SYLLABUS: SEMESTER II

SEMESTER II

19LA02001: LANDSCAPE DESIGN-II

Course Code	Course	Hrs Per Week			Credits	Marks					Total
						CA			UE		
		T	W /L	S		Asg mt.	CT	Sub total	Jury	Writ ten	
19LA02001	Landscape Design II	0	0	10	10	150	0	150	150	0	300

Course Overview:

* Understanding and resolving complex issues at various scales and situations in an urban or rural fabric of residential / commercial/ institutional/ recreational/industrialland use.

Course Outcomes:

* Understanding of arriving at design solutions for larger sites and expressing the same using models

Course contents

* Site analysis, synthesis, suitability, landscape zoning and planning with landscape land uses for medium to large scale projects.
* Evolving an open space structure for the site and suggesting a suitable landscape treatment with respect to ecological, functional, cultural and visual context.
* Process for landscape project formulation and landscape design development based on synthesis
* Examines how humans occupy exterior space and combines this information with the principles of design to create garden scale models. Models are used as a medium for design expression.

References:

1. Simonds. J. O. (1961). Landscape Architecture, The Shaping of Man's Natural Environment.London: F.W. Dodge Cooperation.

2. Harris.C.W and Dine.N.T ; (1997) Time Saver Standards For Landscape Architecture, Mcgraw – Hill International Edition, Arch. Series

3. Starke .B and Simonds. J. O. (2013) Landscape Architecture: A Manual of Site Planning and Design. 5 editions. McGraw-Hill Professional

4. Baker.B.H (1987) A Dictionary of Landscape Architecture.Albu : University Of New MexicoPress

5. Reid G. W: (1987) Landscape Graphics: Watson-Guptill

6. Shaheer .M, Dua G.W and Pal.A .(2012) Landscape Architecture in India: a reader .India: La, Journal of Landscape Architecture

7. Reid G. W: (1993)From Concept to Form: In Landscape Design. John Wiley & Sons

8. All publications by Brian Hackett

SEMESTER II

19LA02002: LANDSCAPE ENGINEERING-II

Course Code	Course	Hrs Per Week			Credits	Marks					Total
						CA			UE		
		T	W /L	S		Asg mt.	CT	Sub total	Jury	Writ ten	
19LA02001	Landscape Engineering - II	0	0	5	5	100	0	100	100	0	200

COURSE OVERVIEW

* To develop an understanding of the working drawings and related documents required for the successful implementation of a project.

COURSE OUTCOMES

Upon completion of the course,

* Equip the students to do landscape working drawings and preparation of bill of quantities and estimation.

COURSE CONTENTS

- Site mobilization; Sequence of site activity, site protection measures, site implementation checklist.
- Design and detailing of hard landscapes: Roads, paving, barriers, edge conditions -functions, types, criteria for selection, design aspects, details.
- Outdoor lighting: Definition of technical terms, types of electrical lighting, types of fixtures, auxiliary fixtures. Principles of design for outdoor illumination, design and type of effects with electrical lighting. Safety precautions and drawbacks of electrical lighting, electrical accessories and their installation. Solar energy and lighting.
- Water features and Irrigation systems: Design of water features such as swimming pools, cascades, fountains etc., and their technical requirements. Consideration for design and detail. Water bodies and natural ponds. Design of irrigation system – landscape area types, Course Overviews and design, water needs and sources, application, methods of installation. Control systems, scheduling and maintenance.

- Outdoor furniture: Criteria for the selection of materials and specifications for the street furniture in various environments. Design of signage and simple outdoor structures like pavilions, gazebos etc. Use of waste materials in landscape, recycling and reuse of materials, their impact on landscape design.
- Construction details of Terrace gardens, roofscapes, vertical landscapes, garden ornaments
- Preparation of tender documents, Bill of quantities and specifications

References

1. Harris.C.W and Dine.N.T ; (1997) Time Saver Standards For Landscape Architecture, Mcgraw – Hill International Edition, Arch. Series
2. Storm.S and Kurt Nathan P.E;(1985) Site Engineering for Landscape Architects, AVI Publishing Company
3. Landphair H C; (1984) Landscape architecture construction. Elsevier
4. Asensio C.F ;(1996) Environmental Restoration Landscape .(Arco Colour Collection):RotoVision
5. Özyavuz.M (2013) ; Advances in Landscape Architecture.InTech
6. Weiler .S and Barth.K.S ;(2009) Green Roof Systems: A Guide to the Planning, Design and Construction of Landscapes over Structure :Wiley and Sons
7. David Sauter, Landscape Construction, Pelmer Thomson Learning, 2000.
8. Michael Little wood, Landscape Detailing Volume I -IV, Architectural Press, 1993.
9. Naoki Mukoda, Street furniture, Bijutsu shuppan – sha Ltd., 1990.

SEMESTER II

19LA02003: THEORY OF LANDSCAPE ARCHITECTURE- II

Course Code	Course	Hrs Per Week			Credits	Marks					Total
						CA			UE		
		T	W /L	S		Asg mt.	CT	Sub total	Jury	Writ ten	
19LA02003	Theory of Landscape Architecture- II	2	0	0	2	25	25	50	0	100	150

COURSE OVERVIEW

- To understand the paradigms in landscape architecture in the post industrial revolution era and to understand the multifaceted dimensions of landscape architecture such as ecology, environment behaviour and sustainability.
- To study contemporary landscape and the manifestation in the western and Indian context.

COURSE OUTCOMES

Upon completion of the course,

- Contemporary landscape design projects and its multi-faceted dimensions.

COURSE CONTENTS

Module I: Industrial Revolution and open space development

- Nineteenth Century Europe: The socio-cultural impact of industrialization and urbanization; its effect on public health legislation and the development of new landscape types, public parks and facilities for sports; Open space development in its urban design and planning context; Early industrial towns , Garden City movement (Letchworth, Welwyn) and the City Beautiful Movement
- USA: Further evolution of the public park as a major component of urban landscape. The work of, F. L. Olmsted, Lawrence Halprin and other pioneers. Park-Systems and suburban development centred on open space; Major park systems like Central Park ,Prospect Park, Emerald Necklace Park, Lovejoy Fountain Park etc

- Evolution of landscape architecture in the post industrial world: Influence of Andrew Jackson Dawning, Thomas Church, Geoffrey Jellicoe, Burle Marx etc;
- Post-war development in Europe: New Towns in England and the concept of Landscape Structure; Landscape Urbanism; Examples of open space development in new towns and urban renewal to illustrate the close conceptual relationship between town planning, urban design and landscape architecture (e.g. Haussmann's Paris, Lutyen's Delhi).

Module II- Contemporary Works

- The Modern Movement: changing concepts of space and the relationship of architecture and landscape; Philosophy and selected works of the modern masters;, Dereck Lovejoy, Frederick Gibbered , Dan Kiley, Garrett Eckbo, Fletcher Stele etc
- Contemporary works of landscape architects in the west ; Tropical landscape architects- Geoffrey Bawa (Lunuganga Estate& other important works) & other major landscape architects; The Indian Context: Understanding contemporary attitudes to open space design in India:. Trends in landscape design in India in the late 20th and the first decade of the 21st Century

Module III- New Realms of Landscape Architecture

- New concept in Landscape Architecture in late 20th century: Landscapes as environmental science, environmental art, land art, landscapes for recreation, landscapes for experimenting theories (Bernard Tschumi), urban landscapes (plazas and squares), regenerative landscapes (high line park) etc
- The influence of Ian McHarg on mid and late 20th Century landscape architecture; Environment and Ecology into landscape: cheonggyecheon stream restoration, works of Turenscape, and similar works; Multifunctional landscapes, Continuous Productive Urban Landscapes- urban agriculture for sustainable cities; Market gardens
- Cultural landscapes, their definition, identification, characteristics and polices; Landscape inventory and conservation of historical landscape, Landscapes- as historic preservation resource; Green pilgrimage network, Sacred landscapes. Historic Urban Landscapes.
- Artistic sensibility in Landscape Architecture, land art; new developments in urban landscape design through the works of Martha Schwartz , Charles Jencks, Nancy Holt etc

References

1. Jellicoe G. and Jellicoe S;(1995).The Landscape of Man: Shaping the Environment from

Prehistory to the Present Day: Thames and Hudson

2. McHarg, Ian L, (1969) Design with Nature, Garden City, N.Y: The Natural History Press,

3. Appleton.J;(1996),the experience of landscape: Wiley

4. Lyall S; (1992) Designing The New Landscape: Thames and Hudson

5. Brown J.(2000) The Modern Garden: Princeton Architectural Press

6. Tate A;(2001) Great City parks: Taylor & Francis

7. Siciliano P C; (2004) Landscape Interpretations: History, Techniques and Design Inspiration: Delmar Cengage Learning

8. Simon Swaffield; (2002) Theory in Landscape Architecture- A Reader; University of Pennsylvania Press

9. Tom Turner;(1996) City as Landscape- A post-modern view of Design and Planning; London :E and FN Spon.

10. Steven C. Bourassa; (1991)The Aesthetics of Landscape, London: Belhaven Press

11. Sylvia Crowe; (1958) Landscape of Power, London : The Architectural Press

SEMESTER II

19LA02004: PLANTS AND DESIGN

Course Code	Course	Hrs Per Week			Credits	Marks					Total
						CA			UE		
		T	W /L	S		Asg mt.	CT	Sub total	Jury	Writ ten	
19LA02004	Plants and Design	2	0	0	2	25	25	50	0	100	150

COURSEOVERVIEW

* To develop an understanding of the factors affecting planting design and what can be achieved through design with plants.
* To make the students understand the planting design professional/technical drawing, design placement aspects and specification standards of plant materials.

COURSE OUTCOMES

Upon completion of the course,

* Understanding the role planting and applications of planting design.
* Understanding of planting plan and estimation

COURSE CONTENTS

Module I: Introduction to Planting Design

- Introduction to planting design. Planting design through ages, Differentiation between trees, shrubs, ground cover and creepers; Understanding and plant selection criteria in landscape – functional, ecological, visual, cultural and temporal; Appreciation and understanding plant use and selection, ecologically sustainable plant use, criteria for planting design.
- Structural characteristics of plants. Spatial functions of plants, ground level planting, below knee height, knee to eye level, above eye level planting, tree planting; creating spaces with plants- Experience of spaces, use of planting to manipulate spatial experience, elements of Spatial composition – enclosure, dynamics and focus; Designing with canopy layers – 3 layers, 2 layers and single layer

- Functional considerations in planting design- Boundaries, screening, shade, shelter, barriers, functions of trees, shrubs 9hedges & shrubbery), groundcover and climbers; trees
- Visual composition in planting design- responses to plant material, A study on form, shape, colour, Texture, growth characteristics and suitability to different environments. Principles of visual composition in planting design; Dynamism in landscape design-planting for texture, leaf and flowers, plants for specific colour and season

Module II- Planting for ecology, environment and culture

- Planting design for ecology and habitat creation; Planting strategies and species for various types of habitats – wooded areas, riparian areas,forests, grassland and meadows, wetlands, coastal edges, waterside and aquatic planting, butterfly gardens
- Planting design for environmental improvement; slope retention, and plants for restoration of disturbed habitats like abandoned quarries and mines, soil conservation, microclimate improvement, windbreaks, shelter-belts
- Plants associated with culture specific to India and that of Kerala: sacred groves, religious values etc; Plants for specific uses: Edible, medicinal, water, hydroponic gardens, butterfly gardens, bird attracting etc

Module III- Planting for specific uses

- Planting design for highways, rural areas, urban areas, roadside planting in urban and rural areas, parking, industrial sites, corporate offices, hospitality & health sector etc.
- Planting for terraces, roofs, vertical gardens, air plants, improving air quality etc.; Xeriscaping benefits, principles, applications in design. Plants for sustainability, LEEDS and GRIHA ratings
- Growth rate of plants as criteria for plant choice for particular situations. Comparison of advantages and disadvantages of fast, medium and slow growing trees. The concept of nurse planting. Creating conditions for plant establishment, planting and transplanting trees and shrubs; Introduction to soft landscape working drawings, planting plans, specifications and estimation.

Note:

Periodical site visits to case studies etc is a must to get a feel of the course and its application in design.

REFERENCES:

1. 1. Nick Robinson, The Planting Design Hand book, Gower Pub., 1998

2. Brian Hackett, Planting Design, McGraw hill, 1979.

3. Bose. T. K. and Choudhary, Tropical Garden Plants in Colour, Horticulture and Allied Publishers, 1991.

4. Iyengar Gopalaswamy, Complete Gardening in India, Gopalaswamy Partha sarathy, 1991.

5. M.S. Randhawa, Flowering trees of India, National Book Trust , India, 1983.

SEMESTER II

19LA02005: LANDSCAPE ECOLOGY AND ECOSYSTEM ANALYSIS

Course Code	Course	Hrs Per Week			Credits	Marks					Total
						CA			UE		
		T	W /L	S		Asg mt.	CT	Sub total	Jury	Writ ten	
19LA02005	Landscape Ecology and Ecosystem Analysis	2	0	0	2	25	25	50	0	100	150

COURSE OVERVIEW

* To develop an understanding of the plant material and their role in ecology.
* Examines the ecology, growth characteristics, and landscape ecology

COURSE OUTCOMES

* Understanding the importance of ecology and the application of the same in ecologically sensitive areas

COURSE CONTENTS

Module I- Basics of Ecology

- Fundaments of Ecology: definition, scope; Components: biotic and abiotic; Definition of Environment and its components; the biosphere and its functioning; Ecological Processes- Energy flow-energy source, food chains, food webs, and trophic structure, ecological pyramids.
- Ecosystem ecology: Biogeochemical cycles; hydrologic cycle, nutrient cycles -carbon, nitrogen, sulphur, phosphorous, Bio-accumulation & Bio-magnification
- Population ecology, Carrying capacity, Limits to growth; Production ecology: Concepts of productivity - Primary and Secondary Productivity.
- Community ecology; Plant Associations-Mutualism, Parasitism, Commensalism, Amensalism; spatial structure, ecological niche and species diversity; Community Dynamics: Succession - Serial stages, Modification of physical environment, Climax formation, Analysis and Evaluation

Module II- Ecosystems and analysis

- Types of ecosystems, characteristics and prevalent vegetation; aquatic ecosystem and forest ecosystem in detail; Field ecology: Quadrat, line transect, community analysis; ecosystem functioning, and analysis
- Biomes of the world and adaptations of plants in different biomes; Phytogeographical Regions of India and Kerala; occurrence, environmental conditions and prevalent vegetation;
- Ecology of western Ghats, Vembanad lake, and Kol wetlands;

Module III- Landscape Ecology

- Introduction to landscape ecology; formation of various landforms; landforms and landscape process; pattern and structure of landscapes; concepts of patch, corridor and matrix
- Landscape dynamics and function, topological and chorological process within landscape , concept of landscape metrics, understanding dynamic interaction between landscape structure and function , ecological services of landscape.
- Ecological degradation and Ecological restoration:Reclamation and restoration of derelict landscapes, conservation and preservation of ecological fragile areas such as wetlands, creeks etc.; Selective case studies- Indian and International; conservation ordinances

References

1. Richard T.T.Forman & Michel Godron , Landscape Ecology, John Wiley & Sons;1986
2. Monica G. Turner & Robert H. Gardner, Landscape ecology in Theory and Practice
3. Odumn, Fundamentals of Ecology
4. Keith Reid and Co. , Man, nature and ecology
5. Kormondy , Concepts of ecology
6. Ecology of Plants- Modern Trends in Applied Terrestrial Ecology
7. Plant Ecology, Kluwer Academic Publishers
8. Landscape ecology, Kluwer Academic Publishers
9. Journal of tropical Ecology: Bimonthly, Cambridge

SEMESTER II

19LA02006: ELECTIVE (WORKSHOP)-1

Course Code	Course	Hrs Per Week			Credits	Marks					Total
						CA			UE		
		T	W /L	S		Asg mt.	CT	Sub total	Jury	Writ ten	
19LA02006	Elective(Workshop)- I 1. Climate Modification through landscape 2. Water Management 3. Advanced Horticultural Practices	1	3	0	2	50	0	50	50	0	100

Note: Students shall make a report after a one week visit to suitable areas like nurseries, forests, protected areas, etc. After a detailed study, a report shall be made which will be evaluated. The course- in charge shall describe the methodology to be undertaken for the workshop/case studies in the course-plan.

1. FOREST ECOLOGY AND MANAGEMENT

COURSE OVERVIEW

* Understanding of forest ecosystem, protected areas and its management

COURSE OUTCOMES

Upon completion of the course,

* Role of forest ecosystem, its components and management.
* Practical exposure to forest biodiversity

COURSE CONTENTS

Module I: Forest and forest environment

- Structure of forest ecosystem; forest microclimate; Major forest types of the world; forest types and forest cover of India with special reference to South India; tree cover of India.
- Ecophysiology of forest trees: Characteristic of tropical trees; shoot growth in forest trees; phenology of trees; forest seed dormancy and germination; regeneration ecology of forest trees.

Module II: Forest Ecosystem Function & Dynamics

- Primary productivity of forest ecosystems; methods of measurement; productivity patterns; litter production and decomposition; Nutrient cycling and nutrient conservation strategies
- Forest hydrology
- Measurement of forest productivity; Ecological Succession; Forest disturbances; Forest fragmentation
- Fauna and protection of wild life corridors, buffers etc

Module III: Forest ecosystem management

- History of forest management in India; joint forest management
- Forest fire; plantation forestry
- Application of remote sensing technique in forest ecology
- Deforestation and approaches to forestry conservation; Changing climate and their impact on forest and soil health.

REFERENCES:

1. Barnes, B V; Zak, D R; Denton, S R and Spurr, S R (1998). Forest ecology (4 th edition). John Wiley and Sons

2. Burton V. Barnes, Donald R. Zak, Shirley R. Denton, Stephen H. Spurr. 1998. Forest Ecology. John Wiley & Sons

3. Champion, H.G. and Seth, S.K. (1968). A revised survey of the forest types of India (Reprinted 2004). Natraj Publicaiton, Dehradun.

4. FSI (2009). State of forest report 2009. Forest Survey of India, Dehradun.

5. Kimmins, J.P. (2004). Forest ecology (2 nd edition). Pearson Education.

6. Ravindranath, N.H. (2004).Joint forest management in India. Oxford University Press.

2. WATER MANAGEMENT

COURSE OVERVIEW

* To understand the water efficient design for complex situations and special conditions through practical studies.

COURSE OUTCOMES

* In depth understanding of water management systems

COURSE CONTENTS

Module I: Waterfront development

- River front developments; sea front developments; treatment of catchment areas; edgings. Understanding floodplains; lake and catchment areas
- Streams in urban landscapes; natural drainage paths-treatments; canals; surface run-off calculations and design; edging. Urban and highway storm water pollution-types and treatments; storm water management; recharge; reuse

Module II: Storm Water and Rainwater management systems

- Water retention structures, water harvesting techniques and devices;
- Advanced irrigation control systems; smart water harvesting solutions.
- Erosion control systems

Module II: Decentralised waste water management systems

- Sewage water treatment and reuse in landscape, decentralised waste water treatment systems and its incorporation into landscape

REFERENCES

1) Viessman Warren(1985): Water Management-Technology and Institutions; Harper & Row.

2) Bansil P.C (2004): Water Management in India; Concept Publishing Company.

3) Vaidhyanathan(2004): Managing Water Scarcity; Lordson Publisher Pvt Ltd.

4) Walesh, Stuart G (1989): Urban surface water management; John Wiley New York.

5) 'Ecological Riverfront Design: Restoring Rivers, Connecting Communities, by Besty Otto, Kathleen McCormick , Michael Luccese.

3. ADVANCED HORTICULTURAL PRACTICES

COURSE OVERVIEW

* ObtainING an in-depth understanding of various horticultural types and management systems

COURSE OUTCOMES

* Hands on experience on specific horticultural types and management

COURSE CONTENTS

Module I: Horticulture for specified uses

- Horticultural practices for medicinal plants
- Horticultural practices for aromatic plants
- Kitchen gardens
- Orchards and vineyards
- Agro-forestry
- Protected horticulture

Module II- Horticultural management

- Soil fertility and nutrition management
- Nursery management for landscape projects
- Water management in plants

Module III: Manure and weed control

- Organic Farming and composting
- Weed management in ornamental plants

Module IV: Plant propagation methods

REFERENCES:

1. Raunkier.C., the Life forms of Plants and statistical plant geography, 1934.

2. Adams C R, Early M P, 2004. Principles of Horticulture. Elsevier, N. Delhi.

3. Barton West R, 1999. Practical Gardening in India. Discovery Pub. House, New Delhi.

4. Edmond J B, Senn T L, Andrews F S, Halfacre P G, 1975. Fundamentals of Horticulture (IV Edn). TMH, New Delhi.

5. Sadhu M K, 1996. Plant Propagation. New age International publishers, N. Delhi

SEMESTER II

19LA02007: LANDSCAPE APPRECIATION

Course Code	Course	Hrs Per Week			Credits	Marks					Total
						CA			UE		
		T	W /L	S		Asg mt.	CT	Sub total	Jury	Writ ten	
19LA02007	Landscape Appreciation	0	2	0	2	25	25	50	0	100	150

COURSE OVERVIEW

* To make the students critically analyze designed/ natural landscapes and in the process develop a deep understanding of landscapes, together with art of written and oral expression of thoughts.

COURSE OVERVIEW

Upon completion of the course,

* Critical analysis of landscapes and the art of oral and written expression of the same.

COURSE CONTENTS

- Learning the art of critically appreciating a creative work, orally, in writing with graphical support.
- Learning to differentiate between the natural organizations and re-organization systems and man's designed interventions.
- Study of works of pioneer landscape architects.
- Site visit to a particular designed landscape (preferably related with thesis topic) and a complete documentation of the same including observational studies.
- Writing a report on the studied landscape and presenting the same in front of an audience.