SCHEME AND SYLLABUS
MASTER OF LANDSCAPE ARCHITECTURE AND MASTER OF LANDSCAPE DESIGN

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

योजना एवं वास्तुकला विद्यालय, भोपाल
राष्ट्रीय महत्व का संस्थान, शिक्षा मंत्रालय, भारत सरकार
School of Planning and Architecture, Bhopal
An Institute of National Importance, Ministry of Education, Government of India

SCHEME AND SYLLABUS
MASTER OF LANDSCAPE ARCHITECTURE AND MASTER OF LANDSCAPE DESIGN

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

PREAMBLE

The demand for specialization in Landscape Architecture or Landscape Design is ever rising in both the urban and the rural sectors. Bhopal, with a great history of integration of landscape design into urban fabric, is an ideal place for the course.

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, for example Industrial and mining sites.

This program offers 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.

VISION STATEMENT

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

OBJECTIVES

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.

MISSION AND STRATEGY

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.

ADMISSION REQUIREMENTS

Masters in Landscape Design Programme

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, Geography. The entrance of the course is through CCMT (i.e.60%) & 40% directly through the institute admission process.

Masters in Landscape Architecture Programme

1. B. Arch

   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.

CREDITS AND SCHEME OF EXAMINATION

FIRST SEMESTER

Proposed Scheme for Postgraduate Program of
Master of Planning Master of Landscape Architecture and Master of Landscape Design

First Year: Integrated Semester						
Subject Code	Subject	WCH			ESE Format	Credits
		L	T	Lab		
MLAR0101	LANDSCAPE TECHNOLOGY - I	1	1	1	WR + VV	3
MLAR0102	PLANT SYSTEMATICS AND PLANT PROCESSES	1	1	1	VV	3
MLAR0103	VISUAL ART-I	1	1		VV	2
MLAR0104	HISTORY, THEORY AND CULTURE - I	1	1		WR	2
MLAR0105	SITE PLANNING AND DEVELOPMENT PROCESSES	1	1		VV	2
MLAR0106	REMOTE SENSING AND ARCGIS	1		2	VV	3
MLAR0107	LANDSCAPE DESIGN STUDIO - I	4	6		VV	5
MLAR0108	BRIDGE COURSE - I * (Basic Graphics)	2	2		WR	Pass/Fail **
	Total					20

L= LECTURE, T = TUTORIAL /ASSIGNMENT, LAB= STUDIO AND LAB WCH- WEEKLY CONTACT HOURS ESE- END SEMESTER EXAMINATION VV- VIVA- VOCE WR-WRITTEN EXAM

First Year: Second Semester						
Subject Code	Subject	WCH			ESE Format	Credits
		L	T	Lab		
MLAR0201	LANDSCAPE TECHNOLOGY - II	1	1	1	VV	3
MLAR0202	PLANTING DESIGN	1	1	1	VV	3
MLAR0203	VISUAL ART - II	1	1		VV	2
MLAR0204	ELECTIVE - I ADDRESSING TECHNOLOGY /ECOLOGICAL RESTORATION/ HUMANITY	1	1		VV	2

	A. CULTURAL LANDSCAPES / HISTORIC URBAN LANDSCAPE/ THERAPEUTIC LANDSCAPE **B. WILDLIFE LANDSCAPE AND MANAGEMENT** **C. ADVANCED GIS AND LANDSCAPE PLANNING SOFTWARE** **D. GREEN AND BLUE INFRASTRUCTURE**					
MLAR0205	**HISTORY, THEORY AND CULTURE - II**	1	1		**WR**	**2**
MLAR0206	**SEMINAR & RESEARCH METHODS**	1	2		**VV**	**3**
MLAR0207	**LANDSCAPE DESIGN STUDIO - II**	5	5		**VV**	**5**
MLAR0208	**BRIDGE COURSE - II***	2	2			**Pass/Fail ** **
	Total					**20**

L= LECTURE, T = TUTORIAL /ASSIGNMENT, LAB= STUDIO AND LAB WCH- WEEKLY CONTACT HOURS ESE- END SEMESTER EXAMINATION VV- VIVA- VOCE WR-WRITTEN EXAM

NOTE:

1. *LANDSCAPE DESIGN STUDIO- II would have components of Report Writing*
2. *Assignments of theory and Viva-Voce subjects may be aligned with the studio exercise*
3. *A Professional Training of 8 weeks duration may be undertaken by students in any research, consultancy organization or NGO working in any domain of Environmental Planning, as an optional engagement in the summer vacation.*

Second Year: Third Semester						
Subject Code	**Subject**	**WCH**			**ESE Format**	**Credits**
		L	**T**	**Lab**		
MLAR0301	**LANDSCAPE TECHNOLOGY –III**	1	1	1	**WR + VV**	**3**
MLAR0302	**COMMON POOL ELECTIVE** **A. LANDSCAPE AND URBANISM** **B. ENERGY EFFICIENT LANDSCAPES** **C. NATURE BASED SOLUTIONS** **D. LANDSCAPE ECOLOGIES**	2	1		**WR**	**3**
MLAR0303	**ELECTIVE II** **Elective from various prior approved online portals (SWAYAM, NPTEL, MOOCs)**	3			**ONLINE CERTIFICATE**	**3**
MLAR0304	**THESIS PROGRAMMING**	1	2		**WR + VV**	**3**
MLAR0305	**LANDSCAPE DESIGN STUDIO-III**	5	5		**VV**	**5**

MLAR0306	**PROFESSIONAL TRAINING**		3		**VV**	**3**
	Total					**20**

L= LECTURE, T = TUTORIAL /ASSIGNMENT, LAB= STUDIO AND LAB WCH- WEEKLY CONTACT HOURS ESE- END SEMESTER EXAMINATION VV- VIVA- VOCE WR-WRITTEN EXAM

Note: Assignments of theory and Viva-Voce subjects may be aligned with the studio exercise and would have components of Project Formulation applied to the studio project.

Second Year: Fourth Semester						
Subject Code	**Subject**	**WCH**			**ESE Format**	**Credits**
		L	**T**	**Lab**		
MLAR0401	**THESIS**	6	15	21	**VV**	**15**
MLAR0402	**PROFESSIONAL PRACTICE**	1			**WR**	**1**
MLAR0403	**ELECTIVE III ADDRESSING ADVANCE TECHNOLOGY / ECOLOGICAL RESTORATION/ HUMANITY** **1. ADVANCE ECOLOGICAL RESTORATION** **2. LANDSCAPE ECONOMICS** **3. EIA** **4. FUTURISTIC LANDSCAPES**	1	1	1	**VV**	**3**
MLAR0404	**GENERAL PROFICIENCY**		1		**VV**	**1**
	Total					**20**

L= LECTURE, T = TUTORIAL /ASSIGNMENT, LAB= STUDIO AND LAB WCH- WEEKLY CONTACT HOURS ESE- END SEMESTER EXAMINATION VV- VIVA- VOCE WR-WRITTEN EXAM

The Optional Professional Training would be considered in General Proficiency, apart from other seminars, conferences, paper presentations and extracurricular & sports activities and social work undertaken.

***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 on enhancing drawing skills, architectural graphics and representation skills. The subject faculty to ensure the students have the necessary representational and drawing preparation skill set. In case required additional hours to be dedicated in developing the skill set for drawing preparation and presentation.

**It is a Non-Audit course, and will be compulsory to pass the subject in order to attain 24 credits and be eligible for next semester.

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

FIRST YEAR: FIRST SEMESTER

FIRST YEAR :FIRST SEMESTER						
Subject Name	**Subject Code**	**Mode of Instruction**	**Method of Evaluation**	**Number of Weekly Periods**	**Credits**	**Learning Domain**
LANDSCAPE TECHNOLOGY - I	**MLAR0101**	**Studio Interaction + Lecture + Lab**	**Progressive Reviews, Viva Voce**	**3**	**3**	**Knowledge and Skill**
Learning Objectives	**Subject Contents**		**Learning Outcome**	**Recommended Readings**		
To develop an understanding of the land and its designed modifications, with an integration of Earth sciences. The objective of the course is to inculcate the understanding of : 1. general concepts associated with earth sciences 2. documentation, data analysis, spatial representation and written & verbal communication. 3. Monitoring quality of water, soil, air etc. 4. application of the theoretical inputs provided in other subjects	**M1 Geology** History of earth's structure, geologic time scale, Study of rocks and minerals, Geologic maps, landforms. Indian geology, Deccan Basalt volcanism. Application of geologic principles to environmental problems e.g.: Stream restoration, hydrogeology, geotourism **M2 Hydrology** Water testing, Natural drainage patterns. Surface and subsurface water ecology, Runoff calculations, swale design, hydrograph, runoff characteristics of streams, field, flow duration curve, Flew mass curve. Relationship to vegetation, drainage basins. Innovating techniques to harvest groundwater and manage runoff. Issues Riparian and Coastal Flooding risk and Water. Legal Frameworks National Water Policy **M3 Soil ecology**, Soil profile, types and soil moisture, Soil ecology and processes, soil restoration , soil testing. **M4 Land surface Modification** Existing and modified contour mapping, grading plans and drainage drawings, Visualizing landforms, land excavations, land-fills, angle of repose, cut & fill calculations, ; practices of erosion control, grade stabilization structures, retaining walls, surface and subsurface drains. **M5 Landscape Construction** Study of construction documentation process employed by landscape architects. Landscape drawings, symbols and sheet layouts.		Upon the completion, students would be able to map and interpret biotic and abiotic resources. Exercise that integrates scientific evidence with frameworks. Exercises on practices of erosion control, grade stabilization structures, retaining walls, surface and subsurface drains. 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.	1. Time Saver Standards for Landscape Architecture, Charles W Harris And Nicholas T Dine McGraw – Hill, International Edition, Arch. Series 2. Environmental Geology, International Journal of Geosciences, Springer 3. International Journal of Earth Sciences Springer 4. A History of Geology, Gabriel Gohau na 5. Morphology and Landscape, Harry Robinson 6. The Age of the Earth, Brent Dalrymple 7. Earth science, Earth materials – 2010, Hefferan, Kevin 8. Engineering geology – 2010, Reddy, D. Venkat, Foundation of geology – 2009, Bhagwat, S.B. 9. Urban watersheds: geology, contamination, and sustainable development – 2011, Kaufman, Martin M. 10. Soil mechanics and foundation engineering : geotechnical engineering – 2010, Arora, K. R. 11. Soil pollution – 2010, Stuart, Anthony 12. Soil testing : laboratory manual -- 2007, Charan, H. D. 13. Biotechnology for the Environment: Soil Remediation, Spiros N. Agathos & Walter Reineke		

FIRST YEAR : FIRST SEMESTER						
Subject Name	**Subject Code**	**Mode of Instruction**	**Method of Evaluation**	**Number of Weekly Periods**	**Credits**	**Learning Domain**
PLANT SYSTEMATICS AND PLANT PROCESSES	**MLAR0102**	**Lecture, Guided Practice and Group Exercise**	**Written**	**3**	**3**	**Knowledge and Skill**
Learning Objectives	**Subject Contents**		**Learning Outcome**	**Recommended Readings**		
To develop an understanding of the plant material and their role in ecology.	**M1 Plant Phenology** Classification of Plant Kingdom, General study of plant morphology and anatomy to understand plant functions. Adaptation in plants, plant propagation Plant processes, Economic values of plant kingdom. **M 2 Forest Ecology** Ecosystems and forest types of India. Principles of plant climax, succession, relationship of plant communities & plant storeys. Distribution of plant communities and plant associations in. Limiting factors and their operations **M3 Planting Palliate Preparation** Identification and use of plants in landscape designs; Criteria for selection of plant material for specific design applications. **M4 Ecological Restoration** Ecological communities: spatial structure, ecological niche and species diversity, succession. Discussion of current issues, research, and trends in selection, marketing, and utilization of plants for landscape design.		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. 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.	1. Ethnographic decision tree modeling – 1989 2. Gladwin, Christina H. 3. Guidelines on landscaping and tree plantation – 2010 4. Indian Road Congress 5. Sacred trees and Indian life -- 2004, Goswamy, Karuna 6. Celebration of Indian trees -- 2007, Kothari, Ashok S. 7. Flowering trees: shrubs & climbers of India, Pakistan, Sri Lanka and Nepal 2006, Khuller, Rupinder 8. Sacred trees and Indian life 2004, Goswamy, Karuna 9. Trees for every purpose 1980, Hudak, Joseph 10. Trees in indian art mythology and folklore – 2000 11. Malla, Bansi Lal 12. Trees of Delhi: a field guide -- 2006, Krishen, Pradip 13. Location, location location : a plant location and site selection guide – 2008, De Meirlier, Marcel 14. Forest ecology 15. Fundamentals of ecology Odumn 16. Man, nature and ecology Keith Reid and Co. 17. Concepts of ecology Kormondy 18. Ecology of Plants- Modern Trends in Applied Terrestrial Ecology 19. Landscape ecologyKluwer Academic Publishers 20. Journal of tropical Ecology:Bimonthly, Cambridge 21. Plant Ecology Kluwer Academic Publishers		

FIRST YEAR : FIRST SEMESTER						
Subject Name	**Subject Code**	**Mode of Instruction**	**Method of Evaluation**	**Number of Weekly Periods**	**Credits**	**Learning Domain**
VISUAL ART - I	**MLAR0103**	**Theory + Tutorial + Lab**	**Viva voce**	**2**	**2**	**Knowledge and Skill**
Learning Objectives	**Subject Contents**		**Learning Outcome**	**Recommended Readings**		
The subject intends to familiarize the students about the role of creativity in idea generation as a basic design activity along with developing expertise in artistic skills and presentations. Expert inputs on film making, sketching, model making, sculpting.	**M1 Creativity and Ideation** About Creativity and Ideation The principles of ideation Personal creative blocks External blocks ; Breaking through to ideas Breaking routine, Re-interpreting the problem Lateral thinking Challenging assumptions Observation, curiosity and experience Risk-taking **M2 Creativity and Ideation** Using creative tools to generate ideas Mind maps Consequences Metaphors and similes Checklists Assumption reversals The rephrasing technique Random stimulus and free association The second-guess technique Morphological analysis Group brainstorming **M3 Typography and calligraphy** History of Writing, Development of alphabets, Different calligraphic schools, Script styles, Roman lettering; Classification of types , Study of one family of serif and san-serif typeface and rendering the same, Hot metal types, Types in digital form, Leading and word spacing **M4 Skill Specialization** A module run by subject experts on art form (E.g Gond Paintings, Bhil paintings etc.) **M5 Graphic design** Design composition **M6 Software skills** Adobe illustrator, Indesign, Corel draw or similar presentation softwares for graphical presentation.		Appropriate graphical presentation techniques and skills	1. Elements of Graphic Design: Space, unity, page architecture, and design, Alex W. White 2. Thinking with Type: A Critical Guide for Designers, Writers, Editors, & Students, Ellen Lupton 3. Type on screen: a guide for designers, developers, writers, and students, edited by Ellen Lupton 4. Art of type and typography: explorations in use and practice, Mary Jo Krysinski 5. Type primer, John Kane 6. How to use graphic design to sell things, explain things, make things look better, make people laugh, make people cry, and (every once in a while) change the world, Michael Bierut 7. Graphic Design for Art, Fashion, Film, Architecture, Photography, Product Design & Everything In Between, Andy Cooke and Amgharad Lewis 8. Wayfinding: designing and implementing graphic navigational systems, Craig M. Berger 9. Essential principles of graphic design, Debbie Millman		

FIRST YEAR : FIRST SEMESTER						
Subject Name	**Subject Code**	**Mode of Instruction**	**Method of Evaluation**	**Number of Weekly Periods**	**Credits**	**Learning Domain**
HISTORY THEORY AND CULTURE - I	**MLAR0104**	**Studio Interaction + Lecture + Lab**	**Written**	**2**	**2**	**Knowledge**
Learning Objectives	**Subject Contents**		**Learning Outcome**	**Recommended Readings**		
To equip the students with the knowledge base regarding history of landscape Architecture with the various theories that have guided landscape design through the ages.	**M1 Introduction to Ancient Civilizations** Understanding the Relationship between Man and Nature, the process of transforming landscapes and landscapes of Magic , Myth and Nature. **M2 World Historical Gardens** Traces of Landscape Planning and Garden Design from Prehistory through Eastern, Egyptian, Roman, Islamic, and Medieval to Renaissance, Italian, French, English, Persian traditions, China and Japan. Ancient and medieval period in India, Mughal and Rajput Garden Styles. **M3 Indican Historical gardens** Study of historical Indian gardens incorporated with site visits. **M4 Understanding of "Cultural Landscapes"** Understanding of "Cultural Landscapes" as a "Memory": identity, collective memory, landscape as a text. Study of various examples of "Cultural Expression" in terms of Landscape through cultural landscape mapping to Socio-ecology, Community scales, and studies of Cultural regions **M5 Indigenous landscapes** Study of rural landscapes of India. Traditional knowledge systems in India.		The knowledge to evaluate and apply historical insights to contemporary landscape design challenges.	1. Landscape of man: shaping the environment from prehistory to the present day -- 2006 Jellicoe, Geoffrey Alan, 712.09 LAN 2. Illustrated history of landscape design -- 2010 Boults, Elizabeth - 712.09 BOU-I 3. Landscape design : theory and practice -- 2011 Rao, M. Pratap - 712 RAO-L 4. Asian gardens: history, belief and design -- 2011 Turner, Tom, 712.095 TUR-A 5. Gardens of delight : Indian gardens through the ages -- 2008 Singh, Rahoul B. 712.60954 SIN-G		

FIRST YEAR : FIRST SEMESTER						
Subject Name	**Subject Code**	**Mode of Instruction**	**Method of Evaluation**	**Number of Weekly Periods**	**Credits**	**Learning Domain**
SITE PLANNING AND DEVELOPMENT PROCESSES	**MLAR0105**	**Studio Interaction + Lecture + Lab**	**Viva Voce**	**2**	**2**	**Knowledge + Skill**
Learning Objectives	**Subject Contents**		**Learning Outcome**	**Recommended Readings**		
To equip the students with the knowledge base regarding history of landscape Architecture with the various theories that have guided landscape design through the ages.	**M1 Site Ecology** Fundamentals of Ecology: definition, scope, ecosystems and their functioning: nature and characteristics, Components: biotic and abiotic Ecological Processes: energy flow-energy source, food chains and trophic structure, ecological pyramids, biogeochemical cycles, hydrological cycle, nutrient cycles. Carrying capacity assessment for site. **M2 Site Planning Processes** Landscape Assessment techniques; Basic quantitative methods of collecting, analyzing projecting and presenting data for Landscape planning **M3 Preparation of site inventory and analysis** Defining the problem, use of relevant software and mapping technology **M4 Program Development and Synthesis** Statement of goals, project objectives, project elements **M5 Planning and design** Conceptual design, Communication of ideas and intent.		Assess landscape processes in a site Design an ecologically sensitive site plan.	1. Site planning – 1984 Lynch, Kevin, 720.28 LYN-S 2. Site planning and design for the elderly : issues, guidelines and alternatives – 1993, Carstens, Diane Y. 725.56 CAR-S 3. Landscape architecture: a manual of environmental planning and design – 2006 Simonds, John Ormsbee 712 SIM-L 4. Design with nature – 1992 McHarg, Ian L. 304.2 MCH-D 5. A Pattern Language, Christopher Alexander, Oxford University Press, NY		

FIRST YEAR : FIRST SEMESTER						
Subject Name	**Subject Code**	**Mode of Instruction**	**Method of Evaluation**	**Number of Weekly Periods**	**Credits**	**Learning Domain**
REMOTE SENSING AND ARCGIS APPLICATION IN LANDSCAPE	**MLAR0106**	**Studio Interaction + Lecture + Lab**	**Viva Voce**	**3**	**3**	**Knowledge + Skill**
Learning Objectives	**Subject Contents**		**Learning Outcome**	**Recommended Readings**		
To develop an understanding of the land and its designed modifications, with an integration of Earth sciences.	**M1 Remote Sensing of Environment** Definition of Remote Sensing, electromagnetic spectrum; Energy budget; Introduction to Satellite Images: Concepts of Projection, Datum & spheroid; platforms and sensors, bands, types of resolution, Panchromatic vs. Multispectral images. **M2 Satellite Image Analysis** Preprocessing of the data: Georeferencing of an image; Merge & Mosaicing; Image Enhancement techniques. Image Interpretation: Introduction to Erdas Imagine supervised and unsupervised classification. **M3 Tools for Environmental Analysis** Urban Heat Island Effect, Normalized Difference Vegetation Index (NDVI), Normalized Difference Vegetation Build up Index (NDBI), Digital change detection. etc. **M4 Tools for Hydrological Analysis** Application of flow direction & flow accumulation techniques, basin and watershed delineation, Extraction of stream network and stream order. **M5 Automation and Basic** Programming Model Builder: Creating a model in Graphical User Interface		GIS software expertise in Landscape Assessment	1. Remote sensing and GIS by Basudeb Bhatta 2. Remote sensing and image interpretation, Thomas M. Lillesand, Ralph W. Kiefer and Jonathan W. Chipman 3. Remote sensing of the environment: an earth resource perspective, John R. Jensen 4. Geographic information systems & science, Paul A. Longley 5. GIS, spatial analysis, and modeling, David J. Maguire, Michael Batty, and Michael F. Goodchild		

FIRST YEAR : FIRST SEMESTER						
Subject Name	**Subject Code**	**Mode of Instruction**	**Method of Evaluation**	**Number of Weekly Periods**	**Credits**	**Learning Domain**
LANDSCAPE STUDIO – I	**MLAR0107**	**Studio Interaction + Lecture + Lab**	**Viva Voce**	**10**	**5**	**Knowledge + Skill**
Learning Objectives	**Subject Contents**		**Learning Outcome**	**Recommended Readings**		
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. Exercises to include Film-making, Story-telling, sketching, illustrating.	**M1 Observing the Interactions and Processes in nature (set of smaller exercises)** Focuses on observation skills, enhancing verbal, intellectual and written communication skill, and evolving creative graphical tools for mapping. Draw relation of art with landscape, documenting natural phenomena occurring in landscape, exploring sensorial and spatial qualities through landscape. **M2 Design Exercises** Outlines the site planning and site design decision-making process. Focuses on providing students with the verbal, intellectual, and graphic tools necessary to successfully tackle a design problem and bring it to a schematic level of completion. The design exercises shall be of Simple design briefs and programs; urban and rural experiments; courtyards, children's play areas, etc. Neighborhood/ Domestic or intermediate scale Eg. Recreational/ Play Areas, domestic gardens and small estates.		Represent landscape processes. Design landscape of neighborhood scale	1. Dictionary of architecture and landscape architecture -- 2006 Curl, James Stevens 2. Digital drawing for landscape architecture: contemporary techniques and tools for digital representation in site design -- 2010, Cantrell, Bradley 3. Experiential landscape: an approach to people, place and space -- 2007 Thwaites, Kevin 4. Landscape graphics : plan, section, and perspective drawing of landscape spaces -- 2002 Reid, Grant W. 5. Architectural rendering: the techniques of contemporary presentation -- 1989 Halse, Albert O. 6. Form and fabric in landscape architecture: a visual introduction -- 2010 Dee, Catherine 7. Fundamentals of landscape architecture -- 2009 Waterman, Tim 8. Graphics for urban design -- 2009 Meeda, Bally		

FIRST YEAR : FIRST SEMESTER						
Subject Name	**Subject Code**	**Mode of Instruction**	**Method of Evaluation**	**Number of Weekly Periods**	**Credits**	**Learning Domain**
BRIDGE COURSE - I	**MLAR0108**	**Studio Interaction + Lecture + Lab**	**Viva Voce**	**4**	**2**	**Knowledge + Skill**
Learning Objectives	**Subject Contents**		**Learning Outcome**	**Recommended Readings**		
To familiarize the students with the basic design principles; drawing tools, field sketching and graphics; surveying; and presentation techniques.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 on enhancing drawing skills, architectural graphics and representation skills.	**M1 Introduction** Introduction and familiarization with drafting tools and accessories. To give basic knowledge of drafting and lettering techniques. 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. **M2 Graphics** Orthographic Projections: Definition, Meaning & concept. Perspective drawings. **M3 Surveying** Introduction to surveying, understanding land topography and its relevance. Types of surveys in practice and survey equipment. **M4 Presentation techniques** Introduction to represent different textures and finishes in plan and elevation. Rendering techniques.		The subject faculty to ensure the students have the necessary representational and drawing preparation skill set. In case required additional hours to be dedicated in developing the skill set for drawing preparation and presentation. **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.	1. Form and Fabric in Landscape Architecture: A Visual Introduction, by Catherine Dee 2. Landscape graphics : plan, section, and perspective drawing of landscape space by Grant W. Reid Fasla ; edited by Elizaberth Wright 3. Visual communication for landscape architecture by Trudi Entwistle and Edwin Knighton 4. Representing landscapes : a visual collection of landscape architectural drawings edited by Nadia Amoroso; foreword by Walter Hood 5. Rendering with pen and ink, Robert W. Gill		

FIRST YEAR: SECOND SEMESTER

FIRST YEAR : SECOND SEMESTER						
Subject Name	**Subject Code**	**Mode of Instruction**	**Method of Evaluation**	**Number of Weekly Periods**	**Credits**	**Learning Domain**
LANDSCAPE TECHNOLOGY – II	**MLAR0201**	**Studio Interaction + Lecture + Lab**	**Viva Voce**	**3**	**3**	**Knowledge + Skill**
Learning Objectives	**Subject Contents**		**Learning Outcome**	**Recommended Readings**		
To develop an understanding of materials and techniques in landscape construction with due importance to construction drawings. Note: *Landscape Technology Laboratory (partly field based) for studies in materials, techniques, utilities, services, construction and detailing. Study trips to actual landscape project sites.*	**M1 Landscape Materials** Introduction to various materials used in landscapes constructions and material plan development. Mud, clay, stone, bricks, timber, glass, metals, gravel, pebbles, Lime, sand, cement, concrete, RCC, Vitrified tiles, terracotta. **M2 Landscape Grading** Technical drawing, for Grading; Construction of landforms, mounds, angle of repose, Slope stabilization, depressions, podiums, earth berms, levels, earthen tiers & terraces. **M3 Landscape drainage and irrigation** Technical drawing, for Storm water drainage system; Groundwater recharges system-construction techniques and drawings, septic tanks, inspection chambers, catch basins, swales, drainage channels etc. Systems for use of gray water and relevant construction details. Construction of retaining walls, edgings of natural and manmade water bodies; culverts; Techniques for prevention of soil erosion. Irrigation systems: Traditional methods, sprinkler, drip irrigation, water hydrants etc. **M4 Landscape Construction Techniques** Landscape layout drawings, Technical drawings for landscape construction details: Paving & pavements, walks, drives, roads, parking, paths & plazas; Plant beds, edgings, plant boxes, steps, ramps, stepping stones etc. Finishes in different types of stone concrete. Utilizing innovative materials and new construction details of landscape structures and street furniture. **M5 Artificial Lighting for Designed Landscapes** Outdoor illumination. Electrical lighting and services, construction, types of illumination fixtures.		Develop landscape details, prepare working drawings	1. Landscape paving 2013, 712 LAN 2. Landscape space 1: central plaza n.d.712 LAN v.1 3. Landscape space 2: garden/lighting space -- n.d.712 LAN v.2 4. Landscape space 3: water space -- n.d.712 LAN v.3 5. Landscape space 4: play facility, resting space -- n.d.712 LAN v.4 6. Landscape construction and detailing – 1996 Blanc, Alan 712 BLA-L 7. Landscape detailing – 1994 Littlewood, Michael 8. Bartrum Douglas: Rock Garden. John Gifford Ltd., London 9. Tree Detailing 10. Littlewood Michael2 Landscape Detailing Vol.1 Enclosure 11. Littlewood Michael 3 12. Landform Designs 13. Beyond the WallKirkwood, Niall. 1999. 14. The Art of Landscape Detail, New York: John Wiley & Sons Inc.		

FIRST YEAR : SECOND SEMESTER						
Subject Name	**Subject Code**	**Mode of Instruction**	**Method of Evaluation**	**Number of Weekly Periods**	**Credits**	**Learning Domain**
PLANTING DESIGN	**MLAR0202**	**Studio Interaction + Lecture + Lab**	**Viva Voce**	**3**	**3**	**Knowledge + Skill**
Learning Objectives	**Subject Contents**		**Learning Outcome**	**Recommended Readings**		
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.	**M1 Introduction to Planting design theory** Planting design theory, a historical perspective, People and plants; coevolution; 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. **M2 Design Applications of Plant Material** Plant mix preparation, naturalistic garden, productive landscape, managed greens etc. Design of Edible, medicinal, hydroponic gardens, backyard gardens. Gardening tools **M3 Planting Design for Environmental Challenges** Planting design for environmental improvement: eg. Soil conservation, modification of microclimate. Planting design for highways, roads, parking, industries, terraces, roofs, indoors, etc. Planting design for disturbed sites, eg abandoned quarries and mines, Planting design for extreme climatic conditions **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 **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.		Develop landscape details, prepare working drawings	1. Ethnographic decision tree modelling – 1989 Gladwin, Christina H 2. Guidelines on landscaping and tree plantation – 2010 3. Indian Road Congress 4. Trees of Delhi: a field guide -- 2006 Krishen, Pradip 5. Location, location location : a plant location and site selection guide – 2008 De Meirlier, Marcel 6. Traditional gardens: plans and planting designs -- 2004 Platts, Roger, 712.6 PLA-T 7. 1001 Most popular garden plants: tips and ideas for garden lovers -- 2008 Rugullis, Antje 8. Elements of Planting Design, Richard Austin, John Wiley & Sons, Inc., New York, 2002		

FIRST YEAR : SECOND SEMESTER						
Subject Name	**Subject Code**	**Mode of Instruction**	**Method of Evaluation**	**Number of Weekly Periods**	**Credits**	**Learning Domain**
VISUAL ART - II	**MLAR0203**	**Studio Interaction + Lecture + Lab**	**Viva Voce**	**2**	**2**	**Knowledge + Skill**
Learning Objectives	**Subject Contents**		**Learning Outcome**	**Recommended Readings**		
To develop expertise in artistic skills and presentations. Expert inputs on film making, sketching, model making, sculpting etc.	**M1 Photography and videography** Aspects of Photography: ISO, focus, shutter speed, exposure and contrast · Techniques of Photography: Using Lens, Perspective, Light, Colour and Composition · Understanding Light: Metering, exposure and useful equipment, Natural light, low-light and night photography, close-up and macro light, daylight, artificial light and studio light · CAG-I: Creating, editing, composing images through Adobe Photoshop · CAG-II: Vector software, creating a basic publication design. **M2 Print making** Fundamentals of various methods of taking prints. Rubbing, Potato Print. Mono-print in single or two colors with various types of materials and their combinations, viz. paper, cardboard, cloth etc. along with techniques such as relief printing, intaglio, lithography, and screen printing that will integrate digital tools with traditional indigenous methods. **M3 Skill specialization** A module on perspective making, sketching, illustration or any other domain run by an expert in the field.		Develop expertise in artistic skills, including photography, videography, printmaking, and specialized techniques for effective presentations.	1. Perspectives on place : theory and practice in landscape photography, Jesse Alexander 2. India : public places, private spaces : contemporary photography and video art, Gayatri Sinha, Paul Sternberger [curators] ; with contributions by Barbara London and Suketu Mehta ; Brian Drolet) 3. India, a pageant of prints, edited by Pauline Rohatagi and Pheroza Godrej 4. Reinventing print: technology and craft in typography, David Jury 5. Vector graphics and illustration: a master class in digital image-making / by Jack Harris and steven withrow		

FIRST YEAR : SECOND SEMESTER						
Subject Name	**Subject Code**	**Mode of Instruction**	**Method of Evaluation**	**Number of Weekly Periods**	**Credits**	**Learning Domain**
ELECTIVE - I	**MLAR0204**	**Studio Interaction + Lecture + Lab**	**Viva Voce**	**2**	**2**	**Knowledge + Skill**
Learning Objectives	**Subject Contents**		**Learning Outcome**	**Recommended Readings**		
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 the role of landscape in city designs and movement corridors within and outside the cities. These are open to other departments.	**A. CULTURAL LANDSCAPES / HISTORIC URBAN LANDSCAPES** To understand the importance of cultural landscape conservation including the Historic urban landscapes and the various approaches to the same. Landscape conservation, Landscape Conservation in Indian Context, 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 Cultural landscape conservation project as study and shall make a proposal for the same. study of various charters related with cultural landscapes		Develop conservation proposals integrating policies and safeguarding methods effectively.	1. Conservation of cultural landscapes -- 2006 Agnoletti, Mauro, ed. 2. Haryana: cultural heritage guide – 2012 954.558 HAR Intangible cultural heritage and intellectual property: communities, cultural diversity and sustainable development – 2009 Kono, T., Ed. 3. Managing our cultural heritage – 2001 Greffe, Xavier 4. Landscape of man: shaping the environment from prehistory to the present day -- 2006 Jellicoe, Geoffrey Alan 5. Heritagescapes and Cultural Landscapes, Singh, Rana P.B., ed. 6. Cultural Landscapes of India: Imagined, Enacted, and Reclaimed, Amita Sinha		
	B. THERAPEUTIC LANDSCAPE Introduction: Historical context of healing landscapes, what are healing spaces. 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. Universal design considerations in landscape; Assessing Healing Environment: Questionnaire surveys; 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		Design therapeutic landscapes that promote well-being using healing principles.	1. Healing landscape : therapeutic outdoor environments, Martha M. Tyson (available at SPAB Library) 2. Healing spaces : the science of place and well being, Esther M. Sternberg (available at SPAB Library) 3. Urban design: health and the therapeutic environment / Cliff Moughtin, Kate McMahon Moughtin, Paola Signoretta (available at SPAB Library) 4. Landscape and urban design for health and well being, Gayle-Souter Brown (available at SPAB Library) 5. Modern family gardens, by Caroline Tilston (available at SPAB Library)		

	C. WILDLIFE LANDSCAPE AND MANAGEMENT Understanding species–habitat interactions, linked ecological processes, effects of climate change, anthropogenic activities on wildlife & natural resources, need for wildlife management and initiatives undertaken.	Implement wildlife management strategies considering climate change and habitat interactions.	1. Environment and wildlife laws in India by Ariya B. Majumdar 2. Forest wildlife ecology and habitat management, by David R. Patton 3. Remote sensing for biodiversity and wildlife management: synthesis and applications, Steve E. Franklin 4. Infrastructure, wildlife tourism, (il)legible populations: comparative study of two districts in contemporary Botswana by LaRocco, Annette Alfina
	D. ADVANCED GIS AND OTHER LANDSCAPE RELATED SOFTWARE This course provides an in-depth exploration of advanced Geographic Information Systems (GIS) and other landscape-related software essential for modern landscape planning and management. Students will gain hands-on experience with advanced GIS tools for spatial analysis, data modeling, and visualization. The curriculum covers the application of GIS in various landscape contexts, including urban planning, environmental management, and conservation. Emphasis is placed on integrating GIS with other software tools to address complex landscape issues, enhance decision-making processes, and support sustainable development. Students will also explore emerging technologies and best practices in the field, preparing them to tackle real-world challenges through innovative, data-driven solutions.	Utilize GIS software to analyze and model landscape spatial data.	1. Managing geographic information systems, N.J. Obermeyer and Jeffrey K. Pinto 2. Regional and urban GIS: a decision support approach, by Timothy L.Nyerges and Piotr Jankowski 3. Remote sensing and GIS for natural resource management, Bir Abhimanyu Kumar 4. Remote sensing and GIS internation: theories, methods, and application by Qihao Weng 5. Remote sensing and GIS by Basudeb Bhatta
	E. GREEN AND BLUE INFRASTRUCTURE Introduction to green infrastructure; Definitions and components; Evolution of theories; Principles of Green Infrastructure; Contemporary Global approaches; Urban Agriculture; Vertical farming; Carbon sequestration; Techniques of Need Assessment and Analysis; Introduction to SuDS Manual; Sustainable urban drainage systems (SuDS): Philosophy and approach; Applying the approach – SuDS design process; Suitability analysis for green infrastructure at urban and regional scales; Green Infrastructure Network Design, Basics of green infrastructure network design from exemplary global cases - Florida / Maryland approach; Trinity	Design sustainable green and blue infrastructure for urban resilience and biodiversity.	1. Environmental management systems : understanding organizational drivers and barriers -- 2007 Tinsley, Stephen 2. Green facilities: industrial and commercial LEED Certification -- 2011 Winkler, Greg 690.52 3. Green infrastructure : linking landscapes and communities by Mark A. Benedict and Edward T. McMahon 4. Green infrastructure : a landscape approach by David C. Rouse

	river corridor project , Dallas; Potential tools for green infrastructure implementation process Green infrastructure and biodiversity; Environmental functions of forests, wetlands, and other open spaces; Economic benefits; Economic value of natural systems; Making links to related efforts; Ecosystem values of green infrastructure network;		5. Water resources planning and management edited by R.Quentin Grafton
	F. INDUSTRIAL LANDSCAPES / MINING LANDSCAPES 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.	Develop strategies for industrial landscapes addressing waste and environmental impacts.	1. Ecology of industrial pollution -- 2010 Batty, Lesley C., ed. and Hallberg, Kevin B., ed. 2. Ecological technologies for industrial wastewater management: petrochemicals, metals, semi-conductors, and paper industries edited by Victor M Monsalvo 3. Environmental footprint of small-scale, historical mining and metallurgy in the Swedish boreal forest landscape: The Moshyttan blast furnace as microcosm by Myrstener, Erik Harald Biester Bigler, Christian Lidberg, William Meyer-Jacob, Carsten Rydberg, Johan Bindler, Richard 4. Extreme sites: the greening of brownfield guest-ed. by Deborah Gans and Claire Weisz

FIRST YEAR : SECOND SEMESTER						
Subject Name	**Subject Code**	**Mode of Instruction**	**Method of Evaluation**	**Number of Weekly Periods**	**Credits**	**Learning Domain**
HISTORY THEORY AND CULTURE - II	**MLAR0205**	**Studio Interaction + Lecture**	**Written**	**2**	**2**	**Knowledge + Skill**
Learning Objectives	**Subject Contents**		**Learning Outcome**	**Recommended Readings**		
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.	**M1 Advent of Modern Landscape** Landscape design in 19 and 20 the century Advent of park landscape Beautiful cities movement, Garden cities Pioneer landscape Architects and their role in development of profession. **Park Movement 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.** **M2 Theoretical realm in Landscape Architecture** 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. Significant theoretical paradigms in Landscape Architecture **M3 Contemporary Landscape Architecture Practice and Futuristic Landscape** Significant landscape architecture projects and their role in shaping up profession Concerns of the profession in time to come **M4 Vernacular landscapes** Understanding of Landscape as a “Language”. Various processes of Narrations to “Communicate” and Express” the Landscape" by various Architects in History.		Evaluate historical and modern landscape designs, theoretical paradigms, significant projects, future trends, and interpret landscapes as forms of communication.	1. Meaning in landscape architecture and gardens : four essays, four commentaries -- 2011 Treib, Marc, ed. 2. Contemporary garden -- 2009 3. Landscape architecture research: inquiry, strategy, design -- 2011 Deming, M. Elen 4. Instant cities : landscape, infrastructure and urban form -- 2009 5. Landscape architect: Hargreaves Associates, 1998-2008 -- 2008Kim, Maria 6. Landscape of man: shaping the environment from prehistory to the present day – 2006 7. Jellicoe, Geoffrey Alan 8. Place in the shade: the new landscape and other essays – 2010 Correa, Charles		

FIRST YEAR : SECOND SEMESTER						
Subject Name	**Subject Code**	**Mode of Instruction**	**Method of Evaluation**	**Number of Weekly Periods**	**Credits**	**Learning Domain**
SEMINAR AND RESEARCH METHODS	**MLAR0206**	**Studio Interaction + Lecture**	**Viva Voce**	**3**	**3**	**Knowledge + Skill**
Learning Objectives	**Subject Contents**		**Learning Outcome**	**Recommended Readings**		
To make the students critically analyze designed/ natural landscapes and in the process develop a deep understanding of landscapes, together with art of written and oral expression of thoughts.	**M1 Introduction to landscape and appreciation** 1. Documentation and mapping 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. Research Process: problem formulation, literature survey, development of working hypothesis, preparation of research design, data collection and analyses, generalization and interpretation, report preparation. **M3 Proposal Formulation** Data collection methods Applications, advantages and disadvantages of each type. Sampling-determination of sample. Data Tabulation- editing, coding, classification, tabulation. **M4 Research Writing** Research Ethics, Preparation of Report and Structure of report. **M5 Writing workshops** Writing workshops with experts to fine tune academic writing.		Develop critical analysis skills for designed and natural landscapes, enhancing understanding and proficiency in written and oral expression.	1. Inquiry by design: environment/Behavior/Neuroscience in architecture, interiors, landscape, and planning -- 2006 Zeisel, John 2. Research design CreswellDIGITAL SUMMIT: What is the Landscape Approach. (n.d.). Retrieved from GLobal landscape forum: http://events.globallandscapesforum.org/digitalsummits/what-is-the-landscape-approach-2/ 3. Dominique Endamana, A. K.-P. (2010). A Framework for Assessing Conservation and Development in a Congo Basin Forest Landscape. Tropical Conservation Science, 262-281. 4. Simon Swaffield, E. D. (2013). Research strategies in landscape architecture: mapping the terrain. Journal of Landscape Architecture. 5. Ahern, J. (2009). Theories, methods and strategies for sustainable landscape. Landscape research, 119-131.		

FIRST YEAR : SECOND SEMESTER						
Subject Name	**Subject Code**	**Mode of Instruction**	**Method of Evaluation**	**Number of Weekly Periods**	**Credits**	**Learning Domain**
LANDSCAPE STUDIO – II	**MLAR0207**	**Studio Interaction + Lecture + Lab**	**Viva Voce**	**10**	**5**	**Knowledge + Skill**
Learning Objectives	**Subject Contents**		**Learning Outcome**	**Recommended Readings**		
To make the students critically analyze designed/ natural landscapes and in the process develop a deep understanding of landscapes, together with art of written and oral expression of thoughts.	Urban Scale Landscape Development (Minor Exercise) Socio-ecology, Community scales, and studies of Cultural regions Examines how humans occupy exterior space and combines this information with the principles of design to create garden scale models. Models are used as a medium for design expression. 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. Intermediate Scale and level of complexity - Eg. Recreational/ Play Areas City level parks, Street redesign, transport and linear infrastructure, as well site planning and landscape design for large Campuses, Housing estates etc Outstation site visit, with extensive data collection, survey and documentation of the entire region. Studies related to physiography, socio-cultural aspects etc. to be conducted in detail.		Develop urban-scale landscape design solutions by integrating socio-ecological principles, cultural studies, and design principles through comprehensive site analysis and study.	1. Anatomy of a park: essentials of recreation area planning and design – 2003 Dahl, Bernie (available at SPAB Library) 2. Landscape architecture: a manual of environmental planning and design / John Ormsbee Simonds and Barry W. Strake (available at SPAB Library) 3. Sustainable urbanism : urban design with nature by Douglas Farr (available at SPAB Library) 4. Urban Design Ecologies edited by Brian McGrath (available at SPAB Library) 5. Urban ecosystems : understanding the human environment by Robert A.Francis ,Michael A.Chadwick (available at SPAB Library)		

FIRST YEAR : SECOND SEMESTER						
Subject Name	**Subject Code**	**Mode of Instruction**	**Method of Evaluation**	**Number of Weekly Periods**	**Credits**	**Learning Domain**
BRIDGE COURSE - II	**MLAR0208**	**Studio Interaction + Lecture + Lab**	**Viva Voce**	**4**	**2**	**Knowledge + Skill**
Learning Objectives	**Subject Contents**		**Learning Outcome**	**Recommended Readings**		
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.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 on enhancing Spatial Understanding of Outdoor Environment. This course can be made open for B-Arch students.	**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. **M2 Documentation** Documentation of different land uses, understanding quality spaces, understanding scale, formulating survey questionnaire **M3 Representation techniques** Techniques of mapping, analytical & graphical methods.		The subject faculty to ensure the students have the necessary representational and drawing preparation skill set. In case required additional hours to be dedicated in developing the skill set for drawing preparation and presentation. **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.	1. The Image of the City by Kevin Lynch (available at SPAB Library) 2. Open space: people space edited by Catharine Ward Thompson and Penny Travlou (available at SPAB Library) 3. Form and fabric in landscape architecture : a visual introduction Catherine Dee (available at SPAB Library) 4. Representing landscapes : a visual collection of landscape architectural drawings edited by Nadia Amoroso; foreword by Walter Hood (available at SPAB Library) 5. Fundamentals of landscape architecture, Tim Waterman (available at SPAB Library)		

SECOND YEAR: FIRST SEMESTER

SECOND YEAR : FIRST SEMESTER						
Subject Name	**Subject Code**	**Mode of Instruction**	**Method of Evaluation**	**Number of Weekly Periods**	**Credits**	**Learning Domain**
LANDSCAPE TECHNOLOGY - III	**MLAR0301**	**Studio Interaction + Lecture + Lab**	**Viva Voce**	**3**	**3**	**Knowledge + Skill**
Learning Objectives	**Subject Contents**		**Learning Outcome**	**Recommended Readings**		
To develop an understanding of the working drawings and related documents required for the successful implementation of a project.	**M1 CONSTRUCTION OF WATER FEATURES** Ponds, pools, swimming pools, water bodies, fountains, etc. new materials like geo textiles, pond liners **M2 ADDRESSING MICRO CLIMATE ISSUES THROUGH LANDSCAPE DESIGN** Urban heat island mitigation, mitigation strategy and details for urban flooding **M3 OUTDOOR USE AREAS** Lawn construction, Grading of various areas, etc. **M4 WORKING DRAWINGS, SPECIFICATIONS AND BILLS OF QUANTITIES** Construction details of Terrace gardens, roofscapes, vertical landscapes; Preparation of Specification sheets and Bills of Quantities		Design and detail out simple or complex landscape elements.	1. The Art of Landscape Detail: Fundamentals, Practices and Case Studies, New York: John Wiley & Sons Inc. 2. Landscape construction and detailing – 1996 Blanc, Alan 3. Landscape detailing – 1994 Littlewood, Michael 4. Bartrum Douglas: Rock Garden. John Gifford Ltd., London 5. Tree Detailing Littlewood Michael2 6. Landscape Detailing Vol.1 Enclosure 7. Landform Designs 8. Beyond the WallKirkwood, Niall. 1999. 9. The Art of Landscape Detail, New York: John Wiley & Sons Inc 10. Water Management-Technology and Institutions, Viessman Warren, , Harper & Row, 1985 11. Water Management in India, Bansil P.C, Concept Publishing Company, 2004, pg 1- 48		

SECOND YEAR : FIRST SEMESTER						
Subject Name	**Subject Code**	**Mode of Instruction**	**Method of Evaluation**	**Number of Weekly Periods**	**Credits**	**Learning Domain**
COMMON POOL ELECTIVE	**MLAR0302**	**Studio Interaction + Lecture + Lab**	**Written**	**3**	**3**	**Knowledge + Skill**
Learning Objectives	**Subject Contents**		**Learning Outcome**	**Recommended Readings**		
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 the role of landscape in city designs and movement corridors within and outside the cities. These are open to other departments.	**A. LANDSCAPE AND URBANISM** The course explores the city designs dictated by the landscape elements, their origin, the present situation and the projections into the future, the narratives in city landscapes, the cultural identity. Meaning, management and manipulation of place. (following the philosophy of Ian Mc Harg)		Assess city designs, cultural identity, and future projections using landscape elements.	Landscape as Urbanism, Charles Waldheim		
	B. NATURE BASED SOLUTIONS Mitigating pollution through nature based solutions; Ecological corridors and Greenways, Wastewater treatment systems. Phytoremediation; Soil improvement, Landscape design to mitigate the negative impacts of mining activities.		Apply nature-based solutions for pollution, ecological corridors, and mining impacts.	Water & wastewater infrastructure: energy efficiency and sustainability by Frank R. Spellman		
	C. ENERGY EFFICIENT LANDSCAPES To give an opportunity to students to study energy efficient landscapes in detail to enhance its application in landscape planning or landscape design process.		Design energy-efficient landscapes to enhance planning and design processes.	Energy efficiency in the urban environment by Khalil, Heba Allah Essam E		
	D. LANDSCAPE ECOLOGIES Watershed mapping assessment, Building ‘Resilience’ – Exercise that integrates scientific evidence with frameworks.		Map watersheds and build resilience using scientific and ecological frameworks.	Landscape ecology principles in landscape architecture and land-use planning by Dramstad, Wenche E		
	E. MINING LANDSCAPES Landscape design for opencast and underground mining sites; management of top soils; treatment of abandoned sites;		Design and manage mining landscapes, including topsoil and site rehabilitation.	Mining heritage and tourism: a global synthesis by Michael V. E. Conlin		

SECOND YEAR : FIRST SEMESTER						
Subject Name	**Subject Code**	**Mode of Instruction**	**Method of Evaluation**	**Number of Weekly Periods**	**Credits**	**Learning Domain**
ELECTIVE - II	**MLAR0303**	**Studio Interaction + Lecture + Lab**	**Viva Voce**	**3**	**3**	**Knowledge + Skill**
Learning Objectives	**Subject Contents**		**Learning Outcome**	**Recommended Readings**		
The subject will allow the student to develop expertise in his or her chosen area of choice. It opens vast opportunities to choose from multi disciplinary domains.	Various MOOC courses related to landscape architecture. Elective from various prior approved online portals (SWAYAM, NPTEL, MOOCs)		Online certificate of the chosen course.	N.A.		

SECOND YEAR : FIRST SEMESTER						
Subject Name	**Subject Code**	**Mode of Instruction**	**Method of Evaluation**	**Number of Weekly Periods**	**Credits**	**Learning Domain**

THESIS PROGRAMMING	MLAR0304	Studio Interaction + Lecture	Written + Viva Voce	3	3	Knowledge + Skill
Learning Objectives	**Subject Contents**		**Learning Outcome**	**Recommended Readings**		
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.	**M1 Introduction and Proposal formulation** Identification of areas of research, synopsis structure and components, literature review **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 **M3 Data Analysis and interpretation** Data analysis		Enable students to understand and mitigate impacts of development projects through effective research, design, and data analysis.	1. Inquiry by design: environment/Behavior/Neuroscience in architecture, interiors, landscape, and planning -- 2006 Zeisel, John 2. Research design CreswellDIGITAL SUMMIT: What is the Landscape Approach. (n.d.). Retrieved from GLobal landscape forum: http://events.globallandscapesforum.org/digitalsummits/what-is-the-landscape-approach-2/ Dominique Endamana, A. K.-P. (2010). 3. A Framework for Assessing Conservation and Development in a Congo Basin Forest Landscape. Tropical Conservation Science, 262-281. Simon Swaffield, E. D. (2013). Research strategies in landscape architecture: mapping the terrain. 4. Journal of Landscape Architecture. Ahern, J. (2009). Theories, methods and strategies for sustainable landscape. Landscape research, 119-131.		

SECOND YEAR : FIRST SEMESTER						
Subject Name	**Subject Code**	**Mode of Instruction**	**Method of Evaluation**	**Number of Weekly Periods**	**Credits**	**Learning Domain**
LANDSCAPE DESIGN STUDIO- III	**MLAR0305**	**Studio Interaction + Lecture + Lab**	**Viva Voce**	**10**	**5**	**Knowledge + Skill**
Learning Objectives	**Subject Contents**		**Learning Outcome**	**Recommended Readings**		
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.	Complex Briefs at the Landscape Planning scale including domain knowledge of/from other Disciplines (Urban Design, Conservation, Environmental Planning) culminating in a comprehensive landscape planning, management and design scheme that Eg. strategies for consolidating urban open spaces using landscape design, or open marketplaces and festival sites as Urban Inserts etc. Introduction to Regional Landscape Conservation and Planning Understanding, mapping and assessing Regional landscape. Collection of primary data, data tabulation, and analysis, to draw inferences. Assessing and designing regional landscape		Equip students to design large-scale regional sites by integrating design, implementation, and stakeholder involvement in landscape planning and conservation.	1. Conceptions of space and place in strategic spatial planning edited by Simin Davoudi and Ian Strange 2. Landscape as urbanism, Charles Waldheim 3. Landscape : pattern, perception and process, by Simon Bell 4. Sustainable landscape planning : the reconnection agenda by Paul Selman 5. Biodiversity planning and design: Sustainable practices by Jack Ahern		

SECOND YEAR : FIRST SEMESTER						
Subject Name	**Subject Code**	**Mode of Instruction**	**Method of Evaluation**	**Number of Weekly Periods**	**Credits**	**Learning Domain**
PROFESSIONAL TRAINING	**MLAR0306**	**Summer Training**	**Viva Voce**	**3**	**3**	**Knowledge + Skill**
Learning Objectives	**Subject Contents**		**Learning Outcome**	**Recommended Readings**		
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.		Field experience and professional expertise in the domain	N.A.		

SECOND YEAR: SECOND SEMESTER

SECOND YEAR : SECOND SEMESTER						
Subject Name	**Subject Code**	**Mode of Instruction**	**Method of Evaluation**	**Number of Weekly Periods**	**Credits**	**Learning Domain**
THESIS	**MLAR0401**	**Studio Interaction + Lecture + Lab**	**Viva Voce**	**15**	**15**	**Knowledge + Skill**
Learning Objectives	**Subject Contents**		**Learning Outcome**	**Recommended Readings**		
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.	Projects must demonstrate the student's analytical skills, and assimilation of theoretical and pragmatic concerns into a real-life or Industry linked Projects (to be encouraged, specifically those with important social, environmental and ecological impacts): (sub-) urban ecologies of scale specifically landscape infrastructural inserts, and landscape-scale interventions, marked by the boundary conditions given below: Relevance: Clearly discernible artistic, cultural, social, environmental, or ecological significance. Preferable limits on scale : Sites; or; (at the largest) a unit pertinent to landscape ecological analysis within a given context		Enable students to independently apply their knowledge in a thesis, demonstrating innovative design or research that advances the discipline with practical, social, environmental, or ecological impact.	Based on individual projects.		

SECOND YEAR : SECOND SEMESTER						
Subject Name	**Subject Code**	**Mode of Instruction**	**Method of Evaluation**	**Number of Weekly Periods**	**Credits**	**Learning Domain**
PROFESSIONAL PRACTICE	**MLAR0402**	**Lecture**	**Viva Voce**	**1**	**1**	**Knowledge**

Learning Objectives	**Subject Contents**	**Learning Outcome**	**Recommended Readings**
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.	**M1 Models and Ethics of Professional Practice** Codes, Standards, Bye-laws, Regulations applicable to building and landscape development. The role of statutory and regulatory bodies such as the Municipal Corporations, etc. professional ethics **M2 Deliberative Democracy, Public Participation, and Professional Service** Types of Citizenship and urban Space, Democracy and urban space, Participation, Public participation in urban landscape design **M3 Finding solutions using collaborative methods, Presentations** Field Visits and Action Research in Group settings; Finding solutions using collaborative methods, Charrette and Presentations; Report and Documentation **M4 Landscape Project management** Pert CPM, timing and phasing; maintenance;Planning, and organizing the project. PERT and CPM. Project supervision, coordination between different agencies, Monitoring a project during execution and preparation of site reports. **M5 Green ratings** LEED, Griha ratings in Landscape Architecture	Equip students to lead in landscape architecture by addressing social and ecological issues through professional ethics, public participation, collaborative methods, project management, and green ratings.	1. Professional practice for landscape architects, Nicola Garmony, Rachel Tennant and Clare Winsch 2. Professional practice of landscape architecture : a complete guide to starting and running your own firm, Walter Rogers 3. Sustainable urban development: changing professional practice edited by Ian cooper and Martin Symes 4. The architect's handbook of professional practice edited by Joseph A. Demkin 5. Professional practice : with elements of estimating, valuation, contract & arbitration, Roshan H Namavati 6. The architect's handbook of professional practice edited by R.L. Hayes

SECOND YEAR : SECOND SEMESTER						
Subject Name	**Subject Code**	**Mode of Instruction**	**Method of Evaluation**	**Number of Weekly Periods**	**Credits**	**Learning Domain**
ELECTIVE III ADDRESSING ADVANCED TECHNOLOGY /ECOLOGICAL RESTORATION/ HUMANITY	**MLAR0403**	**Studio Interaction + Lecture + Lab**	**Viva Voce**	**3**	**3**	**Knowledge + Skill**
Learning Objectives	**Subject Contents**		**Learning Outcome**	**Recommended Readings**		
Advance elective allows in depth concepts related to landscape architecture. Note: *Students are advised to visit the website of Ministry of Environment, Forest and Climates Change, Government of India, World Bank, UNDP, UN-HABITAT, TERI, and refer to then journals on Environmental Economics*	**A. ADVANCE ECOLOGICAL RESTORATION** **M1 Landscape ecology concepts** Understand the concepts and consequences of scale, scaling techniques, and spatial pattern; **M2 Understanding ecosystems a multiple scales** Explain how ecological systems are dynamic in space and time. **M3 Causes and consequences of spatial heterogeneity** Infer the abiotic and biotic processes that structure landscape mosaics and patterns of biodiversity at multiple spatial scales; **M4 Current research trends, and explore applications of the landscape approach** Use the tools specific to landscape ecology to answer questions about heterogeneity, scale, and ecosystem dynamics. **M5 Theory, Methods, and Applications in Conservation and Resource Management** Review the theory, methodology, and application of landscape ecology to contemporary issues in conservation biology and resource management;		Landscape ecology is a hands-on field rather that something purely academic; as more of an approach and a set of tools rather than a subdiscipline in and of itself Learnings of the subject to be demonstrated as an outcome in Thesis project.	1. Environmental contamination : health risks and ecological restoration edited by Ming H Wong (Available at SPAB Library) 2. Ecological restoration and environmental change: renewing damaged ecosystems, Stuart K Allison (Available at SPAB Library) 3. Landscape ecology principles in landscape architecture and land-use planning by Dramstad, Wenche E (Available at SPAB Library) 4. Ecology of cities and towns: a comparative approach edited by Mark J. McDonnell, Amy K. Hahs and Jurgen Breuste (Available at SPAB Library) 5. Key topics in landscape ecology edited by Jiango Wu,and Richard J. Hobbs (Available at SPAB Library)		

	B. LANDSCAPE ECONOMICS **M1 Notions of value in Landscape** Notions of Externalities in Neo-Classical Economics; Ecological Economics **M2 Introduction** Hedonic Pricing Method for environmental and ecosystem services valuation, and (optional) developing a Hypothetical framework for landscape valuation **M3** Integrating Landscape values into economic frameworks,'The Economics of Ecosystems and Biodiversity (TEEB), Carbon Economy REDD+ Framework **M4 Case studies** Landscape valuation and presentation of findings	Learnings of the subject to be demonstrated as an outcome in Thesis project.	1. Economic value of landscapes by C. Martijn Va Heide (Available at SPAB Library) 2. Political economies of landascape change: places of integrative power edited by J.L.Wescoat (Available at SPAB Library) 3. Economic valuation of landscape change: theory and policies for land use and conservation by Jose Manuel Santos (Available at SPAB Library) 4. Principles of environmental economics and sustainability : an integrated economic and ecological approach by Ahmed Hussen (Available at SPAB Library) 5. Urban land economics and public policy, Paul N.Balchin (Available at SPAB Library)
	C. ENVIRONMENTAL IMPACT ASSESSMENT **M1 Introduction** Understanding of various definitions, methodologies, techniques, advantages and disadvantages. Process: data collection, identification of study area, scope, aim, environmental standards and their measurements. **M2 EIA In India** Legislation related to EIA, EIA in developed and developing countries, ecological attitudes in the past. History of EIA in India **M3 EIA Methodology to Landscape Design** Introduction to Landscape & Visual Impact Assessment. Relationship of LVIA to others factors (Climate, soil, heritage, flora-fauna, humans, noise, air, water) Stages involved in LVIA. **M4 Pollution Parameters** Standard methods for determining pollution. Principles, suitability and range of instrumental analysis of pollutants. Stack monitoring; air sampling and analysis. Environment management program and its relationship to landscape design.	Learnings of the subject to be demonstrated as an outcome in Thesis project.	1. Environmental impact assessment methodologies by Y. Anjaneyulu and Valli Manickam 2. Evaluating environmental and social impact assessment in developing countries, Salim Momtaz, S.M. Zobaidul Kabir 3. Impact assessment and sustainable development: european practice and experience edited by Clive George 4. Ecology, impact assessment, and environmental planning, Walter E. Westman 5. Environmental Impact Assessment study report for the proposed re-alignment of the Standard Gauge Railway (SGR) within Nairobi National Park

	D. FUTURISTIC LANDSCAPES To make the students understand the assessment of future scenarios and develop suitable programs, details etc. The concerns of the future can and will not be limited to climate change, changing social urban contexts, pandemics, disaster risk resilience and so on. Assessing impacts of proposed development projects and developing solutions so that wherever possible significant negative impacts may be avoided, minimized, or mitigated. A study of emerging and future technologies and their integration into spatial organizations.	Learnings of the subject to be demonstrated as an outcome in Thesis project.	1. Adaptive water resource management handbook – 2010, Mysiak, J., ed. 333.91 ADA 2. Climate change and sustainable water resource management in Kerala – 2011 –, 333.9114 CLI 3. Climate change and water resources in south asia – 2005Mirza, M. Monirul Qader, ed. and Ahmad, Q. K., ed., 333.9114 CLI 4. Common property water resources: dependence and institutions in India's villages – 2008, Mishra, Arabinda, 354.366 COM 5. Coping with water scarcity: addressing the challenges – 2009, Pereira, Luis Santos 333.91 PER-C

SECOND YEAR : SECOND SEMESTER						
Subject Name	**Subject Code**	**Mode of Instruction**	**Method of Evaluation**	**Number of Weekly Periods**	**Credits**	**Learning Domain**
GENERAL PROFICIENCY	**MLAR0404**	**Extracurricular and co-curricular activities**	**Viva Voce**	**N.A.**	**1**	**Knowledge + Skill**
Learning Objectives	**Subject Contents**		**Learning Outcome**	**Recommended Readings**		
To encourage students to participate in extracurricular and co-curricular activities. To assess the all-round development of the students at the end of all theoretical and practical courses	A student's general proficiency shall be evaluated across the following performances: Optional Professional Training of 8 weeks undertaken in Summer Vacation 1. Additional Online Courses 2. Participation in training programmes/ workshops 3. Paper publication in international and national journals 4. Paper publication in newsletter/others 5. Paper presentation in conference/seminar 6. Participation in Inter College Competition 7. Engagement with NSS/NCC/Others 8. Engagement as volunteer in social work or welfare of the institute 9. Administrative/Managerial responsibilities in the Institute 10. Excellence in sports and cultural activities 11. Scholarships 12. Any other that qualifies as all round development of student		To encourage students to participate in extracurricular and co-curricular activities.All-round development of the students	N.A.		