MAHATMA GANDHI UNIVERSITY

KOTTAYAM

SCHEME AND SYLLABUS

FOR

MASTER OF ARCHITECTURE

(FULL TIME- TWO YEARS)

IN

LANDSCAPE ARCHITECTURE

(FROM 2019 ADMISSION ONWARDS)

MASTER OF ARCHITECTURE: LANDSCAPE ARCHITECTURE

DURATION: TWO YEARS (Four Semesters)

Intake: 20 students

L1. INTRODUCTION (to be changed)

Landscape architects play a pivotal role in today's world in transforming the unbuilt spaces to functionally efficient, environmentally sensitive and visually pleasing spaces. Landscape architects play an important role in shaping the places which we live and work. It is landscaping that achieves the balance between the built and natural environment.

The demand for landscape architects is increasing especially in a country like India that is fast changing in its physical form. Landscape architecture is concerned with landscapes of all types both urban and rural, and at all scales from the smallest open space to the whole region. The technical knowledge of geology, hydrology, geomorphology, botany etc helps a landscape architect helps them in detailed site analysis and site planning of various types of development.

Landscape architects are employed in the planning and development of residential, commercial, industrial areas etc. Their services are also sought for the design and maintenance of public spaces like parks, playgrounds, recreation facilities etc. Landscape architects play a crucial role in the management of storm-water and runoff, conservation and management of ecosystems, restoration of degraded environment and habitats, , while India and world is facing challenges due to global warming, uncontrolled and unplanned development , pollution etc.

Kerala, 'Gods Own Country' is blessed with diverse landscape and varied resources. With Western Ghats on the east, and Arabian Sea on the west, Kerala has 44 rivers which make this land diverse. The state also consists of ecologically rich marine, freshwater, forest, grassland ecosystems etc. There is an alarming need of landscape architects in the state's existing and proposed projects related to different rural and urban projects, natural parks, ecologically sensitive areas etc and this proves the ardent need of the hour in establishing this particular Programme.

This program aims at developing critical thinking and analysis among students and to understand different issues pertaining to a site and its context, and to address them effectively by considering functional, environmental, ecological and visual parameters. It also tries to incorporate interdisciplinary approach involving environmental science, ecology, art, urban design, planning, conservation etc so that the future landscape architects shall be versatile in the various aspects of

practice including design development, project management, emerging technologies, professional practice and communication skills, ethical conduct, as well as relevant areas of research.

L2. OBJECTIVES:

The mission of the Master of Landscape Architecture is to enable architects to develop the skill towards the design of open spaces with due consideration to its context. The programme also aims at mastering students on landscape planning and design through adequate research. The Program prepares the students to enter practice in private, public, academic, and research organizations. The programme is envisaged to encourage students in gaining practical exposure to various realms of landscape architecture through field visits, case studies, and dialogue with experts etc.

L3.ADMISSIONS REQUIREMENTS

Candidates who have been awarded or qualified for the award of Bachelor's degree in Architecture or equivalent courses recognized by the Council of Architecture (COA), with a minimum of 50 % marks in aggregate, from an Institution approved by COA shall be eligible for admission to the M.Arch. Programme.

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. Two letters of recommendation are required, and it is suggested that at least one of the letters come from former educators or academic contact.

L4.COURSE STRUCTURE

The Programme has been designed in four semesters of equal credits, for duration of two years. The course structure consists **of Studio Courses, Core Courses, Electives, Professional Training, Dissertation and Thesis.**

L4.1 Studios

There are two studio courses in the Programme: Landscape Design and Landscape Engineering.

L4.1.1 Landscape Design Studio

The course that earns the maximum credits in the first three semesters is Landscape Design Studio with 10 credits. This course has been designed in such a way that the students are made to handle projects of increased complexities from Semester I to Semester III.

Continuous Assessment is done by the course-in-charge. 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.

The End Semester Examination shall be a Jury/Viva Voce based on the report and it shall be evaluated by a two member committee with the Head of the Department/Teaching Institution or his/ her nominee who is an internal faculty, and an external expert constituted by the Head of the Department/Teaching Institution.

L4.1.2 Landscape Engineering

This is primarily a studio course and deals with technical drawings and engineering aspects of landscape design. The course is offered for the first two semesters. Continuous Assessment is done by the course-in-charge in which teachers' assessment carry 100% marks. The Teacher's 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.

The End Semester Examination shall be a Jury/Viva Voce based on the portfolio/report of the works undertaken in that semester. It shall be evaluated by an external faculty and an internal faculty nominated by Head of the Department/Teaching Institution or two internal faculties nominated by Head of the Department/Teaching Institution. The internal faculty shall not be the same as the course-in- charge.

L4.2Core Courses

The core courses are designed to assist the Landscape Studio through building up a strong scientific, theoretical and historical base. The core courses may be theory based, lab based or seminar based and the assessment types vary as per the category. Field visits and case studies are promoted in all courses. The core courses in the Programme are listed below:

L4.2.1: Semester I

- Theory based- Theory of Landscape Architecture-I; Plant Systematics, Processes and Horticultural Practice; Geology, Soils & Geomorphology; Hydrology and Water Management
- Lab based- Remote Sensing, Land Information Systems and GIS

L4.2.2: Semester II

- Theory based- Theory of Landscape Architecture-II; Plants and Design; Landscape Ecology and Ecosystem Analysis

- Seminar based- Landscape Appreciation

L4.2.3: Semester III

- Theory based- Urban Landscape; Environmental legislations and Economics; Professional Practice

L4.3 Electives

Electives are added in Semester II & III to offer flexibility and help students to pursue a study of their interest. The electives are given in Semester II are workshop based and those in Semester III are theory based.

- Workshop based electives- Forest Ecology and Management; Water management; Advanced horticultural practices
- Theory based electives- Landscape Conservation, Sustainable Landscapes, Landscape Restoration

Workshop based electives are added to gain practical exposure in the specific field. It includes adequate lectures as specified in the curriculum and culminates with a one week workshop/training with nursery or related agencies, as per the specified course.

L4. 4 Professional Training

At the end of the second semester, as a pre-requisite to embark into third semester, the students are required to undergo a Professional Training for 25 full days, either under a Landscape Architect or as a Research Associate with a Landscape Architecture Faculty. This 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.

Before the commencement of the Professional Training, the student shall submit the following details to the Head of the Department/ Teaching Institution for approval. :

i. Name of the Landscape Architect & Details of the Firm

OR

ii. Name and Designation of the Research Associate

The Architect/Research Associate shall possess a valid COA Registration, and shall have completed five years after attaining Post – Graduate degree in Landscape Architecture. The Professional Training shall be done for a period of twenty five full working days and the student shall keep a work diary for the entire training period. The work diary may contain details of site visits, sketches, literatures studies and any data that add to the knowledge base of the student.

A log book consisting of details of work done during the professional training which would be duly stamped and signed by the Principal authority of the office / firm shall be submitted to the course in charge before the final evaluation. The student shall submit anA3 sized report which carries a record of all works like drawings, site visit reports, presentations etc which he/she had done at the office.

Continuous Assessment shall be done by the Course in Charge. 50% of marks shall be allotted for the work diary, log book and performance report from the Landscape Architect where the student had undertaken training. 50% of the marks shall be allotted for the training report.

The End Semester Examination shall be a Jury/Viva Voce based on the report and it shall be evaluated by a two member committee with the Head of the Department/Teaching Institution or his/ her nominee who is an internal faculty, and an external expert constituted by the Head of the Department/Teaching Institution.

L4. 5 Research Methodology & Dissertation

In the third semester, the students shall chose a topic of interest for dissertation and shall carry out an independent research on a focused research question/ hypothesis, under the guidance of a faculty member, assigned by the Head of the Department/ Teaching Institution. Students have to register for the Dissertation and select a topic in consultation with the guide. A detailed synopsis on the topic of the dissertation is to be prepared in the prescribed format given by the Teaching Institution.

Continuous Assessment shall be done by the Guide and the Course in Charge as prescribed in the Course Plan. The teachers Assessment carries 100% marks based on periodical review of the dissertation.

The End semester Examination shall be done as jury that is planned twice during the semester; An Interim Evaluation in the middle of the semester and the Final Evaluation at the end. The Final Evaluation shall be based on the dissertation presentation, dissertation report and technical paper. Both the Interim and Final Evaluation shall be evaluated by a two member committee with the Head of the Department/Teaching Institution or his/ her nominee who is an internal faculty, and an external expert constituted by the Head of the Department/Teaching Institution.

Every student shall get their paper reviewed and send the same, for publication in a journal or for presentation in a conference.

L4. 6 Landscape Architecture Thesis

In the fourth semester, the students shall chose a topic of interest for Thesis, preferably related to the dissertation work done in the third semester, in consultation with the guide, who is a

faculty member, assigned by the Head of the Department/ Teaching Institution. The thesis shall be an **original work** and the same could be design centric or planning centric or research centric with some design component but the focus can vary as per the scale and type of the project.

Continuous Assessment shall be done by the Guide and a two member committee. Progress of the thesis work is to be evaluated during the fourth semester, at least THRICE, by a two member committee consisting of an internal faculty other than the Guide and an external expert constituted by the Head of the Department/ Teaching Institution.

Final evaluation of the thesis shall be taken up only if the student has earned all course credits listed in the first two semesters and earned a minimum of 45% marks in the Continuous Assessment. For the conduct of Final evaluation, the University shall appoint a Chairman from among the Heads/Senior most Professors in Architecture of the Teaching Institutions, on a rotation basis. The Chairman shall prepare a provisional list of External and Internal Jurors from the same stream, one each for every 10 students, for the conduct of External Jury, and submit to the University for Ratification and release of appointment letters. The external examiner shall have a minimum of 10 years practical/teaching experience after registration with COA and minimum of five years teaching/practical experience in the particular stream after Post Graduation. The External Jury consisting of one External Juror and one Internal Juror appointed by the University shall conduct the Thesis and Viva Voce Examination, as per the University declared Schedule.

Supplementary chances shall be given to the students who failed in the final Jury, as per University Norms.

L5: ASSESSMENT AND VALUATION

L5.1 Assessment and valuation of theory based core courses:

The Continuous Assessment (CA) of theory based courses includes Teachers' Assessment (TA) and Class Tests (CT). The class tests and teachers assessment contribute 50% marks each to total Continuous Assessment marks. To make the evaluation more effective, teachers' assessment could be broken into various components like assignments, quizzes, attendance, group discussions, tutorials, seminars, field visit reports, juries etc.

There shall be **E**nd **S**emester **E**xamination [**ESE**] at the end of each semester. The End Semester Examinations (ESE) shall be Written Examination and there is no chance for improvement. The valuation shall be done as mentioned in University Regulations.

L5.2 Assessment and valuation of lab based core courses:

The Continuous Assessment (CA) of lab based courses shall be done as Teachers' Assessment (TA) that may include lab work on specified project, assignments, quizzes, attendance, tutorials, etc. By the end of the semester, students are expected to submit a portfolio/ report of all works undertaken in the course.

The End Semester Examinations (ESE) shall be Jury/ Viva voce based on the report. It shall be evaluated by an external faculty and an internal faculty nominated by Head of the Department/Teaching Institution or two internal faculties nominated by Head of the Department/Teaching Institution . The internal faculty shall not be the same as the course-in-charge.

L5.3 Assessment and valuation of seminar based core courses:

The Continuous Assessment (CA) of theory based courses shall be done as Teachers' Assessment through case study visits, periodic reviews, attendance etc. By the end of the semester students need to come up with an analytical report and a presentation that shall be presented in a seminar.

The End Semester Examinations (ESE) shall be Jury/ Viva voce based on the report and seminar presentation.50% of marks of ESE shall be allotted for the report and 50% for the presentation. It shall be evaluated by an external faculty and an internal faculty nominated by Head of the Department/Teaching Institution or two internal faculties nominated by Head of the Department/Teaching Institution The internal faculty shall not be the same as the course-in- charge.

L5.4. Assessment and valuation of theory based elective courses:

The Continuous Assessment (CA) of theory based elective courses includes Teachers' Assessment (TA) and Class Tests (CT). The class tests and teachers assessment contribute 50% marks each to total Continuous Assessment marks. To make the evaluation more effective, teachers' assessment could be broken into various components like assignments, quizzes, attendance, group discussions, tutorials, seminars, field visit reports, juries etc.

There shall be **E**nd **S**emester **E**xamination [**ESE**] at the end of each semester. The End Semester Examinations (ESE) shall be Written Examination and there is no chance for improvement. The valuation shall be done as mentioned in University Regulations.

L5.5. Assessment and valuation of workshop based elective courses:

For workshop based elective courses, students need to work for a period of one week with nurseries, specific agencies etc approved by the course-in charge. Alternatively workshop may be conducted in the Institution related to the elective courses. By the end of the semester students need to come up with a report on the work they have done in the semester.

The Continuous Assessment (CA) of workshop based courses shall be done as Teachers' Assessment through field visits, attendance, class tests, report etc.

The End Semester Examinations (ESE) shall be Jury/ Viva voce based on the report. It shall be evaluated by an external faculty or an internal faculty nominated by Head of the Department/Teaching Institution. The internal faculty shall not be the same as the course-in- charge.

L5.6. Assessment and valuation of studio courses, Professional Training, Research Methodology and Dissertation and Landscape Architecture thesis are mentioned in L4.1, L4.4, L4.5 and L4.6 respectively.

L5.7. Passing requirement for a student for all courses shall be a minimum of 50% marks (ESE and CA put together), subjected to a minimum of 40% marks for the ESE.

L5. Make up jury and Supplementary chances

L5.1 Studio Courses

i. **Landscape Design:** A make up jury shall be done for those who fail in End Semester Examination for Landscape Design. Students appearing for make-up jury may improve their portfolio during submission. A pass in Landscape Design Studio is mandatory for entering the subsequent Semester. Those who fail in Landscape Design, even after make-up jury, shall repeat the semester during the next year.

ii. **Landscape Engineering:** No make-up jury or improvement chances shall be given for those who fail in Landscape Engineering. Those who fail in the Final Jury for Landscape Engineering Studio shall re-submit the portfolio/report along with the next batch of students as supplementary chance. They may be permitted to improve their portfolio in the supplementary chance. In such cases, University rules pertaining to supplementary examinations shall be applied for the same. However the Continuous Assessment marks remain the same as per University Norms.

L5.2 Core courses:

No improvement shall be given for core courses, whether they are theory based, seminar based or workshop based. Those who fail in the Final Jury for workshop and lab based courses shall re-submit the portfolio/report along with the next batch of students as supplementary chance. They may be permitted to improve their portfolio in the supplementary chance. In such cases, University rules pertaining to supplementary examinations shall be applied for the same. However the Continuous Assessment marks remain the same as per University Norms.

L5.3 Elective courses:

No improvement or make up jury shall be given for elective courses, whether theory based or workshop based. Those who fail in the Final Jury for workshop based elective shall re-submit the portfolio/report along with the next batch of students as supplementary chance. Those who fail in the jury/viva voce for lab based and seminar based core courses shall re-submit the portfolio/report

in the next chance along with the next batch of and get it evaluated. They may be permitted to improve their portfolio in the supplementary chance. In such cases, University rules pertaining to supplementary examinations shall be applied for the same. However the Continuous Assessment marks remain the same as per University Norms.

CURRICULUM/ PROGRAMME STRUCTURE

FOR

MASTERS OF ARCHITECTURE

(FULL TIME-TWO YEARS)

IN

LANDSCAPE ARCHITECTURE

SEMESTER I											
Course Code	**Course**	**Hrs Per Week**			**Credits**	**Marks**					**Total**
						CA			**ESE**		
		T	**W /L**	**S**		**TA**	**CT**	**Sub total**	**Jury**	**Wri tten**	
19LA01001	Landscape Design I	0	0	10	10	150	0	150	150	0	300
19LA01002	Landscape Engineering-I	0	0	5	5	100	0	100	100	0	200
19LA01003	Theory of Landscape Architecture- I	2	0	0	2	25	25	50	0	100	150
19LA01004	Plant Systematics, Processes, and Horticultural Practices	2	0	0	2	25	25	50	0	100	150
19LA01005	Natural Sciences Part A: Geology, Soils & Geomorphology	2	0	0	2	25	25	50	0	100	150
19LA01006	Hydrology and Water Management	2	0	0	2	25	25	50	0	100	150
19LA01007	Remote Sensing, Land Information Systems and GIS	1	3	0	2	50	0	50	50	0	100
	Library/ DA/TA	3									
		30			**25**			**500**	**350**	**300**	**1200**

SEMESTER II											
Course Code	**Course**	**T**	**W /L**	**S**	**Credits**	**Marks**					**Total**
						CA			**ESE**		
						TA	**CT**	**Sub total**	**Jury**	**Wri tten**	
19LA02001	Landscape Design II	0	0	10	10	150	0	150	150	0	300
19LA02002	Landscape engineering -2	0	0	5	5	100	0	100	100	0	200

19LA02003	Theory of Landscape Architecture- II	2	0	0	2	25	25	50	0	100	150
19LA02004	Plants and Design	2	0	0	2	25	25	50	0	100	150
19LA02005	Landscape Ecology & Ecosystem Analysis	2	0	0	2	25	25	50	0	100	150
19LA02006	Elective (Workshop) 1. Forest Ecology and management 2.Water management 3.Advanced horticultural practices	1	3	0	2	50	0	50	50	0	100
19LA02007	Landscape Appreciation-I	0	2	0	2	100	0	50	50	0	150
	Library/ DA/TA	3									
		30			**25**			**500**	**350**	**300**	**1200**

SEMESTER III

Course Code	**Course**	**T**	**W /L**	**S**	**Credits**	**Marks**					**Total**
						CA			**ESE**		
						TA	**CT**	**Sub total**	**Jury**	**Wri tten**	
19LA03001	Landscape Design III	0	0	10	10	150	0	150	150	0	300
19LA03002	Research Methodology and Dissertation	0	2	3	6	100	0	100	100	0	200
19LA03003	Professional Training	0	6	0	3	50	0	50	50	0	100
19LA03004	Urban Landscape	2	0	0	2	25	25	50	0	100	150
19LA03005	Environmental legislations and Economics	2	0	0	2	25	25	50	0	100	150
19LA03006	Professional Practice	3	0	0	3	25	25	50	0	100	150
19LA03007	Elective: (Theory) 1. Landscape Conservation, Planning and Management 2. Sustainable Landscapes 3.Landscape restoration	2	0	0	2	25	25	50	0	100	150
	Library/ DA/TA	3									

		30		**25**			**500**	**350**	**300**	**1200**

SEMESTER IV											
Course Code	**Course**	**T**	**W /L**	**S**	**Credits**	**Marks**					**Total**
						CA			**ESE**		
						TA	**CT**	**Sub total**	**Jury**	**Wri tten**	
19LA04001	Landscape Architecture Thesis	0	0	25	25	300	0	300	300	0	600
					25			**350**	**300**	**100**	**750**

T- Theory W/L- Workshop/Lab S- Studio
CA- Continuous evaluation ESE- End Semester Examination
TA- Teacher's Assessment CT- Class Test

SYLLABUS

SEMESTER I

SEMESTER 1

19LA01001: LANDSCAPE DESIGN - 1

Course Code	Course	Hrs Per Week			Credits	Marks					Total
						CA			ESE		
		T	W /L	S		TA	CT	Sub total	Jury	Written	
19LA01001	Landscape Design -I	0	0	10	10	150	0	150	150		300

COURSE OVERVIEW

* To understand the process of landscape design and to analyze landscape design elements at micro and macro level, in terms of their form, function and aesthetics, by undertaking studio projects dealing with design of outdoor spaces.

COURSE OUTCOMES

Upon completion of the course,

* Site planning process and its significance; establishing relationship between site characteristics and design requirements.
* Successful tackling of a design problem and bringing it to a schematic level of completion.

COURSE CONTENTS

1. **Major Project**

   The major project/design exercise shall be of neighbourhood level, various typologies; urban and rural experiments; children's' play areas, etc for sites up-to 2 acres. The course work shall include

- Introduction to Landscape Design Process
- Site analysis and site planning (sites up to 2 hectares)
- Landscape design proposal
- Studying elements of landscape design and its use in the design of outdoor spaces

2. **Minor Project**

   The studio work may include minor projects like introductory exercises in Art, Architecture & Landscape, design of outdoor furniture, courtyards, water- elements etc.

REFERENCES

1. Harris.C.W and Dine.N.T ; Time Saver Standards For Landscape Architecture, Mcgraw –Hill International Edition, Arch. Series
2. Reid G. W: (1987) Landscape Graphics.
3. Reid G. W: (1993) From Concept to Form: In Landscape Design. John Wiley & Sons
4. Kevin Lynch & Gary Hack: (1984) Site Planning, The MIT Press
5. Starke .B and Simonds. J. O. (2013) Landscape Architecture: A Manual of Site Planning and Design. 5 editions. McGraw-Hill Professional
6. Simonds. J. O. (1961). Landscape Architecture, the Shaping of Man's Natural Environment. London: F.W. Dodge Cooperation.
7. Baker.B.H (1987) A Dictionary of Landscape Architecture, Albu : University Of New Mexico Press
8. All publications by AVA

SEMESTER I

19LA01002: LANDSCAPE ENGINEERING-I

Course Code	Course	Hrs Per Week			Credits	Marks					Total
						CA			ESE		
		T	W /L	S		TA	CT	Sub total	Jury	Writ ten	
19LA01002	Landscape Engineering- I	0	0	5	5	100	0	100	100		200

COURSE OVERVIEW

* Understanding the technical requirements of several aspects of the landscape architect's work, tools and techniques to shape the existing land in the form of intended design etc.

COURSE OUTCOMES

Upon completion of the course,

* Site planning process and its significance; establishing relationship between site characteristics and design requirements.
* Successfully tackling of a design problem and bringing it to a schematic level of completion.

COURSE CONTENTS

- Site Survey and Appraisal; topographic surveys and their methodology, visualising landforms, Understanding contours and their characteristics, graphical representation, deriving contours by interpolation.
- Earth form Grading; symbols and annotations, existing and modified contour mapping, basic grading principles, Earthworks cut and fill processes, volume computations, grading terraces, grading of roads across/along contours, Basics of road alignment (horizontal and vertical)
- Understanding Land/environmental modifications and engineering interventions for soil conservation, erosion control, slope stabilization etc
- Surface Drainage: Site planning for efficient drainage; understanding drainage pattern and watershed area, calculation of surface runoff, determination of catchments area and discharge rate; types of drainage systems, design of drainage elements: swales and culverts etc, sub-surface drainage planning.
- Planning, grading and drainage of sports fields.

REFERENCES

1. Harris.C.W and Dine.N.T ; (1997) Time Saver Standards For Landscape Architecture, Mcgraw – Hill International Edition, Arch. Series

2. Storm.S and Kurt Nathan P.E;(1985) Site Engineering for Landscape Architects, AVI Publishing Company

3. Landphair H C; (1984) Landscape architecture construction. Elsevier

4. Christensen A J; (2005) Dictionary of Landscape Architecture And Construction .McGraw-Hill

5. Thomas J. R. Hughes; Site Engineering for Landscape Architects

6. Untermann, R. (1973) Grade Easy: an introductory course in the principles and practices of grading and drainage, Landscape Architecture Foundation7. Littlewood Michael: Tree Detailing. London. Butterworth Architecture, 1988.

8. Littlewood Michael: Landscape Detailing Vol.1 Enclosure

9. Hazlett Thomas C: Land Form Designs. P D A Publication

SEMESTER I

19LA01003: THEORY OF LANDSCAPE ARCHITECTURE-I

Course Code	Course	Hrs Per Week			Credits	Marks					Total
						CA			ESE		
		T	W /L	S		TA	CT	Sub total	Jury	Writ ten	
19LA01003	Theory of Landscape Architecture-I	2	0	0	2	25	25	50		100	150

COURSE OVERVIEW

* 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.

COURSE OUTCOMES

Upon completion of the course,

* Development of 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

COURSE CONTENTS

Module I: Perceptions of landscape

- Man and nature, and the process of transforming landscapes; Changing perceptions of man's relationship with nature in various phases of history; responses and attitudes to nature and landscape resources as a function of this perception; Landscapes of Power, Faith and Place
- An introduction to social and cultural dimensions of landscape; Theories and Landscape design: Habitat theory, Personal space, Prospect –refuge theory. Perception, Behavior, etc.

Module II: Landscape design and gardens till the early 19th century

Chronology of landscape development, 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, Examples from Ancient Gardens – Mesopotamia, Egypt, Greece, Rome & Western Civilsation- Europe; Italy, France, England

- Ancient Gardens and its characteristics: Mesopotamia- Hanging Gardens of Mesopotamia, Egypt- Temple of Karnak, Greece- Acropolis, Rome- Tivoli gardens
- Western Civilisation: Italian Renaissance Gardens- Villa lante, Villa Medici, Tivoli Grdens; Italian Baroque Gardens- City of Versailles, Piazza of St. Peters Basilica, French Gardens- Vaux- Le- Vicomte, Palce of Versailles
- Western Civilisation: English Picturesque Gardens-William Kent(Phase 1), Rousham House; Capability Brown(Phase 2),Stowe house, Hyde Park Gardens; Humphrey Repton(Phase 3)- Sheringham Park, Norfolk

Module III: Landscape development in the East and Cross cultural Influences

- Early traditions and beliefs about landscape and environment in east and in India; Chronology of Indian Landscape development; Aryan period; Dravidian landscape (Harappa); Ancient Indian traditions – Vedic, Jainism, Buddhism (Lumbini and Sanchi) and later **Hindu movements;** Symbolic meanings and sacred value of natural landscapes; Ancient Indian traditions; siting of structures, complexes and cities; symbolic meanings and sacred value attributed to natural landscapes; traditional landscapes such as ghats, gardens, kunds, sacred groves etc. Landscape in myth and poetry.
- Transfer of concepts through Buddhism to China; Chinese landscape development, gardens of China- Imperial, Private, Monastic and Designed landscapes of public areas; Pre Buddhist Japanese landscapes, impact of China on Japanese gardens; Japanese gardens and its types- Dry/Zen/Rock Garden, Hill and Pond Garden, Tea Garden, Stroll Garden, Paradise garden, Courtyard Garden etc with typical examples; Art of Bonsai
- Nomadic culture of central Asia, advent of Islam; Middle-east: Persian traditions(Persepolis) and its far reaching influence; concept of Paradise as a garden; influence of Persian traditions towards the West and Western expression of Islam –Moorish Gardens- Spain Alhambra and General life, Granada.
- Eastern expression of Islam, Samarkhand and Mughul Gardens in India; Mughal concepts of site planning, Tomb Garden and pleasure garden; Shalimar Gardens of Srinagar and Lahore, Gardens of Nishant Bagh, Pinjore etc, Mughal Gardens at Taj Mahal, Sikandra, Humayuns Tomb and Red Fort; Rajput Landscapes (Mandor Gardens in Jodhpur and Chittor)
- Influences and linkages across cultures and traditions, e.g Chinese tradition and the English Landscape style; Thai Gardens, Colonial landscape development in India, Mughal and

English style at Rashtrapati Bhavan, New Delhi; Development of Botanical Gardens in India like Bryant Park, Kodaikanal, Botanical Gardens, Ooty etc

REFERENCES

1. Jellicoe G. and Jellicoe S;(1995).The Landscape of Man: Shaping the Environment from Prehistory to the Present Day: Thames and Hudson
2. Bill Risebero(1996), The Story of Western Architecture :
3. Pregill,Phillipandvolkman,Nancy,Van Nostrand Reinhold, Landscapes in History Design and planning in the western tradition
4. Tobey, George, Elsevier and Co, History of Landscape Architecture: The relation of people to Environment
5. Turner .T (2010), Asian Gardens: History, Beliefs and Design. London and New York: Routledge
6. Turner .T (2011),European Gardens: History, Philosophy and Design. London and NewYork: Routledge
7. Rogers.E.B;(2001)Landscape Design: A Cultural and Architectural History: Harry N. Abrams
8. Waymark J,Georges T. (2000) History Of Garden Design; Thames & Hudson
9. Moore C W / Mitchell W J;(1993) Poetics of Garden; London: MIT Press

SEMESTER I

19LA01004: PLANT SYSTEMATICS, PROCESSES, AND HORTICULTURAL PRACTICES

Course Code	Course	Hrs Per Week			Credits	Marks					Total
						CA			ESE		
		T	W /L	S		TA	CT	Sub total	Jury	Writ ten	
19LA01004	Plant systematics, processes, and horticultural practices	2	0	0	2	25	25	50		100	150

COURSE OVERVIEW

* Introduction to the characteristics of Plant materials which are an important part of soft landscape, international nomenclature used for plants and their associations in nature.
* To promote understanding of the factors that regulates the growth and characteristics of the plant material.

COURSE OUTCOMES

Upon completion of the course,

- Understanding and identification of native flora , its functions and appropriate horticultural practices

COURSE CONTENTS

Module I: Plant Systematics and Processes

- Classification of plant kingdom, Taxonomy: rules of nomenclature and identification, General study of plant morphology and anatomy to understand plant functions. Plant identification criteria: growth habits, habitat, origin, growth duration, leaf arrangement, leaf type, main flower colour, flowering period, family, genus etc ; Structural characteristics of plants, trees, shrubs and ground covers; Identification of native flora and its identification
- Plant processes, water relation, photosynthesis and respiration. Stem, root and leaf relationship, , Growth Regulators; Response to stimuli and modification; Application of Plant Physiography to sustainable landscape design such as use of CAM (Crassulacean acid metabolism) plants in Green roofs etc.

- Mineral nutrition and nutrients; Nitrogen, Phosphorus, Potassium, Calcium, Magnesium, Sulphur –Significance, Sources and Deficiency; enzymes and metabolism; growth and flowering.

Module II: Horticultural Practices

- Introduction to horticulture; classification of horticultural plants and its characteristics; Soil: formation, composition, types, texture, pH and conductivity; Garden tools and implements; Preparation of bed;Potting mixture
- Plant nutrition and supplements. Fertilizers and Manures- types, methods of applications,. Common plant pests, diseases and their control, insecticides and their application, weed control; Biofertilizers & Biopesticides ; Biological Control ; Sustainable practices in pest management and weed control.
- Advantages of organic manures and fertilizers. Composition of fertilizers – NPK content of various fertilizers. Common organic manures – bone meal, cow dung, poultry waste, oil cakes, organic mixtures and compost. Preparation of compost - aerobic and anaerobic - advantages of both; vermicompost - preparation, vermiwash.
- Irrigation methods - surface, sub, drip, spray irrigations, mist chambers . - advantages and disadvantages - periodicity of irrigation, Water budgeting .

Module III- Plant Propagation

- Methods of plant propagation; Seeds - advantages and disadvantages; Vegetative propagation - advantages and disadvantages; Natural methods of vegetative propagation; Artificial methods - cutting, grafting, budding and layering; Micro-propagation; Use of growth regulators for rooting.
- Establishment and maintenance of grass, Lawn preparation by seeds, seedling and turfing, shrubs and trees with respect to ground preparation, planting and transplanting, protection of plants during and after planting.
- Physical control of plant growth: training and pruning. Bonsai - selection of plant - bonsai containers and method of bonsai formation. Maintenance methodology, maintenance economics and maintenance details for all soft landscape; Plant growing structures: green house, orchidarium, conservatory.

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

REFERENCES:

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

2. Venkateswaralu.V.A., Text book of Botany, Vol III, Guntur.

3. Lawrence.H.M., Taxonomy of vascular plants, Oxford, IBH, 1964.

4. Rao.K.N.R. and Krishnamurthy.K.N., Angiosperms, S.Viswanathan Printers and publishers.

5. Adams C R, Early M P, 2004. Principles of Horticulture. Elsevier, N. Delhi.

6. Barton West R, 1999. Practical Gardening in India. Discovery Pub. House, New Delhi.

7. Edmond J B, Senn T L, Andrews F S, Halfacre P G, 1975. Fundamentals of Horticulture (IV Edn).

TMH, New Delhi.

8. Sadhu M K, 1996. Plant Propagation. New age International publishers, N. Delhi
9. Mohammed Shaheer, Geeta Wahi Dua, Adit Pal,2013. Landscape Architecture in India: A Reader,LA, Journal of Landscape Architecture

SEMESTER I

19LA01005: GEOLOGY, SOILS AND GEOMORPHOLGY

Course Code	Course	Hrs Per Week			Credits	Marks					Total
						CA			ESE		
		T	W /L	S		TA	CT	Sub total	Jury	Writ ten	
19LA01005	Geology, Soils and Geomorpholgy	2	0	0	2	25	25	50		100	150

COURSE OBJECTIVE

* To introduce the basic concepts and theories related to Geology, Soil, geomorphology, etc and how it affects landscape design.

COURSE OUTCOMES

Upon completion of course,

* Characteristics of landforms and soils, and its effect on landscape design

COURSE CONTENTS

Module I: Geology and Geomorphology

- Geology: History of earth, earth's structure, tectonic plates, lithosphere, asthenosphere, rocks – igneous, metamorphic & sedimentary, rock cycle, minerals
- Indian geology, geologic time scale of India, Deccan Basalt volcanism, Plate tectonics, mountain building, earthquakes, volcanoes & tsunamis, glaciers of India, geothermal fields of India.
- Application of geologic principles to environmental problems e.g.: Stream restoration, hydrogeology, geotourism
- Geologic maps, Surveying: Reading Soil, topographic construction, Geodesy, hydrographic, photogrammetry & GIS maps.
- Geomorphology and Surface processes, landforms – Glacial, Aeolian, Fluvial, deformations in landforms; Types of Weathering, Landforms made by Weathering and Erosion, Landforms made by tectonic activity, Coastal Processes, Control of Geology on landforms

Module II: Soils

- Introduction to geology of the state and of India , Soil types, Soil Formation ,Classification of soils and their properties, Soil- water or soil moisture types, soil –water relationship
- Soil modifications, Problems of soils, Acid, Alkaline, Saline soils, Sulphide soils, Essential mineral nutrients of soils, Manure and Fertilizers.

MODULE III: SOIL CONSERVATION AND MANAGEMENT

- Soil conservation, type, factors, methods of conservation, prevention of soil erosion, Soil conditioning and amendment, soil mixtures and alternative to soils.
- Soil Management: Angle of repose, Soil evaluation and land-use planning, Soil conservation and erosion control, Slope stabilization, Soil fertility and plant nutrition
- Soil degradation and control due to mining, quarrying etc, remedial actions and reclamation techniques, managing difficult soils.

REFERENCES

1. Shaheer .M, Dua G.W and Pal.A .(2012) Landscape Architecture in India: a reader .India: La, Journal of Landscape Architecture
2. Harris.C.W and Dine.N.T ; (1997) Time Saver Standards For Landscape Architecture, Mcgraw –Hill International Edition, Arch. Series
3. Storm.S and Kurt Nathan P.E;(1985) Site Engineering for Landscape Architects, AVI Publishing Company
4. Arbogast A; (2011) Discovering Physical Geography 2nd Edition :Wiley
5. Bateman G : Ed;(2008) Encyclopedia Of World Geography: Book Sales
6. Craul T A; (2006) Soil Design Protocols For Landscape Architects And Contractors: Wiley
7. M S Krishnan ; (2006) Geology Of India And Burma;6th Edition : CBS Publishers & Distributors
8. Dr. J. A. Daji, revised by Dr. J. R. Kadam&Dr. N. D. Patil ; A text book of Soil Science; Mumbai : Media Promoters & Publishers Pvt. Ltd.,

SEMESTER I

19LA01006: HYDROLOGY AND WATER MANAGEMENT

Course Code	Course	Hrs Per Week			Credits	Marks					Total
						CA			ESE		
		T	W /L	S		TA	CT	Sub total	Jury	Writ ten	
19LA01006	Hydrology and Water Management	2	0	0	2	25	25	50		100	150

COURSE OBJECTIVE

* To introduce the basic concepts and theories related to hydrology and how it affects landscape design.

COURSE OUTCOMES

Upon completion of course,

* Hydrology, water conservation methods & watershed management

COURSE CONTENTS

Module I- Introduction to Hydrology

- Hydrological cycle, Water resources, Precipitation- Forms and types of precipiatation; Infiltration- Factors affecting infiltration; Evaporation, evapo-transpiration - Factors affecting Evaporation; Runoff- Factors affecting Runoff; Groundwater, occurrence of groundwater; Aquifers – Confines and unconfined; geologic formations as aquifers, aquifer properties, Artesian aquifer
- Precipitation, weather systems for precipitation; Characteristics of Precipitation in India and Kerala; relationship to vegetation; Runoff: hydrograph, runoff characteristics of streams, field, flow duration curve, Flew mass curve, Natural Drainage Pattern , Characteristics and management of drainage basins; Types of flow channels
- Soil water or soil moisture, Measurement of soil moisture content , Water requirement of plants, Methods of application of water to plants/crops
- Ground water management, sources of ground water pollution and its control; Floods, Development of Karst topography, Arid and semi-arid regions, Coastal Hydrogeology, Saltwater intrusions, leaching; use of saline brackish water for development. Impacts of hydrology on environment and landscape development

Module II- Water Management

- Sewage water treatment and reuse in landscape, decentralised waste water treatment systems and its incorporation into landscape
- Rain water harvesting types- storage and recharge; traditional water harvesting systems in different regions of India; conventional systems with case studies
- Storm water management practices- Detention and Retention ponds, infiltration basins, permeable paving, constructed wetlands, roof gardens, rain gardens etc.

Module III- Watershed Management

- Concept of Watershed, Watershed Management and its importance, characteristics of watershed, application of remote sensing in watershed management; Land capability classification, production systems in arable and non-arable land
- Mangament of arable land; Mechancial measures- Bunding, Contour bunds, Graded bunds, Diversion drain, Grasses waterways, Bench terraces, Contour ditching etc; Biological measures- Contour farming, Strip cropping, Vegetative barriers, Crop residue, Mulching, Mixed cropping, Hedge Rows barrier, Alley cropping etc
- Management of non arable land; Mechanical measures- Contour trenching, Orchard terraces,Diversion drain, Stone walls; Biological measures-Half moon terraces, Geojute, Protected terraces, Retaining walls, Wattling, Crib structures, Gunny bag structures

REFERENCES:

1. Shaheer .M, Dua G.W and Pal.A; Landscape Architecture in India: a reader .India: La, Journal of Landscape Architecture, 2012
2. Harris.C.W and Dine.N.T ; Time Saver Standards For Landscape Architecture, Mcgraw – Hill International Edition, Arch. Series, 1997
3. Storm.S and Kurt Nathan P.E; Site Engineering for Landscape Architects, AVI Publishing Company, 1985
4. Bansil P.C, Water Management in India, Concept Publishing Company, 2004, pg 1- 48
5. Madan Mohan Das & Mimi Das Saikia, Watershed Management, PHI Learning Private India, 2003

SEMESTER I

19LA01007: REMOTE SENSING, LAND INFORMATION SYSTEMS AND GIS

Course Code	Course	Hrs Per Week			Credits	Marks					Total
						CA			ESE		
		T	W /L	S		TA	CT	Sub total	Jury	Writ ten	
19LA01007	Remote Sensing, Land Information Systems and GIS	1	3	0	2	50	0	50	50	0	100

COURSE OVERVIEW

* To introduce the basic concepts of remote sensing and GIS software for spatial analysis.

COURSE OUTCOMES

Upon completion of the course,

* Techniques of Map preparation and analysis using maps.
* Application of GIS in Landscape Architecture..

COURSE CONTENTS

Module I: Classification of Spatial and Non-Spatial Data

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

Module II- Map Preparation and Displaying

- Basics of GIS maps preparation, digitization of spatial data, concept of point, line and polygon features
- Fundamental of coordinate system, map layers and geo-referencing, displaying spatial features, adding attribute values to the features, preparing and displaying thematic layers

and maps, selecting and editing spatial features and attribute data , preparing Grid surfaces form point, line and polygon features.

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

Module III: Applications of GIS in Landscape Architecture & Planning

- Overlaying features and analyzing using overlay function, feature selection, buffering, table joining and analysis, manipulating attribute data, classification and reclassifications, GIS modelling, 3D display.
- Introduction to landscape GIS model, Case problem on landscape analysis, suitability analysis using GIS, preparing land-use maps, landscape impact analysis using GIS, landscape suitability analysis, application of GIS in assessing Landscape Ecological risks.

REFERENCES:

1. Introductory Digital Image Processing: A Remote Sensing Perspective, John R. Jensen
2. Land use Planning And Remote Sensing, David T. Lindgren
3. Remote Sensing And Interpretation By Thomas M Lillesand And Kiefer

SYLLABUS

SEMESTER II

SEMESTER II

19LA02001: LANDSCAPE DESIGN-II

Course Code	Course	Hrs Per Week			Credits	Marks					Total
						CA			ESE		
		T	W /L	S		TA	CT	Sub total	Jury	Writ ten	
19LA02001	Landscape Design II	0	0	10	10	150	0	150	150	0	300

Course Overview:

* Understanding and resolving complex issues at various scales and situations in an urban or rural fabric of residential / commercial/ institutional/ recreational/industrial land use.

Course Outcomes:

* Understanding of arriving at design solutions for larger sites and expressing the same using models

Course contents

* Site analysis, synthesis, suitability, landscape zoning and planning with landscape land uses for medium to large scale projects.
* Evolving an open space structure for the site and suggesting a suitable landscape treatment with respect to ecological, functional, cultural and visual context.
* Process for landscape project formulation and landscape design development based on synthesis
* 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.

References:

1. Simonds. J. O. (1961). Landscape Architecture, The Shaping of Man's Natural Environment.London: F.W. Dodge Cooperation.

2. Harris.C.W and Dine.N.T ; (1997) Time Saver Standards For Landscape Architecture, Mcgraw – Hill International Edition, Arch. Series

3. Starke .B and Simonds. J. O. (2013) Landscape Architecture: A Manual of Site Planning and Design. 5 editions. McGraw-Hill Professional

4. Baker.B.H (1987) A Dictionary of Landscape Architecture.Albu : University Of New MexicoPress

5. Reid G. W: (1987) Landscape Graphics: Watson-Guptill

6. Shaheer .M, Dua G.W and Pal.A .(2012) Landscape Architecture in India: a reader .India: La, Journal of Landscape Architecture

7. Reid G. W: (1993)From Concept to Form: In Landscape Design. John Wiley & Sons

8. All publications by Brian Hackett

SEMESTER II

19LA02002: LANDSCAPE ENGINEERING-II

Course Code	Course	Hrs Per Week			Credits	Marks					Total
						CA			ESE		
		T	W /L	S		TA	CT	Sub total	Jury	Written	
19LA02001	Landscape Engineering - II	0	0	5	5	100	0	100	100	0	200

COURSE OVERVIEW

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

COURSE OUTCOMES

Upon completion of the course,

* Equip the students to do landscape working drawings and preparation of bill of quantities and estimation.

COURSE CONTENTS

- Site mobilization; Sequence of site activity, site protection measures, site implementation checklist.
- Design and detailing of hard landscapes: Roads, paving, barriers, edge conditions -functions, types, criteria for selection, design aspects, details.
- Outdoor lighting: Definition of technical terms, types of electrical lighting, types of fixtures, auxiliary fixtures. Principles of design for outdoor illumination, design and type of effects with electrical lighting. Safety precautions and drawbacks of electrical lighting, electrical accessories and their installation. Solar energy and lighting.
- Water features and Irrigation systems: Design of water features such as swimming pools, cascades, fountains etc., and their technical requirements. Consideration for design and detail. Water bodies and natural ponds. Design of irrigation system – landscape area types, Course Overviews and design, water needs and sources, application, methods of installation. Control systems, scheduling and maintenance.

- Outdoor furniture: Criteria for the selection of materials and specifications for the street furniture in various environments. Design of signage and simple outdoor structures like pavilions, gazebos etc. Use of waste materials in landscape, recycling and reuse of materials, their impact on landscape design.
- Construction details of Terrace gardens, roofscapes, vertical landscapes, garden ornaments
- Preparation of tender documents, Bill of quantities and specifications

References

1. Harris.C.W and Dine.N.T ; (1997) Time Saver Standards For Landscape Architecture, Mcgraw – Hill International Edition, Arch. Series
2. Storm.S and Kurt Nathan P.E;(1985) Site Engineering for Landscape Architects, AVI Publishing Company
3. Landphair H C; (1984) Landscape architecture construction. Elsevier
4. Asensio C.F ;(1996) Environmental Restoration Landscape .(Arco Colour Collection):RotoVision
5. Özyavuz.M (2013) ; Advances in Landscape Architecture.InTech
6. Weiler .S and Barth.K.S ;(2009) Green Roof Systems: A Guide to the Planning, Design and Construction of Landscapes over Structure :Wiley and Sons
7. David Sauter, Landscape Construction, Pelmer Thomson Learning, 2000.
8. Michael Little wood, Landscape Detailing Volume I -IV, Architectural Press, 1993.
9. Naoki Mukoda, Street furniture, Bijutsu shuppan – sha Ltd., 1990.

SEMESTER II

19LA02003: THEORY OF LANDSCAPE ARCHITECTURE- II

Course Code	Course	Hrs Per Week			Credits	Marks					Total
						CA			ESE		
		T	W /L	S		TA	CT	Sub total	Jury	Writ ten	
19LA02003	Theory of Landscape Architecture- II	2	0	0	2	25	25	50	0	100	150

COURSE OVERVIEW

- To understand the paradigms in landscape architecture in the post industrial revolution era and to understand the multifaceted dimensions of landscape architecture such as ecology, environment behaviour and sustainability.
- To study contemporary landscape and the manifestation in the western and Indian context.

COURSE OUTCOMES

Upon completion of the course,

- Contemporary landscape design projects and its multi-faceted dimensions.

COURSE CONTENTS

Module I: Industrial Revolution and open space development

- Nineteenth Century Europe: The socio-cultural impact of industrialization and urbanization; its effect on public health legislation and the development of new landscape types, public parks and facilities for sports; Open space development in its urban design and planning context; Early industrial towns , Garden City movement (Letchworth, Welwyn) and the City Beautiful Movement
- USA: Further evolution of the public park as a major component of urban landscape. The work of, F. L. Olmsted, Lawrence Halprin and other pioneers. Park-Systems and suburban development centred on open space; Major park systems like Central Park ,Prospect Park, Emerald Necklace Park, Lovejoy Fountain Park etc

- Evolution of landscape architecture in the post industrial world: Influence of Andrew Jackson Dawning, Thomas Church, Geoffrey Jellicoe, Burle Marx etc;
- Post-war development in Europe: New Towns in England and the concept of Landscape Structure; Landscape Urbanism; Examples of open space development in new towns and urban renewal to illustrate the close conceptual relationship between town planning, urban design and landscape architecture (e.g. Haussmann's Paris, Lutyen's Delhi).

Module II- Contemporary Works

- The Modern Movement: changing concepts of space and the relationship of architecture and landscape; Philosophy and selected works of the modern masters;, Dereck Lovejoy, Frederick Gibbered , Dan Kiley, Garrett Eckbo, Fletcher Stele etc
- Contemporary works of landscape architects in the west ; Tropical landscape architects- Geoffrey Bawa (Lunuganga Estate & other important works) & other major landscape architects; The Indian Context: Understanding contemporary attitudes to open space design in India:. Trends in landscape design in India in the late 20th and the first decade of the 21st Century

Module III- New Realms of Landscape Architecture

- New concept in Landscape Architecture in late 20^{th} century: Landscapes as environmental science, environmental art, land art, landscapes for recreation, landscapes for experimenting theories (Bernard Tschumi), urban landscapes (plazas and squares), regenerative landscapes (high line park) etc
- The influence of Ian McHarg on mid and late 20th Century landscape architecture; Environment and Ecology into landscape: cheonggyecheon stream restoration, works of Turenscape, and similar works; Multifunctional landscapes, Continuous Productive Urban Landscapes- urban agriculture for sustainable cities; Market gardens
- Cultural landscapes, their definition, identification, characteristics and polices; Landscape inventory and conservation of historical landscape, Landscapes- as historic preservation resource; Green pilgrimage network, Sacred landscapes. Historic Urban Landscapes.
- Artistic sensibility in Landscape Architecture, land art; new developments in urban landscape design through the works of Martha Schwartz , Charles Jencks, Nancy Holt etc

References

1. Jellicoe G. and Jellicoe S;(1995).The Landscape of Man: Shaping the Environment from

Prehistory to the Present Day: Thames and Hudson

2. McHarg, Ian L, (1969) Design with Nature, Garden City, N.Y: The Natural History Press,

3. Appleton.J;(1996),the experience of landscape: Wiley

4. Lyall S; (1992) Designing The New Landscape: Thames and Hudson

5. Brown J.(2000) The Modern Garden: Princeton Architectural Press

6. Tate A;(2001) Great City parks: Taylor & Francis

7. Siciliano P C; (2004) Landscape Interpretations : History, Techniques and Design Inspiration: Delmar Cengage Learning

8. Simon Swaffield; (2002) Theory in Landscape Architecture- A Reader; University of Pennsylvania Press

9. Tom Turner;(1996) City as Landscape- A post-modern view of Design and Planning; London :E and FN Spon,

10. Steven C. Bourassa; (1991)The Aesthetics of Landscape, London:Belhaven Press

11. Sylvia Crowe; (1958) Landscape of Power, London : The Architectural Press

SEMESTER II

19LA02004: PLANTS AND DESIGN

Course Code	Course	Hrs Per Week			Credits	Marks					Total
						CA			ESE		
		T	W /L	S		TA	CT	Sub total	Jury	Written	
19LA02004	Plants and Design	2	0	0	2	25	25	50	0	100	150

COURSE OVERVIEW

* 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.

COURSE OUTCOMES

Upon completion of the course,

* Understanding the role planting and applications of planting design.
* Understanding of planting plan and estimation

COURSE CONTENTS

Module I: Introduction to Planting Design

- Introduction to planting design. Planting design through ages, Differentiation between trees, shrubs, ground cover and creepers; Understanding and plant selection criteria in landscape – functional, ecological, visual, cultural and temporal; Appreciation and understanding plant use and selection, ecologically sustainable plant use, criteria for planting design.
- Structural characteristics of plants. Spatial functions of plants, ground level planting, below knee height, knee to eye level, above eye level planting, tree planting; creating spaces with plants- Experience of spaces, use of planting to manipulate spatial experience, elements of Spatial composition – enclosure, dynamics and focus; Designing with canopy layers – 3 layers, 2 layers and single layer

- Functional considerations in planting design- Boundaries, screening, shade, shelter, barriers, functions of trees, shrubs 9hedges & shrubbery), groundcover and climbers; trees
- Visual composition in planting design- responses to plant material, A study on form, shape, colour, Texture, growth characteristics and suitability to different environments. Principles of visual composition in planting design; Dynamism in landscape design-planting for texture, leaf and flowers, plants for specific colour and season

Module II- Planting for ecology, environment and culture

- Planting design for ecology and habitat creation; Planting strategies and species for various types of habitats – wooded areas, riparian areas, forests, grassland and meadows, wetlands, coastal edges, waterside and aquatic planting, butterfly gardens
- Planting design for environmental improvement; slope retention, and plants for restoration of disturbed habitats like abandoned quarries and mines, soil conservation, microclimate improvement, windbreaks, shelter-belts
- Plants associated with culture specific to India and that of Kerala: sacred groves, religious values etc; Plants for specific uses: Edible, medicinal, water, hydroponic gardens, butterfly gardens, bird attracting etc

Module III- Planting for specific uses

- Planting design for highways, rural areas, urban areas, roadside planting in urban and rural areas, parking, industrial sites, corporate offices, hospitality & health sector etc.
- Planting for terraces, roofs, vertical gardens, air plants, improving air quality etc.; Xeriscaping benefits, principles, applications in design. Plants for sustainability, LEEDS and GRIHA ratings
- Growth rate of plants as criteria for plant choice for particular situations. Comparison of advantages and disadvantages of fast, medium and slow growing trees. The concept of nurse planting. Creating conditions for plant establishment, planting and transplanting trees and shrubs; Introduction to soft landscape working drawings, planting plans, specifications and estimation.

Note:

Periodical site visits to case studies etc is a must to get a feel of the course and its application in design.

REFERENCES:

1. 1. Nick Robinson, The Planting Design Hand book, Gower Pub., 1998

2. Brian Hackett, Planting Design, McGraw hill, 1979.

3. Bose. T. K. and Choudhary, Tropical Garden Plants in Colour, Horticulture and Allied Publishers, 1991.

4. Iyengar Gopalaswamy, Complete Gardening in India, Gopalaswamy Partha sarathy, 1991.

5. M.S. Randhawa, Flowering trees of India, National Book Trust , India, 1983.

SEMESTER II

19LA02005: LANDSCAPE ECOLOGY AND ECOSYSTEM ANALYSIS

Course Code	Course	Hrs Per Week			Credits	Marks					Total
						CA			ESE		
		T	W /L	S		TA	CT	Sub total	Jury	Writ ten	
19LA02005	Landscape Ecology and Ecosystem Analysis	2	0	0	2	25	25	50	0	100	150

COURSE OVERVIEW

* To develop an understanding of the plant material and their role in ecology.
* Examines the ecology, growth characteristics, and landscape ecology

COURSE OUTCOMES

* Understanding the importance of ecology and the application of the same in ecologically sensitive areas

COURSE CONTENTS

Module I- Basics of Ecology

- Fundaments of Ecology: definition, scope; Components: biotic and abiotic; Definition of Environment and its components; the biosphere and its functioning; Ecological Processes- Energy flow-energy source, food chains, food webs, and trophic structure, ecological pyramids .
- Ecosystem ecology: Biogeochemical cycles; hydrologic cycle, nutrient cycles -carbon, nitrogen, sulphur, phosphorous, Bio-accumulation & Bio-magnification
- Population ecology, Carrying capacity, Limits to growth; Production ecology: Concepts of productivity - Primary and Secondary Productivity.
- Community ecology; Plant Associations-Mutualism, Parasitism, Commensalism, Amensalism; spatial structure, ecological niche and species diversity; Community Dynamics: Succession - Serial stages, Modification of physical environment, Climax formation, Analysis and Evaluation

Module II- Ecosystems and analysis

- Types of ecosystems, characteristics and prevalent vegetation; aquatic ecosystem and forest ecosystem in detail; Field ecology: Quadrat, line transect, community analysis; ecosystem functioning, and analysis
- Biomes of the world and adaptations of plants in different biomes; Phytogeographical Regions of India and Kerala; occurrence, environmental conditions and prevalent vegetation;
- Ecology of western Ghats, Vembanad lake, and Kol wetlands;

Module III- Landscape Ecology

- Introduction to landscape ecology; formation of various landforms; landforms and landscape process; pattern and structure of landscapes; concepts of patch, corridor and matrix
- Landscape dynamics and function, topological and chorological process within landscape , concept of landscape metrics, understanding dynamic interaction between landscape structure and function , ecological services of landscape.
- Ecological degradation and Ecological restoration: Reclamation and restoration of derelict landscapes, conservation and preservation of ecological fragile areas such as wetlands, creeks etc.; Selective case studies- Indian and International; conservation ordinances

References

1. Richard T.T.Forman & Michel Godron , Landscape Ecology, John Wiley & Sons;1986
2. Monica G. Turner & Robert H. Gardner, Landscape ecology in Theory and Practice
3. Odumn, Fundamentals of Ecology
4. Keith Reid and Co. , Man, nature and ecology
5. Kormondy , Concepts of ecology
6. Ecology of Plants- Modern Trends in Applied Terrestrial Ecology
7. Plant Ecology, Kluwer Academic Publishers
8. Landscape ecology, Kluwer Academic Publishers
9. Journal of tropical Ecology: Bimonthly, Cambridge

SEMESTER II

19LA02006: ELECTIVE (WORKSHOP)-1

Course Code	Course	Hrs Per Week			Credits	Marks					Total
						CA			ESE		
		T	W /L	S		TA	CT	Sub total	Jury	Writ ten	
19LA02006	Elective(Workshop)- I 1. Climate Modification through landscape 2. Water Management 3. Advanced Horticultural Practices	1	3	0	2	50	0	50	50	0	100

Note: Students shall make a report after a one week visit to suitable areas like nurseries, forests, protected areas, etc. After a detailed study, a report shall be made which will be evaluated. The course- in charge shall describe the methodology to be undertaken for the workshop/case studies in the course-plan.

1. FOREST ECOLOGY AND MANAGEMENT

COURSE OVERVIEW

* Understanding of forest ecosystem, protected areas and its management

COURSE OUTCOMES

Upon completion of the course,

* Role of forest ecosystem, its components and management.
* Practical exposure to forest biodiversity

COURSE CONTENTS

Module I: Forest and forest environment

- Structure of forest ecosystem; forest microclimate; Major forest types of the world; forest types and forest cover of India with special reference to South India; tree cover of India.
- Ecophysiology of forest trees: Characteristic of tropical trees; shoot growth in forest trees; phenology of trees; forest seed dormancy and germination; regeneration ecology of forest trees.

Module II: Forest Ecosystem Function & Dynamics

- Primary productivity of forest ecosystems; methods of measurement; productivity patterns; litter production and decomposition; Nutrient cycling and nutrient conservation strategies
- Forest hydrology
- Measurement of forest productivity; Ecological Succession; Forest disturbances; Forest fragmentation
- Fauna and protection of wild life corridors, buffers etc

Module III: Forest ecosystem management

- History of forest management in India; joint forest management
- Forest fire; plantation forestry
- Application of remote sensing technique in forest ecology
- Deforestation and approaches to forestry conservation; Changing climate and their impact on forest and soil health.

REFERENCES:

1. Barnes, B V; Zak, D R; Denton, S R and Spurr, S R (1998). Forest ecology (4 th edition). John Wiley and Sons

2. Burton V. Barnes, Donald R. Zak, Shirley R. Denton, Stephen H. Spurr. 1998. Forest Ecology. John Wiley & Sons

3. Champion, H.G. and Seth, S.K. (1968). A revised survey of the forest types of India (Reprinted 2004). Natraj Publicaiton, Dehradun.

4. FSI (2009). State of forest report 2009. Forest Survey of India, Dehradun.

5. Kimmins, J.P. (2004). Forest ecology (2 nd edition). Pearson Education.

6. Ravindranath, N.H. (2004).Joint forest management in India. Oxford University Press.

2. WATER MANAGEMENT

COURSE OVERVIEW

* To understand the water efficient design for complex situations and special conditions through practical studies.

COURSE OUTCOMES

* In depth understanding of water management systems

COURSE CONTENTS

Module I: Waterfront development

- River front developments; sea front developments; treatment of catchment areas; edgings. Understanding floodplains; lake and catchment areas
- Streams in urban landscapes; natural drainage paths-treatments; canals; surface run-off calculations and design; edging. Urban and highway storm water pollution-types and treatments; storm water management; recharge; reuse

Module II: Storm Water and Rainwater management systems

- Water retention structures, water harvesting techniques and devices;
- Advanced irrigation control systems; smart water harvesting solutions.
- Erosion control systems

Module II: Decentralised waste water management systems

- Sewage water treatment and reuse in landscape, decentralised waste water treatment systems and its incorporation into landscape

REFERENCES

1) Viessman Warren(1985): Water Management-Technology and Institutions; Harper & Row.

2) Bansil P.C (2004): Water Management in India; Concept Publishing Company.

3) Vaidhyanathan(2004): Managing Water Scarcity; Lordson Publisher Pvt Ltd.

4) Walesh, Stuart G (1989): Urban surface water management; John Wiley New York.

5) 'Ecological Riverfront Design: Restoring Rivers, Connecting Communities, by Besty Otto, Kathleen McCormick , Michael Luccese.

1. ADVANCED HORTICULTURAL PRACTICES

COURSE OVERVIEW

* ObtainING an in-depth understanding of various horticultural types and management systems

COURSE OUTCOMES

* Hands on experience on specific horticultural types and management

COURSE CONTENTS

Module I: Horticulture for specified uses

- Horticultural practices for medicinal plants
- Horticultural practices for aromatic plants
- Kitchen gardens
- Orchards and vineyards
- Agro-forestry
- Protected horticulture

Module II- Horticultural management

- Soil fertility and nutrition management
- Nursery management for landscape projects
- Water management in plants

Module III: Manure and weed control

- Organic Farming and composting
- Weed management in ornamental plants

Module IV: Plant propagation methods

REFERENCES:

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

2. Adams C R, Early M P, 2004. Principles of Horticulture. Elsevier, N. Delhi.

3. Barton West R, 1999. Practical Gardening in India. Discovery Pub. House, New Delhi.

4. Edmond J B, Senn T L, Andrews F S, Halfacre P G, 1975. Fundamentals of Horticulture (IV Edn). TMH, New Delhi.

5. Sadhu M K, 1996. Plant Propagation. New age International publishers, N. Delhi

SEMESTER II

19LA02007: LANDSCAPE APPRECIATION

Course Code	Course	Hrs Per Week			Credits	Marks					Total
						CA			ESE		
		T	W /L	S		TA	CT	Sub total	Jury	Writ ten	
19LA02007	Landscape Appreciation	0	2	0	2	25	25	50	0	100	150

COURSE OVERVIEW

* 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.

COURSE OVERVIEW

Upon completion of the course,

* Critical analysis of landscapes and the art of oral and written expression of the same.

COURSE CONTENTS

- Learning the art of critically appreciating a creative work, orally, in writing with graphical support.
- Learning to differentiate between the natural organizations and re-organization systems and man's designed interventions.
- Study of works of pioneer landscape architects.
- Site visit to a particular designed landscape (preferably related with thesis topic) and a complete documentation of the same including observational studies.
- Writing a report on the studied landscape and presenting the same in front of an audience.

SEMESTER III

SYLLABUS

SEMESTER III

19LA03001: LANDSCAPE DESIGN-III

Course Code	Course	Hrs Per Week			Credits	Marks					Total
						CA			ESE		
		T	W /L	S		TA	CT	Sub total	Jury	Written	
19LA03001	Landscape Design- III	0	0	10	10	150	0	150	150	0	300

COURSE OVERVIEW

To develop the skill to integrate various knowledge systems to arrive at a design proposal of a project, preferably with the involvement of the stakeholders.

COURSE OUTCOMES

Upon completion of the course,

* Landscape design of complex sites with multifaceted dimensions and resolving design problems with the involvement of stakeholders.

COURSE CONTENTS

* Features the process of solving complicated site planning and site design problems.
* Each phase of the site planning process is examined in detail by undertaking one or more studio problems that involve resolution of issues related to existing site conditions, program development, conceptual design, design development, and design detailing.
* The studio exercises will involve a combination of different situations – urban context, historical landscape, specialized landscape situations, landscapes etc. Understanding of ecologically sustainable development would be the underlying theme.

References:

1. Simonds. J. O. (1961). Landscape Architecture, The Shaping of Man's Natural Environment.London: F.W. Dodge Cooperation.

2. Harris.C.W and Dine.N.T ; (1997) Time Saver Standards For Landscape Architecture, Mcgraw – Hill International Edition, Arch. Series

3. Starke .B and Simonds. J. O. (2013) Landscape Architecture: A Manual of Site Planning and Design. 5 editions. McGraw-Hill Professional

4. Baker.B.H (1987) A Dictionary of Landscape Architecture.Albu : University Of New MexicoPress

5. Reid G. W: (1987) Landscape Graphics: Watson-Guptill

6. Shaheer .M, Dua G.W and Pal.A .(2012) Landscape Architecture in India: a reader .India: La, Journal of Landscape Architecture

7. Reid G. W: (1993)From Concept to Form: In Landscape Design. John Wiley & Sons

8. All publications by Brian Hackett

SEMESTER III

19LA03002: RESEARCH METHODOLOGY AND DISSERTATION

Course Code	Course	Hrs Per Week			Credits	Marks					Total
						CA			ESE		
		T	W /L	S		TA	CT	Sub total	Jury	Writ ten	
19LA03002	Research Methodology and Dissertation	0	2	3	6	100	0	100	100	0	200

COURSE OVERVIEW

* To enable the student to undertake a methodical research on a topic in landscape architecture and to communicate it through technical writing.

COURSE OUTCOMES

Upon completion of the course,

* Expertise in collecting, processing and presenting relevant information and the art of oral and written expression.
* Findings that can be taken forward for further studies/ design/research.

COURSE CONTENTS

- Introduction- Basic research issues and concepts- orientation to research process- types of research: historical, qualitative, co-relational, experimental, simulation and modeling, logical argumentation, case study and mixed methods- illustration using research samples
- Research Process- Elements of Research process: finding a topic- writing an introduction- stating a purpose of study- identifying key research questions and hypotheses- reviewing literature- using theory- defining, delimiting and stating the significance of the study, advanced methods and procedures for data collection and analysis- illustration using research samples
- Researching And Data Collection- Library and archives- Internet: New information and the role of internet; finding and evaluating sources- misuse- test for reliability- ethics Methods of data collection- From primary sources: observation and recording, interviews structured

and unstructured, questionnaire, open ended and close ended questions and the advantages, sampling- Problems encountered in collecting data from secondary sources

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

Dissertation:

The course deals with selecting an appropriate topic (the topic for the research could be selected in a such way that it could help to develop an appropriate methodology and research approach related to the Landscape Architectural Project taken up in semester-IV from the field of landscape architecture or allied disciplines, for its theoretical exploration.

References:

1. Linda Groat and David Wang; Architectural Research Methods;

2. Wayne C Booth; Joseph M Williams; Gregory G. Colomb; The Craft of Research, 2nd Edition; Chicago guides to writing, editing and publishing;

3. Iain Borden and Kaaterina Ruedi; The Dissertation: An Architecture Student's Handbook; Architectural Press; 2000

4. Ranjith Kumar; Research Methodology- A step by step guide for beginners; Sage Publications; 2005

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

6. Kothari, C.R. (2005) Research Methodology: Methods and Techniques, New Delhi: WishwaPrakashan.

7. Sanoff, H. (1977) Methods of Architectural Programming, Dowden Hutchinson and Ross, Inc. Vol. 29, Community Development Series.

8. Sanoff, H. (1991) Visual research methods in design, USA: Van Nostrand Reinhold.

SEMESTER III

19LA03003: PROFESSIONAL TRAINING

Course Code	Course	Hrs Per Week			Credits	Marks					Total
						CA			ESE		
		T	W /L	S		TA	CT	Sub total	Jury	Writ ten	
19LA03003	Professional Training	0	6	0	3	100	0	100	100	0	200

COURSE OVERVIEW

* To give an opportunity to work in an office and give the student an exposure to real time challenges and situations of the profession.

COURSE OUTCOMES

* Practical exposure to real time challenges and situations and the process of arriving at design solutions for the same.
* Exposure to technical drawings

COURSE CONTENTS

- Professional training to be conducted efficiently for a period of 25 full working days with concerned office at any time after second semester as decided by the institution offering the course.

SEMESTER III

19LA03004: URBAN LANDSCAPE

Course Code	Course	Hrs Per Week			Credits	Marks					Total
						CA			ESE		
		T	W /L	S		TA	CT	Sub total	Jury	Writ ten	
19LA03004	Urban landscape	2	0	0	2	25	25	50	0	100	150

COURSE OVERVIEW

* Understanding of approaches to the planning and design of urban public open spaces.

COURSE OUTCOMES

Upon completion of course,

* To make students understand the design aspects of successful urban landscape cases towards better quality of life.

COURSE CONTENTS

Module I: Introduction & Theory

• Urban Landscape and Urban Design, Urban Landscape and its benefits – ecological, social, health, economic, aesthetic; Sustainability and Urban Landscape, Urban ecology, urban water sheds.

• Open spaces with in urban environment – Natural and Artificial.–Brief introduction to natural and artificial types - street crossing/ square/ plaza/ promenade/ public space/ parks/ waterfronts/ wetlands/ with examples.

• Brief on factors forming Natural urban landscape – geographical features, climate, vegetation& Artificial urban landscape – Land use zoning, road pattern, formation of buildings, etc.

Module II: Urban open spaces

- Open space development in urban design context.Evolution of public park as a major component of urban landscape ; Open space development in new towns - Park systems, waterfronts, Green infrastructure,Vertical landscape.

- Urban spaces and its characteristics, Types of urban spaces, hierarchy of urban spaces - streets and squares. Streetscape and types of squares- Successful case studies.

• Cultural, social and aesthetic value of urban spaces and its perception - Enclosure of urban spaces, visual permeability, approach and axis – serial vision (Gorden Cullen), Imageability and legibility (Kevin Lynch) through landscape, aesthetics, sense of place.

• Urban space enhancement.–Enclosure quality, Public art and artifacts, hardscape and softscape, materials, furniture and lighting, signage.

Module III: Urban Landscape Design

• Design of public parks, streetscape, green ways- Hardscape and softscape, edge character, pavement / surface material selection, Plant / tree selection criteria, furniture and lighting of public space, signage, public art and artifacts.

• Design of parkways, waterfronts, promenade and plaza. - Hardscape and softscape, edge character, pavement / surface material selection, Plant / tree selection criteria, furniture and lighting of public space, signage, public art and artifacts.

• Maintenance and management of public spaces and parks – community participation, awareness programmes, public art / activities; Contemporary urban landscape issues, Case studies-Study, understanding and analysis of known examples at the national and international levels.

REFERENCES:

1. Garden Cullen, The concise Townscape, Architectural press, London.

2. Kevin Lynch, Image of City, Cambridge, MA, 1961.

3. Henry F. Arnold, Trees in Urban Design, Van Nostrand Reinhold Company.

4. Matthew Carmona, Tim Heath, Public places – Urban spaces, Architectural press, 2003.

5. Michael Hough, Cities and natural process, Routledge, 1995.

6. Donald Watson, Alan plattns, Roberta shibley, Time savers standards for urban design, McGraw hill, 2003.

7. Elements and total concept of urban landscape design, Graphic –sha publishing Co, 2001.

8. Tom turner, city as landscape, Eand FN spon, 1996.

9. Cliff Tandy, Handbook of urban Landscape, Architectural Press, 1970.

SEMESTER III

19LA03005: ENVIRONMENTAL LEGISLATIONS AND ECONOMICS

Course Code	Course	Hrs Per Week			Credits	Marks					Total
						CA			ESE		
		T	W /L	S		TA	CT	Sub total	Jury	Writ ten	
19LA03005	Environment & Environmental legislations	2	0	0	2	25	25	50	0	100	150

COURSE OVERVIEW

* To familiarize the students to the environmental legislation and its components and its role in checking the damage to the environment.

COURSE OUTCOME

Upon completion of the course,

* Understanding of global and Indian legislation for protection of environment and sensitivity towards environmental protection.

COURSE CONTENTS

Module I- Environment and Human Activities

- Environmental sciences, Environment – definition, types, important components, positive and negative impact of environment upon humans, Environmental impact of man's activities on earth, impacts of agriculture, industrialization, housing & urbanization, transportation, mining etc; Environmental Valuation and Payment of Ecosystem services with national and international case studies
- Pollution – definition, pollution types- air, water, land, radioactive, noise & thermal and its impact on humans, vegetation and other life forms with appropriate case studies ; global issues like ozone layer depletion, acid rain, bio-magnification, green house effect, global warming, environmental crisis etc

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

Module II: Global Environmental Framework & Legislations

- International framework related to landscape legislation, Role of UNEP and its framework, The Stockholm Declaration, The Vienna Convention for the Protection of the Ozone Layer, The Montreal Protocol on Substances that deplete the Ozone Layer, The Report of the World Commission on Environment and Development, Rio Declaration on Environment and Development
- The U.N Convention on Biological Diversity: Agenda 21, The U.N Framework Convention on Climate Change, UNFCCC, The Kyoto Protocol, The WSSD, 2002, International Environmental law, I.E.L : Precautionary principle and Polluter Pays Principle

Module III: Environmental Legislations in India

- Concept of law constitution in relation to environment in India, Role of MoEF, Indian forests acts and Biodiversity acts – preserved, protected, private and village forests, wild life sanctuaries act
- Legislative and administrative framework for conservation of forests, national parks, protected landscapes , bio reserves etc; Periphery control legislation and green belt concept; Forest policies related to Western Ghats in India- Kasthurirangan and Gadgil Report
- Environmental legislation dealing with Town planning, Urban and rural planning; Legislation relating to preservation of parks, open spaces, playgrounds, trees and ancient monuments, Historic and protected Landscapes ; Preservation of the country-sides etc
- Legislation related to air, water, Land pollution prevention, Role of pollution control boards
- Policies related to wetland preservation and paddy conservation, CRZ rules etc.

References:

1. Birnie,P W & Boyle; (2002) International Law And The Environment, Marsh W; Landscape Planning : Environmental Applications;USA: Oxford University Press

2. Fischer T B ;(2007) Theory And Practice Of Strategic Environmental Assessment : Towards A More Systematic Approach: Routledge

3. Jones C Ed.;(2005) Strategic Environmental Assessment And Land Use Planning : An International Evaluation: Routledge

4. Lee.J (1986) The Environment, Public Health And Human Ecology Consideration For Economic Development: The Johns Hopkins University Press

5. Saksena,K.D; Environmental Policies And Programs In India

6. Anuj Kumar Purwar (2012); Environment and Ecology:I.K International Publishers Pvt. Ltd

SEMESTER III

19LA03006: PROFESSIONAL PRACTICE

Course Code	Course	Hrs Per Week			Credits	Marks					Total
						CA			ESE		
		T	W /L	S		TA	CT	Sub total	Jury	Written	
19LA03006	Professional Practice	3	0	0	3	25	25	50	0	100	150

COURSE OVERVIEW

* To educate the students on the various aspects of a Landscape design practice.

COURSE OUTCOMES

Upon completion of the course,

* Understanding of professional practice, conduct and ethics

COURSE CONTENTS

Module I: Professional Practice

- Brief history of profession, Professional career tracks, Registration and License, professional ethics and code of professional conduct; Scope and meaning of professional services, scope of work and services to be provided.
- Types of client: Private, Government, Corporate etc. Professional relationship between client and Landscape Architect: Forms of agreement, conditions of engagement, Practical illustrations of various aspects of Client-Landscape Architect transactions, especially with regards to the establishment of credibility and trust.
- Scale of Professional Fees: Common and accepted methods of charging fees, percentage, lump sum, time-basis etc. Calculation and estimation of fee based on work involved. Taxes, remuneration and reimbursement.

Module II: Construction administration, Implementation process & Construction documents

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

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

- Site documentation: importance of written records. Site instruction book, periodic reports, visual records, bar charts etc; Techniques of inspection and quality control; visits to site under development.
- Contract Procedure; Criteria for selecting contractors: the process of calling tenders. Comparison of various kind of tenders with regard to objectives, utility and appropriateness; Tender Documentation and evaluation of tender; negotiations with contractors
- Contract Documentation: Forms of contract; General and special conditions, specifications, Bill of quantities; significant clauses pertaining to defects, maintenance, arbitrations, etc; Parties to the contract; their roles, contractual relationships and legal obligations.

Module III: Regulations, Professional Institutes and Competitions

- Regulations and Legal Aspects- Codes, Standards, Bye laws and planning regulations applicable to building and landscape development. The role of statutory and regulatory bodies such as the Municipal Corporation, ISOLA, IFLA and Urban Art commission etc.
- Role of Professional Institute: Professional code of conduct. Relationship of Landscape Architect with other professionals;
- Landscape Design Competitions: Types, Guidelines

References:

1. Walter Rogers(1997): The Professional practice of landscape architecture; Van nostrand Reinhold.
2. John.L.Motloch (2001): Introduction to Landscape design.
3. Jack.E.Ingels (1992): Landscaping, Principles and Practices; Delmar publishers inc.
4. W.F.Hill (1995): Landscape handbook of Tropical Landscape; Garden Art Press.
5. Code of professional practice and competition guidelines of Council of Architecture

SEMESTER III

19LA03006: ELECTIVE (THEORY) -II

Course Code	Course	Hrs Per Week			Credits	Marks					Total
						CA			ESE		
		T	W /L	S		TA	CT	Sub total	Jury	Writ ten	
19LA03006	Elective(Theory) –II 1. Landscape conservation, Planning & Managent 2. Sustainable Landscapes 3. Landscape restoration	2	0	0	2	25	25	50	0	100	150

1. LANDSCAPE CONSERVATION, PLANNING & MANAGEMENT

COURSE OVERVIEW:

* To understand the basic principles and concepts related to conservation of Landscape and landscape planning.
* To outline the evolution of landscape planning, its premises and the process.

COURSE OUTCOMES:

Upon completion of course,

* Understanding the need for landscape conservation and planning and the principles related to them.

COURSE CONTENTS

Module I: Introduction to Landscape Conservation

- Importance of landscape conservation and various approaches to same; Landscape Conservation: Priorities, Policies and Programmes. National parks and other protective designations; Biodiversity and Biosphere reserves; Endangered landscapes; Aspects of watershed Management
- The application of landscape planning techniques to large scale developments such as infrastructure and power projects, extractive and manufacturing industry, new towns and urban extensions, and developments for tourism and eco-tourism.
- Conservation of natural resources; Understanding socio-cultural practices and its implications on landscape ecology; Ecological assessment and mapping of landscape with respect to biodiversity, soil, water etc. for understanding of ecologically sensitive sites; Conservation of historic and cultural landscapes.

Module II- Landscape Planning

- Relationship between man and nature; Analytical aspect of landscape; The natural and cultural setting; The purpose of landscape planning; Domain and context for landscape planning; Evolution of landscape planning; Landscape planning models; Application of G.I.S. and Remote sensing in Regional Landscape Planning; METLAND concept
- Process in landscape planning; principles of planning; procedure in landscape planning; problem defining, goal setting, inventory and analysis; basic of collecting and analyzing,

projecting and presenting data in landscape planning; visual assessment and aesthetic dimension; Suitability analysis; Techniques for identifying preferences

- Concept of garden city and its evolution- Contemporary approaches in planning of cities; concepts and projects of McHarg, Carl Steinite, Warren Manning, Augus Hills, Phil Lewis – Izank Zonneveld, Ervin Zube
- Role of landscape architect in preparation of regional plans , city master plans , townships etc-Concept of Landscape Regionalism-Open space structure for a city and for a region-Landscape land-uses and related policy framework for regional landscape planning-Multidisciplinary framework for regional landscape planning; Introduction to the preparation of Landscape Conservation and Management Plan

Module III- Landscape Economics and Management

- Economics: Cost and benefits related to open space development; Tangible costs of development; capital and maintenance costs: intangible costs, depletion of natural resources, modification of ecological systems rehabilitation cost, social and cultural changes. Unit cost of development of open space.
- Management: Landscape management at the regional scale in relation to soil conservation, water management, grassland management, forestry and agriculture.
- Management practices related to urban ecology and urban habitats, such as urban forests, river banks, regional parks and green belts: ecological, economic and administrative issues.

REFERENCES:

1. Tom Turner(1998): Landscape Planning and Environmental Impact Design; UCL Press, London.
2. Ervin H. Zube, Robert O Brush, Julios G.Y.Fabos (1975); Landscape assessment – values, perceptions.
3. William M. Marsh (1997): Landscape planning – Environmental Application; John Wiley and sons Inc.
4. McHarg, I. L, (1969) Design with Nature, Garden City, N.Y: The Natural History Press.
5. Simonds, J.O; (1978) Earthscape- A Manual of Environmental Planning; NY: Mc Graw- Hill Book Company.
6. Lovejoy.D ; (1975) Landuse and Landscape Planning; Glasgow : Leonard Hill
7. Turner T;(1987) Landscape Planning, London : Hutchinson
8. Eaton R M; (2002) Ideal Cities : Utopianism And The(Un) Built Environment: Thames & Hudson

9. Selman Paul; (2006) Planning at the landscape scale: Routledge
10. Turner T; (1995) City As Landscape : A Post Postmodern View Of Design And Planning ; Taylor & Francis
11. Simonds J.O;(1994) Garden Cities 21- Creating a Livable Urban Environment; Mc Grae Hill, Inc.
12. Marsh W.M; (1983) Landscape Planning and Environmental Applications; New York:John Wiley and Sons,Inc.
13. Publications of Brian Hackett

2. SUSTAINABLE LANDSCAPES

COURSE OVERVIEW:

* To make students aware of the environmental, Energy and Water scenario of our planet in general and to appraise them of the urgent need of making all our landscapes sustainable.

COURSE OUTCOMES:

Upon completion of course,

* Understanding the importance of sustainable site planning & practical application possibilities in landscaping
* Critical awareness of existing environmental rating systems

COURSE CONTENTS

Module I: Introduction to Sustainability

- Basics of Sustainability, Needs of Sustainable Outlook, Sustainable Development, Concept of Renewable/Non-renewable, Global warming, Space-Ship-Earth concept, Natural resources, Objectives of Green Buildings and its relation to landscaping, Different Green rating systems around the world
- LEED India rating & TERI GRIHA rating and the relevance of landscape design in both rating systems; Sustainable site planning and landscaping strategies in green buildings through case studies
- SITES Rating for sustainable landscapes and study of case studies

Module II: Site Planning, Energy Conservation and Materials

- Site Planning strategies like Topographical considerations, Erosion control measures; promotion of public transport and pedestrian movement, Pollution control measures; Design for differently abled etc;
- Microclimatic strategies that can be incorporated in site planning
- Energy Efficiency, Reasons for Energy Crisis; Need for the Energy Conservation; Use of renewable energies for landscaping- Solar, wind, tidal and geothermal energy; Conflict of hydro projects with environment, Preferable materials for hardscaping, Sustainable hardscape construction and maintenance, Cradle to Grave Concept; Improvement of indoor air quality through landscape; Energy efficient construction techniques and earth shelters

Module III: Water conservation and Planting Strategies

- Rain data of India and Kerala, Calculation of tank sizes for storage of rain water in Kerala, Traditional harvesting systems, Methods and techniques for water conservation and Flood control- Detention and retention ponds, Infiltration ponds and trenches, Rain gardens, Green roof and suggested plants for green roof, Permeable paving etc; Fixtures in landscaping; Sustainable irrigation practices; Water conservation in green buildings and large areas
- Waste recycling, Management of Waste water and solid waste, Organic farming, Vermi-compost, De-centralised waste water treatment systems and case studies
- Planting strategies for sustainable landscaping- Native vegetation and types, types of lawn, xeriscaping, water requirements of tropical plants, Rain garden and its construction.

REFERENCES

1. Sue Reed(2010): Energy Wise Landscape Design; New Society Publishers
2. Owen E. Dell(2009): Sustainable Landscaping For Dummies; Wiley Publishing, Inc.
3. Harris.C.W and Dine.N.T ; (1997) Time Saver Standards For Landscape Architecture, Mcgraw – Hill International Edition, Arch. Series
4. Storm.S and Kurt Nathan P.E;(1985) Site Engineering for Landscape Architects, AVI Publishing Company
5. 'A Water Harvesting Manual; for Urban Areas; Case Studies from Delhi'(2003), Centre for Science and Environment, New Delhi.
6. Bansal Naveendra K., Hauser Gerd and Minke Gernot (1997), "Passive Buildings Designs : Handbook of Natural Climatic Control", Elsevier Science, Amsterdam.
7. www.sustainablesites.org
8. www.cseindia.org
9. Websites of TERI, LEED India etc.

3. LANDSCAPE RESTORATION

COURSE OVERVIEW:

* To understand the principles and concepts related to landscape restoration

COURSE OUTCOMES:

Upon completion of course,

* Understanding of landscape restoration and process of restoration of different types of degraded land uses

COURSE CONTENTS

Module I: Introduction to Landscape Restoration

- Disturbed landscapes & types; Functional and dysfunctional landscapes; Economic, Social and Environmental objectives; factors influencing methods of restoration; Selecting Appropriate Reclamation Methods, Materials and Developing a Plan for restoration, General procedure for restoration.
- Protection of Soil, Water Quality, and adjacent undisturbed Areas; sediment and erosion control devices and technologies, temporary degradable materials, Turf Reinforced Mats, Hard Armour Systems etc
- Surface Conditioning: Stabilizing of top soil, improvement of water retention capacity, Modifying Acidic Soils, Saline Soils; Applying Fertilizers, Seedbed Preparation, Mulches etc

Module II- Wetlands and phytoremediation

- Wetlands: definition, types, ecologic and remediating property of wetlands, Constructed wetland types; Phytoremediation & its process, Types- Rhizofiltration , Phytotransformation , Plant-Assisted Bioremediation , Phytoextraction , Phytostabilization & Plant-Assisted Bioremediation, Types suitable for groundwater remediation and soil remediation, plants used in each types, harvesting and disposal of plant material after restoration.
- Restoration of aquatic ecosystems through ecologic restoration: Principles of ecologic restoration; Evaluation of disturbance and ecosystem degradation, Land-uses that can be offered after restoration through case studies: e.g. Cheonggyecheon stream restoration, Successful case studies in India and other countries, works of Turenscape and similar works.

Module III: Landscape Restoration for Specific Types

- Restoration of mining sites- Setting the goal, Assessment of conditions and defining the problem, Evaluation of water retaining capacity and soil structure, design solutions and applicable technologies, treatment of topsoil and planting, Land-uses that can be offered after restoration through case studies. E.g.: Bauxite Mining, Gove Peninsula, Northern Australia; Gold Mining, East Kalimantan, Indonesia etc
- Restoration of quarries: Setting the goal, Assessment of conditions and defining the problem, Evaluation of water retaining capacity and soil structure, design solutions and applicable technologies, treatment of topsoil and planting, Land-uses that can be offered after restoration through case studies. E.g.: Bauxite Mining, Gove Peninsula, Northern Australia; Gold Mining, East Kalimantan, Indonesia etc
- Restoration of landfills: Landfills; Open dump and sanitary landfills; typical section of a sanitary landfill, Components of a landfill, Leachate and methane gas in landfills; Restoration procedure for landfills; Land-uses that can be offered after restoration through case studies. e.g. The Fresh Kills Park
- Restoration of brownfields: Assessment of contaminant levels in soil and groundwater; Removal of pollutants; Land-uses that can be offered after restoration through case studies e.g. Highland Park

REFERENCES

1. Harris.C.W and Dine.N.T ; (1997) Time Saver Standards For Landscape Architecture, Mcgraw – Hill International Edition, Arch. Series
2. David G. Tongway & John A.Ludwig (2011): Restoring Disturbed Landscapes: Putting Principles into Practice; Island Press
3. R. Bobbink, B. Beltman, J.T.A.Verhoeven, & D.F.Whigham(2006): R Wetlands: Functioning, Biodiversity Conservation, and Restoration;Springer
4. Raymundo E. Russo(2008): Wetlands: Ecology, Conservation and Restoration; Nova Science Publishers, Inc.
5. Martin R. Perrow & Anthony J. Davy(2002): Handbook of Ecological Restoration; Cambridge University Press.
6. Justin. B.Hollander, Niall. G. Kirkwood & Julia.L.Gold (2010): Principles of Brownfield Regeneration; Island Press
7. Tim Dixon, Mike Rako, Philip Catney & David Liner(2007): Sustainable Brownfield Regeneration- Liveable Spaces from problem spaces; Wiley- Blackwell

SEMESTER IV

PROPOSED SYLLABUS

SEMESTER IV

19LA04001: LANDSCAPE ARCHITECTURE THESIS

Course Code	Course	Hrs Per Week			Credits	Marks					Total
						CA			ESE		
		T	W /L	S		TA	CT	Sub total	Jury	Writ ten	
19LA04001	Landscape Architecture Thesis	0	0	25	25	300	0	300	300	0	600

Course Overview

To enable a student to independently conceptualize and develop a landscape architectural project with a policy and/ design level proposal for the same.

Course Contents

1. Each student is required to select an independent study, with reference to a special topic in Landscape Architecture, before the end of third semester in consultation with the faculty members.

2. Identification of the project with its significance, scope and limitations

3. Programming research related to the project and evolving the project brief

4. Preparing a project proposal and presenting it in graphical and textual format.

References:

All books/ Journals/ Magazines/ unpublished/published research/websites related to the topic selected by the individual student.