SEMESTER – I

MLA 11 Landscape Architecture Studio-I Credit: 12

Course Objective: To develop an understanding about space design at local level.
Course Content:
Studio project in Landscape Analysis, Landscape Design and Site Planning of small recreational or civic spaces at community level for medium sized sites of area up to 2 Hectare; Students are expected to incorporate the learning from other subjects of the present semester to add value to the Studio outcome. Various materials, which can be used on Site for different components of the built form, may be explored through Site visits and observatory studies. Design may be a cumulative result of an informed decisions of varied nature with due care to prevent Soil erosion, promote ground water recharge processes.
Suggested Readings
1. C, H.T. (n.d) *Land Form Designs* , P D A Publication.
2. H, P.P. (n.d) *Concrete Floors Finishes* .
3. Michael, L. (1988) *Tree Detailing*, London: Butterworth Architecture.
4. Michael, L. (n.d) *Landscape Detailing Vol.1 Enclosure*.
5. Stevens, D. (n.d) *Ultimate Water Garden Book*.

MLA 12 Plants Systematics, Plant Processes and Field Study Credit: 06

Course Objective: To develop an understanding of the plant material in Landscape Design. Examine the characteristics of Plants with reference to the plant material in design. Field trips with experts are required to identify the specific characteristics of the plants. Students are required to prepare a herbarium.
Course Content:
Unit – I Fundamentals of plants, identification of physiological characteristics, deciduous and evergreen, and user's pattern
Unit – II General study of plant morphology and anatomy to understand the plant functions.
Unit – III Plant identification criteria: growth habits, habitat, origin, growth duration, leaf arrangement, leaf type, main flower colour, flowering period, family, genus
Unit – IV Classification of Plant Kingdom. Taxonomy. Principles of nomenclature and identification.
Unit – V Structural characteristics of plants, trees, shrubs and ground covers. Plant formations in Eco zones. Interdependence of animals and plants
*Field visit(s) required to identify the characteristics of various flora, by visiting a greenhouse / Nursery / seedbed.***Suggested Readings**

1. Randhwa,M.S. (1957) *Flowering Trees* , New Delhi: Indian Council Of Agricultural Research.
2. H, S. (1966) *Common Trees –India, The Land And the People* , New Delhi: National Book Trust.
3. Bose,T.K., Chowdhury.B.and.Sharma,S.P. (2011) *Tropical Garden Plants in Colour*, New Delhi: Horticulture And Allied Publishers.
4. M., L.a.G.H. (1964) *Taxonomy of Vascular Plants*, New york: Oxford.P, M. (2008) *Trees of India (WWF Natures Guide)*, London: Oxford; Edition edition.
5. Raunkier.C (1934) *The Life forms of Plants and statistical Plant Geography*, London: Oxford At The Clarendon Press.S, R.M. (1971) *Flowering trees (India-The land and people)*, New Delhi: National Book Trust.
6. S.G, N. (2004) *Forest Trees of South India* , Bengaluru: Navabharath Press.

SEMESTER – I

MLA 13 Theory of Landscape Architecture - I Credit: 03

Course Objective: To equip the students with the knowledge base regarding history of landscape Architecture with the various theories that have guided the landscape design through the ages.

Course Content:
Unit – I Traces of landscape planning and design from pre-history through Eastern, Egyptian, Roman, Islamic and Medieval gardens to Renaissance, Italian, French and English landscape approaches, culminating in the mid-19th century.

Unit – II Relating landscape design to societal, cultural, technological and belief systems of the period. Study of works of renowned Landscape Architects and Architects

Unit – III Man and nature , Process of transforming landscapes; landscapes of Power, Faith and Place. Development of landscape design and gardens till the early 19th century.

Unit – IV Detailed study of selected examples from eastern, central and western traditions;
- Ancient: Mesopotamia, Egypt, Greece, Rome
- Western: Europe, Italy, France, England
- Middle-east: Persian traditions
- Eastern: China and Japan; ancient and medieval period in India; Mughal and Rajput Landscapes

Unit – V Cultural landscapes: identity, collective memory; landscape as text, Landscape as an Art. Theoretical terrain of landscape architecture: nature of theory in landscape architecture, design process, form, meaning and experience. Society, language, representation of landscape; ecological design, aesthetics of sustainability

Suggested Readings

1. Schaal ,Hans Dieter (1993) , *New Landscape Architecture*, Ernst and Sohn
2. Dee, C. (2001) *Form and Fabric: A Visual Introduction*, London: Spon Press- Taylor and Francis Group.
3. etal., A.a. (n.d) *Building and Landscape*.?
4. G.B.Tobey (1973) *A history of American Landscape architecture*, American elsevier Publishing Co.,NY.
5. Hill, P. (2004) *Contemporary history of garden design* , Birkhauser publishers.
6. Jellico, G.a.S. (1995) *The Landscape of Man*, Thames & Hudson Publication.
7. Lehrman, J. (1980) *Earthly Paradise- Garden and courtyard in Islam*, Thames and Hudson.
8. Maria, C.B.J. (n.d) *Mastaedi Arain: Landscape Design Today, Spain* .
9. Newton, N.T. (n.d) *Design on the Land: The Development of Landscape Architecture* .
10. Repishti, P.a.F. (2003) *Dictionary of today's landscape designers*, SkiraEditores P.A.

SEMESTER – I

MLA 14 Site Planning and Landscape Engineering - I Credit: 03

Course Objective: To develop an advanced understanding of a site and the surroundings, with a whole-to-part approach on a holistic basis. Students must examine the natural, cultural, and social systems that affect design decisions, as well as the language and literature of landscape architecture. Studies to be undertaken on land development planning to appraise students in environmental, economic, legal, and visual issues associated with land planning process.

Course Content:

Components of Landscape Engineering, Site mobilisation, Soil conservation and erosion control measures and Estimation of costs for civil works and plantation works

Unit – I

Components of Landscape Engineering and their consideration in Site Planning and Landscape design. Appraisal of site factors in large scale developments with above correlation. Use of relevant software and advanced mapping technology for analysis.

Unit – II

Site mobilisation; Sequence of site activity, site protection measures, site implementation checklist. Landscape Engineering and water conservation; Watersheds and their characteristics, protection of natural water bodies: water retention structures, water harvesting techniques and devices.

Unit – III

Understanding Land/environmental modifications and engineering intervention in :
Soil conservation and erosion control measures; Land reclamation and rehabilitation process; Disposal of sludge, fly-ash, solid and liquid waste; Strip-mines and quarries; Transportation corridors. Horticulture and Forestry techniques.

Unit – IV

Environment-friendly material specifications and methodologies in landscape, to reduce carbon Footprint. Energy saving techniques in landscape engineering for planning of services and utilities. Design parameters and certification criteria for green buildings. Evaluating energy efficient site planning and landscape development. Design of sustainable landscape features such as bioswales, bio retention ponds etc.

Unit – V

Estimation of costs for civil works and plantation works. Preparation of bill of quantities, Specifications and Tender documents

Suggested Readings

1. ines, C.W.H.N.T. (2001) *Time saver Standards for Landscape Architecture*, Mc. Graw Hill.
2. Hack, K.L.a.G. (1984) *Site Planning* , MIT PRESS.
3. Hamid, S. (1985) *Urban Design Process* , Van Nostrand Reinhold.
4. Hopper (n.d) *Landscape Architectural Graphic Standards Student Ed.*, John Wiley and Sons Inc.
5. Ingels, J.E. (1992) *Landscaping – Principles & Practices* , Pelmer Publishers Inc.
6. Lovejoy, D. (1973) *Land use and Landscape Planning*, Barnes & Noble.
7. Lynch, K. (1994) *A Good City Form* , MIT PRESS.
8. Mukoda, N. (1990) *Street furniture*, Bijutsushuppan – sha Ltd.
9. Niall, K.a. (n.d) *The Art of Landscape Detail: Fundamentals, Practices and Case Studies*.

SEMESTER – I

MLA 15 Environmental Legislation and EIA Credit: 03

Course Objective:
To Familiarize The Students To The Environmental Legislation And Its Components And It's Role In Checking The Damage To The Environment

UNIT 1 Components Of Environment
Environmental Sciences, Environment – Definition, Important Components, Quality Of Total Environment.

UNIT 2Human Impact On Ecosystems
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 3 Environmental Legislation
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.

UNIT4 Conservation And Preservation
Legislation Relating To Preservation Of Parks, Open Spaces, Playgrounds, Trees And Ancient Monuments. Legislation Related To Air, Water, Land Pollution Prevention

UNIT 4 Environmental Impact Assessment

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

Suggested Readings

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.

SEMESTER – I

MLA 16 Sustainability and Energy Conservation in Landscape Architecture

Credit: 03

Course Objectives

- To expose the students on the issues of sustainability at the global level.
- To focus on the energy conservation landscape and sustainability at the micro level.
- Sustainable landscape design for various climates of India

UNIT 1 Introduction To Sustainability

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. Sustainability and Climate Change

UNIT 2 Sustainable Site

Sustainable site – LEEDS, BREAM, rating erosion and sedimentation control, site selection, urban development, landscape and exterior design etc., Green Building in the context of sustainability. Ecology and sustainability. Eco-City

UNIT 3 Introduction To Energy Conservation In Landscape

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

UNIT 4 Energy Conservation Methods In Landscape Architecture-Case Studies

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

UNIT 5 Sustainable Landscape Practices

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

Suggested Readings

1. John.F.Benson and Maggie.H.Roe, Landscape and sustainability, John Wiley Publication, New York, 2000.
2. O.R.Gray, Landscape Planning for Energy Conservation,
3. Anne Simon Moffat and Marc Schiller, Landscape design that saves energy, William Monow and co.,Inc., New York, 1981.
4. Publications of Centre for science and environments, TERI, New Delhi

SEMESTER – II

MLA 21 Landscape Architecture Studio-II Credit: 12

Course Objective: To develop the skill to integrate various knowledge systems to arrive at a design proposal of an urban scale, the process used for the same

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

- Urban Open Space systems
- Rural Landscape
- Heritage and Cultural Landscape

Suggested Readingsy

1. C, H.T. (n.d) *Land Form Designs* , P D A Publication.
2. H, P.P. (n.d) *Concrete Floors Finishes* .
3. Michael, L. (1988) *Tree Detailing*, London: Butterworth Architecture.
4. Michael, L. (n.d) *Landscape Detailing Vol.1 Enclosure*.
5. Stevens, D. (n.d) *Ultimate Water Garden Book.*

SEMESTER – II

MLA 22 Plants and Design Credit: 06

Course Objective:
To develop an enhanced understanding of the plant material in Landscape Design
and to examine the characteristics of Plants with reference to the plant material in design.
Course Content: Planting design, Visual, aesthetic and functional considerations, Planting in various environments and Plants and sustainability

Unit – I
Planting design through the ages - a historic perspective, Planting as a design element for structuring the landscape, Differentiation between trees, shrubs, ground cover and creepers. Planting for appearance of form, leaf color and texture, branching habit and trunk form and their texture, color of flowers and fruits. Spring, winter summer and autumn variation in appearance.

Unit – II
Visual, aesthetic and functional considerations in planting design. Planting for visual effect and accent. The role of plant material in environmental improvement, (e.g. soil conservation, modification of microclimate). Planting for shelter, windbreaks and shelter belts.

Unit – III
Planting in various environments such as woodlands, forests, rural areas, urban areas, roadside planting in urban and rural areas, industrial sites etc. Planting design for habitat such as grasslands, woodlands, sloping areas, marshes, bogs, wetlands, waterside and aquatic planting etc. Planting design and ecological considerations, stratification of plant material in nature, erbal plants and their uses.

Unit – IV
Plants and sustainability, Growth rate of plants as a criterion for plant choice for particular situations. Comparison of advantages and disadvantages of fast, medium and slow growing trees. The concept of nurse planting. Creating conditions for plant establishment, planting and transplanting trees and shrubs.

Unit – V
Maintenance of plant material; The preparation of planting concepts, planting plans and plant schedules for various scales of project. Estimation of costs and Bill of quantities.

Suggested Readings

1. Bose,T.K., Chowdhury.B.and.Sharma,S.P. (2011) *Tropical Garden Plants in Colour,* New Delhi:
Horticulture And Allied Publishers.
2. C, R.S. and KK, R.K.A.R. (n.d) *Estimating and Costing*.
3. Elements of Planting Design, Richard Austin, John Wiley & Sons, Inc., New York, 2002
4. Hackett, B. (1979) *Planting Design*, McGraw Hill.
5. H, S. (1966) *Common Trees –India, The Land And the People* , New Delhi: National Book Trust.
6. Jagdish, S.G.a.S. (Delhi) *Estimating Costing And Valuation*, Standard Pub. Dis.
7. Longman, P.B.S.a.O. (Calcutta) *Civil Engineering,Contracts And Estimates*.
8. N, D.B. (n.d) *Estimating and Costing In Civil Engineering, Theory And Practice*.
9. N.H, N.R. (2004) *The Planting Design Handbook,* England: Ashgate Publishing Limited.
10. Walker, T.D. (1991) *Planting Design,* John Wiley and Sons

SEMESTER – II

MLA 23 Theory of Landscape Architecture – II Credit: 03

Course Objective: To develop an understanding of contemporary landscapes and as to how environmental issues and ecological issues have been resolved in them; and understanding regional scale of landscape architecture and its allied aspects.

Course Content: Garden design, growth and development of landscape , multi functional landscape and urban landscape

Unit – I

Modern garden design and innovations in landscape architecture; The contemporary history of the profession with study of theory and works of Andrew Jackson Downing, Frederick Law Olmsted, Ian McHarg, Thomas Church, Lawrence Halprin, Burle Marx to present day significant designers.

Unit – II

Growth and development of Landscape as a profession: Professional education, the environmental movement, large scale regional planning, significant landscape architectural projects of the past century.

Unit – III

Landscape and cities: rural settlements and civic transformations; landscape fragmentation, sensitivity and change.

Unit IV

Multifunctional landscape, Continuous Productive Urban Landscape - urban agriculture for sustainable cities

Unit –V

Market gardens; Landscape as a historic preservation resource; Green pilgrimage network, Sacredlandscape and Historic Urban Landscape.

Suggested Readings

1. Andre Viljone, K.B.J.H. (2005) *Continuous Productive Urban Landscapes: Designing Urban Agriculture for Sustainability*, Elsevier- Architectural Press.
2. Du, G.W.a.B.S. (2016) *Mohammad Shaheer NOTES : A selection of Articles published in LA*, Journal
of Landscape Architecture, A special edition.
3. McHarg, I.L. (1995) *Design with Nature* , Wiley.
4. National ParkService Conference. (1999) *Preserving Modern Landscape Architecture*, Spacemaker
press
5. Newton, N.T. (n.d) *Design on the Land: The Development of Landscape Architecture* .
6. Spens,M(1996)*Landscape Transformed*, Academy Edition.
7. *Modern Landscape Architecture: a CriticalReview* , MIT press.
8. Moore, C. (n.d) *Poetics of Garden* .
9. Shaheer, M. (2013) *Landscape Architecture in India : A Reader*, LA Journal of Landscape Architecture.
10. Singh, M.J.a.I. (2017) *Landscape Architecture: History, Ecology and Patterns*, copal publication.

SEMESTER – II

MLA 24 Site Planning and Landscape Engineering - II Credit: 03

Course Objective: To develop an advanced understanding of a site and the surroundings, with a whole-to-part approach on a holistic basis. Students must examine the natural, cultural, and social systems that affect design decisions, as well as the language and literature of landscape architecture. Studies to be undertaken on land development planning to appraise students in environmental, economic, legal, and visual issues associated with land planning process .**Course Content:** Components of Landscape Engineering, Site mobilisation, Soil conservation and erosion control measures and Estimation of costs for civil works and plantation works

Unit – I

Components of Landscape Engineering and their consideration in Site Planning and Landscape design. Appraisal of site factors in large scale developments with above correlation. Use of relevant software and advanced mapping technology for analysis.

Unit – II

Site mobilisation; Sequence of site activity, site protection measures, site implementation checklist. Landscape Engineering and water conservation; Watersheds and their characteristics, protection of natural water bodies: water retention structures, water harvesting techniques and devices.

Unit – III

Understanding Land/environmental modifications and engineering intervention in :
Soil conservation and erosion control measures; Land reclamation and rehabilitation process; Disposal of sludge, fly-ash, solid and liquid waste; Strip-mines and quarries; Transportation corridors.Horticulture and Forestry techniques.

Unit – IV

Environment-friendly material specifications and methodologies in landscape, to reduce carbon Footprint. Energy saving techniques in landscape engineering for planning of services and utilities. Design parameters and certification criteria for green buildings. Evaluating energy efficient site planning and landscape development. Design of sustainable landscape features such as bioswales, bio retention ponds etc.

Unit – V

Estimation of costs for civil works and plantation works. Preparation of bill of quantities, specifications and Tender documents

Suggested Readings

1. ines, C.W.H.N.T. (2001) *Time saver Standards for Landscape Architecture*, Mc. Graw Hill.
2. Hack, K.L.a.G. (1984) *Site Planning* , MIT PRESS.
3. Hamid, S. (1985) *Urban Design Process* , Van Nostrand Reinhold.
4. Hopper (n.d) *Landscape Architectural Graphic Standards Student Ed.*, John Wiley and Sons Inc.
5. Ingels, J.E. (1992) *Landscaping – Principles & Practices* , Pelmer Publishers Inc.
6. Lovejoy, D. (1973) *Land use and Landscape Planning*, Barnes & Noble.
7. Lynch, K. (1994) *A Good City Form* , MIT PRESS.
8. Mukoda, N. (1990) *Street furniture*, Bijutsushuppan – sha Ltd.
9. Niall, K.a. (n.d) *The Art of Landscape Detail: Fundamentals, Practices and Case Studies*.
10. Reid, G.W. (1987) *Landscape Graphics, Watson* , New York: Guptill publication.

SEMESTER – II

MLA 25 Urban Governance Credit: 03

Course Objective Exposure to the Urban governance

Unit 1: Overview of Urban Governance
Definition, concepts, components, government and governance, hierarchy and structure, forms of governance, process of inclusion and exclusion,

Unit e 2: Legislations pertaining to Urban Governance
Institutional frame and mechanism for urban governance as envisaged in the 73rd and 74th Constitution Amendment Acts.

Unit 3: Institutions and Organizations
Differences between institutions and organizations; approaches to understanding organizations; types, structure and functions, their interface and conflicts, reach, and their effectiveness; Methods, process and evaluation; Present organizations and involved in urban governance.

Unit 4: Urban Local Governance and Participatory Processes
System, structure, functions, powers, process and resource, performance, interface with NGO's, other agencies. Stakeholders' participation, roles and responsibilities, access to government by various stakeholders.

SEMESTER – II

MLA 26 Geoinformatics for Landscape Architecture Credit: 03

Course Objective: To develop an understanding of the land and its designed modifications, with an integration of Earth sciences To develop understanding and capacity building to use information science in landscape architecture to address various problems of geography, cartography, geosciences and related branches of science and engineering in landscape design and planning

Course Content: Concept ,Foundation and application of Remote Sensing and GIS

Unit – I

Concept and Foundation of Remote Sensing, Elements of Photographic System
Types of Aerial Photographs:Vertical Photographs, Oblique Photographs, Satellite Imagery

Unit – II

Introduction to Air Photo Interpretation, Photogrammetry for Map Making :Introduction /Definition, Geometric Elements of a Vertical Photograph, Relief Displacement, Ground Control for Aerial Photography

Unit – III

Digital Image Processing, Applications : Geologic & Soil mapping, Land-use / land cover Mapping a) Land use Classification, Agriculture Applications, Forestry Applications, Water resource Applications: Water Pollution Detection**,** Flood Damage Estimation, Urban & Regional Planning Applications, Wetland mapping

Unit – IV

Geographical Information Systems :Definition, Composition of Geographical Information System, Computer Hardware Module, GIS Software Module, Data Input, Data Storage, Data Output, Database Structures

Unit – V

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

Suggested Readings

1. Batty, D.M.a.M. (ed.) (2005) *GIS, Spatial Analysis and Modeling*, ESRI Press.
2. Brewer, C.A. (n.d) *Designing Better Maps: A Guide for GIS Users*, ESRI Press.
3. C, H.T. (n.d) *Land Form Designs*, P D A Publication.
4. C.Hanna, K. (1999) *GIS for Landscape Architects*, ESRI press.
5. G.S.Srivastava (2014) *An Introduction to Geoinformatics*, McGraw Hill Education.
6. Garcia, J. (2017) *Introduction to Geographic Information System*, Larsen and Keller Education.
7. H, P.P. (1995) *Concrete Floors Finishes* , Butterworth-Heinemann.
8. K.R, B. (1990) *Integrating GIS into Urban Regional Planning, Alternative approaches for developing countries regional development Dialogue* , Japan: UNCRD.
9. Michael, L. (1988) *Tree Detailing* , London: Butterworth Architecture.
10. Michael, L. (1993) *Landscape Detailing Vol.1 Enclosure* , 3rd edition, Architectural Press

SEMESTER – III

MLA 31 Landscape Architecture Studio - III **Credit: 12**

Course Objective: To develop the skill to integrate various knowledge systems to arrive at a design proposal of an urban scale, the process used for the same

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

- Institutional Campuses
- Urban civic spaces at urban design scale
- Transportation and interchange systems and complexes
- Eco-Tourism projects.

Suggested Readingsy

1. C, H.T. (n.d) *Land Form Designs* , P D A Publication.
2. H, P.P. (n.d) *Concrete Floors Finishes* .
3. Michael, L. (1988) *Tree Detailing*, London: Butterworth Architecture.
4. Michael, L. (n.d) *Landscape Detailing Vol.1 Enclosure*.
5. Stevens, D. (n.d) *Ultimate Water Garden Book*.

SEMESTER – III

MLA 32 Landscape Project Management and Professional Practice Credit: 03

(a) 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.

(b) 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.

(c) 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.

(d) Professional Practice Types of client: Private, Government, Corporate etc. The scope and meaning of professional services.

Professional relationship between client and Landscape Architect: Forms of agreement, conditions of engagement, scope of work and services to be provided. Scale of Professional Fees: Common and accepted methods of charging fees, percentage, lump sum, time-basis etc. Calculation and estimation of fee based on work involved. Taxes, remuneration and reimbursement. Role of Professional Institute: Professional code of conduct. Relationship of Landscape Architect with other professionals. Practical illustrations of various aspects of Client-Landscape Architect transactions, especially with regards to the establishment of credibility and trust.

SEMESTER – III

MLA 33 Geology & Edaphic parameters **Credit: 03**

GEOLOGY

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. Minerals and Metals.Rocks: Igneous, Sedimentary, Metamorphic.Isostasy, plate tectonics, crustal deformation and mountain building.Structural geology: dip, strike, folds, faults, joints, unconformities. Stratigraphy: principles, stratigraphy and geology of India.Application of geological information in the interpretation of landscapes on maps and in the field.The relationships between geology, soils and vegetation: Practical examples.

SOILS

Genesis, morphology and classification of soils. Properties of Soils: Physical, Chemical, Biological and Mineralogical. Soil use and Management: (a) Soil evaluation and land-use planning. (b) Soil and water conservation. (c) Soil fertility and plant nutrition. (d) Soil degradation control, remedial actions and reclamation techniques.

Managing difficult soils.

MLA 34 Ecology and Ecosystem Analysis **Credit: 03**

Evolution: Earth and Life

Concept of Ecosystem: General Structure and Function:

i) Energy flow, Primary & Secondary Production ii) Types of Biogeochemical cycles; Carbon cycle, Global water cycles, nitrogen cycle bioaccumulation and biomagnifications and iii) Analysis and evaluation. Concept of ecosystem services.

Types of Ecosystems The Plant Community: General

i) Structure, ii) Concept of ecological Succession and Maturity, Types of succession iii) Analysis, iv) Description and Evaluation

Systems Ecology: Introduction to systems approach and mathematical models in ecology

Population Dynamics:Selected topics in ecosystem management: Climate change – causes and consequences.Aquatic ecology – fresh water and marine

Field ecology: Quadrat, line transect, community analysis

Field work and laboratory analysis of data

SEMESTER – III

MLA35 Landscape Economics Management and horticultural practice Credit: 03

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. Unit cost of development of open space.

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.

Horticulture Practice: Nursery establishment and Plant propagation. Establishment and maintenance of grass, shrubs and trees with respect to: ground preparation, planting and transplanting, pruning.

Horticulture practice and maintenance. Common plant pests, diseases and their control; manures and insecticides and their application. Protection of plant material. Water Budgeting. Equipment for landscape maintenance.

Mode of Evaluation:

The internal evaluation shall be conducted through class test/quiz and term paper as per requirement of the concerned teaching staff.

SEMESTER – III

MLA 36 Research Methodology **Credit: 03**

UNIT I: Research Methodology: An Introduction

Meaning of Research, Objective of Research, Motivation in Research, Types of Research, Research Approaches, Significance of Research, Research Methods versus Methodology, Research and Scientific Method, Importance of Knowing How Research is Done, Research Process, Criteria of Good Research, Problems Encountered by Researchers in India

UNIT II: Defining the Research Problem and Research Design

What is a Research Problem?, Selecting the Problem, Necessity of Defining the Problem, Meaning of Research Design, Need for Research Design, Future of a Good Design, Important Concepts Relating to Research Design, Different Research Design, Basic Principals of Experimental Designs

UNIT III: Sampling Design

Census and sample survey, Implications of a Sample Design, Steps in sampling Design, Criteria of Selecting a Sampling Procedure, Characteristics of a Good Sample Design, Different Types of ample Designs, How to Select a Random Sample?, Random Sample from an Infinite Universe, Complex Random Sampling Designs

UNIT IV: Methods of Data Collection

Collection of Primary Data, Observation Method, Interview Method, Collection of Data through Questionnaires, Collection of Data through Schedules, Difference between Questionnaires and Schedules, Some Other Methods of Data Collection, Collection of Secondary Data, Selection of Appropriate Method for Data Collection

UNIT V:Data Analysis, Interpretation and Report Writing

Data Analysis and Presentation Editing and coding of data, tabulation, graphic presentation of data, cross tabulation, Testing of hypotheses; type I and II errors, one tailed and two tailed tests of significance, Parametric and nonparametric tests for Univariate and Bivariate data. Tests of association; simple linear regression and other nonparametric tests, Meaning of Interpretation, Why Interpretation? Technique of Interpretation, Significance of Report Writing, Deferent Steps in Writing Report. Layout of the Research Report, Types of Report, Oral Presentation, Mechanics of Writing a Research Report, Precautions for Writing a Research Report

SEMESTER – IV

MLA 41 Thesis **Credit: 30**

Landscape Architecture thesis will consist 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.

Mode of Evaluation:

Professional communication skill shall be evaluated periodically through communication skill by judgement at the time of presentation by the concerned student.