 3 SESSION 4: ACTIVITY – Designing and Building a Grey Water System

- 1) explanation of different kinds of grey water treatment systems
- 2) Activity: Building a small grey water system

Evening Video - Geoff Lawton: Water Harvesting the Permaculture Way

READING ASSIGNMENT: The Watershed Wisdom of the Beaver

DAY 4

DAY 4 SESSION 1 – Principles

Principles 3: DIVERSITY

- 1) Interactive Talk – Concept of interactive diversity
- 2) Concept of Niche (Ref DM p26) Relate to: microclimate

Principles 4: SPACE AND TIME

- a) STACKING: Intensive systems, Diversity, Stability and Continuity of Yield
- b) USE OF EDGES
- c) USE NATURAL SUCCESSION (Ref: IPC p p22)

Principals 5: WORKING WITH NATURE

- a) USE NATURAL PATTERNS
- b) INTERVENE LEAST FOR THE MOST CHANGE
- c) PERENNIAL NO-DIG SYSTEMS

DAY 4 SESSION 2 – VIDEO: HOW TO ESTABLISH A FOOD FORREST (Geoff Lawton)

DAY 4 SESSION 3 – Nursery Establishment and Propagation Techniques

Talk and Practical Demonstration of Techniques

- o Propagation
- o Nursery Design and Establishment

DAY 4 SESSION 4 – Activity: Basic Mapping Assignment

- 1) Explanation and demonstration of basic mapping skills: pacing, scaling and triangulation.
- 2) Surveying, plotting of an area assigned on the site. The map to be used as basis for a design exercise later.

DAY 5

DAY 5 SESSION 1 – Exercise: Planning and Planting a Food Forest

DAY 5 SESSION 2 – Principles 6: RESOURCES

- a) Use Biological Resources
- b) Use Appropriate Technology
- c) Design for self regulating systems

VIDEO Back-Yard Food Production: Rabbits and Poultry

DAY 5 SESSION 3 – INTEGRATING ANIMAL SYSTEMS

- o Polyface Farm **VIDEO** (Joel Salatin) Examples (e.g. egg-mobile, piggerator compost, rabbits+hens etc.)

DAY 5 SESSION 4 – DESIGN ASSIGNMENT: Designing A Zone II Forage System

DAY 6

DAY 6 SESSION 1: Trees and Their Energy Transactions

Water and temperature effects

Wind and Woodland edge effects

Erosion control

EXERCISE: Designing a Wind Break

DAY 6 SESSION 2: ACTIVITY – Scarification and Making Seed Balls

Practical demonstration of the techniques:



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1. Selecting seeds
2. Scarifying if necessary
3. Grinding Clay/Compost mix and coating with sand/gypsum mix
4. Seed balls left to dry in the sun – can be planted in the afternoon or on another day.

DAY 6 SESSION 3: Attitudinal Principles, Zone V In the Design and Mid Course Feedback

Principles 7: ATTITUDINAL PRINCIPLES

- a) The problem holds its own solution – everything gardens
- b) PC is imagination and information intensive
- c) Design to minimise limiting factors

ZONE V IN THE DESIGN (ref EUG Ch 17)

DAY 6 SESSION 4: OBSERVATION AS A GUIDE to PC Design

- OBSERVATION**
1. Introductory talk/discussion based on DM 3.3
 2. Walking observation in pairs: collect 3 - 5 observations per groups from the site.
 3. Sit and discuss: make 3 – 5 speculations on each observation.
 4. Report to the class: Your group's most interesting outcome.

ASSIGNMENTS: Research your speculations over the weekend

MID COURSE FEEDBACK

DAY 7

DAY 7 SESSION 1: SITUATION ANALYSIS

- 1) Participants assigned a transect to survey
- 2) Meet back at the class room to collate the data

DAY 7 SESSION 2: The Design Process and Intro to the Small Design Exercise

THE DESIGN PROCESS: SADIM(ET) Survey, Assess, Design, Implement, (Evaluate, Tweak)

DAY 7 SESSION 3: Introduce the Small Design Exercise.

- o Perform their SURVEY on sheet of paper, to produce BEFORE map.

DAY 7 SESSION 4: Work on Small Design Exercise

- o Proceed to the ASSESSMENT and DESIGN phases to produce their AFTER map.

DAY 8

DAY 8 SESSION 1: TEMPERATE PERMACULTURE

Limiting factors, Home Design (Zone 0), Temperate Garden Design (Zone 1), Temperate Orchards

DAY 8 SESSION 2: TROPICAL PERMACULTURE

Limiting factors, Zone 0, Zone 1 – Garden, Zone II/III: Tropical Food Forest, Earth Shaping in Tropics

DAY 8 SESSION 3: DRY-LANDS PERMACULTURE

Types of dry-lands: Mediterranean, sub-tropical; Zone 0: The dry-land home; Zone 1: Garden, Zone 2, Zone 3-4

DAY 8 SESSION 4: ACTIVITY - Mud work for sustainable building

DAY 9

DAY 9 SESSION 1, 2, 3 and 4: FIELD TRIP to Permaculture in Konso Schools Project sites

DAY 10

DAY 10 SESSION 1: FINALISE SMALL DESIGN EXERCISE

DAY 10 SESSION 2: SMALL DESIGN EXERCISE PRESENTATIONS

DAY 10 SESSION 3: INTRODUCE MAIN DESIGN EXERCISE

DAY 10 SESSION 4: WORK ON MAIN DESIGN EXERCISE

DAY 11

DAY 11 SESSION 1: Aquaculture

DAY 11 SESSION 2: Designing and Building a Wood-Saving Stove

DAY 11 SESSION 2: Optional Practical Activity Session

DAY 11 SESSION 4: OPEN for catch up or requested interests

DAY 12

DAY 12 SESSION 1: WORK ON MAIN DESIGN EXERCISE

DAY 12 SESSION 2: FINALISE MAIN DESIGN EXERCISE

DAY 12 SESSION 3: PRESENTATION OF GROUP DESIGNS

DAY 12 SESSION 4: END OF COURSE FEED-BACK AND PRESENTATION OF CERTIFICATES