



**RAMAIAH**  
Institute of Technology

# **CURRICULUM**

**for the Academic year 2021 – 2022**

**SCHOOL OF ARCHITECTURE**

**I - IV Semester M.Arch ( LANDSCAPE ARCHITECTURE)**

**RAMAIAH INSTITUTE OF TECHNOLOGY**  
(Autonomous Institute, Affiliated to VTU)  
Bangalore – 560054.

## About the Institute

Dr. M. S. Ramaiah a philanthropist, founded ‘Gokula Education Foundation’ in 1962 with an objective of serving the society. M S Ramaiah Institute of Technology (MSRIT) was established under the aegis of this foundation in the same year, creating a landmark in technical education in India. MSRIT offers 17 UG programs and 15 PG programs. All these programs are approved by AICTE. All eligible UG and PG programs are accredited by National Board of Accreditation (NBA). The institute is accredited with ‘A+’ **grade by NAAC in March 2021** for 5 years. University Grants Commission (UGC) & Visvesvaraya Technological University (VTU) have conferred Autonomous Status to MSRIT for both UG and PG Programs since 2007. The institute is a participant to the Technical Education Quality Improvement Program (TEQIP), an initiative of the Government of India. The institute has 380 competent faculty out of which 60% are doctorates. Some of the distinguished features of MSRIT are: State of the art laboratories, individual computing facility for all faculty members, all research departments active with sponsored funded projects and more than 300 scholars pursuing Ph.D. To promote research culture, the institute has established Centre of Excellence for Imaging Technologies, Centre for Advanced Materials Technology, Centre for Antennas and Radio Frequency systems (CARFS), Center for Cyber Physical Systems & Schneider Centre of Excellence. **M S Ramaiah Institute of Technology has obtained “Scimago Institutions Rankings” All India Rank 65 & world ranking 578 for the year 2020.**

The Entrepreneurship Development Cell (EDC) and Section 8 company “Ramaiah Evolute” have been set up on campus to incubate startups. **M S Ramaiah Institute of Technology secured All India Rank 8<sup>th</sup> for the year 2020 for Atal Ranking of Institutions on Innovation Achievements (ARIIA), by MoE, Govt. of India.** MSRIT has a strong Placement and Training department with a committed team, a good Mentoring/Proctorial system, a fully equipped Sports department, large air-conditioned library with good collection of book volumes and subscription to International and National Journals. The Digital Library subscribes to online e-journals from Elsevier Science Direct, IEEE, Taylor & Francis, Springer Link, etc. MSRIT is a member of DELNET, CMTI and VTU E-Library Consortium. MSRIT has a modern auditorium and several hi-tech conference halls with video conferencing facilities. The institute has excellent hostel facilities for boys and girls. MSRIT Alumni have distinguished themselves by occupying high positions in India and abroad and are in touch with the institute through an active Alumni Association. **As per the National Institutional Ranking Framework (NIRF), MoE, Government of India, M S Ramaiah Institute of Technology has achieved 65<sup>th</sup> rank among 1143 top Engineering institutions of India for the year 2021 and is 1<sup>st</sup> amongst the Engineering colleges affiliated to VTU, Karnataka.**

## **SCHOOL OF ARCHITECTURE**

Ramaiah Institute of Technology (RIT), Bangalore, is a leading institution offering undergraduate, post graduate and research programs in the areas of engineering, management and architecture. The institute was established in the year 1962 under the aegis of Gokula Education Foundation. Its mission is to deliver Global quality technical education by nurturing a conducive learning environment for better tomorrow through continuous improvement and customization.

The school of architecture, RIT, Bangalore, started in the year 1992. Since its establishment, the school has played a vital role in providing quality education. The Council of Architecture and AICTE has recognized this program.

The mission of the school is to uphold RIT mission and thus provide quality education to the students and mould them to be excellent Architects with adequate management skills and noble human qualities.

Full time faculty members having postgraduate qualification from prestigious institutions in India and abroad are teaching in this school. Experienced and well respected practicing architects are invited to provide their experiences as visiting faculty. New milestones are continually being set and achieved. The synergy of the progressive management, committed faculty and students are ensuring in excellent academic results year after year. This is reflected in the high number of University ranks that are secured.

The School of Architecture is now autonomous (affiliated to VTU) providing scope for further improvement. The focus has been towards fostering novel concepts and solutions in architectural design. The student's response is very encouraging and the school recognizes and appreciates such good students by awarding them. Many of the students after graduation have pursued higher studies in various universities in the country and abroad. There is a good demand for the school graduates in the industry and is developing initiatives towards co-branding of the industry and the institution school. Many have started their own enterprise and architectural practice as well.

All this has been possible as a result of the efforts of the impeccable faculty of the school. The faculty is committed to the welfare and success of the students. The teachers of the school are also engaged in enhancing their knowledge and skills and many are engaged in research activities as well. The school has experts in specialized disciplines like Planning, Landscape Architecture and Interior Design. Faculties of the school also actively participate in National and International conferences and publish and present papers.

The school as part of consultancy started off with the maiden project to redevelop the RIT engineering college campus and is now involved in various campus designs.

The school is proud to have started the M. Arch programme in Landscape Architecture. This was started in the year 2011. The Master of Landscape Architecture is a 2year full time postgraduate programme. The prescribed course is two years of full-time study.

The course consists of areas of study ranging from community-scale landscape planning to the details of landscape construction technology, with an emphasis on sustainable practices in landscape architecture. The course covers a broad spectrum of topics from local to regional scale. Balancing theory with hands-on practice, design aspects of landscape architecture is given equal prominence to direct the students towards a holistic approach to Sustainable Landscape Architecture. The course is structured to analyze and respond to critical issues facing contemporary landscape architectural design and development. Thus the students have the opportunity to explore alternative, innovative, and experimental design.

The course will enable design and construction professionals to enhance their understanding of the integral relationship between natural processes and human activity, and how sustainable design fits into everyday life, explore design options to address the same and examine policies, regulations, and standards in industry and government for implementation of the principles of sustainable design.

## **VISION OF THE INSTITUTE**

To be an Institution of International Eminence, renowned for imparting quality technical education, cutting edge research and innovation to meet global socio-economic needs

## **MISSION OF THE INSTITUTE**

MSRIT shall meet the global socio-economic needs through

- Imparting quality technical education by nurturing a conducive learning environment through continuous improvement and customization
- Establishing research clusters in emerging areas in collaboration with globally reputed organizations
- Establishing innovative skills development, techno-entrepreneurial activities and consultancy for socio-economic needs

## **QUALITY POLICY**

We at Ramaiah Institute of Technology strive to deliver comprehensive, continually enhanced, global quality technical and management education through an established Quality Management System complemented by the synergistic interaction of the stakeholders concerned

## **VISION OF THE DEPARTMENT**

To achieve and propagate high standards of excellence in architectural education

## **MISSION OF THE DEPARTMENT**

- The school's commitment is to prepare people to make a difference;
- To create an environment that shall foster the growth of intellectually capable, innovative and entrepreneurial professionals, who shall contribute to the growth of the society by adopting core values of learning exploration, rationality and enterprise; and
- To contribute effectively by developing a sustainable technical education system to meet the changing technological needs incorporating relevant social concerns and to build an environment to create and propagate innovative designs and technologies.

## **PROGRAM EDUCATIONAL OBJECTIVES (PEOs):**

- PEO1:** Use the knowledge and skills of Landscape Architecture to analyze the real life problems and interpret the results.
- PEO2:** Effectively design, implement, improve and manage the integrated socio-technical systems.
- PEO3:** Build and lead cross-functional teams, upholding the professional responsibilities and ethical values.
- PEO4:** Engage in continuing education and life-long learning to be competitive and enterprising.

## **PROGRAM OUTCOMES (POs):**

**PO1: Landscape Architectural knowledge:** Apply the knowledge of mathematics, science, architectural fundamentals and Landscape Architectural specialization to the solution of complex landscape architectural problems

**PO2: Problem analysis:** Identify, formulate, review research literature, and analyse complex landscape architectural problems reaching substantiated conclusions using first principles of mathematics, natural sciences, and engineering sciences.

**PO3: Design/development of solutions:** Design solutions for complex Landscape design problems and design system components or processes that meet the specified needs with appropriate consideration for the public health and safety, and the cultural, societal, and environmental considerations.

**PO4: Conduct investigations of complex problems:** Use research-based knowledge and research methods including design of experiments, analysis and interpretation of data, and synthesis of the information to provide valid conclusions.

**PO5: Modern tool usage:** Create, select and apply appropriate techniques, resources and modern landscape architecture and IT tools including prediction and modelling to complex engineering activities with an understanding of the limitations.

**PO6: The architect and Society:** Apply reasoning informed by the contextual knowledge to assess societal, health, safety, legal and cultural issues and the consequent responsibilities relevant to the professional landscape architectural practice.

**PO7: Environment and sustainability:** Understand the impact of the professional engineering solutions in societal and environmental contexts, and demonstrate the knowledge of, and need for sustainable development.

**PO8: Ethics:** Apply ethical principles and commit to professional ethics and responsibilities and norms of the landscape architectural practice.

**PO9: Individual and Team Work:** Function effectively as an individual, and as a member or leader in diverse teams, and in multidisciplinary settings.

**PO10: Communication:** Communicate effectively on complex landscape architectural activities with the landscape architectural community and with society at large, such as, being able to comprehend and write effective reports and design documentation, make effective presentations, and give and receive clear instructions.

**PO11: Project management and finance:** Demonstrate knowledge and understanding of landscape architecture and management principles and apply these to one's own work, as a member and leader in a team, to manage projects and in multidisciplinary environments.

**PO12: Life-long learning:** Recognize the need for and have the preparation and ability to engage in independent and life-long learning in the broadest context of technological change.

#### **PROGRAM SPECIFIC OUTCOMES (PSOs):**

**PSO1:** Apply knowledge and skills of art and sciences based on function, form, materials, information, facilities, technology and analysis to design and develop sustainable Landscape Architectural Projects.

**PSO2:** Identify, formulate and solve industrial requirements and problems with a thorough knowledge of contemporary issues in industrial and service sectors and understand the impact of landscape architectural design solutions in a global and societal context.

**PSO3:** Understand and respect professional and ethical responsibility and implement the concepts of project and construction management with the cutting edge technology.

## **BOARD OF STUDIES FOR THE TERM 2020 - 2021**

1. Prof. (Dr.) Pushpa Devanathan	Chairperson
2. Ar. Chitra Vishwanath	VTU Nominee
3. Ar. Vidyadhar S. Wodeyar	External Industry Expert
4. Ar. Prasad G	External Industry Expert
5. Dr. Rama RS	Academician
6. Dr. Chidambara Swamy	Academician
7. Ar. Subbiah T S	Alumni
8. Prof. Vishwas Hittalmani	Member
9. Prof. (Dr.) Rajshekhar Rao	Member
10. Dr. Rashmi Niranjana	Member
11. Ar. Meghana K Raj	Member
12. Ar. Reema H Gupta	Member
13. Er. Vijayanand M	Member



## SCHOOL OF ARCHITECTURE

### TEACHING STAFF

Sl No	Name	Qualification	Designation
1	Prof. (Dr.) Pushpa Devanathan	M.Arch., P.G.D.I.(PhD)	Professor & HOD
2	Prof. (Dr.) Rajshekhar Rao	M. Arch (Landscape Architecture) (PhD)	Professor & Head - M.Arch (Landscape Architecture)
3	Ar. Prasad.G	M. Arch (Landscape Architecture)	Professor (Tenure)
4	Ar. Surekha R	M. Arch (Landscape Architecture)	Associate Professor
5	Ar. (Dr.) Lavanya Vikram	M. Arch (Landscape Architecture) (PhD)	Associate Professor
6	Ar. Meghana K Raj	M. Arch (Landscape Architecture)	Associate Professor
7	Ar. Tejaswini H	M. Arch (Landscape Architecture)	Associate Professor
8	Ar. Sudhir Chougule	M. Arch (Landscape Architecture)	Associate Professor (Tenure)
9	Ar. Mallika P V	M. Arch (Landscape Architecture)	Associate Professor (Tenure)
10	Ar. Ranjitha Govindaraj	M. Arch (Landscape Architecture)	Assistant Professor
11	Ar. Arpita Sarkar	M. Arch (Landscape Architecture)	Assistant Professor
12	Ar. Jyotsna Rao	M. Arch (Landscape Architecture)	Assistant Professor
13	Ar.(Dr.) Sheethal B S	M. Plan	Assistant Professor
14	Dr. Raghavendra	M Sc. PhD	Allied Faculty
15	Mr. Manjunath R	M.Tech	Allied Faculty
16	Mrs. Nruthya	M.Tech	Allied Faculty
17	Mrs. Sri Latha	M.Tech	Allied Faculty

### ADMINISTRATIVE STAFF

1	Mr. Nagesh B.L	Dip. in Mech. Engg.	Instructor
2	Mrs. Ambika	M Tech	Assistant Instructor
3	Ms. Swathi	B.com	SDA

### SUPPORT STAFF

1	Mr. Ramachandra Chari	Attender
2	Mrs. Varalakshmi	Attender

**RAMAIAH INSTITUTE OF TECHNOLOGY, BANGALORE**  
**(AUTONOMOUS INSTITUTE, AFFILIATED TO VTU, BELGAUM)**  
**SCHEME OF TEACHING & EXAMINATION**  
**M ARCH (LANDSCAPE ARCHITECTURE)**  
**ACADEMIC YEAR 2021- 2022**

<b>SEMESTER I -2021 BATCH</b>							
<b>Code</b>	<b>Subject</b>	<b>Credits</b>	<b>Total</b>	<b>Contact Hours</b>	<b>Examination</b>	<b>CIE Marks</b>	<b>SEE Marks</b>
LA 101	Landscape Design -I	8:0:1	9	10	SEE (Viva voce)	50	50
LA 102	Landscape Construction Techniques & services -I	3:0:1	4	5	SEE (Viva voce)	50	50
LA 103	Theory of Landscape Design	3:0:0	3	3	SEE	50	50
LA 104	Elements of Landscape Design	3:0:0	3	3	SEE	50	50
LA 105	Geology & Geomorphology	2:0:0	2	2	SEE	50	50
LA 106	Hydrology	2:0:0	2	2	SEE	50	50
LA 107	Soil science	2:0:0	2	2	SEE	50	50
	<b>Total</b>		<b>25</b>	<b>27</b>			

CIE = CONTINUOUS INTERNAL EVALUATION

SEE = SEMESTER END EXAMINATION

**Evaluation Pattern: Marks allocation for SEE (Viva Voce)**

<b>Subject Code</b>	<b>Subject</b>	<b>Design</b>	<b>Drawing</b>	<b>Elective / Study Tour/Book review</b>	<b>Total</b>
LA101	Landscape Design -I	20	20	10	50

<b>Subject Code</b>	<b>Subject Name</b>	<b>Portfolio</b>	<b>Viva</b>	<b>Total</b>
LA 102	Landscape Construction Techniques & Services -I	40	10	50

**Note:**

- Literature survey will be a requirement for Landscape design study. Periodical review by an external jury for subjects going for viva voce.
- National/International tours may be arranged during vacation to students, to study of Landscape Architecture.
- For all viva voce examinations one internal faculty and one external faculty will conduct the exam.
- Portfolios have to be submitted on prescribed date for all Viva subjects on the date announced by the department.
- All students have to register on the first day at the beginning of the Viva Voce exam.

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**SCHEME OF TEACHING & EXAMINATION**  
**M ARCH (LANDSCAPE ARCHITECTURE)**  
**ACADEMIC YEAR 2021- 2022**

<b>SEMESTER II -2021 BATCH</b>							
<b>Code</b>	<b>Subject</b>	<b>Credits</b>	<b>Total</b>	<b>Contact Hours</b>	<b>Examination</b>	<b>CIE Marks</b>	<b>See Marks</b>
LA201	Landscape Design -II	8:0:1	9	10	SEE (Viva voce)	50	50
LA202	Landscape Construction Techniques & services -II	3:0:1	4	5	SEE (Viva voce)	50	50
LA203	Planting Design -I	3:0:0	3	3	SEE	50	50
LA204	Landscape Resources & management - I	3:0:0	3	3	SEE	50	50
LA205	Seminar	3:0:0	3	3	SEE (Viva voce)	50	50
LA206	Research methodology	3:0:0	3	3	SEE	50	50
	<b>Total</b>		<b>25</b>				

CIE = CONTINUOUS INTERNAL EVALUATION

SEE = SEMESTER END EXAMINATION

Evaluation Pattern: Marks allocation for SEE

**SEE Viva Voce Examination**

<b>Subject Code</b>	<b>Subject</b>	<b>Design</b>	<b>Drawing</b>	<b>Viva</b>	<b>Total</b>
LA 201	Landscape Design –II (SEE Viva Voce)	20	20	10	50

<b>Subject Code</b>	<b>Subject Name</b>	<b>Portfolio</b>	<b>Viva</b>	<b>Total</b>
LA 202	Landscape Construction Techniques & services –II (SEE Viva Voce)	40	10	50

<b>Subject Code</b>	<b>Subject Name</b>	<b>Portfolio</b>	<b>Viva</b>	<b>Total</b>
LA205	Seminar (SEE Viva Voce)	40	10	50

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**RAMAIAH INSTITUTE OF TECHNOLOGY BANGALORE**  
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**SCHEME OF TEACHING & EXAMINATION – M ARCH**  
**(LANDSCAPE ARCHITECTURE)**  
**ACADEMIC YEAR 2021- 2022**

<b>SEMESTER III – 2020 BATCH</b>							
<b>Code</b>	<b>Subject (2019 Batch)</b>	<b>Credits</b>	<b>Total</b>	<b>Total Hours</b>	<b>Examination</b>	<b>CIE Marks</b>	<b>SEE Marks</b>
LA301	Landscape Design III (Regional landscape)	8:0:1	9	10	SEE (Viva voce)	50	50
LA302	Planting Design -II	3:0:0	3	3	SEE	50	50
LA303	Remote sensing & GIS	2:0:0	2	2	CIE	100	
LA304	Environmental Impact Assessment	2:0:0	2	2	SEE	50	50
LA305	Landscape Resources & Management - II	3:0:0	3	3	SEE	50	50
LA306	Elective	1:0:1	2	3	SEE (Viva voce)	50	50
LA307	Practical Training / Vacation Assignment	3:0:0	3	3	SEE (Viva voce)	50	50
LA 308	Landscape Documentation	0:0:1	1	2	SEE (Viva voce)	50	50
	<b>Total</b>		<b>25</b>	<b>28</b>			

**Evaluation Pattern: Marks allocation for SEE Viva Voce**

<b>Subject Code</b>	<b>Subject</b>	<b>Design</b>	<b>Drawing</b>	<b>Viva Voce</b>	<b>Total</b>
LA301	Landscape Design III (Regional landscape)	20	20	10	50

<b>Subject Code</b>	<b>Subject Name</b>	<b>Design</b>	<b>Drawing</b>	<b>Viva Voce</b>	<b>Total</b>
LA306	Elective	25	15	10	50

<b>Subject Code</b>	<b>Subject Name</b>	<b>Portfolio</b>	<b>Critical Appraisal</b>	<b>Material Analysis</b>	<b>Viva Voce</b>	<b>Total</b>
LA307	Practical Training / Vacation Assignment	30	5	5	10	50

<b>Subject Code</b>	<b>Subject Name</b>	<b>Portfolio</b>	<b>Critical Appraisal</b>	<b>Analysis</b>	<b>Viva Voce</b>	<b>Total</b>
LA308	Landscape Documentation	30	5	5	10	50

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**RAMAIAH INSTITUTE OF TECHNOLOGY BANGALORE**  
**(Autonomous Institute, Affiliated to VTU)**  
**SCHEME OF TEACHING & EXAMINATION – M ARCH**  
**(LANDSCAPE ARCHITECTURE)**  
**ACADEMIC YEAR 2021- 2022**

<b>SEMESTER IV – 2020 BATCH</b>							
<b>Code</b>	<b>Subject</b>	<b>Credits</b>	<b>Total</b>	<b>Total Hours</b>	<b>Examination</b>	<b>CIE Marks</b>	<b>SEE Marks</b>
LA401	Landscape Architecture Thesis	15:0:1	16	17	SEE (Viva voce)	50	50
LA402	Landscape Conservation	3:0:0	3	3	SEE	50	50
LA403	Legal Aspects & Environmental Legislation	3:0:0	3	3	SEE	50	50
LA404	Professional Practice & Landscape Maintenance	3:0:0	3	3	SEE	50	50
<b>Total</b>			<b>25</b>	<b>26</b>			

**CIE = CONTINUOUS INTERNAL EVALUATION**

**SEE = SEMESTER END EXAMINATION**

**Evaluation Pattern: Marks allocation for SEE (Viva-Voce)**

<b>Subject Code</b>	<b>Subject Name</b>	<b>Design</b>	<b>Drawing</b>	<b>Viva Voce</b>	<b>Total</b>
LA401	Landscape Architecture Thesis	25	15	10	50



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- For all viva voce examinations one internal faculty and two external faculty will conduct the exam.
- Portfolios have to be submitted on prescribed date for all Viva subjects on the date announced by the department.
- All students have to register on the first day at the beginning of the Viva Voce exam.



# **CURRICULUM**

**for the Academic year 2021 – 2022**

**SCHOOL OF ARCHITECTURE**

**I Semester M.Arch (LANDSCAPE ARCHITECTURE)**

**RAMAIAH INSTITUTE OF TECHNOLOGY**

**(Autonomous Institute, Affiliated to VTU)**

**Bangalore – 560054.**

**SEMESTER - I**  
**LANDSCAPE DESIGN - I**

**Course Code: LA101**

**Prerequisite: Nil**

**Course Coordinator: Prof. Rajshekhar Rao**

**Credits: 8:0:1**

**Contact Hours: 10 Hrs/ Wk**

**Course Objectives**

- To introduce the students to landscape design
- Introductory exercises in Art, Architecture and Landscape
- Landscape Analysis and site planning for medium sized sites
- Landscape design of small outdoor spaces which clued recreational, ecological, public or civic

**Course Contents**

**Unit I**

To understand Landscape and its elements. The studio shall deal with the basics of Landscape Design like principles, composition, perception and appreciation of basic landscape design issues and landscape treatment in relation to the buildings

**Unit II**

Use of plant material for defining, structuring the open spaces to create spatial experiences in outdoor areas.

**Unit III**

Understand the various qualities of the plant material like ecological, aesthetics and their associations. Interaction of social and economic forces, historical value.

**Unit IV**

Understand the Elements of site planning with respect to the context and surroundings. To use elements of landscape design and landscape treatment in relation to the buildings. Document the open space.

**Unit V**

Design problem to include open spaces, space around buildings, courts, etc. with landscape details, scale and proportion, relation with buildings & surroundings with due emphasis on design process, organization and evaluation of ideas into a physical solution within the scope of landscape architecture.

**Course Outcomes (COs):**

**CO1-** Understand the basics of landscape design (PO1, PO2) (PSO1)

**CO2-** Analyze the role of plants in outdoor spaces (PO1) (PSO1)

**CO3-** Understand the value of plants and its socio-economic aspects (PO1) (PSO1)

**CO4-** Learn to document a site and understand site planning (PO3) (PSO1)

**CO5-** Analyze and design the site, its context based on the requirement (PO1, PO2) (PSO3)

**References:**

1. The Complete Landscape Design and Gardens of Geoffrey Jellicoe -Michael Spens
2. The Poetics of Garden - William Turnbull Jr.
3. Designing the New Landscape -Sutherland Lyall.
4. Time Saver Standards for Landscape Architecture
5. Landscape Graphics- Plan, section and perspective drawing of Landscape Spaces. -Rant W Reid
6. Introduction to Landscape Design -John L. Motloch
7. Landscape Architecture-history, ecology and patterns. -Minakshi J

**Evaluation Pattern : Marks allocation for SEE Viva Voce**

<b>Subject Code</b>	<b>Subject</b>	<b>Design</b>	<b>Drawing</b>	<b>Viva</b>	<b>Total</b>
LA101	Landscape Design –I (SEE Viva Voce)	20	20	10	50

## SEMESTER - I

### LANDSCAPE CONSTRUCTION TECHNIQUES AND SERVICES - I

**Course Code:** LA 102

**Credits:** 3:0:1

**Prerequisite:** Nil

**Contact Hours:** 5 Hrs/ Wk

**Course Coordinator:** Associate Prof. Surekha R

#### Course Objectives:

- Landforms and earthwork,
- Various aspects of street design including storm water drain, street furniture.
- Sustainable storm water management.
- Water features and their maintenance.
- Hardscape details related to sports fields and related to planting.

#### Course Contents

##### Unit I

Design of Landforms - Contours- representation of landforms and landform design, interpretation of contours, slope analysis, uses and function.

Grading – symbols and abbreviations, basic grading exercises, grading and alignment of paths/ roads, angle of repose and retaining walls.

##### Unit II

Earth work formation - Earthworks – principles of Earthwork, earthwork grading, cut and fill calculations- borrow pit method, average spot level method, precautions taken in cut and fill method in relation to soil conditions, amount of precipitation.

##### Unit III

Drainage system –Design of Road and street details, street furniture. Drainage – Surface drainage, calculation of surface run-off, design of surface & storm water drainage, design of streets and gutters, site planning for efficient drainage.

Water as a Resource –Sustainable storm water management, recharging techniques used in Indian and International context. Use of water in the appropriate context of time, political/religious power, way of thinking, technical advancements & influences from other regions. Qualities of water scope types of display, rain water harvesting and irrigation systems.

##### Unit IV

Water Features - Design of water features such as swimming pools, cascades, fountains etc., and their functional requirements, considerations for design and detail. Water body's natural ponds.

Maintenance of swimming pools and related areas (Pump, filtration, balancing tank etc.)

Design of irrigation system: Landscape area types, objectives and design, water need and sources, maintenance. Application methods of installation, control systems, scheduling, and maintenance.

### Unit V

Hardscape details related to sports fields - Playfield and buffer area dimensions, drainage patterns related to play fields, construction details related to play fields including fixtures and markings.

Hardscape details related to planting like separators, root barriers, staking, materials to prevent soil consolidation, erosion control methods prevention of root damage during filling around trees etc.

#### Course Outcomes (COs):

**CO1** - To learn Landscape elements and features including landform, earthwork. (PO1, PO2, PO7) (PSO1)

**CO2** – To understand the Streets including storm water drainage and furniture. (PO1, PO2, PO8) (PSO1)

**CO3** –To understand the Earth work formation, grading calculations. (PO1, PO2, PO5) (PSO3)

**CO4** –Integration of Sustainable water management through landscape design. (PO2, PO4) (PSO3)

**CO5** –Applying the Designing and detailing of Sports fields. (PO2,PO5) (PSO3)

#### References:

1. Landscape Construction and Detailing. – 1993 Blanc, Alan
2. An Introduction to Landscape Design and Construction - James Blake.
3. Site Design and Construction Details – Theodore D Walker
4. Rainwater Harvesting – G.N Virupaksha
5. Construction Detailing for Landscape and Garden Design: Surfaces, steps and margins - Paul Hensey
6. Landscape Development Handbook’ -Dewberry and Davis.

#### Evaluation Pattern : Marks allocation for SEE Viva- Voce

Subject Code	Subject Name	Portfolio	Viva	Total
LA 102	Landscape Construction Techniques & services –I (SEE Viva Voce)	40	10	50

**SEMESTER - I**  
**THEORY OF LANDSCAPE DESIGN**

**Course Code: LA103**

**Credits 3:0:0**

**Prerequisite: Nil**

**Contact Hours: 3 Hrs/ Wk**

**Course Coordinator:** Associate Prof. Tejaswini H

**Course Objectives:**

- Introduce the students to the importance of history of Landscape Architecture.
- Exploration of continuous evolution of thought and trends across the timeline of Landscape architecture from the earliest period to the present day and examination of how humankind has influenced this change.

**Course contents**

**UNIT I**

Chronology of development and evolution of landscape from the earliest period to the present day. Early traditions and beliefs about landscape and environment in the eastern and western world. Development of landscape gardening and landscape design till the early 19th century.

**UNIT II**

Detailed study of selected examples from eastern and western traditions. Ancient civilizations – Introduction to Gardens of Egypt, Greek, Roman, Babylon

**UNIT III**

Formal gardens - Influences, Elements, Principles of garden design in Persian Gardens and Gardens of Spain, Italy and France. Informal gardens - Influences, Elements, Principles of garden design in Chinese and Japanese Landscape.

**UNIT IV**

Formal and Informal Landscape design in England Colonial landscape development in India.

**UNIT V**

Design philosophy and concepts of Landscape works of Humphrey Repton, Lancelot Brown, William Kent, Thomas Church, F. L. Olmstead. Study of modern Masters of Landscape Architecture, works of Peter Walker, Martha Schwartz.

**Course Outcomes (COs):**

**CO1-** Demonstrate knowledge of fundamental terminology and concepts drawn from the global tradition of Landscape design from antiquity to the twenty-first century. (PO1, PO6) (PSO1)

**CO2-** Identify exchanges of ideas between different cultural and across geographic boundaries and temporal frameworks. (PO1, PO3, PO7) (PSO1)



**CO3-**Identify changes in the human/nature relationship through history. (PO3, PO8) (PSO1)

**CO4-** Study the characteristics and analyze the features of historical gardens. (PO1, PO6) (PSO1)

**CO5-** Recent trends and appreciation of scale in terms of natural landscape. (PO1, PO5) (PSO1)

**References:**

1. The History of Gardening Design, Faber & Faber Ltd., 1962- Derek Culford,
2. The Landscape of Man, Thames & Hudson Ltd., London 1975.- Geoffrey & Susan Jellicose.
3. Studies in Landscape Design – Vol: 1,2& 3, London oxford University- G.A Jellicose
4. The History of Landscape Design in 100 Gardens - Linda A. Chisholm
5. Landscape design history & theory: landscape architecture and garden design origins - Tom Turner
6. Landscape and Garden Design: Lessons from History Paperback - Gordon Haynes
7. Garden Design and History - Tom Turner
8. A History of Landscape Architecture- Relationship of people to Environment - G B Tobey

**SEMESTER - I**  
**ELEMENTS OF LANDSCAPE DESIGN**

**Course Code: LA104**

**Credits: 3:0:0**

**Prerequisite: Nil**

**Contact Hours: 3 Hrs/ Wk**

**Course Coordinator:** Associate Prof. Tejaswini H

**Course Objectives:**

- Introduce the student to know the importance of Plants in landscape architecture.
- To understand the taxonomic classification of plants.
- Introduction to different types of Ecology and their plant succession as per their climatic and habitat conditions.

**Course contents**

**UNIT I**

Introduction to Landscape design: Definitions, Types of landscape, Introduction to the plant kingdom. Classification of Plant Kingdom, Basic plant structure, General study of plant morphology and anatomy to understand plant functions. Functions of plants depending on their growth habits and climate.

**UNIT II**

Principles of Taxonomy / nomenclature, Classification, identification and naming, Familiarity with native flora; geographical regions of India. Critical survey of Vegetation types of India. Distribution of plant communities and plant associations in India and its regional distribution. Economic value of plants in Landscape design.

**UNIT III**

Plant processes/ Problems, plant- water- soil relationship, mineral nutrition, photosynthesis, and respiration. Stem, root & leaf relationship, growth & flowering, growth regulators. Plant multiplication & adaptations.

**UNIT IV**

Plant Ecology – Introduction to ecosystem, Different types of ecosystem, Food chains - Trophic levels with respect to plant communities and plant storeys. Stages of plant succession, relationship of plant communities & plant storey's.

**UNIT V**

Introduction to Horticulture and greenhouse crops. Introduction, importance, scope, advantages and dis-advantages. Types of Greenhouses, plant response to Greenhouse environment. Design criteria of greenhouse for cooling and heating purposes. Hydroponics and aeroponics application techniques, advantages and disadvantages.

**Course Outcomes (COs):**

**CO1-** Identify different plant material and their adaptations to different climates. (PO1, PO4, PO5) (PSO1)

**CO2-** Learn the relationship of how plant, water and soil functions. (PO4, PO5) (PSO1)

**CO3-** Identify taxonomical classification of plants and their geographical distribution across India. (PO5, PO6) (PSO1)

**CO4 –** Identify different types of Ecology and their plant succession as per their climatic and habitat conditions. (PO4, PO5, PO6) (PSO3)

**CO5 –** Learn the application of plant material in landscape architecture. (PO4, PO7) (PSO3)

**References:**

1. Botany -W.A. Jenson
2. Environment of Plant Ecology - Etherington, John R.
3. Botany - Ashok Kumar
4. 'The study of plant communities' - Oosting
5. 'The science of Biology' -Paul B. Weisz

**SEMESTER I**  
**GEOLOGY & GEOMORPHOLOGY**

**Course Code: LA105**

**Credits: 2:0:0**

**Prerequisite: Nil**

**Contact Hours: 2 Hrs/ Wk**

**Course Coordinator: Dr. Raghavendra (Civil Department)**

**Course Objectives:**

- This course introduces students to rock formation, its characteristics and its influences on landscape.
- This course introduces detailed knowledge on the soils.
- Introduction of basic geology and its link with various landscape.
- To understand land formation and its characteristics.

**Course contents**

**UNIT I**

The Earth – origin, composition, structure distribution of land and sea. Outer zones of earth. Major geological cycles- external and internal processes, Plate Tectonics and its effects etc., Rocks- formation, classification, physical and chemical properties.

**UNIT II**

Petrology-Igneous, Sedimentary, Metamorphic.

Structural geology- dip, strike, folds, faults, joints, unconformities. Stratigraphy: principles, stratigraphy and geology of India.

**UNIT III**

Earthquakes: causes and effects, seismic micro zonation, seismic zones of India. Volcanoes and their types.

Evolution of landscapes - Basics concept of geomorphology/ Geological factors in developments of landscapes. Based on geological resources and man's interventions their impact on environment and landscape design. Economic impact of geological formations.

**UNIT IV**

Application of geological information in the interpretation of landscapes on maps and in the field.

The relationships between geology, soils and vegetation: Practical examples.

**UNIT V**

Landscape Assessment- Based on geological resources and man's interventions and their impact on the environment. Economic impact of geological formations, Applications of landscapes on maps and in the field: Practical examples of relationships between geology, structures, slope stabilization, water development and management etc.

**Course Outcomes (COs):**

**CO1-** Describe the properties of earth dynamic and their processes (PO1, PO3, PO6) (PSO1)

**CO2-** Identifying natural changes on terrain and justify geological hazards. (PO2, PO7) (PSO3)

**CO3-** Availability of rock mass for landscape construction. (PO2, PO4, PO8) (PSO2)

**CO4-** Evaluate the ground behavior and its suitability in landscape projects. (PO3, PO4, PO6) (PSO2)

**CO5-** Delineate the layers and their interpretation through mapping technique. (PO2, PO3, PO5) (PSO3)

**References:**

1. Introduction to the Geology of India -Krishnan M.S
2. Elements of Geology- Zumberge, James H.
3. Environmental Geology- K.S. Vadiya

## **SEMESTER I**

### **HYDROLOGY**

**Course Code: LA106**

**Credits: 2:0:0**

**Prerequisite: Nil**

**Contact Hours: 2 Hrs/ Wk**

**Course Coordinator: Dr. Raghavendra (Civil Department)**

#### **Course Objectives:**

- This course introduces students to soil erosion, characteristics and land formation and its influence on landscape.
- This course introduces detailed knowledge on the soils.
- Introduction of basic hydrology and its link with various landscape.

#### **Course Contents**

##### **UNIT I**

Introduction to Hydrological systems: Hydrological cycle, Precipitation – forms and types, Intensity of rainfall, Measurement of rainfall, computation of average rainfall over a catchment area.

##### **UNIT II**

Abstraction: evaporation, transpiration, evapo-transpiration, interception, infiltration.  
Ground water: Occurrence of ground water, types of aquifers, stream flow effects and bank storage, influent and effluent streams.

##### **UNIT III**

Runoff: Types, factors affecting runoff. Hydrographs – definition, components of hydrograph, time of concentration, lag time. Floods – definition, impact of floods on environment.

##### **UNIT IV**

Soil erosion: Types of soil erosion, controlling soil erosion.  
Soil conservation: afforestation, agronomic practice, terracing, bunding, cropping patterns.  
Water Conservation: contour bunding, contour terracing, gabion structures, check dams, percolation tanks, subsurface dams, farm ponding, rain water harvesting.

##### **UNIT V**

Watershed: definition and description of watershed. Watershed management of forest lands, grasslands, agricultural lands, arid and semi-arid regions and urban areas.

**Course Outcomes (COs):**

**CO1-** Understand what is the importance of Hydrology and Precipitation. (PO1, PO3, PO4) (PSO1)

**CO2-** Understand how the occurrence of Groundwater and aquifers. (PO2, PO3) (PSO3)

**CO3-** Understand how the stream flow originates and there by runoff & floods. (PO2, PO4, PO6) (PSO2)

**CO4-** Understand soil erosion and study soil conservation methods. (PO4, PO5, PO12) (PSO1)

**CO5-** Understand watershed and its management. (PO4, PO10) (PSO3)

**References:**

1. Ground Water Hydrology -Todd, David Keith
2. Hydrology – Jayaram Reddy
3. Applied Hydrology - Chow, Ven Te & others
4. Soil and Groundwater pollution from agricultural activities - Ramachandra

**SEMESTER - I**  
**SOIL SCIENCE**

**Course Code: LA107**

**Credits: 2:0:0**

**Prerequisite: Nil**

**Contact Hours: 2 Hrs/ Wk**

**Course Coordinator: Dr. Raghavendra (Civil Department)**

**Course Objectives:**

- This course introduces students to soil formation, characteristics and its influence on landscape.
- This course introduces gives detailed knowledge on the soils
- This course introduces methods of soil analysis

**Course Contents**

**UNIT I**

Introduction to soil science. Role of soil in landscape design. Formation of the soil, physical, chemical and biological properties of the soil. Importance of Soil pH value, Soil horizons, soil moisture permeability, Ion exchange capacity. Soil texture and classification. Various classification of soil in India, Karnataka and Bangalore.

**UNIT II**

Mineralogical properties of Soil. Soil erosion, Factors responsible for soil erosion, measures for stabilization, methods adopted for soil conservation.

**UNIT III**

Soil degradation control, remedial actions and reclamation techniques. Managing difficult soils.

Reclamation of problem soils, saline, alkaline and acidic soils, measures to reclaim the soil, deficiency symptoms.

**UNIT IV**

Role of soil organisms, humus and top soil content, green manure, compost, organic/ inorganic fertilizers, Composting, Vermi- Composting, Bio fertilizers.

**UNIT V**

Soil required for plant growth and preparation of the soil, soil for potted plants and terrace gardens. Soil analysis: Soil survey and field mapping, land capability classification, soil capability study.



**Course Outcomes (COs):**

- Understand the significance of various properties of soils and their relation to the formation of soils. (PO1, PO4) (PSO1)
- Determine the strength of soils keeping in mind the actual field conditions with respect to drainage conditions available in the field. (PO1, PO2, PO8) (PSO2)
- Analyze any field situations with the knowledge gained. (PO1, PO3, PO12) (PSO3)
- Design the foundations for any structure in any field /soil. (PO2, PO4, PO12) (PSO2)
- Position to assess the stability of slopes & retaining walls. (PO3, PO6) (PSO1)

**References:**

1. Nature & Properties of Soil -Brady Nylec
2. Handbook of Agriculture -CSIR Publication
3. Soil Management for Conservation & Production - R.L. Cook



# **CURRICULUM**

**for the Academic year 2021 – 2022**

**SCHOOL OF ARCHITECTURE**

**II Semester M.Arch (LANDSCAPE ARCHITECTURE)**

**RAMAIAH INSTITUTE OF TECHNOLOGY**

(Autonomous Institute, Affiliated to VTU)

Bangalore – 560054.

**SEMESTER - II**  
**LANDSCAPE DESIGN-II**

**Course code LA 201**

**Credits: 8:0:1**

**Pre- requisite: Nil**

**Contact Hours: 10 Hrs/ Wk**

**Course Coordinator:** Prof. Rajshekhar Rao

**Course objectives:**

- To develop the skill in students to integrate various knowledge systems in relatively large urban scale exercises of analysis and proposals
- The studio exercises will involve three or four of the following situations – campus landscape, group housing, urban civic spaces at urban design scale, heritage and cultural zones, and transportation and interchange systems and complexes.

**Course contents**

**Unit I**

Developing a thorough understanding of social, physical and biological processes and issues of urban environment and civic spaces.

**Unit II**

Resolving complex issues at various scales of urban contexts like historical, heritage, cultural, etc.

**Unit III**

Landscape design of urban fabric for various situations like specialized landscape, industrial landscapes, recreational landscapes, commercial, institutional, recreational, etc.

**Unit IV**

Evaluation and analysis of large scale contoured sites in the context of urban ecology.

**Unit V**

Development of design methodology and site planning for large scale sites in contemporary urban context with ecologically sustainable design as the underlying theme.

**Course Outcomes (COs):**

**CO1-** Understand social, physical and biological processes of urban environment. (PO1, PO6) (PSO1)

**CO2-** Resolve complex urban issues. (PO1, PO2, PO7) (PSO2)

**CO3-** Develop landscape design for specialized landscapes. (PO2, PO8) (PSO1)

**CO4-** Evaluate and analyze large scale urban sites. (PO1, PO2, PO4, PO10) (PSO1)

**CO5-** Develop a design methodology and carry out site planning for large scale urban sites. (PO1, PO2, PO3, PO12) (PSO3)

**References:**

1. Great City Parks -Alan Tate.
2. The New Tech Garden -Paul Cooper.
3. Handbook of Urban Landscape -Cliff Tandy.
4. Radical Landscapes Reinventing Outdoor Spaces -Jane Amidon.
5. Time Saver Standards for Landscape Architecture
6. Returning to Nothing: The Meaning of Lost Places - Peter Read
7. The Experience of Place: A New Way of Looking at and Dealing with our Radically Changing Cities and Countryside - Tony Hiss
8. Great Streets- Allan B. Jacobs

**Evaluation Pattern : Marks allocation for SEE Viva- Voce**

<b>Subject Code</b>	<b>Subject</b>	<b>Design</b>	<b>Drawing</b>	<b>Viva</b>	<b>Total</b>
LA201	Landscape Design –II (SEE Viva Voce)	20	20	10	50

## SEMESTER - II

### LANDSCAPE CONSTRUCTION TECHNIQUES AND SERVICES -II

**Course Code:** LA202

**Credits:** 3:0:1

**Prerequisite:** Nil

**Contact Hours:** 5 Hrs/ Wk

**Course Coordinator:** Associate Prof. Surekha R

#### **Course Objectives:**

- Properties, uses and inherent qualities of various hardscape materials and associated Construction techniques and process
- Fundamental principles of outdoor lighting.
- A Broad overview of Plumbing and irrigation system.
- Water features.
- Market study of emerging materials, Importance and impact of Waste material recycling, Preparation of hardscape BOQ

#### **Course Contents**

##### **Unit I**

Hard landscape - Design and detail of hard landscape: Introduction to hard landscape design, Design and detail of hard landscape: Roads, paving, barriers, edge conditions – Function of hard landscape design, types of hard landscape material, fixing details, criteria for selection, design aspect etc.,

##### **Unit II**

Street furniture - Introduction, criteria for the selection of material and specifications for the street furniture in various climatic conditions. Design of signage and simple outdoor structures like pavilions, gazebos etc.,

##### **Unit III**

Outdoor lighting - Principles of design for outdoor illumination, definition of technical terms, types of fixtures, design and type of effects with electrical fitting, safety precaution and drawbacks of electrical lighting, electrical accessories and their installation. Working drawing for outdoor lighting.

##### **Unit IV**

Water Features – Design of Water features such as swimming pools, cascades. Fountains. etc., and their functional requirements, considerations for design and detail. Water bodies, Natural ponds.

Plumbing and irrigation system – Plumbing and irrigation system: types of irrigation system (Drip system, sprinkler system), Objectives and design, Water need and source, Installations, Control systems, Scheduling and Maintenance.

Irrigation layout for landscape design, working drawing for irrigation systems.

## Unit V

Market study - For emerging materials and technology, comparative study with current alternatives, Study the importance and Impact of Recycle/Reuse/Refurbish materials. Designing and detailing using Recycled materials. Preparation of detailed Bill of quantities for Hardscape elements. - Details for the tender drawings, preparation of LBH sheets and tabulation of quantities, common terms and conditions of tenders, Detailed specifications.

### Course Outcomes (COs):

**CO1** - Understand about the character, Quality, Availability, Sustainability and integrity of hardscape and materials that are commonly used in landscape construction (PO1, PO6) (PSO1)

**CO2** - Understanding the principles importance of various landscape components such as street furniture, outdoor lighting, Irrigation, LEED and sustainable practices (PO1, PO2, PO12) (PSO1)

**CO3** - Prepare design development and construction drawings and details (PO2, PO3, PO10) (PSO1)

**CO4** - Develop working knowledge of the appropriate technologies as they apply to sites on the ground. (PO2, PO3, PO12) (PSO3)

**CO5** - Study on different emerging technologies, Materials and Preparation of Tender drawings/BOQ's for Hardscapes (PO2, PO3, PO12) (PSO3)

### References:

1. Landscape construction,1994- Dietrich, Kerrs
2. Lennox – Moyer, Landscape lighting Book
3. Walker, site details
4. Sports Fields: A Manual for Design, Construction and Maintenance -Jim Puhalla, Jeff Krans, Mike Goatle
5. Landscape irrigation: Design and management- Stephen W Smith
6. Landscape lighting Book - Jannet Lennox Moyer
7. The Site details- Walker
8. The Complete Book of Playgrounds Design- Carles Broto

### Evaluation Pattern : Marks allocation for SEE Viva Voce

Subject Code	Subject Name	Portfolio	Viva	Total
LA 202	Landscape Construction Techniques & services –II (SEE Viva Voce)	40	10	50

**SEMESTER - II**  
**PLANTING DESIGN - I**

**Course Code: LA203**

**Prerequisite: Nil**

**Course Coordinator:** Associate Prof. Meghana K Raj

**Credits: 3:0:0**

**Contact Hours: 3 Hrs/ Wk**

**Course Objectives:**

- Discusses in detail about the various aspects of designing with plants.
- Understand the principles of drawings for client and site
- Preparation of softscape BOQ
- It also emphasizes on the applications of planting design in practice

**Course Contents**

**Unit I**

Introduction to planting design, Role of plant materials in Landscape Design, Functional Use of plants and Ecology. Classification of plant material for various uses in landscape design. To learn to draw the Master plan for the proposed design to help the client envisage the designed area. To learn to draw Planting Plan for the proposed design to enable the contractor to execute the design on site. To learn to do the Bill of Quantities for Site preparation and the softscape used in the proposed design

**Unit II**

Spatial characteristics of plants in design-ground covers, shrubs, trees, climbers. Visual characteristics of plants in design- form, line, texture, color. Plant material to be studied in detail with respect to the sun, soil, water quality.

**Unit III**

Design dynamics and design disciplines. Planting and setting out plan for a landscape design. Design exercises oriented towards the use of plant material for specific design applications Plants for urban and rural roads, parks, open spaces, residential areas etc.

**Unit IV**

Introduction to soft landscape compositions with plant materials and their specifications. Usage of plant materials for indoor and outdoor spaces of a Residence/ Spa inclusive of terrace gardens.

**Course Outcomes (COs):**

**CO1** - Understand the Basics of Planting Design (PO1, PO12) (PSO1)

**CO2** - Understand the essential characteristics of plants and its requirements (PO2, PO11) (PSO1)



**CO3** - Understand the principles of Planting and its application (PO1, PO2, PO10) (PSO1)  
**CO4** - Analyze the context and create spatial compositions (PO1, PO3, PO4, PO11) (PSO1)  
**CO5** - Learn to do the necessary drawings and specifications for execution on Site (PO3, PO5, PO12) (PSO3)

**References:**

1. Landscape design with plants' - Clouston, Brian
2. Planting design' - Hackett, Brian
3. Tropical garden plants in colour: a guide to tropical ornamental plants' - Bose & Chowdhary
4. Some beautiful Indian Climbers & Shrubs' -Bor & Raizada
5. Residential Landscaping 1: planning, design, construction' - Walker, Theodore D.
6. Home Gardening' - Pratibha Trivedi
7. Planting the Landscape' -Nancy A. Leszczynski
8. The Planting Design Handbook' -Nick Robinson
9. Stunning Gardens - N.M Ganesh Babu
10. Plant taxonomy past, present and future - Gupta

**SEMESTER - II**  
**LANDSCAPE RESOURCES & MANAGEMENT - I**

**Course Code: LA204**

**Prerequisite: Nil**

**Course Coordinator:** Associate Prof. Lavanya V

**Credits: 3:0:0**

**Contact Hours: 3 Hrs/ Wk**

**Course Objectives**

- Refine students' knowledge base of ecology and its application to natural resource management.
- Develop an understanding of various aspects of landscape resources, importance, need for conservation, and conservation techniques.
- Further the ability to plan, design and maintain landscapes based upon sound ecological and landscape management principles.

**Course Contents**

**UNIT I**

Introduction to Environment. Regional levels to Microclimate levels. Microclimate: Definition and characteristics. Evolution of cities

The role of landscape components in modifying microclimate with respect to temperature, humidity, precipitation, air corridors, heat islands, wind speed etc., in cities. Threats to the environment. Research on Impacts and Mitigation methods adopted.

**UNIT II**

Introduction to Landscape Resources-Types and values in Urban context. Need for Conservation landscape resources. Public Participation as a method of Landscape conservation

**UNIT III**

Introduction to Landscape Management. Urban Forests- Need and Values of Urban Forests Role of Urban Forests, Threats and management techniques. Tree establishment and issues in maintenance related to urban vegetation, its role in urban landscapes.

**UNIT IV**

Introduction to Urban Water bodies and Urban Land, Need and values, Threats, mitigation and management techniques of Urban land and water bodies.

**UNIT V**

Definition of sustainable Landscape, Types of sustainable Landscape and its techniques. Application in Urban and Regional context. Vertical Garden and Terrace Garden procedures and applications.

**Course Outcomes (COs):**

**CO1-** Develop fundamental knowledge of Landscape Ecology (PO1, PO4) (PSO1)

**CO2-** Develop basic understanding of Landscape resources and management principles and techniques (PO1, PO3) (PSO1)

**CO3-** Understand the issues of Urban forest management and its requirement in the current context (PO1, PO3, PO4) (PSO2)

**CO4-** Recognizing the need for maintenance and revival of Urban water bodies. (PO1, PO3, PO4) (PSO2)

**CO5-** Develop critical thinking in designing sustainable landscapes in urban and regional context (PO3, PO4, PO5) (PSO1)

**References:**

1. Project Management for the Design Professional - Burstein
2. Environmental Management – T.V Ramchandra
3. Landscape Ecology & Resource Management - John A. Bissonette, IlseStorch
4. Responsive Environments - Sue McGlynn, Graham Smith, Alan Alcock and Paul Murrain
5. The Landscape Urbanism Reader - Charles Waldheim
6. Cultural Landscapes of South Asia: Studies in Heritage Conservation and Management - Routledge Research
7. Sustainable Urbanism: Urban Design with Nature - Douglas Farr
8. Projective Ecologies- Chris Reed

## **SEMESTER - II**

### **SEMINAR**

**Course Code: LA205**

**Prerequisite: Nil**

**Course Coordinator: Prof. Rajshekhar Rao**

**Credits: 3:0:0**

**Contact Hours: 3 Hrs/ Wk**

#### **Course Objectives:**

- To promote research in Landscape architecture
- To train the students in collecting, critically analyzing and presenting information in a legal sequence
- Topics related to various aspects of landscape Architecture could be chosen in consultation with faculty members, comprehensively researched and findings presented in a series of seminars by individual students
- The materials would be documented and formally presented as a portfolio at the end of the semester.

#### **Course Contents**

##### **Unit I**

Introduction to the various aspects of landscape architecture and the selection of topics with potential for in-depth study, research and analysis.

##### **Unit II**

Research: Enable students to choose their topic of interest and prepare a synopsis for the same.

##### **Unit III**

Supporting data: case studies, publications and articles that underpin the study are to be sequentially collected and documented in the form of presentations and/ or reports for further analysis.

##### **Unit IV**

Inference and Analysis: the data collected is individually analyzed and reported as final layer of the study, incorporated as part of the presentation.

##### **Unit V**

Conclusions and regulations: the resulting analysis must enable the student to conclude on possible solutions if the topic of study is subject to debate, or must allow the individual to infer the existing rules, policies and guidelines pertaining to the topic, to be able to provide an analytical conclusion on the same.

**Course Outcomes (COs):**

**CO1-** Research on chosen topic (PO1, PO2) (PSO1)

**CO2** -Expertise in collecting, Processing and presenting relevant information. (PO2, PO3) (PSO1)

**CO3** -Broad knowledge about Regulations, Guidelines, Policies. etc. (PO4) (PSO2)

**CO4** -Prepare the detail Analysis on the topic (PO2) (PSO1)

**CO5** -Conclusion on the topic and Detail report of the same (PO2) (PSO3)

**Evaluation Pattern : Marks allocation for SEE Viva Voce**

<b>Subject Code</b>	<b>Subject Name</b>	<b>Portfolio</b>	<b>Viva</b>	<b>Total</b>
LA205	Seminar (SEE Viva Voce)	40	10	50

**SEMESTER - II**  
**RESEARCH METHODOLOGY**

**Course Code: LA206**

**Credits: 3:0:0**

**Prerequisite: Nil**

**Contact Hours: 3 Hrs/ Wk**

**Course Coordinator: Associate Prof. Lavanya V**

**Course Objectives:**

- Introduce the student to different types of research methods carried out in landscape architecture.
- Introduce different methodology and steps involved in research.
- Introduce the student for different method involved in data collection and sampling selection.
- Introduce the student to techniques in report writing.

**Course Contents**

**UNIT I**

Introduction of the subject and its relevance to architectural field and society, Introduction: Introduction to Research Methodology, Meaning of Research, Objectives, Types, Approaches, Significance. Difference between Research methods and methodology,

**UNIT II**

Research Problem Identification: Identification of Research Problem, Identification of need to define research problem, Techniques involved in defining the Research Problems.

Research Design: Need, Characteristics of a good Design and related concepts, Types and Basic Principles of Research Designs and its relevance in landscape architecture.

Research Hypothesis: Characteristics, questions and possible hypothesis, formulation of a hypothesis.

**UNIT III**

Sampling Design: Need, types, methods, characteristics of a good sample design, steps in sampling design, criteria for selecting samples, Probability and Non-probability samples– Urban related Problems

Data Collection: Types and Collection Methods, Primary and Secondary data, sources of data, method to select appropriate data collection method.

**UNIT IV**

Interpretation of results and report writing

Significance, Steps, Layout of Report, Types of Reports, Mechanics of Writing, Precautions, Guidelines for research reports, Report formats, Typing Instructions. Future research and role of computers in architecture. Classroom Exercise: Very Small Sample of Research Project –

1 and enable students to get practically acquainted with the Research Methodology to carry out future researches.

### **Unit V**

Future research and role of computers in architecture. To take up a small project and apply research techniques to landscape architecture research.

#### **Course outcomes (COs):**

**CO1-** Understanding the basic concept of research and its application to landscape projects. (PO1, PO6) (PSO1)

**CO2-** Understand the different research methods used by landscape architects and to be critically evaluate the use. (PO1) (PSO2)

**CO3-** Understand the different methods to conduct the sample surveys and data collection for various projects. (PO5, PO6) (PSO3)

**CO4-** To prepare scholarly proposals for the masters of landscape architecture thesis report. (PO4) (PSO1)

**CO5-** To develop a comprehensive understanding of the various research dimensions in landscape architecture. (PO1) (PSO2)

#### **References:**

1. Research Methodology: Methods and Techniques- C. R. Kothari
2. Methodology of Research in Social Sciences - O.R. Krishnaswami, M. Ranganathan
3. Architectural Research Methods - Linda N. Groat, David Wang
4. Research Methodology - R. Panneerselvam
5. Strategies for Sustainable Rural Development –Singh Surat
6. Sustainable Design: Towards New Ethic in Architecture and Town Planning – Contal, Marie Helene
7. Green Architecture: Guide to Sustainable Design -- Crosbie, Michael J





# **CURRICULUM**

**for the Academic year 2021 – 2022**

**SCHOOL OF ARCHITECTURE**

**III Semester M.Arch (LANDSCAPE ARCHITECTURE)**

**RAMAIAH INSTITUTE OF TECHNOLOGY**

(Autonomous Institute, Affiliated to VTU)

Bangalore – 560054.

## **SEMESTER –III**

### **LANDSCAPE DESIGN III (Regional landscape)**

**Course Code: LA301**

**Credits: 8:0:1**

**Prerequisite: Nil**

**Contact Hours: 10 hrs/wk**

**Course Coordinator: Prof. Rajshekhar Rao**

#### **Course objectives:**

- To develop the skill in students to investigate and record interdisciplinary regional scale projects integrating characteristics of soils, slopes, natural drainage systems, native plants communities, and wildlife habitat systems.

#### **UNIT I**

The studio exercises will involve regional context, conservation, specialized landscape situations, ecology and the region. Understanding of ecologically sustainable development would be the underlying theme.

#### **UNIT II**

The exercise includes documentation, to illustrate the process of understanding through study, in depth analysis of all the major issues, present status, scheme and policy decisions. Due importance to be given for the entire process that happens in site, studio and reviews.

#### **UNIT III**

It can include a large area in a regional scale with strong justification with reference to conservation, ecological problems, environmental issues etc.

The studio shall begin with documentation and understanding the process followed in each of schemes. Documentation shall be intensive exercises with small groups who will identify the project and illustrate the entire process of design as well review the present status of the project and realization of stated objectives.

#### **UNIT IV**

The main studio project shall be chosen in an area which is undergoing rapid changes triggered by an identifiable event or policy. The studio shall debate the needs of conserving the overall character of the chosen area with an in depth analysis on the social- cultural issues. Design of the proposed built element shall be preceded by a comprehensive scheme which shall be detailed.

#### **UNIT V**

Projects like; tourism development; conservation of natural and built heritage; intervention in an urban area which has not been able to maintain its cultural moorings due to market forces shall be attempted.

Preliminary work on thesis project is to be done.

**Course outcomes (COs):**

**CO1-** To investigate and record the information available for analyzing natural and cultural processes that influence landscape planning and design. (PO1, PO2, PO4, PO6) (PSO1)

**CO2 -** Adapt techniques and approach to organize and presenting environmental themes. (PO1, PO4) (PSO2)

**CO3-** To understand the parameters that guide planning and design decision making. (PO1, PO3) (PSO2)

**CO4-** To understand and analyze the socio-cultural issues. (PO1) (PSO1)

**CO5-**To understand and maintain the cultural significance in urban scenario. (PO1) (PSO1)

**References:**

1. Silent Spring- Rachael Carson
2. Small is Beautiful -EF Schumacher
3. Introduction to Landscape Design- John L. Motloch
4. Cities- Lawrence Halprin
5. The Wonder that was India- AL Basham
6. Regional Landscape Architecture: Southern California: Mediterranean Modern- Jeffrey Head
7. Beatrix Farrand's American Landscapes: Her Gardens and Campuses- Diana Balmori, Diane Kostial-Maguire, Elanor M. McPeck
8. Detailing for Landscape Architects: Aesthetics, Function, Constructability - John Wiley & Sons, Hoboken, NJ

**Evaluation Pattern: Marks allocation for SEE Viva Voce**

<b>Subject Code</b>	<b>Subject</b>	<b>Design</b>	<b>Drawing</b>	<b>Viva Voce</b>	<b>Total</b>
LA301	Landscape Design III (Regional landscape)	20	20	10	50

**SEMESTER - III**  
**PLANTING DESIGN - II**

**Course Code: LA 302**

**Credits: 3:0:0**

**Prerequisite: Nil**

**Contact Hours: 3 hrs/wk**

**Course Coordinator:** Associate Prof. Meghana K Raj

**Course Objectives:**

- Introduce the students to the technical representation of softscape and hardscape in Landscape Architecture.
- Introduce them to the methods of bill of quantities for the plant materials in Landscape Design.
- Introduce them to different ecosystems their significant issues and suggestive plantation.
- Introduce them to softscape maintenance and management.

**Course contents**

**UNIT I**

Introduction to landscape working drawings like Master Plan and Planting Plan, plant patterns, plant schedule, specifications, estimation and bills of quantity for softscape Design exercises oriented towards the use of plant material in specific situation such as courtyards, small open spaces.

**UNIT II**

Windbreaks or shelter belts, Wetland ecosystems, plant materials for high water table, Wasteland reclamation, Role of plants against drought, flood etc. Influence of temperature, humidity and rainfall over plants.

**UNIT III**

Application in planting design, case studies. Maintenance and management of plant material

**UNIT IV**

Process of transplanting of Trees. Soil preparation and Selection of plant material, Vertical garden.

**UNIT V**

Green Rating in landscape, Composting, Organic farming, Soil less culture

**Course Outcomes (COs):**

**CO1-** Gain the knowledge of technical representation of softscape and hardscape in Landscape Architecture. Identify the methods of bill of quantities for the plant materials in Landscape design. (PO1, PO2) (PSO1)

**CO2-** Understand the technique of maintenance and management of planting material. (PO1) (PSO1)

**CO3-**To understand the interrelation of plants and environment. Identify them to different ecosystem and their significant issues. (PO2, PO3) (PSO2)

**CO4-**Understand the planting procedure and considerations in tree transplantation. (PO1) (PSO2)

**CO5-**The awareness, knowledge and implementation of sustainable planning and design techniques. (PO1, PO4, PO12) (PSO3)

**References:**

1. Residential Landscaping 1: Planning, Design, Construction - Walker, Theodore D.
2. Plants for Reclamation of Wasteland ICAR Publication
3. Plants & Environment - Daubenmire.
4. The Planting Design Handbook 2nd Edition -Nick Robinson
5. Landscape Graphics: Plan, Section, and Perspective Drawing of Landscape Spaces- Grant Reid
6. The Vertical Garden from Nature to the City - Patrick Blanc
7. Constructed Wetlands and Sustainable Development - Gary Austin, Kong jian Yu
8. Treatment Wetlands 2nd Edition - Robert H. Kadlec, Scott Wallace
9. The Organic Farming Manual: A Comprehensive Guide to Starting and Running a Certified Organic Farm – Ann Larkin Hansen

**SEMESTER - III**  
**REMOTE SENSING AND GIS**

**Course Code: LA 303**

**Credits: 2:0:0**

**Prerequisite: Nil**

**Contact Hours: 2 hrs/ wk**

**Course Coordinator:** Asst. Prof. Arpita Sarkar

**Course Objectives:**

- Objective of the course is to train the students in the application of GIS in landscape design.

**Course Contents**

**UNIT I**

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

**UNIT II**

Objective and functions Geographical Information System – GIS software in general - over view of GIS map components.

Google Earth – site marking – KML files- exposure to other data sources – Bhuvan. nrc - USGS earth explorer, etc.

**UNIT III**

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

**UNIT IV**

**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.

**UNIT V**

Overlaying features and analyzing using overlay function – feature selection – buffering – table joining and analysis - manipulating attribute data – classification and reclassifications -

GIS modelling – 3-D GIS Digital Elevation Model & Digital Terrain Model - Case problem on landscape analysis – application of GIS in assessing Landscape Ecological risks.

**Course Outcomes (COs):**

**CO1:** To expand understanding and use of social and environmental systems information in the design and planning process (PO1, PO2) (PSO1)

**CO2:** To increase the knowledge on GIS and the various characteristics of Data. (PO1) (PSO1)

**CO3:** Techniques of Map preparation and analysis using maps. (PO2, PO3, PO4, PO5) (PSO1)

**CO4:** Understand the concept of GIS and its applications (PO3, PO5) (PSO1)

**CO5:** Understand the potential of GIS and develop integrated practice of using the GIS application with landscape architecture. (PO5) (PSO3)

**References:**

1. Introduction to G.I.S – Kang Tsung Chang
2. Remote Sensing and Image Interpretation –Thomos M Lillisand, Ralph W
3. Fundamentals of Remote Sensing – George Joseph
4. Principles of G.I.S – Peter A Burrough, Rachael A McDonnel
5. Spatial Analysis and G.I.S – Michael F Goodchild

**SEMESTER - III**  
**ENVIRONMENTAL IMPACT ASSESSMENT**

**Course Code: LA 304**

**Credits: 2:0:0**

**Prerequisite: Nil**

**Contact Hours: 2 hrs/wk**

**Course Coordinator:** Associate Prof. Surekha R

**Course Objectives:**

- Understanding of environmental issues and suggestive measures
- Introduction to techniques of environmental management
- Introduction to application of relevant legislations in landscape design
- Establishing links of environmental management and landscape architecture

**Course contents**

**Unit I**

Introduction to environmental management; concepts of ecosystem; ethics and environment; environmental management tools. Environmental movements in the world. Environmental pollution and environmental concerns in India. Impact of human settlements, industries, dams, national parks, etc. on environment. Evolution of EIA across the world and India.

**Unit II**

Environmental Impact Assessment - Definitions, purpose, steps, hierarchy, impact indicators and forecasting environmental changes. Strategic environmental assessment (SEA): Rationale and scope, process, benefits and constraints. Environmental clearance procedure in India.

**Unit III**

EIA documentation and processes: Stages; impact prediction, evaluation, and mitigation; impact on decisions; public participation; requisites and review of EIS.

**Unit IV**

Environmental management plan – strategies, approaches of environmental protection. Environmental monitoring. Environmental auditing: Objectives and scope, types, methodology.

**Unit V**

EIA notifications by MoEF CC. Environmental and town planning legislations dictating the EIA procedures: (Air act; Water act, EPA act). Role of a landscape architect in EIA.



**Course Outcomes (COs):**

**CO1:** Understand the evolution of environmental impact assessment and appreciate the importance and need for environmental impact assessment. (PO4) (PSO1)

**CO2:** Skilled in review and appraisal of the EIA process and its outputs specific topic areas. Explain the major principles and steps involved in environmental impact assessment. Develop an understanding of the role of SEA & EIA in decision making. (PO4, PO5) (PSO2)

**CO3:** Select methodology for identification of environmental impacts, environmental indices and indicators. Apply the skill and knowledge of predicting impact of proposed project. (PO1, PO4) (PSO3)

**CO4:** Participate in interdisciplinary environmental report preparation. (PO4) (PSO3)

**CO5:** Gain an overview of the legislative framework for EIA, with a focus towards its application for policy development, project planning. (PO4,PO5) (PSO3)

**References:**

1. Our National Park Policy - John Ise
2. Parks and Recreational Needs in Urban area - Elinor C. Guggenheimer
3. Landscape Planning & Environmental Impact Design – Tom Turner
4. Environment Assessment Methodologies –Y. Anjaneyulu and Valli Manickam
5. Environmental Impact Analysis – R. K Jain et.al Van Nostrand
6. Environmental Impact Analysis –Larry. W. Canter
7. Guidelines for EIA of Developmental Projects, Ministry of Environment and Forests, GOI.

**SEMESTER - III**  
**LANDSCAPE RESOURCES & MANAGEMENT - II**

**Course Code: LA 305**

**Credits: 3:0:0**

**Prerequisite: Nil**

**Contact Hours: 3 hrs/wk**

**Course Coordinator:** Associate Prof. Lavanya V

**Course Objectives:**

- Introduce them to the values of biodiversity at the regional scale and various terminologies.
- Introduce ecosystem as a landscape resources, its importance and need for conservation.
- Environmental pollution and their mitigation techniques. Disaster management and their mitigation through landscape.

**Course Contents**

**UNIT I**

Introduction to Bio Diversity, Values, environmental services to the planet. Bio Diversity of India, Bio Diversity hotspots, threats and conservation.

**UNIT II**

Introduction to ecosystem, desert, marine, estuary and aquatic. Threats and conservation measures of these ecosystems with case studies

**UNIT III**

Environmental pollution: Classification, types, causes, threats and mitigation methods- Air pollution, Water pollution, Sound pollution, Soil pollution, Radioactive pollution. Case studies from India and the world.

**UNIT IV**

Solid waste Management- Classification, methods, benefit, government measure.

**UNIT V**

Disaster Management- Landslides, Earthquake, floods. Causes, and mitigation process through landscape.

**Course Outcomes (COs):**

**CO1-** Develop fundamental knowledge of Bio Diversity. (PO1, PO2) (PSO1)

**CO2-** Study of different ecosystems and their conservation. (PO1, PO2) (PSO1)

**CO3-** Understand the different types of environmental pollution and mitigation techniques (PO3, PO4) (PSO2)

**CO4-** Study the importance of Solid waste management. (PO4, PO5) (PSO1)

**CO5-** Identify the different natural disasters and study the mitigation of these through landscape. (PO3, PO5) (PSO2)

**References:**

1. Project Management for the Design Professional - Burstein
2. Environmental Management – T.V Ramchandra
3. Landscape Ecology & Resource Management - John A. Bissonette, Ilse Storch
4. Urban Ecology: the science of cities- Richard Forman
5. A place in a shade - Charles Correa
6. Great Streets - Allan Jacobs
7. Civilizing American Cities: Writings on City Landscapes - Frederick Law Olmsted
8. The Death and Life of Great American Cities - Jane Jacobs

## SEMESTER - III

### ELECTIVE

**Course Code: LA 306**

**Prerequisite: Nil**

**Course Coordinator: Prof. Rajshekhar Rao**

**Credits: 1:0:1**

**Contact Hours: 3 hrs/wk**

#### Course Objectives:

- To Understand the Various Aspects of Landscape Architecture

#### Course Contents

Aim of this Elective course is to broaden the knowledge of the student so as to enable the student to deal more effectively with various aspects of landscape architecture. Topics pertaining to environmental, ecological or other important issues in the field of landscape architecture like, Sacred landscape, Modern landscape, Eco- architecture, lake as water resource, Interior landscape design, Cultural landscape. Water as element in landscape, Manmade\_landscape etc.

#### Course Outcomes (COs):

1. To analyze the different aspects in landscape Architecture (PO1) (PSO1)
2. To apply the principles of landscape architecture (PO2) (PSO1)
3. To select the topics for the Thesis Project (PO1) (PSO1)
4. Ability to plan and write a report /assignment (PO3, PO5) (PSO1)
5. Ability to substantiate critical reading of literature study. (PO4) (PSO2)

#### Evaluation Pattern: Marks allocation for SEE

Subject Code	Subject Name	Design	Drawin g	Viva Voce	Total
LA306	Elective (Viva Voce)	25	15	10	50

**SEMESTER III**  
**PRACTICAL TRAINING / VACATION ASSIGNMENT**

**Course Code: LA 307**

**Credits: 0:0:3**

**Prerequisite: Nil**

**Contact Hours: 3 Hrs/wk**

**Course Coordinator:** Prof. Rajshekhar Rao

Duration of Assignment: 7 weeks between 2<sup>nd</sup>& 3<sup>rd</sup> Semester.

**Course Objectives:**

To provide exposure to the various dimensions of Landscape Architectural profession. The students are required to Study minimum two live Projects designed by landscape architects, Critical Analysis of the live projects designed by landscape architects.

**Course Contents**

**UNIT I**

Study and critical analysis of completed live projects designed by the landscape architect. Understand how a Landscape office functions.

**UNIT II**

Preparation of working drawings, Irrigation drawing, Electrical drawings.

**UNIT III**

Prepare Planting plan, list of plant materials, BOQ, landscape elements, and documentation of projects through 3D views and photographs.

**UNIT IV**

Study various landscape materials and construction techniques used on site.

**UNIT V**

Through site visits gain practical knowledge, Exposure to Client-Architect relationship, Discussions with Contactor.

**Course Outcomes (COs):**

CO1: Understanding of the various types of projects and the process of designing. (PSO1)

CO2: Learn skill of producing detail drawings for construction on site. (PSO1)

CO3: Understanding of Designing and Detailing out of Landscape projects. (PSO1)

CO4: Exposure to Professional practice as per the demand of industry. (PSO3)

CO5: Demonstrate skills to start an independent Landscape practice. (PSO3)

**Performance will be evaluated through Viva voce**

The Viva voce marks will be awarded based on the following works:

- Documentation of the work done in the office
- Critical analysis report of two live projects
- Landscape material portfolio

**Note: Student should work under a Landscape Architect who is a registered architect from Council of Architecture and the registered architect should sign in the certificate with registration number.**

**Evaluation Pattern: Marks allocation for SEE (Viva Voce)**

<b>Subject Code</b>	<b>Subject Name</b>	<b>Portfolio</b>	<b>Critical Appraisal</b>	<b>Material Analysis</b>	<b>Viva Voce</b>	<b>Total</b>
LA307	Practical Training / Vacation Assignment	30	5	5	10	50

## SEMESTER – III

### LANDSCAPE DOCUMENTATION

**Course Code:** LA308

**Credits:** 0:0:1

**Prerequisite:** Nil

**Contact hours:** 2 Hrs/Wk

**Course Coordinator:** Prof. Rajshekhar Rao

#### Course Objectives:

- To Understand the Value of Landscape documentation and procedure involved in landscape documentation.

#### Course Contents

##### UNIT I

Introduction to landscape documentation: definition, Objectives, Importance of documentation

##### UNIT II

Validation of a site

##### UNIT III

Methodology and techniques of Documentation

##### UNIT IV

Analysis of given data and formulating policies.

##### UNIT V

Apply the knowledge gained and document a landscape site.

#### Course Outcomes (COs):

**CO1-** Gain knowledge about landscape documentation (PO1) (PSO1)

**CO2-** Be able to validate a given site (PO1, PO2) (PSO2)

**CO3-** Learn various techniques of documentation (PO3) (PSO1)

**CO4-** Learn the need and art of Policy making (PO4) (PSO2)

**CO5-** Field work. (PO4, PO5) (PSO3)

#### References:

Landscape Architecture Documentation standards – Principles, guidelines and Best Practices by Wiley

#### Evaluation Pattern: Marks allocation for SEE (Viva Voce)

Subject Code	Subject Name	Portfolio	Critical Appraisal	Analysis	Viva Voce	Total
LA308	Landscape Documentation	30	05	05	10	50





# **CURRICULUM**

**for the Academic year 2021 – 2022**

**SCHOOL OF ARCHITECTURE**

**IV Semester M.Arch (LANDSCAPE ARCHITECTURE)**

**RAMAIAH INSTITUTE OF TECHNOLOGY**

(Autonomous Institute, Affiliated to VTU)

Bangalore – 560054.

**SEMESTER - IV**  
**LANDSCAPE ARCHITECTURE THESIS**

**Course Code: LA 401**

**Credits: 15:0:1**

**Prerequisite: Nil**

**Contact hours: 17 Hrs/Wk**

**Course Coordinator: Prof. Rajshekhar Rao**

**Course objectives:**

- To provide the students an opportunity towards application of the knowledge gained in an independent Thesis, with a design or a research focus, to arrive at a creative/ thoughtful design or findings, enriching the landscape architecture database.

**Course contents**

**UNIT I**

To provide an opportunity to prepare independent and original study at local or regional level. The study should be research based related to Urban or regional landscape issue.

**UNIT II**

To provide an opportunity to prepare independent and original study at local or regional level pertaining to landscape architecture. To create a brief which sets the frame work for design.

**UNIT III**

To demonstrate an advanced level of design ability to convert the brief set forth earlier into a speculative proposition of design.

**UNIT IV**

To articulate and delineate the proposition of design into a Landscape design solution addressing all the dimensions.

**UNIT V**

Alternatively, the Thesis could be a research topic based on the accepted norms of research methods. The Thesis can either be a scholarly research on an issue (or set of issues) which has a bearing on Urban or regional issues or a project with a clearly demonstrated design development process. The project shall demonstrate competence in integrating various issues of social, formal and local concerns into the design. 16 credits include the contact between the students and teachers. Each student is expected to spend additional time in the week on the Thesis in terms of library reference, site visits, designing, drawing, use of computers etc.

**Course Outcomes (COs):**

**CO1-** Assimilate a comprehensive understanding in handling a major Landscape Design independently. (PO3, PO4) (PSO1)

**CO2** - Understand Practical application of the knowledge acquired in various subjects studied during the course (PO2, PO5) (PSO2)

**CO3** - Analyze solutions for real life situations. (PO1, PO5) (PSO2)

**CO4** - Exhibit design, verbal and graphic skills through presentation of their work (PO1, PO2) (PSO1)

**CO5** - Learn to develop maps of the topography for Landscape planning and Site Management (PO5) (PSO3)

**References:**

1. Forest types -Vol1 and Vol 2 - Champion and Seth
2. Forest Ecology - G.S. Puri
3. Trees of Delhi - Pradeep Krishan
4. Research Methodology in Landscape Architecture - Nik Ismail Azlan
5. Landscape conservation - Brian Hackett
6. Earthscape - Simonds
7. Plants for Wasteland Reclamation - Sastry
8. Landscape and geomorphology - Agoudie
9. Jungle Trees of Central India - Pradip Krishen
10. Sacred scapes and Pilgrimage Systems - Rana P. B. Singh
11. Forestry in Karnataka - Deepak Sarmah

**Evaluation Pattern: Marks allocation for SEE (Viva Voce)**

<b>Subject Code</b>	<b>Subject Name</b>	<b>Design</b>	<b>Drawing</b>	<b>Viva Voce</b>	<b>Total</b>
LA401	Landscape Architecture Thesis (Viva Voce)	25	15	10	50

**SEMESTER IV**  
**LANDSCAPE CONSERVATION**

**Course Code: LA 402**

**Credits: 3:0:0**

**Prerequisite: Nil**

**Contact Hours: 3 Hrs/ Wk**

**Course Coordinator: Asst. Prof. Ranjitha Govindaraj**

**Course Objectives:**

- To understand the difference types of Landscape Assessment techniques and conservation.
- To accommodate the knowledge of Landscape resources during planning.

**Course Contents**

**UNIT I**

Introduction to the concept of Landscape Conservation, Principles of Landscape Conservation. Types of Landscape for Conservation. Layers in Landscapes, Values in Landscapes

**UNIT II**

Introduction to Historical perspective of Landscape Conservation – Eurocentric and Indian. Impact of Human activities on Historic Landscapes. Introduction to Cultural Landscapes -Role of communities in Conservation of Landscapes. UNESCO Cultural Landscapes – examples.

**UNIT III**

Impact of Large scale projects on Landscapes – Dams, Reservoirs, mining and industries etc. Methodology of Landscape Conservation, Documentation process, Documentation techniques, examples. Burra Charter and the NARA document.

**UNIT IV**

Landscape conservation Policies – International, National, State, Regional and Local level.

**UNIT V**

Relevance of Landscape Conservation in Modern Era

**Course Outcomes (COs):**

**CO1-** Understanding of Landscape Planning and Landscape Conservation with proper assessment results and cost benefit analysis. (PO3, PO4, PO5) (PSO1)

**CO2-** Understanding the process and role of different organizations. (PO3, PO4) (PSO1)

**CO3 -** Knowledge on Landscape management at the regional level. (PO2, PO3) (PSO2)

**CO4 -**Knowing different Acts and policies at different level. (PO3) (PSO1)

**CO5** -Assessing and studying the Landscape Conservation of modern era. (PO3, PO4)  
(PSO2)

**References:**

1. Strategies for Sustainable Rural Development –Singh Surat
2. Sustainable Design: Towards New Ethic in Architecture and Town Planning – Contal, Marie-Helene
3. Green Architecture: Guide to Sustainable Design -- Crosbie, Michael J
4. Wetlands, A Threatened Landscape - Michael Williams
5. Architecture in Conservation: Managing Development at Historic Sites - James Strike
6. Models for Planning Wildlife Conservation in Large Landscapes- Joshua J. Millspaugh and Frank R. Thompson,
7. Climate and Conservation: Landscape and Seascape Science, Planning, and Action- Charles C. Chester
8. Applying Landscape Ecology in Biological Conservation- Gutzwiller, Kevin
9. Applying Ecological Principles to Land Management- Dale, Virginia H., Haeuber, Richard A.
10. Gardens & Landscapes in Historic Building Conservation - Marion Harney
11. Urban Nature Conservation: Landscape Management in the Urban Countryside- Taylor & Francis

## **SEMESTER IV**

### **LEGAL ASPECTS & ENVIRONMENTAL LEGISLATION**

**Course Code: LA 403**

**Credits: 3:0:0**

**Prerequisite: Nil**

**Contact Hours: 3 Hrs/ wk**

**Course Coordinator:** Associate Prof. Surekha R

#### **Course Objectives:**

- Introduction to legal aspects and terminologies
- Understanding of various environmental legislation applicable in the country and across the globe
- Understanding of various town planning legislation applicable in the country
- Understanding the significance and application of the same in landscape projects

#### **Course Contents**

##### **UNIT I**

Significance and Concept of Constitution and Laws in Indian Scenario Indian Constitution: Concept of Law in Indian Scenario, legislation, Meaning and terms of law, ordinance, bill, act, regulation, and bye-laws, importance and significance of laws in relationship to landscape architect, Process of law making,

##### **UNIT II**

Environmental Legislation in India Significance, Powers and function, application, penalties and current scenario of: Environmental Protection Act, Air Act, Water Act, Mining Act, Forest Act, Wetland Act, Biodiversity Act, National Green Tribunal Act, Tribal Act, Wildlife Protection Act, Ancient Monument Act, International Environmental regulation and treaties

##### **UNIT III**

Land Acquisition Significance, Process of acquisition, ownership details, issues, penalties of land Acquisition 1894, The Right to Fair Compensation and Transparency in Land Acquisition, Rehabilitation and Resettlement Act, 2013

##### **UNIT IV**

Panchayat and Municipalities Need of 73<sup>rd</sup> and 74<sup>th</sup> amendments, Balwant Rai Metha Committee and Ashok Metha Committee, Evolution of 73<sup>rd</sup> and 74<sup>th</sup> amendment, Distribution of Power – 3 tier governance system, importance of the amendment, implementation of the amendment in different region, issues of the amendment

##### **UNIT V**

Town Planning Legislation in India and Abroad Town and Country Planning Act, Importance and Need of Development Plans in India, Hierarchy and significance of green area in development plans, Concept of Planning in other countries

**Course Outcomes (COs):**

**CO1-** Understand various provisions of legal aspects in Indian constitution and meaning of law, regulation, Abatements (PO1) (PSO1)

**CO2-** Analyze and Understand the application of Acts in Indian Scenario (PO1, PO2) (PSO1)

**CO3-** Understand the significance and process of land Acquisition (PO2, PO3) (PSO2)

**CO4-** Need and significance of 73<sup>rd</sup> and 74<sup>th</sup> amendment of Indian Constitution (PO2, PO3) (PSO2)

**CO5-** Understand the importance and significance of Town Planning legislation in India and concept of planning in other countries (PO3, PO4, PO5) (PSO2)

**References:**

1. Our National park policy, The John Hopkins Press, 1961 – Ise John
2. Parks and Recreational Needs in Urban area, Twayne Publishers Inc. 1969 - Commissioner Envor C. Cymoodhhames
3. Professional Practice of Landscape Architecture - Walter Rogers
4. Project Management for the Design Professional- Frank Burstein,
5. Making Environmental Law: The Politics of Protecting the Earth - Nancy E. Marion
6. The Making of Environmental Law - Richard J. Lazarus
7. The Global Environment and International Law - Michael J. Lynch; Ronald G. Burns
8. Environmental Law, Crime, and Justice - Paul B. Stretesky
9. Protecting Life on Earth: An Introduction to the Science of Conservation- Michael P. Marchetti; Peter B. Moyle
10. Environment and Law- David Wilkinson

## SEMESTER - IV

### PROFESSIONAL PRACTICE & LANDSCAPE MAINTENANCE

**Course Code: LA 404**

**Credits: 3:0:0**

**Prerequisite: Nil**

**Contact Hours: 3 Hrs/ Wk**

**Course Coordinator:** Prof. Pushpa Devanathan

#### **Course Objectives:**

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

#### **Course Contents**

##### **UNIT I**

The clients: different kinds of clients including public and local authorities engaging the services of Landscape Architect. The extent and variety of services performed by the landscape Architect; Professional ethics and code of professional conduct.

##### **UNIT II**

Tender Documents, calling of tender, measurements, analysis of rates, plant materials earth grading, masonry, paving, drainage etc. Bills of quantities, abstract of cost.

##### **UNIT III**

Contract documents: procedure involved in awarding the contract, condition of contract, Specification, bill of quantities, cost estimation.

##### **UNIT IV**

Condition of engagement and scale of professional charges: Terms and conditions used by professional Institutes.

##### **UNIT V**

Landscape Architecture competition – Purpose, Types, Competition guide lines, conducting landscape architectural Institutes. Landscape Maintenance

#### **Course Outcomes (COs):**

**CO1-** Knowledge about landscape consultancy practice, Contract management. (PO2, PO3) (PSO3)

**CO2-** Understand code of conduct (PO2, PO3) (PSO3)

**CO3-** Understand the process and role of an architect in project execution. (PO3, PO4) (PSO1)

**CO4-** Understand the landscape management and maintenance. (PO3, PO4) (PSO1)

**CO5-** To understand the extent of service offered. (PO4, PO5, PSO 4) (PSO2)



**References:**

1. Rogers Professional Practice of Landscape Architecture
2. Project Management for the Design Professional - Burstein
3. Professional Practice of Landscape Architecture – Walter Rogers
4. Professional Practice by S.V Ravindra
5. Professional practice by Roshan Namavathi