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Permaculture Design Certificate Course Outline

Day 1: Introduction and Overview

- Intros
- Evidence for the need to act
- History of Permaculture
- Definition of Permaculture
- Permaculture Ethics
- Permaculture around the Globe

Day 2: Concepts and Themes in Design

- Principles of Natural Systems
- Permaculture Design Principles
- Energy Cycles and Flow diagrams
- Edge Effects and Thinking
- Diversity and Stability
- Strategies which Increase Yield

Day 3: Methods of Design and Patterns in Nature

- Functional Analysis and interconnectedness of needs and products
- Observation and Site Assessment
- Zone, Sector, and Slope/Aspect Planning
- Incremental Design
- Fractal patterns and Scales of Order
- Core model and associated patterns

Day 4: Climate and Weather

- Global Climate systems and biomes
- Oceans and Atmosphere
- Hydrologic and Biogeochemical Cycles
- Precipitation, Humidity, and Brittleness
- Radiation
- Wind

Day 5: Water and Soil

- **Water**
    - Constants of water
    - Water in Landscape: Sources, Transports, Sinks
    - Catchment Planning

    - Fluvial Processes
    - Water recycling and bioremediation
- **Soil**
    - Physical Soil Properties
    - Chemical Soil Properties
    - Types of Soils
    - The living soil and ecology
    - Broadacre Soil Renovation and Management
    - Compost
    - Management of organic residues and excreta

Day 6: Trees and Cultivated Ecologies

- **Trees**
    - Tree types, architecture and functions
    - Tree biomass and nutrient cycling
    - Trees and their effects on rainfall, temperature, and wind
- **Cultivated Ecologies**
    - Plant communities and guilds
    - Ecotypes and plant analogues
    - Agroforestry, Silvopastoralism, and Alley Cropping
    - Indigenous Landscape Management systems
    - Major and Minor Landscape profiles

Day 7: Earthworks

- Landscape profiles (cont.)
- Ethics of earthworks and heavy machinery
- Types of Machinery
- Earthworks process: surveying, levels, resource and soil management
- Appropriate earthworks locations and types
- Follow up actions: seeding, planting, mulching

Day 8: Humid Tropics

- Tropical climate factors and soils
- The tropical house
- Tropical Polycultures
- Integrated Land Management
- Designing for Catastrophe

Day 9: Arid and Drylands

- Arid Climate factors and soils
- Site selection and stabilization
- Animals and disturbance in Arid/Brittle systems
- The drylands house and settlements

- Keyline design
- Fire

Day 10: Humid Cool to Cold Climates

- Cool to cold humid climate factors and soils
- The temperate house
- Temperate agroforestry and perennial forage systems
- Food processing and storage
- Snow, wind, and shelter
- Appropriate Technology and energy systems

Day 11: Aquaculture and Community and Village systems

- **Aquaculture**
    - Water and its properties as an ecosystem medium
    - Aquatic ecosystem types, niches, and polycultures
    - Ponds, Nutrient flows, Edges, and structures
    - Chinampas
    - Oceans and Coasts
- **Village Systems**
    - Bioregional planning
    - The City forest
    - Humans and the built environment pattern language
    - Neighborhood and ecovillage design
    - Mixed-use structures, cottage industries, and the village center
    - Transportation

Day 12: Invisible Structures

- Connecting to elders and bioregional traditional cultural practices
- Alternative economies
- Education and information access
- Transition Town and energy descent action planning
- Community groups and relocalization