PAITITI PDC Subject Overview

1. Introduction
- Introductions by participants – brief background and course expectations
  - Agreements
  - Co-learning & teaching model
  - Adult learning model
- Course administration, timetable and scheduling
- Using the Design Manual as a text-book for the course & other available references
  - Course resources handout
- Definition of permaculture, why do we need such a design system?
- History and philosophy of permaculture as a taught and applied design system
- The Ethics and The Principles
- Permaculture in landscape, society and community context
- The evidence of why we need to act, key global challenges
- The Bill of Human Rights
- Activities
  - River/Mountain introduction
  - Skill sharing plan for participants

2. Concepts & Themes in Design
- Tradition, culture and belief systems
- Life principles and natural laws stated
- The methods of design, resources, yields, cycles, food webs, growth
- Vegetarianism and dietary 'isms
- Complexity, connections, order and chaos, permitted and forced functions
- Inter-active diversity, stability, fertility, sustainable productivity and profitability, time and yield

3. Methods of Design
- Functional Design Development – Analysis, Observation and Deductions from nature
- Sector Planning
- Slope, Key Points, orientation, aspect, data overlay
- Zones and their placement
- Designing in zones 1, 2, 3, 4 and 5
- Random assembly of element lists and subsets cross referenced
- Flow diagrams, options and decisions,
- incremental design and guilds
- Succession, evolution, establishment and maintenance
- Principle summary and summary of design methods
- The Cultivated ecology, practical procedures of property design
- **Activity** – Building the compost pile

Ch4. Pattern Under-standing
- Patterns in nature listed as form, the core model pattern, 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
- **Video**: Fractals – The Colours of Infinity
  - The Universe
- **Activity**: Identification of current/potential local use of patterning in relation to key survival information

Ch5. 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
- **Activity**: Defining pattern of local climate – seasonal effects & planting seasons (frost dates etc)

Ch6. Trees & Their E 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
- **Activity**: Observation of trees in local setting

Ch7. Water
- Chemical & structural properties of water
- Regional interventions and the water cycle
- Water harvesting earthworks for conservation and storage
- Rain water harvesting, biological water cleaning systems, irrigation and gravity designs
- Water reduction in sewage systems
- Water in design
- **Activity**: Sand play – designing water storage features and managing flow

Ch8. 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
- Designing for catastrophe, fire, flood, drought, earthquake, landslip and tsunami
- **Activity**: testing pH of selected soils

Ch9. Earthworking & 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
- **Activity**: Jar method to investigate soil makeup

Ch10. The Humid Tropics
- Climate types, tropical soils and earthshaping
- 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 stabilisa-tion and shelterbelts
- Low islands and coral cay strategies

Ch11. 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
- **Activity**: House design exercise for various climates

Ch12. 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
- **Activity**: Group design work

Ch13. Aquaculture
- History & cultural variations
- Design considerations
- Species selection & yield
- Aquaculture within design & food supply
- Aquaculture plant & animal species
- Farming invertebrates for fish food
- Appropriate techniques, chennel, canal and chinampa

Ch14. Invisible Structures
- Right livelihood strategies
- Community gardens, establishing city farms, urban strategies & land access
- Regenerative enterprises & the 8 forms of capital
- Alternative money, bioregional organization, ethical investment
- Working with groups – sociocracy / dynamic governance
- Setting up a local group and working network
- Working in different cultures with sensitivity, effective aid

Design Exercise
- Client interview & clarifying a design brief
- Applying design steps & strategies
- Working within a design team & process
- Drawing up designs to be understandable
- Presenting options to a client

Additional Learning Modules
- Sacred Geometry
  - What is the significance of numbers and how do they influence fundamental design/patterns?
  - How have these been traditionally expressed
- Natural health
  - What are some of the underlying principles to health and vitality?
  - Key functions of our body and ways that we can support them
- Detox & Body Cleansing
  - What is detox, is it necessary?
  - What are accessible, safe and effective ways to detox our bodies

?What Next?
- Permaculture Global Nation
  - Diploma information
  - Permaculture academy
  - Certification and student intention affirmations
  - Feedback opportunity on course materials/ teaching/activities
  - Photographs and goodbyes