ANNA UNIVERSITY : : CHENNAI- 600 025

UNIVERSITY DEPARTMENTS

CURRICULUM - R 2009

M. ARCH (LANDSCAPE ARCHITECTURE)

I TO IV SEMESTERS CURRICULUM AND SYLLABUS

S. No	Course Code	Course Name	L	T	P/S	C
		SEMESTER I				
		Common to M. Arch., M. Arch. (Digital Arch.) and M. Arch. (Landscape Arch.)				
1.	**AA 9111**	Contemporary Processes in Architectural Design I	3	0	0	3
2.	**AA 9112**	Architecture and Critical Theory	3	0	0	3
3.	**AA 9113**	Traditional and Contemporary Landscapes	3	0	0	3
4.	**AA 9114**	Sustainable and Green Building Design	2	0	6	5
5.	**AA 9115**	Urban Design Studio	2	0	6	5
		Sub Total	**13**	**0**	**12**	**19**
		SEMESTER II				
6.	**LN 9121**	Planting and Horticultural practices	3	0	0	3
7.	**LN 9122**	Geology and Soils	3	0	0	3
8.	**LN 9123**	Hydrology and Micro Climate	3	0	0	3
9.	**LN 9124**	Landscape Ecology and Planning	0	0	0	3
10.	**LN 9125**	Landscape Construction I	1	0	4	3
11.	**LN 9126**	Landscape Design Studio I	0	0	12	6
		Sub Total	**10**	**0**	**16**	**21**
		SEMESTER III				
12.	**LN 9131**	Planting Design	3	0	0	3
13.	**LN 9132**	Environmental Legislation and EIA	3	0	0	3
14.	**LN 9133**	Advanced Landscape Construction II	1	0	4	3
15.	*** * * * * ***	Elective I	*	*	*	3
16.	**LN 9134**	Dissertation	0	0	6	3
17.	**LN 9135**	Advanced Landscape Design Studio II	0	0	12	6
		Sub Total	**7**	**0**	**22**	**21**
		SEMESTER IV				
18.	**LN 9141**	Professional Practice of Landscape Architecture	3	0	0	3
19.	*** ** * * ***	Elective II	*	*	*	3
20.	**LN 9142**	Thesis	0	0	16	8
		Sub Total	**3**	**0**	**16**	**14**
	Total no of credits required for the award of the degree					**75**

List of Electives- M. Arch (Landscape Architecture)			L	T	P/ S	C
21.	**AA 9131**	Research Methodologies in Architecture	3	0	0	3
22.	**AA 9153**	GIS Modeling in Urban Planning	3	0	0	3
23.	**LN 9151**	Sustainability & Energy Conservation in Landscape architecture	3	0	0	3
24.	**LN 9152**	Computer applications &management information systems	3	0	0	3
25.	**LN 9153**	Landscape Management	3	0	0	3
26.	**LN 9154**	Urban Landscape Design	3	0	0	3
27.	**LN 9155**	Application of GIS in Landscape Design	3	0	0	3

L- Lecture T- Tutorial P- Practical / S- Studio C- Credits

ANNA UNIVERSITY : : CHENNAI- 600 025
UNIVERSITY DEPARTMENTS

M. ARCH (Landscape Architecture– Part Time - Day Time
CURRICULUM (REGULATIONS 2009)

S. No.	Course Code	Course Name	L	T	P/S	C
SEMESTER I Common to M. Arch., M. Arch. (Digital Arch.) and M. Arch. (Landscape Arch.)						
1.	**AA 9111**	Contemporary Processes in Architectural Design I	3	0	0	3
2.	**AA 9114**	Sustainable and Green Building Design	2	0	6	5
3.	**AA 9115**	Urban Design Studio	2	0	6	5
		Sub Total				**13**
SEMESTER II						
4.	**LN 9121**	Planting and Horticultural practices	3	0	0	3
5.	**LN 9122**	Geology and Soils	3	0	0	3
6.	**LN 9123**	Hydrology and Micro Climate	3	0	0	3
7.	**LN 9125**	Landscape Construction I	1	0	4	3
		Sub Total				**12**
SEMESTER III Two courses common to M. Arch., M. Arch. (Digital Arch.) and M. Arch. (Landscape Arch.)						
8.	**AA 9112**	Architecture and Critical Theory	3	0	0	3
9.	**AA 9113**	Traditional and Contemporary Landscapes	3	0	0	3
10.	**LN 9131**	Planting Design	3	0	0	3
11.	**LN 9133**	Advanced Landscape Construction II	1	0	4	3
		Sub Total				**12**
SEMESTER IV						
12.	**LN 9124**	Landscape Ecology and Planning	0	0	0	3
13.	*** * * * * ***	Elective I	*	*	*	3
14.	**LN 9126**	Landscape Design Studio I	0	0	12	6
		Sub Total				**12**
SEMESTER V						
15.	**LN 9132**	Environmental Legislation and EIA	3	0	0	3
16.	**LN 9134**	Dissertation	0	0	6	3
17.	**LN 9135**	Advanced Landscape Design Studio II	0	0	12	6
		Sub Total				**12**
SEMESTER VI						
18.	**LN 9141**	Professional Practice of Landscape Architecture	3	0	0	3
19.	*** * * * * ***	Elective II	*	*	*	3
20.	**LN 9142**	Thesis	0	0	16	8
		Sub Total				**14**
		Total no of credits required for the award of the degree				**75**

List of Electives- M. Arch. (Landscape Architecture)						
21.	**AA 9131**	Research Methodologies in Architecture	3	0	0	3
22.	**AA 9153**	GIS Modeling in Urban Planning	3	0	0	3
23.	**LN 9151**	Sustainability & Energy Conservation in Landscape architecture	3	0	0	3
24.	**LN 9152**	Computer applications &management information systems	3	0	0	3
25.	**LN 9153**	Landscape Management	3	0	0	3
26.	**LN 9154**	Urban Landscape Design	3	0	0	3
27.	**LN 9155**	Application of GIS in Landscape Design	3	0	0	3
L- Lecture T- Tutorial P- Practical / S- Studio C- Credits						

M. ARCH. SYLLABUS

SEMESTER I

AA 9111 CONTEMPRORARY PROCESS IN ARCHITECTURE I L T P/S C
3 0 0 3

OBJECTIVE:
To investigate the contemporary theories of media and their influence on the perception of space and architecture. To provide an overview of various Contemporary design processes and its relation to computation.

UNIT I INTRODUCTION 6
Investigation of contemporary theories of media and their influence on the perception of space and architecture. Technology and Art – Technology and Architecture – Technology as Rhetoric – Digital Technology and Architecture

UNIT II ASPECT OF DIGITAL ARCHITECTURE 9
Aspects of Digital Architecture – Design and Computation – Difference between Digital Process and Non-Digital Process – Architecture and Cyber Space – Qualities of the new space – Issues of Aesthetics and Authorship of Design – Increased Automatism and its influence on Architectural Form and Space

UNIT III CONTEMPORARY PROCESS 15
Overview of various Contemporary design process and it relation to computation: Diagrams – Diagrammatic Reasoning – Diagrams and Design Process – Animation and Design – Digital Hybrid Design Protocols – Concept of Emergence - Introduction to Cellular Automata and Architectural applications – Genetic algorithms and Design Computation

UNIT IV GEOMETRIES AND SURFACES 15
Fractal Geometry and their properties – Architectural applications - Works of Zvi Hecker–- Shape Grammar - Shapes, rules and Label - Shape Grammar as analytical and synthetic tools- Combining Shape grammar and Genetic algorithm to optimize architectural solutions - Hyper Surface– Introduction to Hyper surface and concepts of Liquid architecture.

TOTAL:45 PERIODS

REQUIRED READING
1. Peter Eisenmann, Diagram: An Original Scene of Writing, Diagram Diaries
2. MOVE, UN Studio
3. Grey Lynn, The Folded, The Pliant and The Supple, Animate form
4. Contemporary Techniques in Architecture, Halsted Press, 2002
5. Ali Rahim, Contemporary Process in Architecture, John Wiley & Sons, 2000

REFERENCES

1. Walter Benjamin, Practices of Art in the Age of Mechanical Reproduction Colin press, 1977
2. Work of Architecture in the Age of Mechanical Reproduction, Differences MIT press,1997.
3. William J Mitchell, the Logic of Architecture: Design, Computation and Cognition. MIT Press, Cambridge, 1995
4. Marcos Novak, invisible Architecture: An Installation for the Greek Pavilion, Venice Biennale, 2000

AA 9112 ARCHITECTURE AND CRITICAL THEORY L T P/S C
3 0 0 3

OBJECTIVE:
The term critical theory is a tautology. However, this term is used to differentiate traditional theories that understand and explain architecture as autonomous objects and hermetically sealed discipline. The objective of this course is to explain and show how architecture is enmeshed in the society and a product of larger socio-cultural issues and practices.

UNIT I INTRODUCTION 6
Architectural Theory and practice- Relation between theory and practice. Traditions in/of architectural theory. Critical Theory. Qualities and challenges of critical theory.

UNIT II POWER AND BUILT ENVIRONMENT 10
Forms of power. Power and knowledge. Panopticon. Colonialism as a form of dominance. Colonialism in India. Production of Indo-Saracen architecture. Ideas of segregation, control and surveillance in colonial towns. Discussing New Delhi as a part of imperial vision. Idea of Ghetto, surveillance and control in contemporary cities.

UNIT III ENCOUNTERING MODERNISM/MODERNITY 10
Phenomenology and architecture. Architecture and sense of place. Fragmentation and Nihilism as conditions of modern society. Counter claims. Encountering the idea of functionalism - Semiotic and Deconstruction as a critical tool. Architecture of Resistance. The idea of critical regionalism.

UNIT IV SPECTACLE AND ARCHITECTURE 10
Society of spectacle. Spectacle as a form of seduction. Debating aesthetisation of architectural issues. Critiquing learning from Las Vegas. World in a shopping wall. Thematic environments. Theme parks and privatization of public spaces. Visual regime in architecture. Media and architecture.

UNIT V ISSUES IN ARCHITECTURE 9
Gender and space. Heritage and politics of memory. City as contested geography. Technology and Architecture.

TOTAL:45 PERIODS

REQUIRED READINGS:
1. Neil Leach (ed) Rethinking Architecture, Routledge 2000
2. Paul Allan Johnson. Theory of Architecture, Routledge 2000
3. Michael Hays (ed) Architectural Theory since 1960,MIT Press, 2000
4. Anthony king, Urban Development in Colonialism
5. Nazzar Al Sayaad (ed) Forms of Dominance,
6. Lawrence vale. Architecture and Nationalism and identity,

REFERENCES:
1) Anil Lomba, Colonialism, 2000
2) Thomas Metcalf Imperial vision, Oxford
3) Neil Leach, Aesthetics and Anesthetics,
4) Guy Debord. Society of Spectacle.
5) Michael Sorkin (ed) Variations of Theme park
6) Lan Border (ed), Intersections.

AA 9113 TRADITIONAL AND CONTEMPORARY LANDSCAPES L T P/S C
3 0 0 3

OBJECTIVE

To study the social and cultural influences on traditional landscapes through analysis of form and space, citing principles of each period with examples.

To study contemporary landscape and the manifestation in the western and Indian context.

UNIT I EASTERN TRADITIONS AND ISLAMIC LANDSCAPES 15

Early traditions and beliefs about landscape and environment in east. Ancient Indian traditions – Vedic, Jainism, Buddhism and later Hindu movements. Symbolic meanings and sacred value of natural landscapes.

Transfer of concepts through Buddhism to China –Chinese landscape development – gardens of China – Pre Buddhist Japanese landscapes – impact of China on Japanese gardens – Japanese gardens.

Nomadic culture of central Asia – advent of Islam – concept of Paradise as a garden – spread of Islamic traditions to the West and East. Eastern expression of Islam – Samarkhand and Mughul India – Tomb and pleasure garden – Moghul concepts of site planning. Western expression of Islam – Spain Alhambra and General life, Granada.

UNIT II RENNAISSANCE AND THE EVOLUTION OF NEW THOUGHTS 6

Development of the enclosed garden in the Middle ages. Renaissance – Italy, France and England, Romanticism. Influences and linkages across cultures. Study of the western landscapes till the nineteenth century.

UNIT III THE EVOLUTION OF THE MODERN LANDSCAPE 9

Industrialization and urbanization – impacts and development of the concept of public open spaces, open space development in new towns, parks movement.

Open space development and its urban design and planning context, Early industrial towns and the garden city movement. Public park as a major component of urban landscape, the works of F.L.Ohmstead, and other pioneers. Open space development and Close conceptual relationship between Town planning, urban design and landscape architecture. Examples.

UNIT IV THE MODERN MOVEMENT, CONTEMPORARY CONCEPTS AND CONCERNS 9

Changing concepts of space and the relationship of architecture to landscape. Study of selected works of modern architects and landscape architects. Postwar development in Europe. The influence of Ian Mcharg on Landscape architecture. The works of Jellicoe, Burle Marx and others.

Concept of sustainable landscape development, Cultural landscapes their definition, identification, characteristics, policies, Artistic sensibility in landscape architecture and land art, New development in urban Landscape design.

UNIT V INDIAN CONTEXT 6

Issues in contemporary India, Analysis and understanding of philosophies of contemporary landscape works in India, case studies.

TOTAL: 45 PERIODS

REQUIRED READINGS:

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.

REFERENCES:

1. Elizabeth Barlow Rogers, Landscape Design – A Cultural &Architectural History, Hary & Abram inc. publishers, 2001.
2. Phillip Pregill & Nancy Volkman, Landscapes in History, Van Nostrand publishers, 1993.
3. Jonas Lehrman, Earthly Paradise- Garden and courtyard in Islam, Thames and Hudson,1980.
4. G.B.Tobey, A history of American Landscape architecture, American elsevier Publishing Co.,NY, 1973.
5. Pieluigi Nicholin, Francesco Repishti, Dictionary of today's landscape designers, Skira Editores P.A, 2003.

AA 9114 SUSTAINABLE AND GREEN BUILDING DESIGN L T P/S C
2 0 6 5

OBJECTIVE:

To sensitize the students to the various aspects of sustainable and green building design in the context of global warming and climate change and to address the very process and tools of design to enable architecture that is environmentally friendly and sustainable.

UNIT I INTRODUCTION 15

Attitudes to architecture: a historical perspective- General premises and strategies for sustainable and green design- objectives and basis- Eco-mimicry as a design tool based on ecosystem analogy- theoretical basis for a sustainable and eco friendly design

UNIT II ECO HOUSE 30

The form of the house: the building as an analogy- design from first principles: conserving energy; working with climate: passive solar design; minimizing new resources; respect for users; respect for site and holism- photovoltaics and solar hot water systems; water usage; small scale wind systems and hydro power; Case studies- Studio project on design of eco houses: context specific

UNIT III ENVIRONMENTAL IMPACT OF BUILDING MATERIALS 15

Measuring the impact of building materials- calculating embodied energy- recycling and embodied energy- processing and embodied energy- time and embodied energy- embodied energy of different building materials- low energy building and masonry materials- life cycle analysis- Case studies and analysis

UNIT IV GREEN CONSTRUCTION AND ENVIRONMENTAL QUALITY 15

Sustainable architecture and Green Building: definition- Green building Evaluation Systems; LEED Certification; Green Globe Certification; Case studies which look at the environmental approach- renewable energy- controlling the water cycle- impact of materials on the environment – optimizing construction- site management- environmental management of buildings

UNIT V SUSTAINABLE AND GREEN BUILDING DESIGN STUDIO 30

This studio will explore collaborative learning to explore, investigate and apply various parameters of sustainability for design development of projected building/ urban scenarios

TOTAL:120 PERIODS

REQUIRED READINGS:

1. Ken Yeang; Eco design - A Manual for Ecological design, Wiley- Academy; 2006
2. Sue Roaf et all; Ecohouse: A design Guide; Elsevier Architectural Press; 2007
3. Thomas E Glavinich; Green Building Construction; Wiley; 2008

REFERENCES:

1. Brenda and Robert Vale; Green Architecture- Design for a Sustainable Future; Thames and Hudson; 1996
2. Daniel Vallero and Chris Brasier; Sustainable Design- The science of sustainability and Green Engineering; Wiley; 2008
3. Catherine Slessor; Sustainable Architecture and High Technology- Eco Tech; Thames and Hudson; 1997
4. Dominique Gauzin- Muller; Sustainable architecture and Urbanism; Birkhauser; 2002

AA 9115 URBAN DESIGN STUDIO L T P/S C
2 0 6 5

OBJECTIVE:

To identify and address the issues of urban form through precedent studies; literature review; case studies and contemporary determinants of urban form including globalization, real estate, digital revolution, policy and infrastructure development

UNIT I INTRODUCTION 15

A brief historic review of the development of the urban design discipline and principles- Redefining urban condition – role of Globalisation – impact of Digital Revolution – sustainable development– Contemporary Processes in Urban Design

UNIT II SPLINTERING URBANISM 15

Transportation Networks –Information and communication networks Telecommuting and Urbanism

UNIT III RESTRUCTURING THE CITY 15

Place making in the Digital Age – reconfiguring public realm – Globalisation, and Generic Urban form– Urbanisation and Excursions on density

UNIT IV SUSTAINABLE DEVELOPMENT 30

Sustainable Cities Program - Revitalization of brown field sites- Transit Metropolis- Case Studies

UNIT V APPLICATION OF DIGITAL TECHNIQUES IN URBAN DESIGN 30

Depiction of Urban Spaces in Digital Media - Role of Digital Media in Reconfiguring Urban Space –Case studies – Application of Geographic Information Systems, diagramming and 3D Modeling tools in Urban Design - Digital Media as a facilitator for participatory, sustainable urban design.

TOTAL:120 PERIODS

REQUIRED READING:

1. Crigore Birdea (ed.), Virtual Reality Technology. Wiley and Sons, New York, 1994
2. William J. Mitchell, City of Bits: Space, Place and the infobahn, MIT Press, 1996
3. Charles Correa, Housing and Urbanisation, Thames and Hudson, 1999
4. Neil leach, Designing for the digital world, John Wiley and Sons, 2002

REFERENCES:

1 Benjamin Woolley, Virtual Worlds. Penguin Books, 19931994.
2 Peter Calthorpe, The Next American Metropolis, Princeton Architectural Press, 1993.
3 Thomas A, Horan, Digital Places: Building our city of bits, Urban Land Institute, 2000.

SEMESTER II

LN9121 PLANTING AND HORTICULTURAL PRACTICES L T P/S C
3 0 0 3

UNIT I CHARACTERISTICS OF PLANT MATERIALS 9

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.

UNIT II FLORISTIC REGIONS OF INDIA 9

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

UNIT III PLANT PROPAGATION 9

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.

UNIT IV HORTICULTURAL PRACTICE 9

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 .

UNIT V LANDSCAPE MAINTENANCE 9

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

TOTAL: 45 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. Rao.K.N.R. and Krishnamurthy.K.N., Angiosperms, S.Viswanathan Printers and publishers.
5. G.S.Puri, Forest types of India.

LN9122 GEOLOGY AND SOILS L T P/S C
3 0 0 3

UNIT I INTRODUCTION 15

The Earth – Origin of Earth, Solar system. Earth's Structure, Composition, Land and Sea distribution , Earth and its Atmosphere.
Rock-Rock forming minerals – Igneous, Metamorphic and Sedimentary rocks, Economic importance of mineral deposits.
Geomorphic process : Epigenic or Exogenic process – Weathering, Erosion, Mass wasting, Fluvial cycle, Groundwater, Wind, Seas and Oceans, Glaciers.
Hypogenic or Endogenic process – Earth quake, Tsunami, Fold, Fault, and Volcanism, Platetectonics.

UNIT II STUDY OF LANDFORMS 12

Evolution of land forms: Land forms produced by geomorphic process – Reclamation of land forms , Land forms along coasts.
Man's intervention into Ecology and Environment- case studies in India, Deterioration of landscapes by Mining of minerals. Suitability of land for various developments.
Surface and Groundwater resources management, Quality of water for drinking. Hydraulic effects caused by rapid urbanization.. Concept of rainwater harvesting.

UNIT III SOIL CHARACTERISTICS 6

Soil forming minerals –Weathering & Erosion, Soil profile, Role of climate, Rainfall, Vegetation, Topography and Time factors in soil formation.
Soil classification, Soil water, Soils of India.
Soil properties, Physical, Chemical and Biological properties, Sustainability of soil for development activities.

UNIT IV SOIL ANALYSIS 6

Soil analysis, Soil survey and field mapping, land capability classifications.
Role of remote sensing in soil mapping.

UNIT V SOIL MODIFICATIONS 6

Soil modifications, Problems of soils, Acid, Alkaline, Saline soils, soil pH,
Essential mineral nutrients of soils, Manure and Fertilizers.
Soil conservation, type, factors, methods of conservation, prevention of soil erosion,
Soil conditioning, soil mixtures and alternative to soils.

TOTAL: 45 PERIODS

REFERENCES:

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

LN9123 HYDROLOGY AND MICRO CLIMATE L T P/S C
3 0 0 3

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 9

Ground water management, sources of ground water pollution and its control, use of saline brackish water for development. 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, septic tank, soak pit designs.

UNIT III INTRODUCTION TO CLIMATE 10

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.

UNIT IV LANDSCAPE AND EVALUATION TOOLS 10

Soil classification and vegetation in the tropics. Landscaping in varied Indian climates. Impact of natural and man made features on climate. Evaluation of climatic data. Sources, methods of obtaining data, instruments and charts used for this purpose. Use of hand held instruments.

UNIT V MICRO CLIMATIC CONTROL 10

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.

TOTAL: 45 PERIODS

REFERENCES:

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.

LN9124 LANDSCAPE ECOLOGY AND PLANNING L T P/S C

0 0 0 3

UNIT I ECOLOGY 9

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 9

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 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

UNIT IV PROCESS IN LANDSCAPE PLANNING 9

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 V Case Studies: LANDSCAPE PLANNING 9

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: 45 PERIODS

REFERENCES:

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.

LN9125	LANDSCAPE CONSTRUCTION I	L	T	P/S	C
		1	4	0	3

UNIT I LANDSCAPE GRAPHICS 5

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 20

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

UNIT V OUTDOOR FURNITURE 20

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: 75 PERIODS

REFERENCES:

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.

LN9126 LANDSCAPE DESIGN STUDIO – I L T P/S C
0 0 12 6

Studio work shall deal with an appreciation of basic landscape design issues and elements – simple site planning, use of plant materials for defining and structuring the open spaces, landscape treatment in relation to the buildings, understanding the aesthetic qualities of the plant materials and their associations.

The studio exercises will involve three or four of the following situations – Campus landscape, Group housing, specialized human landscapes at different situations, parks and garden design. Understanding the function and structuring of outdoor spaces would be the underlying theme.

SEMESTER III

LN9131 PLANTING DESIGN L T P/S C
3 0 0 3

UNIT I INTRODUCTION TO PLANTING DESIGN 9

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 9

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 9

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 9

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.

UNIT V APPLICATIONS IN PRACTICE 9

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

TOTAL: 45 PERIODS

REFERENCES:

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.

LN9132 ENVIRONMENTAL LEGISLATION AND EIA

L	T	P/S	C
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UNIT I COMPONENTS OF ENVIRONMENT 6

Environmental sciences, Environment – definition, important components, quality of total environment.

UNIT II HUMAN IMPACT ON ECOSYSTEMS 12

Environmental impact of man's activities on earth, impacts of agriculture, industrialization, urbanization. Relations between local modification and global phenomena. Green house effect, acid rain etc., Pollution – definition, pollution of air, water, land and noise, effect on humans, vegetation and other life forms, degradation of land. International treaties on environment, sustainable development – ecological and environmental parameters, public participation and role of NGOs. Status of environment in India.

UNIT III ENVIRONMENTAL LEGISLATION 9

Concept of law constitution in relation to environment. Introduction to town planning legislation and legal tools for development control and their relationship for landscape design objectives. Indian forests acts – preserved, protected, private and village forests, wild life sanctuaries act. Legislative and administrative framework for national parks in U.K., U.S.A. and India. Periphery control legislation and green belt concept. Preservation of the countryside.

UNIT IV CONSERVATION AND PRESERVATION 9

Legislation relating to preservation of parks, open spaces, playgrounds, trees and ancient monuments. Legislation related to air, water, Land pollution prevention

UNIT IV ENVIRONMENTAL IMPACT ASSESSMENT 9

Environmental impact assessment – definitions, methodologies, techniques, advantages and disadvantages. Process – data collection, identification of study area, scope, aim, environmental standards and their measurement. EIA in India, legislation related to EIA, EIA in developed and developing countries

TOTAL: 45 PERIODS

REFERENCES:

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.

LN9133 ADVANCED LANDSCAPE CONSTRUCTION II L T P/S C
1 0 4 3

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 10

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

UNIT V WATER RESOURCES PLANNING 15

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

TOTAL:75 PERIODS

REFERENCES:

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.

LN9134 DISSERTATION L T P/S C
0 0 6 3

Topics related to various aspects of Landscape Architecture could 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.

TOTAL:90 PERIODS

LN9135 ADVANCED LANDSCAPE DESIGN STUDIO– II L T P/S C
0 0 12 6

The studio exercises will involve three or four of the following situations – urban context, historical landscape, specialized landscape situations, industrial landscapes, recreational landscapes. Understanding of ecologically sustainable development would be the underlying theme.

TOTAL:180 PERIODS

SEMESTER IV

LN9141 PROFESSIONAL PRACTICE OF LANDSCAPE ARCHITECTURE L T P/S C
3 0 0 3

UNIT I THE PROFESSION OF LANDSCAPE ARCHITECTURE 6

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

UN IT II PRINCIPLES OF PROFESSIONAL PRACTICE 9

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 III PROFESSIONAL RELATIONSHIPS 9

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 IV PROFESSIONAL APPROACH 12

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 V PROJECT MANAGEMENT 9

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: 45 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.

LN9142	THESIS	L T P/S C
		0 0 16 8

Thesis will be an individual project dealing with complex problems of landscape architecture including site planning and landscape planning and seeks to develop concepts of landscape design as an interactive process of natural and man made environment.

TOTAL: 240 PERIODS

LIST OF ELECTIVES

AA9131	RESEARCH METHODOLOGIES IN ARCHITECTURE	L T P/S C
		3 0 0 3

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 9

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 9

Research writing in general- Components: referencing- writing the bibliography- developing the outline- presentation; etc.

UNIT V CASE STUDIES 9

Case studies illustrating how good research can be used from project inception to completion- review of research publications

TOTAL: 45 PERIODS

REQUIRED READING

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. Iain 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
5. John W Creswell; Research design: Qualitative, Quantitative and Mixed Methods Approaches; Sage Publications; 2002

REFERENCES:

1. Amos Rapoport; House, form and culture;
2. Christopher Alexander; Pattern Language
3. Diagram Diaries; Peter Eissenman;

AA9153 GIS MODELLING IN URBAN PLANNING L T P/S C
3 0 0 3

OBJECTIVE

This course will examine the role and application of Geographic Information Systems in environmental design, community charities and other urban design projects.

UNIT I INTRODUCTION 8

GIS – Spatial data, non Spatial data, Plan, Map, Scale, Map Projection, GPS, GCP collection, Spectral signature curve, Image processing – Geo coding / Geo referencing, GIS software, Two tier architecture, Three tier architecture, Thin client, Thick client

UNIT II DATABASE CONCEPTS 12

Data structures, Databases, Files, Types of Tables, Table operations, Creating a Table, Accessing Records in a Table, Manipulating records in a Table, Modifying Table structure, Reports, Advantages of database, Primary key and data access, Composite primary key, Defining a primary key, Sorting, Indexing, Master Detail relationships, Types of relationships, Foreign key, Deleting, updating and adding records to linked tables, ER Diagram, Data Model – Physical, logical and conceptual.

UNIT III SPATIAL DATA 10

Comparative methods for obtaining images, Aerial Photograph, Satellite Imagery – High resolution imagery – LISS, PAN, MSS – Ortho rectification, Digitization – Layers, Digital Elevation model, Digital Terrain Modelling, Existing maps – Problems and Issues, Rubber sheeting, Digitization, overlay, union, intersection.

UNIT IV INTRODUCTION TO GIS SOFTWARE 12

Arc Info – Coverage – Arc, Node, Tics, Add, get, put, Map extent, edit, Topology creation – Clean, Build, Tables – Creating tables, updating tables, join, drop item, Export, Import, overlay, union, intersection, buffer.

UNIT V MODELLING GIS PROJECTS FOR URBAN AREAS 18

Preparation of Land use map, Land use suitability analysis, Screen design, Visual Basic application using Map objects.

TOTAL:60 PERIODS

REQUIRED READING

1. Information systems for Urban Planning – Robert Laurini
2. Modelling our world – ESRI Press
3. An Introduction to Data base Systems – C.J.Date
4. Fundamentals of Data base Management System by Elmasri & Navethi
5. ESRI (1992) Understanding GIS, The Arc Info Methods, ESRI, USA

LN9151	SUSTAINABILITY AND ENERGY CONSERVATION IN LANDSCAPE ARCHITECTURE.	L T P/S C 3 0 0 3

UNIT I INTRODUCTION TO SUSTAINABILITY 10

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 7

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

UNIT III SUSTAINABLE LANDSCAPE 9

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

UNIT IV INTRODUCTION TO ENERGY CONSERVATION IN LANDSCAPE 9

Energy conservation and sustainability, principles of energy systems, energy and global environment, scope for energy conservation in landscape.

UNIT V ENERGY CONSERVATION METHODS IN LANDSCAPE ARCHITECTURE 10

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: 45 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.

Websites:

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

LN9152	COMPUTER APPLICATIONS AND MANAGEMENT INFORMATION SYSTEMS	L T P/S C 3 0 0 3

UNIT I INTRODUCTION 9

The use of computer software (Photo-Shop and Illustrator) for the processing of words and images. Issues, ideas, themes of representation and imaging in digital media using some of graphic material.

UNIT II APPLICATION OF COMPUTERS IN THE DESIGN PROCESS 9

Various projection and graphic techniques. Developing skills in visualization and eidetic representation using the computer as tool for developing design projects. Advanced work with Photo-Shop and Illustrator, and in particular techniques with AutoCAD.

UNIT III COMPUTERS AND DESIGN PRESENTAIONS 9

Means for integration of fundamentals and techniques. The interactive realm of 3D modeling and animation using primarily FORM-Z modeling programs.

UNIT IV NON LINEAR PRESENTATION (FLASH AND DIRECTOR) 9

Importing files using standard and linking options. Using scripts and behaviors, understanding stage, cast and time line, using cast library, Tweening, using swf movie, presentation using voice over and presentation demos, creating auto run cd roms.

UNIT V CASE STUDIES 9

Exploring the various design media as they relate to form, image, sequence, movement, and animation through a series of weekly exercises.

TOTAL: 45 PERIODS

REFERENCES:

1. J.Jeffcoate, Multimedia in Practise: Technology and Applications, Prentice hall, New jersey, 1994.
2. Apple computer Inc., Multimedia demystified – a guide to the world of multimedia, Random house, New Media, Newyork, 1994.
3. Kirk, Ross and Hunt, Andy, Digital Sound Processing for music and multimedia, Focal press, Oxford, 1999.
4. S.Robert Tannenbaum, Theoretical foundations of Multimedia, Computer Science Press, Newyork, 1998.
5. Mark Von Wodtke, Mind over media: creative thinking skills for electronic media, McGraw hill, Newyork, 1993

LN9153 LANDSCAPE MANAGEMENT L T P/S C
3 0 0 3

UNIT I INTRODUCTION 9

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 – Economics of global climate change – Kyoto protocol – pollution control and Carbon trading - Economic definitions of sustainability - Ecological vs. Economic sustainability.

UNIT II ENVIRONMENTAL ECONOMICS IN LANDSCAPE 9

Valuation of landscape services– measuring benefits and cost- tangible costs of landscape development, capital and maintenance cost - modification of natural system and environmental costs.

UNIT III LANDSCAPE ASSESSMENT 9

Assessing the landscape value – landscape quality – aesthetic, heritage and sensitivity values. – Landscape Perception - Evaluating natural process, pattern and elements of landscape. Classification and ranking of landscape. Basic quantitative methods of collecting and analyzing, projecting and presenting data for landscape planning, visual assessment and aesthetic dimension.

UNIT IV MODELS IN LANDSCAPE ASSESSMENT 9

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 – GIS models in landscape assessment.

UNIT V MANAGEMENT 9

Landscape management at the regional scale in relation to soil conservation. Land use planning and resource management - water management, forest management, grassland and agricultural management. Management practice related to urban ecology and urban habitats such as urban forests, urban water sheds, regional parks, green belts. Ecological. Economic and administrative issues, management models.

TOTAL: 45 PERIODS

REFERENCES:

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

LN9154 URBAN LANDSCAPE DESIGN L T P/S C
3 0 0 3

UNIT I INTRODUCTION 6

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 9

Cultural, social and aesthetic value of urban spaces and its perception, Imageability, Townscape elements. Urban space enhancement.

UNIT III OPEN SPACE SYSTEM 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.

UNIT IV ELEMENTS IN URBAN LANDSCAPE 12

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 V CASE STUDIES 9

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

TOTAL: 45 PERIODS

REFERENCES:

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.

LN9155 APPLICATIONS OF GIS MODELING IN LANDSCAPE ARCHITECTURE L T P/S C
3 0 0 3

UNIT I INTRODUCTION 6

Classification of Spatial and non-spatial data - spatial relationships among elements / activities – fundamentals of topological relationship - spatial data and their representation in maps - raster and vector based system to representing spatial objects - objective and functions Geographical Information System – GIS software in general - over view of GIS map components.

UNIT II MAP PREPARATION AND DISPLAYING 12

Basics of GIS maps preparation – digitization of spatial data - concept of point, line and polygon features - fundamental of coordinate system – map layers and geo-referencing – displaying spatial features – adding attribute values to the features – preparing and displaying thematic layers and maps - selecting and editing spatial features and attribute data - preparing Grid surfaces form point, line and polygon features .

UNIT III SPATIAL ANALYSIS USING GIS 9

Spatial joining - concept of geo processing – union, intersect, clip and merge – features to raster - preparing surfaces - creating TIN surfaces and contours - surface analysis – spatial joining of geographic features.

UNIT IV APPLICATIONS OF GIS IN LANDSCAPE ARCHITECTURE 6

Overlaying features and analyzing using overlay function – feature selection – buffering – table joining and analysis - manipulating attribute data – classification and reclassifications - GIS modeling – 3D display.

UNIT V LANDSCAPE PLANNING AND GIS 12

Introduction to landscape GIS model - Case problem on landscape analysis – suitability analysis using GIS – preparing land-use maps – landscape impact analysis using GIS - landscape suitability analysis – application of GIS in assessing Landscape Ecological risks.

TOTAL: 45 PERIODS

REFERENCES:

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