



Permaculture Design Certificate Course Outline by Tom Kendall

DAY 1 – Introduction

Housekeeping
Introduction: Who is Tom Kendall
Group Participant Introductions
What crises does the world face today
Permaculture Definitions and Philosophy
Definitions of Wealth and Sustainability
Permaculture Ethics and Philosophy
Permaculture in Landscape and Society
The principles of Permaculture
Integration vs Segregation
Bacteria based and fungal based soils

DAY 2 – Chapter 2 & 3: Concepts, themes and methods of design

Directives, laws and principles
Definition of Resources
Identifying Resources
5 types of Resources
Principle of disorder
Yield in linear vs Yield in cyclic systems
Cultural impediment to Yield
8 Methods of Design
Permaculture vs Most Present Day Design
Guilds and relationships between elements

DAY 3 – Chapter 4: Pattern understanding

Definition of patterns
Orders within patterns
Types of patterns
Working with patterns
Patterns on edge effects
Tribal use of patterns
Pattern creation in nature
Patterns of society
Torrordal Phenomena

DAY 4 – Chapter 5: Climatic factors

Climatic factors: factors that affect the climate
Climate types:
What determines a climate type
Precipitation types
Types of rainfall
Types of condensation
Solar radiation and its effects
Types of incoming radiation waves
Short wave and long wave radiation; light and heat
Heat transfer types
Managing frost
Wind: its measurement and diversion methods
Landscape effects
Process of approach
Classic landscape profile

DAY 5 – Chapter 6: Trees & their energy transactions

Biomass of a tree
Interaction of trees and their environment
Biomass above and below ground
Wind effects on trees
Temperature effects of trees
Trees and precipitation
Tree interaction with rain
Albedo
Forest classes
Legume trees and their function in forests

DAY 6 – Chapter 7: Water

World shaped by water

Heavy particles and acidity in water

Precipitation

Freshwater and where it is stored

The cycle of fresh water

Orographic and forest effects on precipitation

Effects of human interference on precipitation

Holding and slowing down water

Infiltration via earthworks: swales, dams, ponds and earth tanks

Soil storage and how to increase storage in damaged soils

Tank storages

Biological storage

Different dam types and where they fit in the landscape

How to reduce water used in sewage systems

Sewage ponds, septic systems and greywater systems

DAY 7 – Chapter 8: Soils

What is NPK and how did it become the most used fertiliser in the world

Accelerating succession and evolution through soil building

Carbon and Nitrogen in the soil

pH of soil, acidity and alkalinity

The Allbrecht System and the Mulders Chart

Working with nature (animals and plants) to adjust mineral levels in soil

Carbon sequestering

Sources of Nitrogen and effects of too much (direct) Nitrogen

Aeration vs Compaction of soil

Effects of fertiliser on plants

Soil health and classifications

Soil structure and composition

Humus and humus content of soils

Colloids and soil crumbs

Natural vs synthetic soil conditioners

Soil Biota or the "Soil Food Web"

Fungal based hot compost vs bacterial based worm compost and worm farms

Erosion and salt effects

Average soil

Top soil

Soil Life

Plant interaction

Soil patterns and the biocide cocktail

Feeding the soil

Decomposition Knowledge - Compost

Worm Farm

DAY 8 – Chapter 9: Earthworks & earth resources

Effects of Earthworks on immediate environment
Necessary and ethical earthworks
Importance of planning and surveying before doing any earthworks
Ground cover and planting out as part of earthworks
Slope measurement
Different tools that measure levels
Soil slump control
Drainage for earthworks
Earth constructs and its uses
Earth moving equipment: the right machine for the job
Earth resources: different elements in the earth and their uses
STUDENT DESIGN PROJECT

DAY 9 – Chapter 10: The humid tropics

What is a microclimate
The 3 types of climates in Humid Tropics
Tropical soils and their management
Plants, planting and sources of humus
Earth shaping suitable to Humid Tropics
House Design
Student Design Project

Chapter 12: Humid cool to cold climates

What are Humid cool – cold climates
Land form and Water conservation
Settlement and house design and planning
Wild fire considerations in planning buildings
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DAY 10 – Chapter 11: Dryland strategies

Different climates within the dry climate
Indicators for a dry climate
Water in dry climates
Precipitation in dry climates
Soil and temperature changes
Animals in the dry climate
Soil biota, minerals and organic substances
The desert house and desert settlements
Importance of shade in settlements
Water ways, water retention and water use in the desert
House garden in the desert / dry climate
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DAY 11 – Chapter 13: Aquaculture

Advantages of aquaculture
Elements needed for successful aquaculture
Cultural variations in aquaculture
Canal, channels and chinampas and quantities of fish
Maintaining water quality
Types of environments and what suits aquaculture
Acidity and Alkalinity and its effect on aquaculture
Temperature control
Salt content
Flow of water
Species evaluation
Diversity by configuration and structures
Staging of ponds
Ways to encourage insect population for feeding fish
Compressed air
Aquaculture
Gley
Chinampas
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DAY 12 – Chapter 14: Strategies of an alternative global nation

Why globalisation is not working
Debt and the restrictive practices of governments
Bioregional localisation
Legal entities for property and company protection
Shared property ownership
Errors in setting up a community
Local money trading system
Formal systems
Formal/Informal economy
Local Permaculture Groups
Student Design Projects, Presentations and Finish