

Permaculture Education PDC Syllabus and Session Plan Guide for Permaculture College Australia

Standard PDC Course 72-85 hour Programme

Developed by Robyn Francis, Permaculture Education 1985-89, under constant revision, last revised May 2011

This course is based on the original PDC course curriculum, 1986, published by the Permaculture Institute by Bill Mollison et al, and covers all the required subject areas constituting an internationally recognised Permaculture Design Course.

The Permaculture Education PDC Syllabus by Robyn Francis, has undergone many changes over the past two and a half decades and is subject to constant revision and updating with current science, sustainability practices and innovations, emerging social systems and Permaculture developments. These ongoing revisions maintain the integrity and essential knowledge areas of the original PDC curriculum while maintaining currency, accuracy, and adjustment to changing conditions in a rapidly changing world of climate chaos and resource peaks, which were not such major factors in the 1980's when the original curriculum was developed.

Permaculture Education in partnership with PCA continues to lead the way with Permaculture vocational training and professional development to train a new generation of effective and competent Permaculture practitioners, designers and educators.

Program Adjustments:

Depending on venue, nature of course participants and time restraints the standard program can be adjusted. Sessions suitable for adjustment are indicated by the following codes

- ***C *CC** indicates sequential sessions that can be **Condensed** and merged into a single session
- ***O** indicates **Optional** sessions that do not comprise a compulsory component of an internationally recognised PDC but are generally included the PE-PDC for the benefit of participants and to support their capacity to be more effective Permaculture practitioners
- Some listed sessions may presented as evening sessions.
- Evenings in a residential course can also be utilised for viewing additional relevant A/V presentations, documentary films, guest speakers and other extra curricula activities/workshops
- additional sessions may be allocated for field trips, practical projects and for working on the course design project

* a PDC 'tradition' is to hold a Talent or Non-talent show on the final evening of the course, special feast or party.

Session	Subject/ modules	Learning Outcomes	Teaching Resources	Examples of Activities
1	Intros, Course & Site orientation	Participants get to know each other and	<ul style="list-style-type: none"> • Site info 	Larger groups use activities (human

		are inducted to course program, protocols, resources and site facilities, first aid & emergency procedures	<ul style="list-style-type: none"> • Course notes • Course program 	thermometers, popcorn) for getting to know each other Groups 30+ create 'affinity groups' Short tour of learning environment and site facilities
1.1	Introduction to Permaculture Solutions for Sustainability Introduces context of current world crisis & sustainability challenges, climate change, peak oil and Ecological Footprints, then key Permaculture concepts, ethics and history, range of Permaculture applications globally and how these will be addressed through the course.	Familiarity with key global crisis terminology, concepts, footprints and Permaculture solutions, providing a context and overview of areas the course will be covering.	Data Projector PPT presentation	Presentation with Q&A
2 *O	Creative problem solving Problem solving process Experiential learning Learning style inventory Team work	Ability to apply problem-solving approaches and principles of Experiential Learning to specific situations and issues. Identify ways these approaches can apply to group and team work facilitation	<ul style="list-style-type: none"> • Learning Style Inventory • Butchers paper, felt pens, masking tape • White board • De Bono Thinking Hat props 	<ul style="list-style-type: none"> • Identify learning style • Discuss how this supports team work • Creative problem solving group activity & report back • Reflections on what has been learned • Parallel thinking (time permitting)
3 *C	Pattern learning & traditional cultures Explores how traditional knowledge has evolved as the 'folk science of survival', phenology, mnemonics, and its relevance to Permaculture design and developing sustainable systems	Appreciation of traditional knowledge and information methodologies, phenology, and how permaculture designers, practitioners and educators can use these tools and information	<ul style="list-style-type: none"> • White board • Post-its • Data projector • Powerpoint images • Examples and samples 	<ul style="list-style-type: none"> • Visualisation of role in pre-literate society and intergenerational information transfer • Affinity matrix to identify fields of traditional survival knowledge and information methodologies • Discuss how this relates to sustainability • Examples of phenology, sayings
4 *CC	Patterns in Nature Patterns of structure, form and flow in nature and how this applies to working and designing with natural systems, biomimicry	Increase awareness of key underlying patterns in nature and natural systems and ability to recognise common patterns found in nature	<ul style="list-style-type: none"> • Pattern cards • White board • Samples of plants & natural objects • Outdoor observation site or Powerpoint 	<ul style="list-style-type: none"> • Interactive presentation • Categorising classic patterns with cards and/or natural specimens collected outdoors • Observation walk
5	Permaculture Principles and ethics Brief history of Permaculture's	ability to explain permaculture principles and ways they can be applied in domestic, productive landscape,	White board Holmgren principles card set	Introductory talk followed by group activity, discussion & feedback using Principles cards – group process

	evolution and ethical basis Pc Principles: Mollison/ Holmgren	business and community contexts		adjusted to suit course numbers
6	Applications of Pc Principles & Ecological processes, Guiding principles, functions & yields Pc definition of work & pollution Key ecological terms & processes, Odum Succession	Deepen appreciation of Pc principles applied in a design process Develop vocabulary of ecological concepts, terms and processes Understand process and stages of succession	Whiteboard/butcher paper Outdoor observation site or powerpoint of succession stages and species Data projector, sound	Interactive presentation Brainstorms Field observation if possible Group work identifying typical local pioneers and species at various stages of succession Short video-trophic cascades
7	Landform & Reading the Landscape Types of landscapes Landform influences on climate, soil, water, vegetation, sun & wind patterns Reading topographic maps & landform features	Ability to read a topographic map, understand contours, interpret scale and identify key landform features: ridges, gullies, saddles, keypoints, aspects, gradient.	Data projector & whiteboard Samples of contour maps Model of contours or sandpit	Interactive presentation Class exercise plotting landform features on a contour map Recreate contour map in sand pit Field observation of landform features
8	Water in Landscape -1 Global distribution of water, water issues & functions in design Strategies to 'slow it, spread it & sink it' and soil infiltration techniques: soil reconditioning, Keyline®, swales, terraces and contour systems, water efficient irrigation.	Ability to evaluate and select suitable strategies for water management to reduce runoff and improve infiltration	Water Cards and suitable area for global water distribution activity White board/flip chart Data projector Powerpoint presentation	Freshwater global distribution activity Presentation Field observation if appropriate examples are available
9	Water in Landscape -2 Sources and quality of water Water quality, collection & storage Domestic roof water collection, conservation & recycling Farm dams: site criteria, construction Natural Sequence Farming approach to water course rehabilitation Legal restraints & water rights	Establish appropriate use of water according to water quality Calculate roof run off and rainwater catchments and identify opportunities for conservation and recycling Identify different types of dams and research relevant legislation	White board Data projector Suitable site for field observation	Identify local water sources & potential quality/use Calculate roof rainwater harvest Field trip or powerpoint presentation of Permaculture water systems or sandpit modelling of water strategies (e.g. swales, terraces, dam, road stormwater management)
9a	Djanbung Gardens Water Systems Case Study & Earthworks In-depth case study of planning and developing water systems for Djanbung Gardens property, Earthworks- considerations, preparation, machinery, examples of earthworks successes and failures	Consolidate knowledge from previous sessions, and importance of integrated water design, waste water treatment and steps in implementation Appreciation of different types of earthworks and selecting appropriate machinery	Data projector	Powerpoint presentation with Q&A

10	Living Soil Systems -1 Basics of soil: role in the environment, components & biota, soil food web Soil types & classifications Soil sampling, profile, testing & pH Key plant nutrients, function & sources	Understanding of soils as a complex physical, chemical and biological system Implications of pH and correction strategies Approaches to soil samples and testing soil properties	White bard Data projector Soil samples & pH kit Site for field observations	Interactive presentation Field observation of soils in different conditions (e.g., garden, forest, compacted) Collect and test pH of soil samples and material used in garden/production systems
11	Living Soil Systems -2 Role of soil biota and plants in regulating nutrient availability: SFW, Ethylene-oxygen cycle Dealing with problem soils Compost: methods & types, compost teas & biodynamic systems	Develop practical strategies and select relevant methodologies to restore and maintain a healthy soil environment and where to find appropriate information	White board Data projector Ethylene-oxygen cycle cards	Ethylene-oxygen cycle role play Group discussions on soil strategies
12 *O	Practical session on soils and compost How to build a rapid compost heap – materials, methodology and biological processes. Preparing and applying a compost tea brew, Determine soil amendments & constructing a minimal till mulched garden bed Practical risk assessment, health and safety considerations, PPE	Hands-on experience in composting and range of soil treatments Develop and implement organic soil improvement strategy	Suitable site for practical activities Materials & tools for rapid Berkley compost heap: manure. Straw/hay, garden forks, wheelbarrows, gloves Compost Tea equipment & materials: container, compost, molasses, air pump Mulching materials, soil amendments, garden forks etc	Construct a rapid Berkley compost heap Create a compost tea brew Recondition and mulch a garden bed Discuss use of different approaches for various production systems, small & large scale
13	Forests & Biospheric Functions Role of forests in global cycles Forests and wind energy Forests and rain/water cycle: impact, throughfall, impedance, infiltration, evapo-transpiration, condensation Forest guilds	Increase awareness of forest functions, their impact on local & regional climate factors, groundwater recharge, and importance in design for sustainability as an integrated system	White board Data projector	Suitable forest/tree system for field observation
14 *C	Climates & Biomes Global influences on climate systems, drivers & forcings, climate change. Hadley Cells, jet streams, Biome Matrix & climate classifications	Deepen understanding of complexity of climate systems Develop vocabulary of climate science and appreciation of climate change	Whiteboard Data projector Inflatable globe	Presentations, discussion & Q&A Simulation of earths orbit around sun as seasonal driver

15 *CC	Microclimate influencing factors and modification, sector plan Windbreak design	Ability to identify and modify microclimates for specific systems, design windbreaks and suntraps	White board Data projector Suitable site for field observations	Field observations of different microclimates Group activity: Microclimate caterpillar
16	Classical Landscapes and Climate Zones Features of humid landscapes Cold & Warm Temperate Humid climates, features and sustainable landuse strategies, traditional systems	Identify appropriate design, landuse and environmental management strategies suitable for different climate zones and how to research and apply appropriate information	Whiteboard Data projector Sandpit or butchers paper/pens	Interactive presentations Group discussions Create models/drawings of different classical landforms and appropriate landuse systems in the landscape & present to class for feedback
17	Tropical & Subtropical Climates Minor Landscapes: volcanic, high/low islands/wetlands			
18	Arid Zones and dryland strategies Typical arid landforms & features, water harvesting strategies, soil issues & nutrient management			
19	Patterns in Design Use of patterns to increase yields, maximise use of space, reduce maintenance, and recognise limits of application of specific pattern approaches	Explore options to apply patterns in design to improve specific situations or systems, and recognise their determining and limiting factors.	Whiteboard String & ruler	Interactive presentation Row pattern activity Discussion
20	Design process & methodology Overview of design process, tools and approaches to design, element analysis, zonation, sector analysis, slope & orientation, relative placement, observation, experiential & intuitive.	Learn to use a range of tools in design e.g. brainstorm, mind maps, flow charts, observation & experiential, models and overlays Develop ability to explore and evaluate options for relative placement in design considering orientation, sector and zonation factors	Whiteboard Butchers paper & pens Relative Placement Activity Kits	Interactive processes & short presentations, mind map an element analysis Small group discussion and design with Relative Placement kit Experiential outdoor observation activities – sharp/soft focus, upside down, worms eye, snapshot, zazen etc
21	Site Analysis Client information & brief Site analysis process and information gathering, types and sources of information, base plans Site visit, equipment, OHS	Identify information required before undertaking a design or works on a site, nature and sources of information and use of analytical tools and processes Considerations for site visits.	White board Butchers paper & pens Examples or powerpoint of resources, maps, aerial photos, overlays, models	Interactive presentation Class brainstorms Mapping info streams

	Tools for analysis: PMI, SWOT, mind map, overlays			
22	<p>Resource & Energy Conservation</p> <p>Resource consumption overview, ecological and carbon Footprints:</p> <p>Behavioural adjustments & strategies: domestic, production, consumption contexts</p> <p>Design strategies for built environment: orientation, passive solar principles, insulation and ventilation, adaption to tropical and temperate climates, materials & embodied energy, landscape microclimate support</p>	<p>Identify a range of strategies for behavioural changes and adjustments to save energy & resources, eliminate waste & reduce carbon emissions</p> <p>Ability to apply relevant design principles and strategies to energy efficient buildings including domestic and commercial applications. Use a solar chart to plot sun angles throughout the year</p>	<p>White board Butchers paper & pens Relevant reference books Data projector</p>	<p>Resource Hot potato activity: electricity, transport/fuel, water, waste and inputs</p> <p>Calculate solstice sun angles</p> <p>Presentation solar & natural houses</p>
23	<p>Appropriate Energy & Resource Conserving Technology</p> <p>Appropriate Technology Criteria</p> <p>Alternative technologies for key domestic functions: water, food storage, cooking, heating, human waste, waste water treatment, electricity generation, transport</p>	<p>Ability to assess technological needs and evaluate options available for a specific situation</p>	<p>White board Data projector Site suitable for field observation of range of appropriate technologies in use Relevant reference books</p>	<p>Interactive presentation Small group exercise making recommendation of appropriate technologies for a given situation to reduce GHG emissions and improve efficiency</p>
24	<p>Zone 1 Garden Design</p> <p>Principles of edible landscape design, functions, production and infrastructure needs of home garden environment</p>	<p>Ability to design a productive and functional home garden environment</p>	<p>White board Relevant reference books Butcher paper & pens</p>	<p>Interactive presentation Brainstorm on functions, production and infrastructure Group bubble plan for Zone 1 design</p>
25	<p>Zone 1 production systems</p> <p>Vegetable garden design & zonation, range of crops, companion planting, crop rotation, mulches & maximising small space production</p>	<p>Ability to research and design an intensive vegetable garden using Permaculture principles and strategies</p>	<p>White board Data projector Relevant reference books, charts Zone 1 garden for field observation</p>	<p>Interactive presentation Field walk observing garden production principles in practice</p>
26 *O	<p>Practical Gardening Session</p> <p>Planting seedlings, direct seeding & vegetative propagules Spacing and growing requirements of</p>	<p>Practical experience with techniques for establishing a range of planting materials in a Permaculture garden Determine relevant tools, risks, OHS and PPE</p>	<p>Seedlings, seeds, vegetative planting materials, compost, garden tools, gloves and relevant PPE Garden area for planting</p>	<p>Demonstration of techniques followed by hands-on planting of a range of plants and materials.</p>

	specific plants & intercropping strategies Techniques for plant establishment			
27	Food Forests & Orchards -1 Site factors/considerations, site preparation, design strategies, stacking & succession & how they vary for tropical and temperate systems. Different approaches for domestic and commercial systems.	How to adapt principles of forest ecology to the design of productive orchards and food forest systems	Whiteboard Data projector & sound system Farm for the Future DVD/internet access Suitable site for field observation Samples of tree foliage and fruits	Interactive presentation View & discuss section on temperate food forest of DVD Field observation of established pc orchard/food forest
28	Food Forests & Orchards -2 Integrating livestock, implementation and management strategies Bee keeping Role of bees as pollinators, 'know your animal', designing forage systems, basic hive structure and handling	Practical understanding of integrated system management, and designing guilds Practical appreciation of importance of bees and how to get started with bee keeping & designing bee-friendly environments	White board Butchers paper & pens Research resources (books, charts) Examples of bee keeping equipment, bee products	Interactive presentation Group research & design project on developing orchard guilds Visit beehives if on site.
29 *O	Main Crops Different considerations for domestic self-reliance and commercial crop production. Value-for-effort staple food crops Commercial production for local food supplies, value added processing Recent innovations in sustainable commercial production and marketing	Realistic appreciation of staple food production for home use and factors to consider for commercial crop production systems	Whiteboard Data projector Samples of unusual crops & local commercial products Power point presentation Samples of plants, crops, products	Interactive presentation
30	Animals in Permaculture -1 Permaculture approach to integrated animal systems, ecosystem services and issues arising from unsustainable animal production, breed conservation Poultry: Permaculture strategies for integrated poultry systems for chickens, ducks, turkeys & other	Deeper appreciation of the role of animals in human welfare, ecosystem services and how to create sustainable and humane animal systems Knowledge of design approaches for domestic and commercial poultry systems	Whiteboard Data projector Accessible example of permaculture poultry systems	Interactive presentation Field observation of established integrated poultry system/s
31	Animals in Permaculture -2 Mammals: rabbits, guinea pigs and natural pig raising	Knowledge of potential for small livestock for protein production and alternative approaches to pig raising systems	Whiteboard Data projector & sound system Useful references and URLs	Interactive presentation Joel Salatin Polyface Farm video/ or Alan Savoury video

	Sustainable grazing systems – rotation, cell-block, pasture, forage and fodder systems. Specific needs of different grazing animals: cattle, goats, sheep, horses, donkey, camel, llama etc Recent developments in commercial sustainable animal production	Better understanding of sustainable grazing systems, potential for carbon sequestration, importance of tree and shrub forage and how to access further information		
32	Freshwater Aquaculture Benefits of making natural water bodies productive, fresh water ecology and food chain, suitable species for farm dams, productive water plants	Have a deeper understanding of freshwater ecology, how to apply this to designing productive dams and ponds, and select suitable water plants	Data projector Whiteboard Suitable site to observe pond life, water plants and natural freshwater aquaculture	Interactive presentation Field observation of freshwater aquatic plants & production systems
33 *O	Integrated Weeds & Pest Management Roles of pests and weeds in ecology Management strategies using design, predator habitat, cultivation techniques, organic and biological controls	Ability to design an integrated system to reduce weed problems, attract natural pest predators and develop a strategic approach to control	Whiteboard Data projector Pest and predator card set Samples of common weeds Suitable site for field observation	Interactive presentation Pest and predator card activity Field observations of Permaculture control measures
34	Zone IV Broad-acre Crops and Tree Farming Integrated sustainable broad-acre systems, pasture cropping & rotation, mixed species agroforestry and agroecology systems, tree crops for timber, fuel and non-timber-products, bamboo production, coppicing.	Ability to research and design sustainable cropping and tree farming systems and select suitable approaches for a specific farm context.	Whiteboard Data projector & internet access Site for field observation Butchers paper & pens	Interactive presentation Native timber and tree product group research activity Field observation of tree or bamboo or coppice production system
35	Zone V Conservation Forests & Wildlife Introduce concepts of restoration ecology for bush regeneration, integrating bushfoods and cultural plants, creating wildlife habitat and corridors, use of succession and other establishment strategies	Ability to research local knowledge and design for wildlife and natural area conservation as an integrated ecosystem. Increased awareness of range and potential of local bushfoods & considerations for wild harvest	White board Data projector Butchers paper & pens Samples of wild harvest/bushfood products	Interactive presentation – brainstorm, Q&A, discussion
36	Field trip – rainforest walk Interpretive field trip to local natural	Improve observation skills in identifying plant communities and wildlife habitat	Access to natural conservation area or national park for field trip	Field trip

*O	forest area to observe ecosystem assemblies, plant communities and wildlife habitat		Transport (Bus or car pool) First Aid kit	
37	Design for Disaster Identify potential disasters – natural and human-caused Develop design and management strategies to reduce vulnerability, community disaster preparedness and response. Specific design strategies to reduce bushfire severity. Responses to impacts of climate change	Ability to assess risk from natural and human disaster and research information to design a system for risk minimisation	Whiteboard Reference resources Data projector & sound system IDEP DVDs	Interactive presentations with brainstorm, discussions IDEP community disaster educational video
38	Course Design Project Revision of design process & client brief. Explain requirements for course design project and introduce design project and relevant resources – NB nature of design project/s differ course to course. Site visit if possible.	A clear understanding of what is required for the course design project, outcomes, timeline and presentation, and what resources are available. Establish a design brief.	Base plan/s Tracing paper & basic drawing equipment Information resources relating to the site/design Internet access for research Access to site for site visit	Presentation of design project Interview of client to develop brief Site visit (where possible)
39	Bioregional Planning Introducing bioregions and strategies for re-localisation, transition, bioregional analysis using Eco-Social Matrix and in-output matrix, identifying sense of place and community.	Ability to identify, research and analyse information about a bioregion and opportunities for bioregional development	Whiteboard Data projector Butchers paper	Sense of place discussion Interactive presentation Bioregional ESM hot-potato, affinity matrix or other activity to identify natural, social and service catchments for a bioregion or neighbourhood
40	Legal Structures for Sustainability Role and function of legal structure, where they are required, range of options available for land ownership, enterprise & business, financial systems and community development work. Considerations for developing organisational constitutions	Improved understanding of why legal structures are used, range of legal entities and their applications and how to research legal requirements for an organisation or business	White board	Interactive presentation, Q&A both ways. Who belongs to an association
41	Community Economic Systems Role of Permaculture in early development of Ethical Investment movement Principles and strategies for	Realise the range of strategies available for strengthening a local economy and where to research and gather further information of working models locally and globally.	Whiteboard Samples of local currencies Information resources of ethical investment and community economic systems	Interactive presentation Consumer power small group discussion or LETs simulation game

	strengthening local economies, exchange systems, local currencies, local loan funds & enterprise support			
42 *O	Patterns of Landownership & Settlement Range of land ownership, title and tenure options, Council & planning instruments, zonation. Historic context of land subdivision laws and approaches to sustainable settlement patterns: rural & urban	Better understanding of legal framework and options for landownership, how to access and research planning information & when to consult planners and legal advisors Awareness of potential to input into local government planning processes	Whiteboard Data projector Examples of different approaches to land use, subdivision and forms of title/tenure, samples of planning documents.	Interactive presentation and case studies
43	Settlement Patterns: Urban and Rural Ecovillages and Community History and current models of rural landsharing communities, ecovillages cohousing projects, and revitalising existing rural and urban communities and towns Principles of sustainable human settlement design integrating ecological, social & economic strategies	Increased awareness of the range and diversity of existing sustainable urban and rural settlement forms and strategies for revitalising existing communities, town and villages	Whiteboard Data projector	Interactive presentation and case studies
44	Urban Strategies Urban ecology – issues and potential, retrofit strategies for urban environments: inner city, suburbs & industrial areas – ways cities can be more energy & resource efficient & potential for urban food production including rooftop gardens, community gardens & city farms	Recognise the potential for creating sustainable urban environments and develop strategies for urban food production.	Whiteboard Data projector Butcher paper & pens Reference books and related resources	Interactive presentation Case studies Urban wild design activity
45	CSA & Local Food Security Systems Community Supported Agriculture enterprises, farmers markets, local food production, processing and distribution systems, land access systems	Deepen awareness of issues and potential for local food production and distribution systems and recent developments and innovations	Whiteboard Data projector Examples of recent innovations and initiatives – guest speaker if available	Interactive presentation and case studies Brainstorming and creative problem solving exercises

<p>47</p> <p>*O</p>	<p>Transition Towns and Future Directions</p> <p>History and current transition town initiatives, key strategies and community engagement in inclusive approaches to preparing for a low-carbon society and peak oil.</p>	<p>Ability to see potential for transition initiatives in their own communities and how to access support and further information</p>	<p>Whiteboard Data projector & sound system Butchers paper Transition handbook & related information resources Transition video</p>	<p>Interactive presentation Visualisation activity Group discussions & feedback</p>
<p>48</p>	<p>Permaculture Organisation & Next Steps</p> <p>History of Permaculture organisation nationally & globally. Policies and role of PDC in Permaculture, national & international convergences and conferences, Permaculture networks, further education and Accredited Permaculture Training, requirements for professional Permaculture work and teaching.</p>	<p>Have a clear understanding of the PDC certificate as basic international industry standard, how to connect with Permaculture organisations and networks and options for further training and qualifications.</p>	<p>Whiteboard Data projector PDC course handbook</p>	<p>Presentation, Q&A</p>
<p>49</p>	<p>Design Presentations</p> <p>Group & individual presentations of course design project work and feedback on what has worked and what requires adjustment or reconsideration</p>	<p>Gain confidence in presenting and communicating a design including explaining rational underlying design decisions and answering questions from the group and/or client</p>	<p>White bard/easel for displaying group design wok Data projector</p>	<p>Group and individual design presentations and feedback</p>
<p>50</p>	<p>Course Feedback</p> <p>Verbal and written feedback on course program, structure, resources, trainers. What worked for them and recommendations for improving the course in future.</p>	<p>Participants reflect and share what they have learned through the course, how it met expectations and how they will use this ne knowledge and skills in the future.</p>	<p>Feedback forms Participant contact sheets</p>	<p>Quiet time to reflect and complete written feedback sheets Talking circle for verbal feedback Goodbye activity or ritual</p>