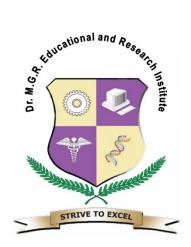
## FACULTY OF ARCHITECTURE

(CA / 5 / Academic - TN41 dt. 28.07.11)

## Dr. M.G.R

# EDUCATIONAL & RESEARCH INSTITUTE UNIVERSITY

(Declared U/s. 3 of UGC Act 1956)



# M.Arch Landscape Architecture SYLLABUS - 2021

**BOS MEETING DATE: 21.04.2021** 

Sponsored by,
Dr. M.G.R. Educational and Research Institute Trust,
Chennai – 600 095

## Dr. M.G.R EDUCATION & RESEARCH INSTITUTE UNIVERSITY

(Declared as Deemed -to- University, u/s. 3 of UGC Act 1956)

## **M.ARCH**

## Landscape Architecture-2021

### **SEMESTER - I**

Code No	COURSE TITLE	L	T	P/S	C		
THEORY							
MAR21L001	Geology & Soils	2	0	0	2		
MAR21L002	Hydrology and Water Management	2	0	0	2		
MAR21L003	Theory of Landscape Architecture-I	2	0	0	2		
MAR21L004	Landscape ecology and planning	2	0	0	2		
THEORY CUN	THEORY CUM PRACTICAL						
MAR21L005	Plant Systems and Horticultural practices	2	0	4	3		
MAR21L006	Landscape Construction-I	2	0	4	3		
STUDIO STUDIO							
MAR21LI01	Intensive Pre-requisite Study	0	0	2	1		
MAR21LL01	Landscape Architecture Studio-I Professional Communication -I	0	0	12	5		
	Total Credit	12	0	24	20		

#### **SEMESTER - II**

Code No	COURSE TITLE	L	T	P/S	C	
THEORY						
MAR21L007	Theory of Landscape Architecture-II	2	0	0	2	
MAR21L008	Landscape Resources-I	2	0	0	2	
MAR21L009	Sustainability & Energy Conservation in Landscape Architecture	2	0	0	2	
MAR21L010	Planting Design	3	0	0	3	
THEORY CUM PRACTICAL						
MAR21L011	Remote Sensing, Land Information Systems and GIS	2	0	4	3	
MAR16L012	Advanced Landscape Construction -II	2	0	4	3	
STUDIO						
MAR16LL02	Landscape Architecture Studio-II Professional Communication-II	0	0	12	6	
	Total Credit	13	0	20	21	

#### **SEMESTER - III**

Code No	COURSE TITLE	L	T	P/S	C
THEORY					
MAR21L013	Urban Landscape Design	2	0	0	2
	Elective - I	2	0	0	2
MAR21L014	Landscape Economics, Estimation and Landscape Management	3	0	0	3
MAR21L015	Research Methodologies In Architecture	2	0	0	2

STUDIO						
MAR21LL03	Dissertation		0	0	6	3
MAR21LL04	Landscape Architecture Studio-III Professional Communication-III		0	0	12	6
		Total Credit	8	0	18	18

#### **SEMESTER-IV**

Code No	COURSE TITLE	L	T	P/S	С
THEORY					
MAR21L016	Professional Practice of Landscape Architecture	2	0	0	2
	Elective - II		0	0	2
STUDIO	STUDIO STUDIO				
MAR21LL05	Landscape Architecture Studio-IV (Thesis) Professional Communication-IV	0	0	24	12
Total Credit		4	0	24	16

#### **ELECTIVES**

Code No	COURSE TITLE	L	T	P/S	C
THEORY					
MAR21LE01	Landscape Resources-II	2	0	0	2
MAR21LE02	Landscape Project Management and Management	2	0	0	2
MAR21LE03	Climate, Built Form & Landscape	2	0	0	2
MAR21LE04	Landscape Assessment and Landscape Conservation	2	0	0	2

#### **Total No of Credits: 75**

Minimum marks for passing in each subject – 50%

Weightage for Internal Exam – 50%

Weightage for University Exam - 50%

For Landscape Construction, STUDIO Project & Dissertation – Internal Assessment – 50%

- External Viva - 50%

<sup>\*</sup> Varies between 12 – 15 hrs durationand weeks.

<sup>\*\*</sup> Undeterminable Number of Hours, It may be 25 – 30 hrs duration/ week.

#### **SEMESTER - I**

MAR21L001 GEOLOGY & SOILS L T P C 2 0 0 2

Theory

UNIT I 6

Earth in space; origin and interior of the earth.

Early history of the Earth. The origin of life and meaning of fossils as keys to the past.

Earthquakes: causes and effects, seismic microzonation, seismic zones of India.

UNIT II 8

Minerals and Metals.

Rocks: Igneous, Sedimentary, Metamorphic.

Isostasy, plate tectonics, crustal deformation and mountain building.

UNIT III 8

Structural geology: dip, strike, folds, faults, joints, unconformities. Stratigraphy: principles, stratigraphy and geology of India.

UNIT IV 8

Application of geological information in the interpretation of landscapes on maps and in the field. The relationships between geology, soils and vegetation: Practical examples.

**TOTAL: 30 PERIODS** 

- 1. I.P. Abrol and V.V.Dhruva Narayana, Technologies for Wasteland Development, ICAR, New delhi, 1990.
- 2. Arthur.V.Strahler, Physical Geography, Second edition, John Wiley and sons Inc.,1951.

#### MAR21L002

#### HYDROLOGY AND WATER MANAGEMENT

LTPC 2002

Theory

#### UNIT I HYDROLOGICAL SYSTEMS

6

Hydrological cycles and sources of water. Characteristics and management of drainage basins. Types of flow channels, management of surface water. Ground water occurrence, aquifer recharge areas, infiltration, water intrusion areas, water bearing properties of geological formations, salt water intrusion, leaching etc.,

#### UNIT II WATER MANAGEMENT

8

Urban water cycle, sources of water, Ground water management, sources of ground water pollution and its control, use of saline brackish water for development.

Impounded traditional water architecture typologies in India.

Impacts of hydrology on environment and landscape development, rain water harvesting methods, water treatment techniques, sewage water treatment and reuse in landscape, waste water and sewage water disposal methods on different types of soils.

#### UNIT III RAIN WATER HARVESTING SYSTEM AND MANGEMENT

8

Introduction to Surface run off co-efficient and calculation for various regions in Indian subcontinent. Collection methods, harvesting techniques and management for horticulture and irrigational purpose in landscape design.

#### UNIT IV DE-CENTRALISED WASTE WATER TREATMENT SYSTEM and MANAGEMENT 8

Introduction to De-centralised waste water treatment System (DEWATS) ,linked treatment modules, general design principles, other features. Steps involved in setting up DEWATS for a project. Best integration of various DEWATS modules in landscape design.

Study of various plant material and its significance in planted gravel filter /root zone treatment beds. Usage of treated water for horticulture and irrigation needs

**TOTAL: 30 PERIODS** 

#### **REFERENCES:**

1. William D. Thornbury, Principles of Geomorphology, John Wiley and sons Inc.,1954.

MAR21L003 THEORY OF LANDSCAPE ARCHITECTURE - I

LTPC 2002

Theory

UNIT I 6

Dialogue on developing an analytical approach to the study of theory; developing an attitude towards critique and evaluation of choices for design decisions in varied contexts of space and time. Appreciation of scale in terms of garden, landscape and nature.

An outline of the chronology of development and evolution of landscape and garden design in relation to art, architecture and city planning from the earliest period to the present day: towards a comprehensive and inclusive vision of Landscape Architecture.

UNIT II 8

Changing perceptions of man's relationship with nature in various phases of history; responses and attitudes to nature and landscape resources as a function of this perception.

Environmental and Behavioral theories: Entropy, Prospect and Refuge, Defensible space etc. An introduction to social and cultural dimensions of landscape.

UNIT III 8

Ancient Indian traditions; siting of structures, complexes and cities; symbolic meanings and sacred value attributed to natural landscapes; traditional landscapes such as ghats, gardens, kunds, sacred groves etc. Landscape in myth and poetry.

The comparative analysis of examples of landscape separated in time and space: siting, relationship to surroundings, use of landscape elements, function, scale, symbolism, etc. Illustrative range of examples from various geographic locations and periods, highlighting aspects of Form, Space and Order.

UNIT IV 8

Development of landscape design and gardens till the early 19th century: Detailed study of selected examples from Eastern, Central and Western traditions;

Ancient Heritage : Mesopotamia, Egypt, Greece, Rome Western Civilization : Europe; Italy, France, and England

The middle-east : The Persian tradition and its far reaching influence

Eastern Civilisation : China and Japan

Ancient and medieval period in India; Mughal and Rajput Landscapes.

Influences and linkages across cultures and traditions, e.g Chinese tradition and the English Landscape style, influence of Persian traditions towards the West and East.

Colonial landscape development in India

**TOTAL: 30 PERIODS** 

- 1. Geoffrey and Susan Jellico, The landscape of Man, Thames & Hudson Publication, 1995
- 2. Robert Holden, New landscape Design, Lawrence king publishing, UK, 2003
- 3. Penelope Hill, Contemporary history of garden design, Birkhauser publishers, 2004
- 4. Elizabeth Barlow Rogers, Landscape Design A Cultural & Architectural History, Hary & Abram inc. publishers, 2001.
- 5. Phillip Pregill & Nancy Volkman, Landscapes in History, Van Nostrand publishers, 1993.
- 6. Jonas Lehrman, Earthly Paradise- Garden and courtyard in Islam, Thames and Hudson, 1980.
- 7. G.B.Tobey, A history of American Landscape architecture, American elsevier Publishing Co.,NY, 1973.
- 8. Pieluigi Nicholin, Francesco Repishti, Dictionary of today's landscape designers, Skira Editores P.A, 2003.

#### MAR21L004

#### LANDSCAPE ECOLOGY AND PLANNING

LTPC 2002

Theory

#### UNIT I ECOLOGY & ECOSYSTEM

7

Understanding the ecosystem and their functioning — components of ecosystem - natural process-Fundamentals of ecology - Ecological processes and dynamics— understanding ecological concepts like population growth, regulation, carrying capacity- colonization and succession - stability and resilience of ecosystem — ecosystem degradation.

#### UNIT II LANDSCAPE ECOLOGY

7

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.

#### UNIT III LANDSCAPE PLANNING & PROCESS

9

Relationship between man and nature – analytical aspect of landscape – the natural and cultural setting - evolution of landscape planning –concepts and projects of McHarg, Carl Steinite, Warren Manning, Augus Hills, Phil Lewis – Izank Zonneveld, Ervin Zube - landscape planning models – METLAND concept

The purpose of landscape planning – domain and context for landscape planning – principles of planning – procedure in landscape planning - problem defining, goal setting, inventory and analysis - basic of collecting and analyzing, projecting and presenting data in landscape planning, visual assessment and aesthetic dimension. – Suitability analysis – techniques for identifying preferences - Planning options – proposing landscape plan.

#### UNIT IV Case Studies: LANDSCAPE PLANNING

7

Reclamation and restoration of derelict landscapes - conservation and preservation of ecological fragile areas such as wetlands, creeks etc. - conservation ordinances. Case studies on landscape regional planning - policies and landscape.

#### **TOTAL: 30 PERIODS**

- 1. Richard T.T.Forman & Michel Godron, Landscape Ecology, John Wiley & Sons; 1986
- 2. Tom Turner, Landscape Planning and Environmental Impact Design, UCL Press, London, 1998.
- 3. Ervin H. Zube, Robert O Brush, Julios G.Y.Fabos, Landscape assessment values, perceptions, 1975.
- 4. G. Tyler Miller Jr., Living in the Environment: Principles, Connections, and Solutions, Brooks / Cole publishers co., 2004.
- 5. William M. Marsh, Landscape planning Environmental Application, John Wiley and sons Inc., 1997.

#### MAR21L005

#### PLANT SYSTEMS AND HORTICULTURAL PRACTICES

LTPC 2043

Theory +Practical

#### UNIT I CHARACTERISTICS OF PLANT MATERIALS

10

Classification of plant kingdom, rules of nomenclature and identification. Plant processes, water relation, mineral nutrition, photosynthesis and respiration. Stem, root and leaf relationship, growth and flowering, response to stimuli and modification. Plant multiplication and adaptation.

**Output:** *Plant identification Report* - Nomenclature, classification, identification of selected horticultural plants

#### UNIT II FLORISTIC REGIONS OF INDIA

10

Different floristic regions and forest types of India. Dominant, endemic, occasional, prevalent species in select types.

**Output:** Report and seminar- Compilation of the various aspects contributing to the characterization of the selected phyto-geographical region

#### UNIT III PLANT PROPAGATION

20

Nursery establishment and plant propagation. Establishment and maintenance of grass, shrubs and trees with respect to ground preparation, planting and transplanting, protection of plants during and after planting. Workshop to gain hands on experience on various planting techniques.

**Output:** Report and seminar- Site visit and hands on training on establishment of soft scape and maintenance. Various propagation techniques and plant protection.

#### UNIT IV HORTICULTURAL PRACTICE & MAINTENANCE

20

Plant nutrition and supplements. Fertilizers and Manures- types, methods of applications, advantages and disadvantages. Common plant pests, diseases and their control, insecticides and their application, weed control. Sustainable practices in pest management and weed control. Water budgeting. Leaf Area Index calculation for various plant species of India.

Maintenance methodology, maintenance economics and maintenance details for all soft landscape. Equipment for landscape maintenance.

**Output:** Report and Sheets- Report on plant growth and nutrition. Landscape development of a given area and Estimation and Budget for soft scape, lawn, shrubs and trees. LAI and other morphological traits for different species Water budgeting for plant growth and maintenance.

**TOTAL: 60 PERIODS** 

#### **REFERENCES:**

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

- 2. Venkateswaralu.V.A., Text book of Botany, Vol III, Guntur.
- 3. Lawrence.H.M., Taxonomy of vascular plants, Oxford, IBH, 1964.
- $4. \quad Rao. K. N. R. \ and \ Krishnamurthy. K. N., \ Angiosperms, S. Viswanathan \ Printers \ and \ publishers.$
- 5. G.S.Puri, Forest types of India.

## MAR21L006 LANDSCAPE CONSTRUCTION - I L T P C 2 0 4 3

Theory+Practical

#### UNIT I LANDSCAPE GRAPHICS

10

Symbols of representation of landscape elements in plan, elevation and section.

#### UNIT II DESIGN OF LANDFORMS

**15** 

Contours – representation of landforms and landform design, interpolation of contours, slope analysis, uses and function.

Grading – symbols and abbreviations, basic grading exercises, grading alignment of paths/roads, angle of repose and use of retaining walls.

#### UNIT III EARTHWORK FORMATION

**15** 

Earth works – principles of earth work, cut and fill calculations – borrow pit method, average end area method, average spot level method, precautions taken in cut and fill methods in relation to soil conditions, amount of precipitation etc.,

#### UNIT IV HARD LANDSCAPES & OUTDOOR FURNITURE

20

Design and detail of hard landscapes – Roads, paving, barriers, edge conditions – functions, types, criteria for selection, design aspects, details.

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.

Preparation of working drawings for hard landscaping and services.

#### **TOTAL: 60 PERIODS**

- 1. Strom Steven, Site engineering for landscape Architects, John wiley and sons Inc., 2004.
- 2. Charles.W.Harris & Nicholas T. Dines, Time saver Standards for Landscape Architecture, Mc. Graw Hill.
- 3. Jack E. Ingels, Landscaping Principles & Practices, Pelmer Publishers Inc., 1992
- 4. Grant W Reid, Landscape Graphics, Watson Guptill publication, New York, 1987.
- 5. David Sauter, Landscape Construction, Pelmer Thomson Learning, 2000.
- 6. Michael Little wood, Landscape Detailing Volume I -IV, Architectural Press, 1993.
- 7. Naoki Mukoda, Street furniture, Bijutsu shuppan sha Ltd., 1990.
- 8. Kirkwood, Niall. 1999. Constructing Detail, The Art of Landscape Detail, New York: John Wiley &Sons Inc.
- 9. The Art of Landscape Detail: Fundamentals, Practices and Case Studies, Kirkwood, Niall
- 10. Landscape Architectural Graphic Standards Student Ed., Hopper. Wiley.
- 11. Detailing for Landscape Architects, Ryan. Wiley.

#### MAR21LI01

#### **INTENSIVE PRE-REQUISITE STUDY**

LTPC 0021

Practical

Intensive pre-requisite field study an introductory course in landscape systems, the principles of design, and basic skills in two- and three-dimensional landscape design representation.

The course will include site visits and field trips.

Coursework may include studies of selected topics, drawing assignments, critical analysis and site reports.

**TOTAL: 15 PERIODS** 

MAR21LL01

# LANDSCAPE ARCHITECTURE STUDIO -I PROFESSIONAL COMMUNICATION - I

LT PC 0 0125

Studio

Readings in Landscape Architecture

Introductory exercises in Art, Architecture & Landscape

Urban and Rural Landscape appraisal

Landscape Analysis and Site Planning for medium sized sites (upto 2 Ha)

Landscape Design of small recreational or civic spaces.

Professional communication: Specific and focused exercises to develop language skills in verbal and written communication on subjects related to design, art and aesthetics and urban and rural environment.

#### **SEMESTER - II**

MAR21L007 THEORY OF LANDSCAPE ARCHITECTURE - II L T P C 2 0 0 2

Theory

UNIT I 6

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 and the Garden City movement.

UNIT II 8

USA: Further evolution of the public park as a major component of urban landscape. The work of F.L. Olmsted and other pioneers. Park-Systems and suburban development centered on open space. The Modern Movement: changing concepts of space and the relationship of architecture and landscape illustrated through studies of selected works of the modern masters.

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).

The influence of Ian McHarg on mid and late  $20_{th}$  Century landscape architecture. The work of selected twentieth century landscape architects, in the west as well as in India.

UNIT III 8

Contemporary concepts and concerns: "Green" Architecture and Energy-Saving site planning and Landscape Architecture;

Cultural landscapes, their definition, identification, characteristics and polices; Landscape inventory and conservation of historical landscape

Artistic sensibility in Landscape Architecture, land art; new developments in urban landscape design.

UNIT IV 8

The Indian Context: Understanding contemporary attitudes to open space design in India: ancient horticultural tradition, Mughal influence, British colonial influence. Trends in landscape design in India in the late  $20_{th}$  and the first decade of the  $21_{st}$  Century; the search for a theoretical basis. Development and evolution of the landscape profession in India.

TOTAL: 30 PERIODS

- 1. Garden Cullen, The concise Townscape, Architectural press, London.
- 2. Kevin Lynch, Image of City, Cambridge, MA, 1961.
- 3. Henry F. Arnold, Trees in Urban Design, Van Nostrand Reinhold Company.
- 4. Matthew carmona, Tim Heath, Public places Urban spaces, Architectural press, 2003.
- 5. Michael Hough, Cities and natural process, Routledge, 1995.
- 6. Donald Watson, Alan plattns, Roberta shibley, Time savers standards for urban design, McGraw hill, 2003.
- 7. Elements and total concept of urban landscape design, Graphic –sha publishing Co, 2001.
- 8. Tom turner, city as landscape, Eand FN spon, 1996.
- 9. Cliff Tandy, Handbook of urban Landscape, Architectural Press, 1970.
- 10. Penelope Hill, Contemporary history of garden design, Birkhauser publishers, 2004
- 11. Jonas Lehrman, Earthly Paradise- Garden and courtyard in Islam, Thames and Hudson, 1980.
- 12. G.B.Tobey, A history of American Landscape architecture, American elsevier Publishing Co.,NY, 1973.
- 13. Pieluigi Nicholin, Francesco Repishti, Dictionary of today's landscape designers, Skira Editores P.A, 2003.

**MAR21L008** 

#### LANDSCAPE RESOURCES - I

LTPC 2002

Theory

UNIT I 6

Settlements and Landscape: Siting and evolution of cities in relation to regional landscape resources.

The role of landform, water systems, climate and vegetation. Illustrative studies of cities in India and elsewhere.

Microclimate: Definition and characteristics. The role of landscape components in modifying microclimate with respect to temperature, humidity, precipitation, air corridors, heat islands, wind speed etc., in cities.

UNIT II 8

Evaluation of microclimate data.

Air pollution and Bio-meteorology; climatic comfort indices; heat transfer; meteorological instrumentation and plant injury; Types of air pollutants, sources and consequences. Air pollution and plants. Air pollution monitoring and quality criteria

UNIT III 8

Threats to urban landscape resources; urban environmental issues such as solid waste management, air quality, conservation of water resources and vegetation cover.

The urban forest: It's ecological social and environmental dimensions. Ways of studying urban vegetation. Its role in the urban landscape.

UNIT IV 8

Landscape heritage: Open space systems, cultural and sacred landscapes, their typology and role in the development of cities. Landscape resources specific to distinctive city types: for example: religious centers, historic cities, coastal or port cities, hill station etc.

City development Plans, Zonal Plans and structure plan. Development controls and their role in the conservation and creation of urban landscape.

**TOTAL 30 PERIODS** 

- 1. Robert Brown and Jenny J Gillespie, Micro climatic landscape design creating thermal comfort and energy efficiency, John Wiley, N.Y, 1995.
- 2. Anne Simon Moeffeet & Marie Schiller, Landscape design that saves energy, William Marison & Co. N.Y.
- 3. George Perkins Marsh, Man and Nature.
- 4. Bansal N.K. Minke.G, Climatic zones and rural housing in India, KFA, Julich, Federal republic of germany, 1988.
- 5. Baruch Givoni, Passive and low energy cooling of Building, Van Nostrand reinhold, Newyork, 1994.

#### MAR21L009

## SUSTAINABILITY AND ENERGY CONSERVATION IN LANDSCAPE ARCHITECTURE

LTPC 2002

Theory

#### UNIT I INTRODUCTION TO SUSTAINABILITY

7

Need and concept of sustainability, Brundtland report, World Commission on environment and development, sustainable development, sustainable growth, sustainable economy and sustainable use. Visions of sustainability. Source and ethics of sustainability.

#### UNIT II SUSTAINABLE SITE AND SUSTAINABLE LANDSCAPE

**10** 

Sustainable site – LEEDS, BREEM, rating erosion and sedimentation control, site selection, urban development, landscape and exterior design etc. Ecology and sustainability.

Sustainable landscape management, Sustainable planning and city form. Sustainable urban landscape, landscape sustainability at the national and regional level.

#### UNIT III INTRODUCTION TO ENERGY CONSERVATION IN LANDSCAPE

6

Energy conservation and sustainability, principles of energy systems, energy and global environment, scope for energy conservation in landscape. Leaf area Index and its importance xeriscape techniques.

#### UNIT IV ENERGY CONSERVATION METHODS IN LANDSCAPE ARCHITECTURE

7

Various methods of energy conservation in landscape architecture, energy conservation techniques in various climates- hot and humid, hot dry, etc. Energy efficient site planning and landscape development. Energy efficient planting design. Case studies.

TOTAL: 30 PERIODS

#### **REFERENCES:**

- 1. John.F.Benson and Maggie.H.Roe, Landscape and sustainability, John wiley Publication, Newyork, 2000.
- 2. O.R.Gray, Landscape Planning for energy conservation.
- 3. Anne simon Moffat and marc schiler, Landscape design that saves energy, William monow and co.,Inc., Newyork, 1981.
- 4. Publications of Centre for science and environments, New delhi and TERI.
- 5. Grady Clay, Water and the landscape, McGraw hill book company, Newyork.
- 6. Sustainable Landscape Management, Cooke. Wiley.

#### Websites:

www.greenbuilder.com/sourcebook/landscapeenergy.html www.wspinners.com/contex/newsletter/gmgroup/landscaping.html

## MAR21L010 PLANTING DESIGN

LTPC 3 00 3

Theory

#### UNIT I INTRODUCTION TO PLANTING DESIGN

10

Introduction to planting design. Plants as living materials, landscape architect's view of plants. Plants as structural, functional and decorative elements. Structural characteristics of plants. Spatial functions of plants, ground level planting, below knee height, knee to eye level, above eye level planting, tree planting.

#### UNIT II CREATING SPACES WITH PLANTS

10

Experience of spaces, use of planting to manipulate spatial experience, elements of spatial composition – enclosure, dynamics and focus. Plant associations. Plant communities, Designing with canopy layers – 3 layers, 2 layers and single layer. Plants as a part of integral habitats.

#### UNIT III VISUAL COMPOSITION IN PLANTING DESIGN

10

Subjective and objective responses to plant material. A study on form, shape, colour, texture, growth characteristics and suitability to different environments. Principles of visual composition-harmony and contrast, Balance, Emphasis, Sequence, Scale, Unity and variety in planting design.

#### UNIT IV PLANTING DESIGN FOR HABITAT CREATION & APPLICATIONS

15

Planting strategies and species for various types of habitats – wooded areas, grassland and meadows, wetlands, coastal edges, waterside and aquatic planting, slope retention, and plants for restoration of disturbed habitats.

Study of local plant materials, their botanical, common and regional names, growth characteristics and application in design. Visit to nurseries. Soft landscape working drawings, planting plans, specifications and estimation for various scale of projects.

**TOTAL: 45 PERIODS** 

- 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.
- 6. Design with nature, By Ian McHang.

MAR21L 011 REMOTE SENSING, LAND INFORMATION SYSTEMS AND GIS L T P C 2 0 4 3

Theory +Practical

UNIT I 10

Remote Sensing, Land Information System & GIS

Concept and Foundation of Remote Sensing

Elements of Photographic System

Types of Aerial Photographs:

Vertical Photographs,, Oblique Photographs, Satellite Imagery

UNIT II 10

Introduction to Air Photo Interpretation

Photogrammetry for Map Making

Introduction / Definition

Geometric Elements of a Vertical Photograph

Relief Displacement

**Ground Control for Aerial Photography** 

**Digital Image Processing** 

UNIT III 20

#### **Applications**

Geologic & Soil mapping

Land-use / land cover Mapping a) Land use Classification

**Agriculture Applications** 

**Forestry Applications** 

Water resource Applications:

a) Water Pollution Detection b) Flood Damage Estimation

**Urban & Regional Planning Applications** 

Wetland mapping

#### **Geographical Information Systems**

Definition

Composition of Geographical Information System

Computer Hardware Module

GIS Software Module

Data Input, Data Storage, Data Output

**Database Structures** 

UNIT IV 20

#### Presentations / Workshop

**Application of GIS & Remote Sensing** 

Automated Mapping / Facility Management. (AM/FM)

3-D GIS Digital Elevation Model & Digital Terrain Model

Digital Image Processing and Editing; Error Detection and Correction

Geo Spatial Analysis: Turning Data into Meaningful information.

Comparison of Vector & Raster Methods

Internal G.I.S.

**Network Analysis** 

Open GIS

**TOTAL: 60 PERIODS** 

- 1. Brail K.R (1990) Integrating GIS into Urban Regional Planning, Alternative approaches for developing countries, regional development Dialogue, Vol.11, No.3 UNCRD, Japan, 1990.
- 2. Karen C.Hanna, GIS for Landscape Architects, ESRI press, 1999.
- 3. Andy Mitchell, GIS Analysis Volume 1. Geographic patterns and Relationships, ESRI Press 2005.
- 4. David Maquire and Michael Batty (Editors) GIS, Spatial Analysis and Modeling, ESRI Press, 2005.
- 5. Cynthia A. Brewer, Designing Better Maps: A Guide for GIS Users, ESRI Press

#### MAR21L 012

#### **ADVANCED LANDSCAPE CONSTRUCTION - II**

LTPC 2043

**Practical** 

#### UNIT I OUTDOOR LIGHTING

10

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.

#### UNIT II PLAY AREA AND TERRACE LANDSCAPING

**15** 

Design of play areas -Totlots to play grounds. Design and detail of play equipments.

Considerations, design and detail for terrace landscaping, concept of green roof - intensive and extensive.

#### UNIT III WATER FEATURES

25

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, objectives and design, water needs and sources, application, methods of installation. Control systems, scheduling and maintenance.

#### UNIT IV STORM WATER MANGEMENT & WATER RESOURCES PLANNING

20

Drainage – surface drainage, calculation of surface run off, design of surface and storm water drainage, design of swales and gutters.

Water shed and their characteristics, urban storm water drainage systems, protection of natural water bodies, water retention structures, water harvesting techniques and devices.

TOTAL: 60 PERIODS

- 1. David Sauter, Landscape Construction, Pelmer Thomson Learning, 2000.
- 2. Michael Little wood, Landscape Detailing Volume I-IV, Architectural Press, 1993.
- 3. Roger Narboni, Lighting the Landscapes- Art Design technologies, Birkhauser, Switzerland, 2004.
- 4. Halpeth, T.Senthilkumar, G.Harikumar, Light Right, TERI, New Delhi, 2004.
- 5. Charles.W.Harris & Nicholas T. Dines, Time saver Standards for Landscape Architecture, Mc. Graw Hill.

MAR16LL02

# LANDSCAPE ARCHITECTURE STUDIO - II PROFESSIONAL COMMUNICATION - II

LTP C 0 0 12 6

Studio

Exercise related to the application of ecological principles in a range of situations and directed towards understanding and proposing design possibilities in:

**Urban Open Space systems** 

Rural Landscape

Heritage and Cultural Landscape

Professional Communication II: Advanced language skills in relation to technical writing and professional communications with agencies associate with planning and design, for example: Planning authorities, Statutory bodies, Clients, Contractors, other professionals.

#### **SEMESTER - III**

# MAR21L013 URBAN LANDSCAPE DESIGN L T P C 2 0 0 2

Theory

#### UNIT I INTRODUCTION

5

City and pattern – hierarchy of streets and squares – spatial organization and land use – road net works and basic services. Open spaces with in urban environment.

#### UNIT II URBAN SPACES

8

Cultural, social and aesthetic value of urban spaces and its perception, Image ability, Townscape elements. Urban space enhancement. Landscape Urbanism.

#### UNIT III OPEN SPACE SYSTEM & ELEMENTS IN URBAN LANDSCAPE

9

Open space development in urban design context. Evolution of public park as a major component of urban landscape. Open space development in new towns. Park systems, water fronts. Green infrastructure. Urban ecology, urban water sheds.

Design of public parks, roads, green ways, parkways, promenade and plaza. Public art.

Plant selection criteria, furnishings and lighting of public space, maintenance and management of public spaces and parks,

#### UNIT IV CASE STUDIES

8

Contemporary urban landscape issues. Case studies-Study, understanding and analysis of known examples at the national and international levels.

**TOTAL: 30 PERIODS** 

- 1. Garden Cullen, The concise Townscape, Architectural press, London.
- 2. Kevin Lynch, Image of City, Cambridge, MA, 1961.
- 3. Henry F. Arnold, Trees in Urban Design, Van Nostrand Reinhold Company.
- 4. Matthew carmona, Tim Heath, Public places Urban spaces, Architectural press, 2003.
- 5. Michael Hough, Cities and natural process, Routledge, 1995.
- 6. Donald Watson, Alan plattns, Roberta shibley, Time savers standards for urban design, McGraw hill. 2003.
- 7. Elements and total concept of urban landscape design, Graphic –sha publishing Co, 2001.
- 8. Tom turner, city as landscape, Eand FN spon, 1996.
- 9. Cliff Tandy, Handbook of urban Landscape, Architectural Pres

#### MAR21L014 LANDSCAPE ECONOMICS, ESTIMATION AND LANDSCAPE MANAGEMENT

LTPC 3003

Theory

UNIT I 15

Economics: Cost and benefits related to open space development; Tangible costs of development; capital and maintenance costs: intangible costs, depletion of natural resources, modification of ecological systems rehabilitation cost, social and cultural changes. Fundamentals and concepts in Environmental Economics– Ecosystem Services and Valuation - natural capitals and their benefits to the society– externalities and public goods – non -renewable resource depletion and their social costs - intangible cost associated with social and cultural changes

UNIT II 10

Unit cost of development of open space. Costing and estimation in landscape projects. Landscape material specification, quantification, Landscape project scheduling, Small scale and large scale projects. Soft scape and hard scape costing and execution.

UNIT III 10

Management of land and resources for agriculture, grazing, forest production, water and all other uses in terms of Social and cultural values, Biodiversity, livelihood and ecosystems services. Community involvement and participation in decision making and management of landscapes.

UNIT IV 10

Management: Landscape management at the regional scale in relation to soil conservation, water management, grassland management, forestry and agriculture.

Management practices related to urban ecology and urban habitats, such as urban forests, river banks, regional parks and green belts: ecological, economic and administrative issues. Management models.

TOTAL: 45 PERIODS

- 1. Conrad, J. M. (1999). Resource Economics. Cambridge University Press.
- 2. Field, B. C. and Field, M. K. (2006). Environmental economics. McGraw-Hill/Irwin.
- 3. Hanley, N., Shogren, J. F., and White, B. (1997). Environmental economics in theory and practice. Oxford university press, New York.
- 4. Kolstad, C. D. (2003). Environmental economics. Oxford university press.
- 5. Solow, R. M. (1993). An almost practical step toward sustainability. Resources policy, 19(3):162–172.
- 6. Varian, H. R. (2007). Intermediate microeconomics: A modern approach. W. W. Norton & Company.
- 7. Daly, H. E. and Farley, J. Ecological Economics: Principles and Applications. Washington, D.C.: Island Press, 2004.

#### MAR21L015 RESEARCH METHODOLOGIES IN ARCHITECTURE

LTPC 2002

#### **OBJECTIVES:**

- To make the students to distinguish various theoretical ideologies influencing the philosophy and values of architecture.
- To establish the sense of systematic inquiry in students mind to analyze and infer the issues and aspects relating to Architecture.

#### UNIT I INTRODUCTION

9

Basic research issues and concepts- orientation to research process- types of research: historical, qualitative, co-relational, experimental, simulation and modeling, logical argumentation, case study and mixed methods- illustration using research samples

#### UNIT II RESEARCH PROCESS

9

Elements of Research process: finding a topic- writing an introduction- stating a purpose of study-identifying key research questions and hypotheses- reviewing literature- using theory- defining, delimiting and stating the significance of the study, advanced methods and procedures for data collection and analysis- illustration using research samples

#### UNIT III RESEARCHING AND DATA COLLECTION

6

Library and archives- Internet: New information and the role of internet; finding and evaluating sources- misuse- test for reliability- ethics

Methods of data collection- From primary sources: observation and recording, interviews structured and unstructured, questionnaire, open ended and close ended questions and the advantages, sampling- Problems encountered in collecting data from secondary sources

#### UNIT IV REPORT WRITING

6

Research writing in general- Components: referencing- writing the bibliography - developing the outline- presentation; etc. Case studies illustrating how good research can be used from project inception to completion- review of research publications

TOTAL: 30 PERIODS

#### **OUTCOMES:**

- The student will develop the skill to identify, decipher and interpret the issues relating to Architecture, based on research enquiry methods.
- The student will widen the information and will prepare the students for scientific method of researching and research process.

- 1. Linda Groat and David Wang; Architectural Research Methods;
- 2. Wayne C Booth; Joseph M Williams; Gregory G. Colomb; The Craft of Research, 2nd Edition; Chicago guides to writing, editing and publishing;
- 3. lain Borden and Kaaterina Ruedi; The Dissertation: An Architecture Student's Handbook; Architectural Press; 2000
- 4. Ranjith Kumar; Research Mehodology- A step by step guide for beginners; Sage Publications; 2005

#### **MAR21LL03**

#### **DISSERTATION**

LTPC 0063

#### Seminar

Topics related to various aspects of Landscape Architecture would be chosen in consultation with faculty members, comprehensively researched, and findings presented in a series of seminars by individual students.

The materials would be documented and formally presented as a Dissertation at the end of the semester.

The dissertation would be of a length of between 3000 and 4000 words with illustrations, references, footnotes and annotations.

MAR21LL04

# LANDSCAPE ARCHITECTURE STUDIO - III PROFESSIONAL COMMUNICATION - III

LTP C 0 0 1 2 6

Studio

Relatively large scale exercise of analysis and proposals related to Landscape of:

- Institutional Campuses
- Urban civic spaces at urban design scale, and
- Transportation and interchange systems and complexes

Eco-Tourism projects.

Professional Communication III: Professional techniques in digital media.

#### **SEMESTER - IV**

## MAR21L016 PROFESSIONAL PRACTICE OF LANDSCAPE ARCHITECTURE L T P C 2 0 0 2

Theory

#### UNIT I THE PROFESSION OF LANDSCAPE ARCHITECTURE & PRINCIPLES 9

Brief history of profession, Professional career tracks, Registration and License, professional ethics and code of professional conduct.

The client- different kinds of clients and projects, general concept for engaging the services of landscape architect. The extent and variety of services performed by landscape architect, terms and conditions.

#### UNIT II PROFESSIONAL RELATIONSHIPS

7

Interface with other consultants and contracting agencies. Prime consulting, Multiple direct-consulting, Sub consulting relationships. Relationship between the Landscape architect and Clients, Allied professional, contractor, General public.

#### UNIT III PROFESSIONAL APPROACH

7

Methods of working – surveys, preparation of policy and design proposals. Reports, contents and production techniques. Types and contents of Drawings prepared in a landscape architect's office. Contracts- Definition and terminologies, Contract documents. Preparation of tender documents. Different types of tender.

#### UNIT IV PROJECT MANAGEMENT

7

Planning, and organizing the project. PERT and CPM. Project supervision, co-ordination between different agencies, Monitoring a project during execution and preparation of site reports.

**TOTAL: 30 PERIODS** 

- 1. Walter Rogers, The Professional practice of landscape architecture, Van nostrand Reinhold, 1997.
- 2. John.L.Motloch, Introduction to Landscape design, 2001.
- 3. Jack.E.Ingels, Landscaping, Principles and Practices, Delmar publishersinc, 1992.
- 4. W.F.Hill, Landscape handbook of Tropical Landscape, Garden Art Press, 1995.

# MAR21LL05 LANDSCAPE ARCHITECTURE STUDIO-IV (THESIS) L T P C PROFESSIONAL COMMUNICATION - IV 0 0 24 12

Studio

Landscape Architecture thesis will consists of two parts:

- (a) Research oriented towards establishing a strong theoretical background for the chosen subject.
- (b) Application to a Landscape Planning or Landscape Design proposal with appropriate details.

Professional Communication III: Application of skills and techniques acquired in the past three semesters to specialized requirements of the Thesis, including the use of video or other digital multimedia for a short, specific exercise related to presentation of thesis work.

**MAR21LE01** 

#### LANDSCAPE RESOURCES - II

LTPC 2002

Theory

UNIT I 6

Overview of landscape resources at the national level.

National Environment Policy.

Developmental and Environmental issues associated with particular landscape regions: mountain and hill areas; deserts and wastelands; river and aquatic systems, coastal and estuarine regions, etc.

UNIT II 8

The rural landscape: agriculture and forestry as competing uses, the impact of industry and power generation.

Forest types of India; introduction to Forest Policy and management of forest resources. Conservation Forestry, Agro-Forestry and Social Forestry.

UNIT III 8

Significance of biodiversity, urban biodiversity, wildlife conservation.

Agricultural practices and the formation of traditional rural landscape. Illustrative examples from different climatic and geographic regions.

Factors associated with the location and functioning of extractive and manufacturing industry in the rural landscape.

UNIT IV 8

Wetlands: definition, wetland values and conservations. Wastelands management. Land reclamation and rehabilitation.

Watersheds and the importance of watershed management. Resource conservation, land capability classification; mechanical, vegetative and agronomic measures in soil and water conservation.

Techniques and criteria for evaluation of regional landscape resources.

**TOTAL: 30 PERIODS** 

#### MAR21LE02

## LANDSCAPE PROJECT MANAGEMENT AND MAINTENANCE

LTPC 2002

Theory

UNIT I 6

#### **Regulations and Legal Aspects**

Codes, Standards, Bye laws and planning regulations applicable to building and landscape development. The role of statutory and regulatory bodies such as the Municipal Corporation, N.D.M.C, D.D.A and Urban Art commission etc.

UNIT II 8

#### **Construction administration, Implementation process**

Sequence of activities from inception to completion: agencies involved at each stage, their professional relationships and obligations. Co-ordination of agencies and activities on site. Practical examples.

Budgetary control, progress evaluation and monitoring: various kinds of estimates, review and updating, simple examples of pert charts and bar diagrams.

Site documentation: importance of written records. Site instruction book, periodic reports, visual records, bar charts etc.

Techniques of inspection and quality control; visits to site under development.

UNIT III 8

#### **Construction documents**

Contract Procedure; Criteria for selecting contractors: the process of calling tenders. Comparison of various kind of tenders with regard to objectives, utility and appropriateness.

Tender Documentation and evaluation of tender; negotiations with contractors.

Contract Documentation: Forms of contract; General and special conditions, specifications, Bill of quantities; significant clauses pertaining to defects, maintenance, arbitrations, etc.

Parties to the contract; their roles, contractual relationships and legal obligations.

UNIT IV 8

#### **Landscape maintenance:**

Preparation of a maintenance plan: watering, fertilization, aeration, mulching, edging, pest control, pruning, and weed control. Design for irrigation, drainage, electrical etc, Methods and materials involved in maintenance of the landscape features. Maintenance bids and services involved.

#### **Landscape Design Competitions: Types, Guidelines**

**TOTAL: 30 PERIODS** 

#### **REFERENCES:**

1. Walter Rogers, The Professional practice of landscape architecture, Van nostrand Reinhold, 1997.

- 2. John.L.Motloch, Introduction to Landscape design, 2001.
- 3. Jack.E.Ingels, Landscaping, Principles and Practices, Delmar publishersinc, 1992.
- 4. W.F.Hill, Landscape handbook of Tropical Landscape, Garden Art Press, 1995.
- 5. H.N.Tiwari, Environmental Law, Allahad law agency, 1997.
- 6. Rosencrany, a.Diwan, Noble.M, Environmental law and policy in India(Cases, Materials, and statutues), Tripathi Bombay, 1991.

#### MAR21LE03

#### **CLIMATE, BUILT FORM & LANDSCAPES**

LTPC 2002

Theory

#### UNIT I INTRODUCTION TO CLIMATE LANDSCAPE AND EVALUATION TOOLS 7

A brief introduction to the composition of atmosphere, elements of weather, temperature, precipitation, humidity, air pressure, wind patterns and radiation etc, Climate - micro, macro and crypto climate. Climatic zones of India. Study of urban and rural climate.

Soil classification and vegetation in the tropics. Landscaping in varied Indian climates. Impact of natural and manmade features on climate. Carbon neutral and negative concepts.

Evaluation of climatic data. Sources, methods of obtaining data, instruments and charts used for this purpose. Use of hand held instruments.

#### UNIT II MICRO CLIMATIC CONTROL

8

Impact of natural and man made elements on climate. Radiation, wind, temperature, humidity and precipitation modification. Sustainable micro climatic design. Integration of microclimatic information in design and case studies.

#### UNIT III ELEMENTS OF CLIMATE

8

Analysis of local site and climate and their consequences for built form & landscape. Particular attention to daylight, solar access and shading; ventilation; wind and precipitation; climate-adapted design of outdoor-indoor areas.

#### UNIT IV CLIMATIC ANALYSIS

7

Methods to analyse the various elements of local climate and site, and assess their consequences on built environment and its immediate outdoors. Earth for life approach.

**TOTAL: 30 PERIODS** 

- 1. Robert Brown and Jenny J Gillespie, Micro climatic landscape design creating thermal comfort and energy efficiency, John Wiley, N.Y, 1995.
- 2. Anne Simon Moeffeet & Marie Schiller, Landscape design that saves energy, William Marison & Co, N.Y.
- 3. George Perkins Marsh, Man and Nature.
- 4. Bansal N.K. Minke.G, Climatic zones and rural housing in India, KFA, Julich, Federal republic of germany, 1988.
- 5. Baruch Givoni, Passive and low energy cooling of Building, Van Nostrand reinhold, Newyork, 1994.

#### MAR21LE04 LANDSCAPE ASSESSMENT AND LANDSCAPE CONSERVATION

LTPC 2002

Theory

#### UNIT I

6

Environmental Impact Assessment and the Environmental Impact Statement: Theory and Practice. Illustrative examples from India and elsewhere to demonstrate the degree of effectiveness. The role of Environmental Legislation and the Ministry of Environment and Forests.

UNIT II 8

Landscape Assessment techniques;. Assessing the landscape value – landscape quality – aesthetic, heritage and sensitivity values. Models for assessing landscape resources – land use impact assessment models – model to assess the ecological values – Land Evolution and Site Assessment model (LESA) – Ecological modeling, Landscape visual Impact assessment (LVIA)

UNIT III 8

Case studies: The application of landscape assessment and evaluation techniques to large scale developments such as infrastructure and power projects, extractive and manufacturing industry, new towns and urban extensions, and developments for tourism and eco-tourism.

UNIT IV 8

The concept of Landscape restoration and Landscape Conservation: definitions and scope. Landscape Conservation: Priorities, Policies and Programmes. National parks and other protective designations. Biodiversity and Biosphere reserves. Endangered landscapes. Aspects of watershed management.

**TOTAL 30 PERIODS** 

- 1. Michael Allaby, Basics of Environmental Science, Routledge, 2000.
- 2. Avjit gupta and Mukul.G.Asher, Environment and the developing world, John wiley and sons, Inc, 2000.
- 3. Larry W.Canter, Environmental Impact Assessment, McGraw Hill, Inc, 1996
- 4. H.N.Tiwari, Environmental Law, Allahad law agency, 1997.
- 5. Rosencrany, a.Diwan, Noble.M, Environmental law and policy in India(Cases, Materials, and statutues), Tripathi Bombay, 1991.

#### REFERENCE BOOKS

#### **FOR**

#### M.ARCH

#### LANDSCAPE ARCHITECTURE

Cantor, Steven L. 1996. 'Bxybee Landfill, Candlestick Park Landfill', *Innovative Design Solutions in Landscape Architecture*, New York: )ohn Wiley & Sons Inc.

Kirkwood, Niall. 1999. Constructing Detail, The Art of Landscape Detail, New York: John Wiley &Sons Inc.

Kirkwood, Niall. 2004. Case Study D, The Readjusted Scales of Duration (Michael Blier), *Weathering and Durability in Landscape Architecture, Fundamentals, Practices, and Case Studies.* New York: John Wiley & Sons, Inc.

Kirkwood, Niall. 2004. Case Study K. Perpetual Materials, *Weathering and Durability in Landscape Architecture: Fundamentals, Practices, and Case Studies*, New York: John Wiley & Sons Inc.

Dee, Catherine. 2001. *Form and Fabric in Landscape Architecture: a Visual Introduction.* London; NY: Spon Press. (This book is also required for LARCH 341.)

Treib, Mark. Representing Landscape

*Ecological Design and Planning /* eds. William Thompson & Frederick Steiner

*The Language of Landscape / Anne Spirn* 

Sustainable Sites Initiative, Standards and Guidelines

Manufactured Landscapes (film)

Detail in Contemporary Landscape Architecture, Mcleod, Virginia

The Art of Landscape Detail: Fundamentals, Practices and Case Studies, Kirkwood, Niall

Handbook of Landscape Architecture, Carpenter, J

Landscape Architectural Graphic Standards Student Ed., Hopper. Wiley.

Time Saver Standards for Landscape Architecture, Harris.

Detailing for Landscape Architects, Ryan. Wiley.

New Landscape Design, Holden. A.Press.

Landscape in History, 2<sup>nd</sup> Edition, Pregill. Wiley.

Materials & their Applications Landscape Design, Sovinski. Wiley.

Illustarted History of Landscape Management, Boults. Wiley.

Sustainable Landscape Management, Cooke. Wiley.

Security & Site Design., Landscape architecture Approach., Hopper. Wiley.

Landscape Spaces Series, By Archiworld.

Landscape Architects Series, By Archiworld.

Landscape World Series, By Archiworld.

Environment & Landscape Series, By Archiworld.

Landscape of man, By Jellicie.

Design with nature, By Ian McHang.