SCHEME AND SYLLABUS

OF THE PROPOSED POST GRADUATE PROGRAMME

MASTER OF LANDSCAPE ARCHITECTURE AND MASTER OF LANDSCAPE DESIGN

DEPARTMENT OF LANDSCAPE

School of Planning and Architecture, Bhopal

(An Autonomous Institution of MHRD, Government of India)

Neelbad Rd, near IISER Institute, Bhauri, Madhya Pradesh 462030

MASTER OF LANDSCAPE ARCHITECTURE AND MASTER OF LANDSCAPE DESIGN

DURATION: **TWO YEARS (Four Semesters),** Intake**: 25 students**

INTRODUCTION

The demand for specialization in Landscape Architecture or Landscape Design is ever rising in both the urban and the rural sectors. There is a great thrust towards this specialization. Bhopal, with a great history of integration of landscape design into urban fabric, is an ideal place for starting the above Post graduate program. This course will be the only one in Central India, therefore shall draw in a great number of interested students.

This program offer students an interdisciplinary setting to learn and think critically and creatively in addressing environmental issues so that the future landscape architects shall certainly be versatile in the various aspects of practice typifying the profession, including an environmental ethic, design development, project management at multiple scales, communication, emerging technologies, ethical conduct, as well as relevant areas of research.

New construction is increasingly contingent upon compliance with environmental regulations, zoning laws, and water restrictions, which will spur demand for landscape architects or landscape designers to help plan sites that meet these requirements and integrate new structures with the natural environment in the least disruptive way. Landscape architects and landscape designers will be increasingly involved in preserving and restoring wetlands and other environmentally sensitive sites.

In the transportation sector too, landscape architects and landscape designers are required for surface transportation and transit programs, such as interstate highway construction and maintenance, and environment-friendly pedestrian and bicycle trails, along with dealing with issues of forest fragmentation due to the vehicular movement corridors.

Landscape architects and landscape designers are also expected to be involved in historic preservation, land reclamation, and refurbishment of existing sites, example Industrial and mining sites.

VISION STATEMENT

To prepare students to play a pivotal role in resolving issues facing contemporary society based on the values of goodness, beauty, humanity, and creative co-existence.

MISSION AND STRATEGY

Knowledge Creation

To generate knowledge that is relevant to the needs of society, working on key themes and providing innovative solutions, thus contributing to nation, and community building through knowledge creation that furthers the Institution’s values.

Dissemination
To engage in public dialogue with global, regional, and local communities; providing solutions for key issues of the present time.

Capacity Building
To develop in-house resources that can play a role in the nation's development through educational modules, research and consultancy.

Application
To engage in outreach, and consultancy for service to community that pertain to core disciplinary strengths as a way of furthering the institution's social responsibility.

Objectives:

The mission of the Master of Architecture (Landscape) is to educate for ultimate leadership in the landscape architecture profession. This mission requires the development and exercise of both intellect and sensibility.

The Program has the dual objectives of providing students with a core of design and technical skills in combination with experiences in pure and applied research. This duality prepares students for problem solving in the profession through design and research, and it is a program focus. The Program prepares the students to enter practice in private, public, academic, and research organizations.

Student preparation is enhanced by specialized coursework taken inside and outside of landscape architecture and by the topic of one's thesis. Students are directed to select thesis committee members early-on and to select specialized courses which reinforce students' areas of primary interest in landscape architecture.

Admissions Requirements

Masters in Landscape program is now being offered for graduates of

1. B. Arch/B. Plan/B.E./B. Tech (Civil engineering)

2. M.Sc (with min. two year programme completed from universities approved by UGC) in the following: Horticulture, Botany, Agriculture, Forestry, Ecology, Zoology, Geology, Geomorphology. The entrance of the course is through CCMT (i.e.60%) & 40% directly through institute admission process.

They are further required to appear for an interview and submit portfolios reflecting the applicants' professional and/or academic experiences and interests. Portfolios are assessed according to proficiency in design, presentation and layout, technical skills, and content, similar to criteria used in design studios. Three letters of recommendation are required, and it is suggested that at least two of the letters come from former educators or academic contact.

Course Structure:

The course has been designed in four semesters of equal durations and credits, spread in a total of two years.

Theory:

The core subjects like Landscape Technology, History and Theory of Landscape Architecture, Water Management run through two to three semesters, with increasing rate of complexities, are designed to assist the Landscape Studio through building up a strong scientific, technological, theoretical and historical base. The first semester has a subject devoted to climatology and the Third Semester has subjects to develop understanding of land economics and research methods. This semester is also designed to form the prelude to the independent Thesis. The fourth semester equips the student for the profession with the subject Professional Practice.

Training:

Professional Training under a Landscape Architect or as a Research Associate with a Landscape faculty is a necessary component of the course, which equips the student with the practical aspects/ research base, offering the required exposure to the realm of the profession and research, before he takes up the Thesis.

Flexibility (through Electives):

The course is designed with flexibility for the student to pursue the area of his/ her interest. The second semester offers an array of specialized landscapes to choose from, the third semester offers a common pool elective wherein the student can opt for an elective outside the department, promoting the interdisciplinary approach. The fourth semester offers electives with focus on conservation of energy and historicity.

Studios:

Environment & Management studios: These studios focus on Plants, Ecology, Site planning, Development processes, Water resource as the most valuable and vulnerable asset, Planting design, Environmental Impact Assessment and a Seminar in landscape Appreciation.

Landscape Studios: These are designed as the Core studios of Landscape design, which run through the entire program with increasing complexities, wherein the student makes an application of all the above modules, culminating in an independent Thesis.

ASSESSMENT:

The objective of the evaluation system is to ensure that the student develops a thorough understanding of issues related with Landscape Architecture and therefore has something positive and definitive to offer to the society when he/ she actually starts functioning as a landscape Architect or landscape designer.

The system of evaluation of the student's work has two major components: the continuous evaluation throughout the semesters with a weightage of 60 % and the end term examination with a weight age of 40 %. The continuous evaluation comprises of the attendance, Minor-1 & 2 examinations and the assignments. The conferment of the Degree requires 60 credits and a satisfactory completion of the Thesis.

The assessment of Studios is through periodic reviews conducted for the various stages of the work assigned to the students. The studio deliverables shall be in the form of the specified drawings, reports and models, in accordance to the Studio briefs distributed at the beginning of the semester.

All theory subjects shall be assessed through written examinations and as well as through assignments.

The students shall undertake case-studies in order to understand the methodology and processes in the realization of a project and the maintenance strategies adopted for the long life of the project.

End semester examination shall comprise of written examination or a Viva-voce or a combination of both, depending on the requirements of the subject.

CREDITS AND SCHEME OF EXAMINATION

FIRST SEMESTER

Course No.	SUBJECT	WCH	ESE FORMAT			PROPOSED CREDITS
MLAR0101	LANDSCAPE TECHNOLOGY –I	5	WR		VV	5
MLAR0102	PLANT SYSTEMATICS AND PLANT PROCESSES	3	-		VV	3
MLAR0103	SITE PLANNING AND DEVELOPMENT PROCESSES	2	-		VV	2
MLAR0104	HISTORY, THEORY AND CULTURE-I	2	WR		-	2
MLAR0105	LANDSCAPE STUDIO -I	13	-		VV	13
MLAR0106	BRIDGE COURSE I * (Basic graphics)	5	WR	NON AUDIT	-	Pass/Fail **
	TOTAL CREDITS	25-30				25

***Bridge course I: This course is mandatory for students from non-architecture disciplines i.e. MSc. in Horticulture/Forestry/Botany/Agriculture/Geology/Ecology/Zoology/Geomorphology. The intent of the course is updating the students from diverse disciplines i.e. other than architecture/BE/Civil with basic understanding of subjects and tools required for learning of this course. This course will focus to enhance drawing skills, architectural graphics and representation skills.**

****It is a Non-Audit course, and will be compulsory to pass the subject in order to attain 25 credits and be eligible for next semester.**

SECOND SEMESTER

Course No.	SUBJECT	WCH	ESE FORMAT			PROPOSED CREDITS
MLAR0201	LANDSCAPE TECHNOLOGY –II	3	WR		VV	3
MLAR0202	HISTORY, THEORY AND CULTURE-II	2	WR		VV	2
MLAR0203	PLANTING DESIGN	2	-		VV	2
MLAR0204	ELECTIVE A. LANDSCAPE FOR HEALING B. INDUSTRIAL LANDSCAPES C. COMMERCIAL LANDSCAPES D. LANDSCAPE FOR SPORTS E. INSTITUTIONAL LANDSCAPES F. LANDSCAPE CONSERVATION G. VISUAL LANDSCAPES H. WILD LIFE LANDSCAPE AND MANAGEMENT I. REMOTE SENSING AND AERIAL INTERPRETATION J. GREEN BUILDINGS	3	-		VV	3
MLAR0205	SEMINAR & RESEARCH METHODS	2	-		VV	2
MLAR0206	LANDSCAPE STUDIO- II	13	-		VV	13
MLAR0207	BRIDGE COURSE II*	5		NA		Pass/Fail **
	TOTAL CREDITS	25-30				25

***Bridge course II: This course is mandatory for students from non-architecture disciplines i.e. MSc. horticulture/ Forestry/ Botany/ Agriculture/ Geology/ Ecology/ Zoology/ Geomorphology. This course will focus to enhance SPATIAL UNDERSTANDING OF OUTDOOR ENVIRONMENT. This course can be made open for B-Arch students.**

It is a Non-Audit course, and will be compulsory for landscape design students to pass the subject in order to attain 25 credits and be eligible for next semester.

THIRD SEMESTER

CourseNo.	SUBJECT	WCH	ESE FORMAT			PROPOSED CREDITS
MLAR0301	LANDSCAPE TECHNOLOGY –III	3	WR		VV	3
MLAR0302	COMMON POOL ELECTIVE A. LANDSCAPE AND CITY DESIGN B. THE FUTURE CITIES C. MOVEMENT CORRIDORS D. ENERGY EFFICIENT LANDSCAPES E. MINING LANDSCAPES	2	WR		-	2
MLAR0303	LANDSCAPE ECONOMICS	2	WR		-	2
MLAR0304	WATER MANAGEMENT	2	-		VV	2
MLAR0305	THESIS PROGRAMMING	2	WR		VV	2
MLAR0306	LANDSCAPE STUDIO-III	10	-		VV	10
MLAR0307	PROFESSIONAL TRAINING	4	-		VV	4
	TOTAL CREDITS	25				25

FOURTH SEMESTER

CourseNo.	SUBJECT	WCH	ESE FORMAT			PROPOSED CREDITS
MLAR0401	PROFESSIONAL PRACTICE	3	WR		-	3
MLAR0402	ENVIRONMENTAL IMPACT ASSESSMENT	1	-		VV	1
MLAR0403	THESIS	21	-		VV	21
	TOTAL CREDITS	25				25

Total Credits at the end of four semesters: (25+25+25+25) = 100

FIRST SEMESTER

MLAR 0101 LANDSCAPE TECHNOLOGY –I 5 CREDITS

Weekly Contact Hours: **5**

End Semester Examination: one Written Exam of 3 hours duration, One Viva Voce

Course Objective: To develop an understanding of the land and its designed modifications, with an integration of Earth sciences.

M No.	Module Name	Course Content	Week
M1	**Geology**	1. History of earth's structure, tectonic plates, lithosphere, asthenosphere, Study of rocks – igneous, metamorphic & sedimentary, minerals, natural hazards viz. volcano, earthquakes. 2. Geologic maps, geologic time scale, geomorphology, landforms – Glacial, Aeolian, Fluvial, deformations in landforms. Indian geology, life through the geologic ages, Deccan Basalt volcanism, Plate tectonics, earthquakes & tsunamis, glaciers of India, geothermal fields of India. 3. Application of geologic principles to environmental problems e.g.: Stream restoration, hydrogeology, geotourism	**3**
M2	**Hydrology**	1. Hydrological cycle, water resources; Ground water, forms of subsurface water, aquifer properties, geologic formations as aquifers, Infiltration, Soil moisture, Surface water flow. 2. Precipitation, weather system's for precipitation. Evaporation, evapo-transpiration; remote sensing & GIS applications. Runoff: hydrograph, runoff characteristics of streams, field, flow duration curve, Flew mass curve. 3. Characteristics of Precipitation on India; relationship to vegetation, drainage basins, natural drainage patterns.	**4**
M3	**Surveying**	1. Reading Soil, topographic construction, Geodesy, hydrographic, photogrammetry & GIS maps.	**4**
M4	**Land surface Modification**	1. Visualizing land forms, land excavations, land- fills, angle of repose, existing and modified contour mapping, cut & fill calculations, grading and drainage drawings; practices of erosion control, slope stabilization, safe disposal of run-off water and drainage, grade stabilization structures,	**2**

		retaining walls, surface and sub-surface drains, cut and fill slopes, timing and phasing; maintenance; characteristics and management of water sheds; slope protection; grading plans, design and specifications. 2. Presence or vicinity of vegetation, streams, lakes, soft compressible soils, wetland; Impact of land surface modification on drainage.	
M5	**Landscape Construction**	1. Study of construction documentation process employed by landscape architects. Landscape drawings, symbols and sheet layouts.	**3**

Note: The subject shall include a number of demonstrative exercises and visits. **Landscape Technology Laboratory** (partly field based): for studies in Geology, Hydrology, Surveying, site grading, materials and construction techniques, scale models, utilities and services, construction and detailing.

MLAR 0102 PLANT SYSTEMATICS AND PLANT PROCESSES 3 CREDITS

Weekly Contact Hours: **3**
End Semester Examination: One Viva Voce

Course Objectives: To develop an understanding of the plant material and their role in ecology.

Course Contents: Examines the ecology, growth characteristics, and design applications of plant materials. Field trips with experts are required.

Plant & Ecology Laboratory: for studies in ecology, growth characteristics, design applications, plant material and their groupings, techniques and methods of plant manipulation.This lab shall be in the form of a greenhouse and a nursery.

Course structure: Laboratory sections will be devoted to learning to identify live specimens of the dominant landscape plant taxa found in native landscapes and important non-native taxa utilized in regional landscape designs. The recitation portion of the classes will consist of an overview followed by group discussions of research, educational, and popular press articles related to current issues, research, and trends in selection, marketing, and utilization of plants for landscape design. Each student will be responsible for summarizing and critiquing a published article for the weekly one page topic papers. Following an introduction to each topic by the instructor, a guest lecturer or other expert in the field, a student-led discussion of the topic will comprise the remainder of the recitation period. Topics will be predetermined to allow preparatory time by the students prior to the recitation.

M No.	Module Name	Course Content	Week
		1. Fundaments of Ecology: definition, scope, ecosystems and their functioning: nature and characteristics, Components: biotic	

M1	**Introduction to Ecology**	and abiotic, major types, the biosphere and its functioning. 2. Ecological Processes: energy flow-energy source, food chains and trophic structure, ecological pyramids, biogeochemical cycles hydrologic cycle nutrient cycles - carbon, nitrogen, sulphur, phosphorous, evolution - variation and selection, speciation. 3. Ecology of growth, regulation, limits to growth, carrying capacity, Ecological conditions of India, 4. Eco systems and forest types of India.Biomes, Principles of plant climax, succession, relationship of plant communities & plant storeys. Distribution of plant communities and plant associations in. Limiting factors and their operations: climatic and atmospheric factors, soils, biotic factors, interaction of factors.	**4**
M2	**Plant Ecology**	1. Classification of Plant Kingdom, Principles of nomenclature and identification;Plant identification criteria. General study of plant morphology and anatomy to understand plant functions. Growth habits, habitat, origin, growth duration, leaf arrangement, leaf type, main flower colour, flowering period, family, genus Adaptation in plants Planting in disturbed sites (mined, quarried lands, wetlands, saline acidic soils etc).Limitations and adaptability in urban and suburban environments for important taxa; Plant phenology.Plant processes, plant – water - soil relationship, mineral nutrition, photosynthesis, and respiration. Stem, root & leaf relationship, growth & flowering. Plant multiplication & adaptations. Economic values of plant kingdom.	**3**
M3	**Planting Palliate Preparation**	Identification and use of plants in landscape designs; Criteria for selection of plant material for specific design applications. Classification in plants, Planting for appearance of form, leaf colour and texture, branching habit and trunk form and their texture, colour of flowers and fruits. Planting for visual effect and accent. Plants for special uses in	**5**

		commercial and residential developments; identification, cultural requirements,	
M4	**Ecological Restoration**	1. Ecological communities: spatial structure, ecological niche and species diversity, succession. 2. Discussion of current issues, research, and trends in selection, marketing, and utilization of plants for landscape design. 3. Critical survey of Vegetation types of India. Cultural values of vegetation.	**4**

MLAR 0103 SITE PLANNING AND DEVELOPMENT PROCESSES 2 CREDITS

Weekly Contact Hours: **2**

End Semester Examination: One Viva Voce

Course Objective:

To develop a complete understanding of the site and the surrounds, with a whole to part approach.

M No.	Module Name	Course Content	Week
M1	**Site Planning Processes**	1. Landscape Assessment techniques; Basic quantitative methods of collecting, analyzing projecting and presenting data for Landscape planning	**4**
M2	**Preparation of site inventory and analysis**	1. Defining the problem, use of relevant software and mapping technology	**4**
M3	**Program Development**	1. Statement of goals, project objectives, project elements	**4**
M4	**Synthesis**	1. Conceptual design, Communication of ideas and intent	**4**

MLAR 0104 HISTORY AND THEORY OF LANDSCAPE ARCHITECTURE-I 2CREDITS

Weekly Contact Hours: **2**

End Semester Examination: one Written Exam of 3 hours

Course Objective:

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

M No.	Module Name	Course Content	Week
M1	**Introduction to History**	1. Understanding the Relationship between Man and Nature, the process of transforming landscapes; landscapes of Power, Faith and Place. 2. Traces of Landscape Planning and Garden Design from Pre-history through Eastern,	

	and Understanding of Landscape Architecture and Garden Design	Egyptian, Roman, Islamic, and Medieval to Renaissance, Italian, French, English, Persian traditions, China and Japan. 3. Ancient and medieval period in India, Mughal and Rajput Garden Styles.	**4**
M2	**Understanding of "Cultural Landscapes"**	1. Understanding of "Cultural Landscapes" as a "Memory": identity, collective memory, landscape as a text. 2. Study of various examples of "Cultural Expression" in terms of Landscape	**3**
M3	**Theory of Landscape Architecture**	1. Understanding of theoretical terrain of Landscape Architecture. 2. The nature of theories and philosophies in Landscape Architecture. 3. Design Process, Form, Meaning, Built Environment and Experience.	**5**
M4	**Landscape as a "Language"**	1. Understanding of Landscape as a "Language". 2. Various process of Narrations to "Communicate" and Express" the Landscape by various Architects in History.	4

MLAR 0105 LANDSCAPE STUDIO –I 13 CREDITS

Weekly Contact Hours: **13**
End Semester Examination: One viva voce

Course Objective: To enable the students to integrate the knowledge gained from all the above subjects in the landscape design studio exercise. An exploration into the realm of design through an application of own mind, coupled with an intense interaction with faculty and practicing landscape architects.

M No.	Module Name	Course Content	Week
M1	**Observing the Interactions and Processes in nature (set of smaller exercises)**	1. Focuses on observation skills, enhancing verbal, intellectual and written communication skill, and evolving creative graphical tools for mapping. 2. Draw relation of art with landscape, documenting natural phenomena occurring in landscape, exploring sensorial and spatial qualities through landscape.	**4**
M2	**Design Exercises (max.2 nos.)**	1. Outlines the site planning and site design decision-making process. Focuses on providing students with the verbal, intellectual, and graphic tools necessary to	As required

		successfully tackle a design problem and bring it to a schematic level of completion. 2. The design exercises shall be of neighbourhood level, various typologies; urban and rural experiments; courtyards, children's' play areas, etc.	

MLAR 0106 BRIDGE COURSE — Pass/Fail **

Weekly Contact Hours: **5**
End Semester Examination: one written exam of 3 hours

Note: The intent of the course is updating the students from diverse disciplines i.e. other than architecture/BE/Civil with basic understanding of subjects and tools required for learning of this course. This course will focus to enhance drawing skills, architectural graphics and representation skills.

****It is a Non-Audit course, and will be compulsory to pass the subject in order to attain 25 credits and be eligible for next semester.**

Course objective: To familiarize the students with the basic design principles; drawing tools, field sketching and graphics; surveying; and presentation techniques.

M No.	Module Name	Course Content	Week
M1	**Introduction**	1. Introduction and familiarization with drafting tools and accessories. To give basic knowledge of drafting and lettering techniques. 2. To develop comprehension and visualization of geometric forms. Develop understanding the basic design elements & principles; Visual compositions. Exercises to increase perception and sensitivity of anthropometrics and space.	**4**
M2	**Graphics**	1. Orthographic Projections: Definition, Meaning & concept. Perspective drawings.	**4**
M3	**Surveying**	1. Introduction to surveying, understanding land topography and its relevance. 2. Types of surveys in practice and survey equipment.	**4**
M4	**Presentation techniques**	1. Introduction to represent different textures and finishes in plan and elevation. Rendering techniques.	**4**

MLA - SECOND SEMESTER

MLAR 0201 LANDSCAPE TECHNOLOGY –II 3 CREDITS

Weekly Contact Hours: **3**

End Semester Examination: one Written Exam of 3 hours duration, One Viva Voce

Course Objective: To develop an understanding of materials and techniques in landscape construction with due importance to construction drawings.

M No.	Module Name	Course Content	Week
M1	**Introduction to Various Materials and Landscape Construction Techniques**	1. Introduction to various materials used in landscapes constructions. Mud, clay, stone, bricks, timber, glass, metals, gravel, pebbles, Lime, sand, cement, concrete, RCC, Vitrified tiles, terracotta. 2. Market surveys and Site Visits for materials to document the various landscape construction details in local areas (with in the city).	**3**
M2	**Landscape construction-1**	1. Understanding of various construction details: Paving & pavements, walks, drives, roads, parking, paths & plazas; Plant beds, edgings, plant boxes, steps, ramps, stepping stones. Finishes in different types of stones and concrete. 2. Ground water re-charges system-construction techniques and drawings, septic tanks, inspection chambers, catch basins, swales, drainage channels etc. Systems for use of grey water and relevant construction details.	**3**
M3	**Landscape construction-2**	1. Construction of retaining walls, edgings of natural and manmade water bodies; culverts; Techniques for prevention of soil erosion. 2. Construction details of small landscape structures and street furniture.	**4**
M4	**Landscape construction-3**	1. Construction of land forms, mounds, angle of repose, depressions, podiums, earth berms, levels, earthen tiers & terraces. 2. Designing of a small outdoor design space to understand the various construction details.	**6**

Landscape Technology Laboratory (partly field based) for studies in materials, techniques, utilities, services, construction and detailing. Study trips to actual landscape project sites.

MLAR 0202 HISTORY THEORY AND CULTURE-II 2CREDITS

Weekly Contact Hours: **2**

End Semester Examination: one Written Exam of 3 hours duration, One Viva Voce

Course Objective: This subject deals with contemporary landscapes and how environmental issues and ecological issues have been resolved in them. Understanding Regional scale of landscape architecture and its allied aspects.

M No.	Module Name	Course Content	Week
M1	**Advent of Modern Landscape**	1. Landscape design in 19 and 20 the century a. Advent of park landscape 2. Beautiful cities movement, Garden cities 3. Pioneer landscape Architects and their role in development of profession 4. Park Movement 5. 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.	**5**
M2	**Theoretical realm in Landscape Architecture**	1. Building theory in landscape architecture. 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. Role of Theory in Landscape profession 2. Significant theoretical paradigms in Landscape Architecture	**5**
M3	**Contemporary Landscape Architecture Practice and Futuristic Landscape**	1. Significant landscape architecture projects and their role in shaping up profession 2. Concerns of the profession in time to come	**6**

MLAR 0203 PLANTING DESIGN 2 CREDITS

Weekly Contact Hours: **2**

End Semester Examination: One viva voce

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

M No.	Module Name	Course Content	Week

M1	**Introduction to Planting design theory**	Planting design theory, a historical perspective, People and plants; co-evolution; Discussion, recognition of varying cultural contexts, perceptions. Visual Aesthetics and functional considerations in planting design. Planting design as an element of structuring the landscape, to make a design statement.	**2**
M2	**Design Applications of Plant Material**	To find, group and space plants. Design of Edible, medicinal, water, hydroponic gardens, backyard gardens. Planting design for disturbed sites, eg abandoned quarries and mines.	**3**
M3	**Planting Design for Environmental Improvement**	Planting design for environmental improvement: eg. Soil conservation, modification of microclimate. Planting design for highways, roads, parking, industries, terraces, roofs, indoors, etc. Xeriscaping benefits, principles, applications in design. Plants for sustainability, LEEDS and GRIHA ratings	**3**
M4	**Elements of Horticultural Practices**	Lawn establishment, tree pit preparation, Nursery establishment and plant propagation, soil preparation, planting, establishment and maintenance of trees and shrubs, ground covers, climbers, grasses, palms, aquatic plants, bonsai. Transplantations. Plant injuries and their causes, insects and diseases: spread, symptoms of injury, weeds, principles of control, pesticides, integrated pest management	**3**
M5	**Professional/technical drawing**	Professional/technical drawing, design placement aspect and specification standards of plant materials, their rationale (according to growth characteristics) and artistic treatment. Post development maintenance; preparation of planting, specifications and Bill of quantities	**3**

MLAR 0204 ELECTIVE 3 CREDITS

Weekly Contact Hours: **2**
End Semester Examination: One viva voce

Course Objective: To offer the students an interdisciplinary setting to take up courses from other departments. The department shall offer three elective subjects based on Studies in role of landscape in city designs and movement corridors within and outside the cities. These are open to other departments.

S. No.	Module Name	Course Content

1	**Landscapes for healing**	1. **Introduction:** Historical context of healing landscapes, what are healing spaces 2. **Theoretical Context in Healing Landscape** Theories of the Healing Influence of the Garden; the healing garden, the horticulture therapy school, The Cognitive School, The range of landscapes used in environmental psychology studies, and the evidence of health effects related to viewing these landscapes 3. Universal design considerations in landscape 4. **Assessing Healing Environment:** Questionnaire surveys 5. **Designing Healing Environment:** Design for healing: design for healing for various disabilities, Case studies of healing garden; Designing healing environment; Planting design for healing environment Medicinal plants Evaluation method: Seminar/ paper on approved topic
2	**Industrial landscapes**	1. The course explores the challenges of industrial landscapes, disposal / treatment of industrial waste, planting design to mitigate the negative impacts, greening the vertical and horizontal surfaces.
3	**Commercial landscapes**	1. The course explores the landscape theories and design for commercial areas / commercial landscapes. Planting design to attract / give relief to shoppers / planting design to reap commercial benefits.
4	**Landscapes for sports**	1. Need for sports landscape. 2. Landscape design for sports fields, stadiums, swimming pools; including illumination and ancillary services. 3. Understanding active recreation through sports in residential, commercial, city level.
5	**Institutional landscapes**	1. Landscape design for educational institutes, theory and practice; design for concentration, inducing learning; design for leisure.
6	**Landscape Conservation**	1. To understand the importance of landscape conservation including the Historic urban landscapes and the various approaches to same. 2. Landscape: an emerging historic preservation resource; study of various charters related with

		landscape conservation, Landscape Conservation in Indian Context, Environmental conservation, 3. Landscape conservation and its significance (natural resources such as soil, water, vegetation etc), Conservation of historic landscapes, HULs, National and International policies related to landscape conservation areas such as forests, national parks, protected landscapes, bio- reserves etc. UNESCO's recommendations for the Historic Urban Landscapes, safeguarding methods. The students shall take up an actual landscape conservation project as study and shall make a proposal for the same.
7	**Visual landscapes**	1. The landscape design of open atriums, visual courtyards; places visible from high rise buildings/ indoor spaces; places that can be seen and not used or visited; to add interest and to give relief from monotony through visual landscape design.
8	**Wildlife Landscape and Management**	2. Understanding species–habitat interactions, linked ecological processes, effects of climate change, anthropogenic activities on wildlife & natural resources, need for wildlife management and initiatives undertaken
9	**Remote Sensing and Aerial Interpretation**	3. Principals and Elements of Visual Image Interpretation, Examination of the Earth from an aerial perspective to identify objects, patterns, and man-land interrelationships, "spatial terrain" information. Three-Dimensional Depth Perception,Photo-overlay, Land Use and Land Cover Classification System
10	**Green Buildings**	4. Goals of Green Building, Green building Rating System, Environmental, Social, Economical Benefits

MLAR 0205 SEMINAR AND RESEARCH METHODS 2 CREDITS

Weekly Contact Hours: **2**
End Semester Examination: One viva voce

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

M No.	Module Name	Course Content	Week
M1	**Introduction to landscape and appreciation**	1. Notions of landscape and their contexts	**4**

		2. Modes of representation of landscape Landscape appreciation - modes and styles, Natural landscapes as systems observational study of Natural landscape, Designed landscape, Presentation of Appraisal as a report or other	
M2	**Introduction to research**	Introduction, definition, objectives of research, types of research, research process, research design, types of research designs descriptive vs Analytical, applied vs fundamental, quantitative vs qualitative, conceptual vs empirical . Research Process: problem formulation, literature survey, development of working hypothesis, preparation of research design, determination of sample, data collection and analyses, hypothesis testing, generalization and interpretation, report preparation.	**4**
M3	**Proposal Formulation**	Collection of Primary data- methods- observations- structured, unstructured, interview, schedules and questionnaires. Applications, advantages and disadvantages of each type. Sampling- criteria of selecting samples, probability sampling, non-probability sampling. Characteristics and sub categories in each type. Data Tabulation- editing, coding, classification, tabulation	**2**
M4	**Research Writing**	1. Ethics of writing 2. Structure of report Preparation of Report /Thesis- prefatory part, main body, supplementary part, referencing and bibliography.	**6**

MLAR 0206 LANDSCAPE STUDIO –II 13 CREDITS

Weekly Contact Hours: **13**

End Semester Examination: One viva voce

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.

M No.	Module Name	Course Content	Week
M1		1. Examines how humans occupy exterior space and combines this information with the principles of design to create garden	

	Urban Scale Landscape Development (Minor Exercise)	scale models. Models are used as a medium for design expression. **2.** Landscape character, design simulation, landscape media, landscape context, and human spatial experience are included. The design exercises shall be of urban scale, eg. urban open space systems, heritage zones, etc.	**3**
M2	**Regional Landscape (Major exercise)**	1. Outstation site visit, with extensive data collection, survey and documentation of the entire region. Studies related to physiography, socio-cultural aspect etc. to be conducted in detail. 2. Issues and threats identification and challenges associated with the region to be solved through regional scale development proposal and detailed design intervention of important areas.	**10**

MLAR 0207 BRIDGE COURSE-II Pass/Fail **

Weekly Contact Hours: **5**
End Semester Examination: one written exam of 3 hours

This course is mandatory for students from non-architecture disciplines i.e. MSc. horticulture/ Forestry/ Botany/ Agriculture/ Geology/ Ecology/ Zoology/ Geomorphology. This course will focus to enhance SPATIAL UNDERSTANDING OF OUTDOOR ENVIRONMENT. This course can be made open for B-Arch students.

It is a Non-Audit course, and will be compulsory for landscape design students to pass the subject in order to attain 25 credits and be eligible for next semester.

Course objective: To familiarize the students with the basic understanding of outdoor environment, spatial quality, sense of scale and representation techniques. This subject will assist the students in their studio exercises.

M No.	Module Name	Course Content	Week
M1	**Introduction**	Exercises to increase perception and sensitivity of outdoor spaces. Study of urban, rural, cultural, ecological community values both the tangible and intangible, through site visits.	**4**
M3	**Documentation**	Documentation of different land uses, understanding quality spaces, understanding scale, formulating survey questionnaire	**4**
M4	**Representation techniques**	Techniques of mapping, analytical & graphical methods.	**4**

MLA - THIRD SEMESTER

MLAR 0301 LANDSCAPE TECHNOLOGY - III 3 CREDITS

Weekly Contact Hours: **3**

End Semester Examination: one Written Exam of 3 hours duration, and one Viva-Voce

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

M No.	Module Name	Course Content	Week
M1	**Construction of Water Features**	1. Ponds, pools, swimming pools, water bodies, fountains, etc. new materials like geo textiles, pond liners	**3**
M2	**Artificial Lighting for Designed Landscapes**	1. Outdoor illumination. Electrical lighting and services, construction, types of illumination fixtures.	**3**
M3	**Outdoor Use Areas**	1. Lawn construction, Grading of various areas, etc.	**4**
M4	**Working Drawings, Specifications And Bills of Quantities**	1. Construction details of Terrace gardens, roofscapes, vertical landscapes; Preparation of Specification sheets and Bills of Quantities	**6**

MLAR 0302 COMMON POOL ELECTIVE: 3 CREDITS

a. LANDSCAPE AND CITY DESIGN
b. THE FUTURE CITIES
c. MOVEMENT CORRIDORS
d. ENERGY EFFICIENT LANDSCAPES
e. MINING LANDSCAPES

Weekly Contact Hours: **3**

End Semester Examination: one Written Exam of 3 hours duration

Electives offered by other courses: Master of Planning (URP): **MPUR0302**: A. Urban Redevelopment, B. Planning for Tourism, Quantitative Methods and Systems Analysis. Master of Planning (Environmental Planning): **MPEM0302**: A. Water resource management, B. Energy auditing and accounting Master of Urban Design **MAUD0302:** A. Urban design politics, B. Architectural criticism, C. City and the Arts. Master of Architecture (Conservation): **MACO0302**: A. Museum Design, B. Disaster Management of Cultural Resources.

Course Objective: To offer the students an interdisciplinary setting to take up courses from other departments. The department shall offer three elective subjects based on Studies in role of landscape in city designs and movement corridors within and outside the cities. These are open to other departments.

E No.	Elective Name	Course Content
E1	**a. LANDSCAPE AND CITY DESIGN**	1. The course explores the city designs dictated by the landscape elements, their origin, the present situation and the projections into the future. 2. Meaning, management and manipulation of place. (following the philosophy of Ian Mc Harg)
E2	**b. THE FUTURE CITIES**	1. The course explores the narratives in city landscapes, the cultural identity carrying capacity to the city of the future.
E3	**c. MOVEMENT CORRIDORS**	2. The course explores the various vehicular movement corridors, the highways, the forest roads; impact of the resulting fragmentation of forests, landscapes; minimizing the impacts of movement corridors on nature. Greenways.
E4	**d. ENERGY EFFICIENT LANDSCAPES**	1. To give an opportunity to students to study energy efficient landscapes in detail to enhance its application in landscape planning or landscape design process.
E5	**e. MINING LANDSCAPES**	1. Landscape design for open cast and underground mining sites; management of top soils; treatment of abandoned sites; landscape design to mitigate the negative impacts of mining activities.

MLAR 0303 LANDSCAPE ECONOMICS 2CREDITS

Weekly Contact Hours: **2**

End Semester Examination: one written exam

Course Objective: To enable a holistic approach to notions of 'value' inscribed in landscapes; both natural and cultural.

Narrow economic valuations ignore values which are intrinsic to the landscape. Landscapes can be seen to comprise of aesthetic, ecological, environmental, as well as utilitarian values, which are tacit and usually reflected in their real-estate value. The course will help the students to develop an understanding for their evaluation.

M No.	Module Name	Course Content	Week

M1	**Notions of value in Landscape**	Notions of Externalities in Neo-Classical Economics; Ecological Economics	**4**
M2	**Introduction**	Hedonic Pricing Method for environmental and ecosystem services valuation, and (optional) developing a hypothetical framework for landscape valuation	**4**
M3	**Integrating Landscape values into economic frameworks**	'The Economics of Ecosystems and Biodiversity (TEEB) Carbon Economy REDD+ Framework	**4**
M4	**Case studies**	Landscape valuation and presentation of findings	**4**

MLAR 0304 WATER MANAGEMENT 2 CREDITS

Weekly Contact Hours: **2**

End Semester Examination: one Viva Voce

Course Objective: To gain awareness regarding the larger issues surrounding water availability and use, as well as emerging trends and forecasts for different regions of India.

The Course aims to familiarize the student to frameworks and instruments regarding the use, conservation in order to consider approaches to water at the landscape-scale.

Further, the course will encourage the student to find first-hand and viable solutions to real-life issues regarding water – both conditions of excess and deficiency through field-work and studio.

M No.	Module Name	Course Content	Week
M1	**Issues**	Riparian and Coastal Flooding risk and Water Scarcity in India	**4**
M2	**Legal Frameworks**	National Water Policy (1987, 2002, 2012 and 2020), Approaches to sharing resources: 'Water-Food-Energy Nexus' Approach (FAO 2014); 'Landscape Approach' (Sayer et al. 2013); Introduction to 'Resilience'	**4**
M3	**Building 'Resilience' – Field work and Studio**	Exercise that integrates the scientific evidence with frameworks and best-practices	**8**

MLAR 0305 THESIS PROGRAMMING 2 CREDITS

Weekly Contact Hours: **2**

End Semester Examination: One Viva Voce

Course Objective: To comprehensively make the students understand the impacts of proposed development projects, enabling them to work out alternatives, so that wherever possible significant negative impacts may be avoided, minimized, or mitigated.

M No.	Module Name	Course Content	Week

M1	**Introduction and Proposal Formulation**	1. Identification of areas of research, synopsis structure and components, literature review	**3**
M2	**Research design and site selection**	Research design and methods formulation, Selection of tools for research, data collection and management, Site survey and mapping, thematic maps development, Site analysis	**3**
M3	**Data Analysis and interpretation**	3. Data analysis	**10**

MLAR 0306 LANDSCAPE STUDIO- III 10 CREDITS

Weekly Contact Hours: **10**
End Semester Examination: One Viva Voce

Course Objectives: To make the students understand the workings of a large site/ area of regional scale, design and implementation factors with the involvement of the stakeholders.

M1	**Introduction to Regional Landscape Conservation and Planning**	1. Understanding, mapping and assessing Regional landscape. Collection of primary data, data tabulation, and analysis, to draw inferences. Assessing and designing regional landscape	**16**

MLAR 0307 PROFESSIONAL TRAINING 4 CREDITS

Weekly Contact Hours: **4**
End Semester Examination: One Viva Voce

Course Objectives: Professional training under a practicing landscape architect or as research assistant under a landscape architect in academics, to enable the student to understand the nuances of the profession and its responsibilities. An in-built system of weekly contact hours has been worked out. The minimum duration of the training period should be 8 weeks.

MLA - FOURTH SEMESTER

MLAR 0401 PROFESSIONAL PRACTICE 3 CREDITS

Weekly Contact Hours: **3**

End Semester Examination: One written exam of 3 hours duration

Course Objective:

Course Objective: To prepare students to lead the profession, by equipping them with the necessary knowledge of burning social and ecological issues pertinent to landscape. The Course will enable students to use the knowledge and skills gained, and participate in real-life social settings in order to shape local or landscape-scale ecological and environmental change through participation and advocacy.

M No.	Module Name	Course Content	Week
M1	**Models and Ethics of Professional Practice**	1. Codes, Standards, Bye-laws, Regulations applicable to building and landscape development. 2. The role of statutory and regulatory bodies such as the Municipal Corporations, etc.	**2**
M2	**Deliberative Democracy, Public Participation, and Professional Service**	1. Types of Citizenship and urban Space 2. Democracy and urban space 3. Participation 4. Public participation in urban landscape design	**3**
M3	**Finding solutions using collaborative methods**	Field Visits and Action Research in Group settings; Finding solutions using collaborative methods	**8**
M4	**Presentations**	Charrette and Presentations; Report and Documentation	**3**

MLAR 0402 ENVIRONMENTAL IMPACT ASSESSMENT 2 CREDITS

Weekly Contact Hours: **2**

End Semester Examination: One Viva Voce

Course Objective:

To comprehensively make the students understand the impacts of proposed development projects, enabling them to work out alternatives, so that wherever possible significant negative impacts may be avoided, minimized, or mitigated.

M No.	Module Name	Course Content	Week
M1	**Introduction**	1. Understanding of various definitions, methodologies, techniques, advantages and disadvantages**.**	**3**

		2. Process: data collection, identification of study area, scope, aim, environmental standards and their measurements.	
M2	**EIA In India**	1. Legislation related to EIA, EIA in developed and developing countries, ecological attitudes in the past. 2. History of EIA in India	**3**
M3	**EIA Methodology to Landscape Design**	1. Introduction to Landscape & Visual Impact Assessment. 2. Relationship of LVIA to others factors (Climate, soil, heritage, flora-fauna, humans, noise, air, water) 3. Stages involved in LVIA.	**6**
M4	**Pollution Parameters**	1. Standard methods for determining pollution. 2. Principles, suitability and range of instrumental analysis of pollutants. 3. Stack monitoring; air sampling and analysis. 4. Environment management program and its relationship to landscape design.	**4**

MLAR 0403 THESIS 21 CREDITS

Weekly Contact Hours: **21**

End Semester Examination: One Viva Voce

Course Objectives:

To provide the students an opportunity towards application of the knowledge gained in an independent Thesis, with a design or a research focus, to arrive at a creative/ thoughtful design or findings, enriching the landscape architecture database. The findings of the thesis should extend the boundaries of the professional discipline by either presenting new and unique ideas or information, or by interpreting existing knowledge from a different perspective. In case of a research thesis, the study should necessarily culminate into a methodology / policies/ guideline.