



## School of Planning and Architecture ,Vijayawada

(An institution of National Importance under the Ministry of Education (MoE), Govt. of India) Survey No.4/4, ITI Road, Vijayawada-520008, Andhra Pradesh, India.

<b>Studio Brief:</b>	Department of Architecture	
<b>Minor Design Problem</b>	Course: Bachelor of Architecture	
Class: II Year III Semester	Attendance: 75% Minimum	Passing Marks:40% each in Internal & External 50% in Aggregate
Contact Hours : 10 (05 on Thursday+ 05 on Friday)		
Studio faculty :  Dr. Venkata Krishna Kumar Sadhu, Dr. Nagaraj Kaja, Dr.Prashanti Rao and Ar.Kapil Natawadkar		

### Studio Intent:

Students of Third Semester B.Arch are in the process of learning to connect studies in their previous studios of 2d composition, elements of design, principles of design, anthropometry, circulation etc., to that of present studio about 3D composition, form development, size and proportion, elements of space, function, human scale, climate response etc. Through lectures and assignments on 3D compositions, form, its transformations, space and circulation, elements of space, the students shall learn to develop their understanding regarding form and shape. The studio exercise are programmed in way to slowly induced application of principles of basic design towards development of architectural built and unbuilt compositions as major and minor projects. The literature study shall be focused to sensitise students about tangible and intangible concerns for space development. Similarly the case studies are proposed to explore and establish the relationship between space and forms linking built and unbuilt. Apart from that the study areas also gave the insights about climate responsive architecture and environmental concern. In this purview the design briefs is focused on outdoor and indoor learning environment primary education system.

### Studio objectives:

- To apply the learning on function and aesthetics acquired during the previous semester. The studio helps to develop an Architectural expression which is responsive to the people and environment.
- To enable the conceptualization of form, space and structure through creative thinking and to initiate architectural design process deriving from architectural principles.

- To involve the students in choosing appropriate examples (case studies) and train them in formulating and critical analysis of concepts and architectural program.
- To enable the presentation of concepts through various modes and techniques that will move constantly between 2D representation and 3D modelling.
- To explore the spatial organization related to small span, spaces with simple movement predominantly horizontal and simple function public buildings of small scale. The thrust area for the design studio shall be on the principles of climatic responsive architecture.

**Minor project: (2 Week):**

**Playscapes / Naturescapes (Outdoor learning environment)**

Play and learning are inextricably linked. A Russian psychologist recognized that learning occurs when children actively engage in practical activities within a supportive social context. The accumulation of new knowledge is built on previous learning, but the acquisition of new skills is facilitated by social and often playful interactions. The definition of play is elusive. However, there is a growing consensus that it is an activity that is intrinsically motivated, entails active engagement, and results in joyful discovery. Play is voluntary and often has no extrinsic goals; it is fun and often spontaneous. Children are often seen actively engaged in and passionately engrossed in play; this builds executive functioning skills and contributes to school readiness (bored children will not learn well). Play often creates an imaginative private reality, contains elements of make believe, and is nonliteral. Play is fundamentally important for learning 21st century skills, such as problem solving, collaboration, and creativity, which require the executive functioning skills that are critical for adult success. The focus on the natural environment as a play-ground and learning arena is a way of rediscovering nature's way of teaching, or 'learning from nature'.

**Site Context:**

The site is assumed to be an open space of 400 square meter as a of part primary school in Vijayawada. Students shall select an area form the central open space from the given key plan.

**Submission requirements:**

- Model at 1:50 scale
- Illustrative sketches at suitable scale and proportion



Key plan &  
References:



## Major project: Preschool / Primary School Design

Children learn best in environments where they can have secure relationships with caring and responsive adults, and where they feel safe and free to explore and learn. One key way infants and toddlers learn is by exploring their environment. Children will naturally be drawn to explore a space that is inviting. Creating a supportive learning environment requires time, reflection, and planning. Whether children spend three or twelve hours a day in your program, the environment plays a major role in helping children develop and learn. Research suggests that a high-quality classroom environment can help close the achievement gap (Mashburn, 2008). That is, children who enter school less ready to learn are those that benefit the most from supportive classroom environments. The supportive classroom you provide can also be an important source of consistency for military children (a group that may experience a great deal of change in their daily lives). A supportive environment is well-organized, dependable, and flexible.

### Stage – 01- Literature review and desktop study

- Study of guidelines and space standards pertaining to design problem and ancillary facilities ( indoor and outdoor )
- Theories and philosophies practices in education and learning environment.
- Art Appreciation ( Desktop study )

**Stage –III - Live Case Study and site as per schedule prescribed in academic calendar.**

### Stage III – Design

**Submission dates:**

No.	Schedule	Duration	Dates
	Introduction to Project		
	<b>Minor project ( Individual )</b>		14-07-2023
<b>Stage 1</b>	Plays capes <ul style="list-style-type: none"><li>• Submission requirement<ul style="list-style-type: none"><li>○ Model @1:50</li><li>○ Illustrative sketches</li></ul></li></ul>	2 week	<b>Progress Discussion.</b>  20-07-2023 21-07-2023 <b>Submission</b> 27-07-2023* 28-07-2023*

			28-07-2023 ( Introduction of Stage II)
<b>Stage 2</b>	Literature Review ( Group work -2 students ) Submission requirement ( A2 size sheets and report)	2 week	<b>Progress Discussion.</b> 03-08-2023 04-08-2023 <b>Submission</b> 10-08-2023* 11-08-2023*
<b>Stage II-A</b>	Pre- study tour work – identification of case studies and site selection	1 week	17-08-2023 18-08-2023
<b>Stage II-B</b>	Site visit and Live case studies (19-08-2023 and 02-09-2023 )	1 week	25-08-2023 27-08-2023
<b>Stage II-C</b>	Post study tour work - Live case study documentation	1 week	<b>Progress Discussion.</b> 03-09-2023 04-09-2023
<b>Mid-Semester Exam From 11-09-2023 to 15-09-2023 ( Presentation and Submission of Stage II-C work ) 14-09-2023&amp;15-09-2023*</b>			
<b>Major project</b>			
<b>Stage III</b>	Site Analysis	2 Week	<b>Progress Discussion.</b> 21-09-2023 22-09-2023 <b>Submission</b> <b>28-09-2023</b> 29-09-2023*
<b>Stage IV</b>	Concept development and Preliminary design	3 week	<b>Progress Discussion.</b> 05-10-2023 06-10-2023 12-10-2023 13-10-2023 <b>Submission</b> 19-10-2023*
<b>Dusshera Break – 20-10-2023 to 24 – 10 -2023</b>			
<b>Stage V</b>	Design Development (Pre-final Submission )	2 Week	<b>Progress Discussion.</b> 26-10-2023 27-10-2023 <b>Submission</b> 02-11-2023* 03-11-2023*

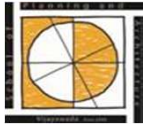
<b>Stage V</b>	Final Submission	2 Week	<b>Progress Discussion.</b> 09-11-2023 10-11-2023 <b>Submission</b> 16-11-2023* 17-11-2023*
End of Classwork – 22-11-2023			

Notes:

- Submission dates are marked ; all students are required to submit the drawings on the given dates on google classroom.
- All reviews are marked and carry significant weightage of continuous evaluation process.
- Studio schedule is subject to change as and when required as per the studio progress.

References:

- Moody Park (<https://space2place.ca/portfolio/moody-park> - Moody Park )
- Jester Park Natural Plays cape,
- Delta-Plantmen  
([https://www.researchgate.net/publication/360350696\\_Green\\_Space\\_Association\\_with\\_Mental\\_Health\\_and\\_Cognitive\\_Development](https://www.researchgate.net/publication/360350696_Green_Space_Association_with_Mental_Health_and_Cognitive_Development))
- <https://childrensdesignguide.org/wp-content/uploads/2022/07/D4CR-Design-Principles-2.0-2022-07-12.pdf>
- <https://www.designskolenkolding.dk/en/news/designing-child-centered-perspective>



## School of Planning and Architecture: Vijayawada

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### Department of Architecture

**Course: ARC212 - Building Materials and Construction III**

**Class:** 2nd Yr B.Arch III - A Sem A.Y. 2023-24

**Instructors:** Asst.Prof. Vijesh Kumar V

**Internal Assessment:** 50

**External Theory Exam:** 50

**Contact Periods/ week:** 2L + 3P periods.(50 min each)

**Total Marks:** 100

**Time Table:** Tuesday (Period 4 - 8)

**Credits:** 5

**Attendance:** Min 75%

**Min. Passing Marks:** 40% each in Internal & External Assessment, 40% in Aggregate

**Objective: (1.)** Focus on various building materials and construction techniques would be emphasized based on the performing standards and codes, wherein application of each material would be discussed in detail, both in the context of historical and contemporary methodology. With time, each topic can also focus on latest trends in practice and usage of new technology/materials.

**(2.)** To impart subject on application of each material in detail, both in the context of historical and contemporary methodology. It shall also on latest trends in practice and usage of new

**Out Line of the Course:** The construction details and techniques used in construction of doors, ventilators, RCC structures, Vault, domes and excavation for both in the context of historical and contemporary scenario.

#### LECTURE PLAN

WEEK	DATE	TOPIC OF CLASS LECTURE & DISCUSSION	TOPIC OF STUDIO WORK & ASSIGNMENTS / REMARKS
1	18-Jul-22	Types of doors and Typical parts and joineries based on the <b>make</b> (battened, ledged, braced, flush, panelled, framed and etc.)	<b>Assignment 1:</b> Types of Door (A4), <b>Sheet 1:</b> (a) Battened and Ledged Door; Battened, (b) Ledged and Braced Door; (C) Battened, Ledged, Braced and Framed Door
2	25-Jul-22	Classification based on usage (pivoted, single leaf, double leaf, revolving, swing, rolling shutter, safety doors, collapsible, etc.),	<b>Sheet 3:</b> Panelled Doors ( Wooden and Glazed) <b>Sheet 4:</b> Sliding Doors
3	01-Aug-22	Classification based on hardware fixtures, joinery, door-fixing details, and types of materials used in doors (wood, metal, glass, aluminium, & PVC).	<b>Sheet 5:</b> Aluminium/ metal/UPVC/store-front Door <b>Sheet 6:</b> Revolving/Pivot Doors



4	08-Aug-22	Types of windows and ventilators based on the design (sliding, pivot, casement, louvered, fixed, bay window etc.)	<b>Assignment 2:</b> Types of Windows (A4), <b>Sheet 7:</b> Casement Window - Panelled and glazed (Fixed/ Movable/ Louvred) <b>Sheet 8:</b> Bay Window (Fixed and Movable)
5	15-Aug-22	<b>Holiday - Independence Day</b>	
6	22-Aug-22	Classification based on material (wood, steel, glass and aluminium) hardware fixtures, joinery, window fixing details.	<b>Sheet 9:</b> UPVC/Metal Window
7	29-Aug-22	Classification based on material (wood, steel, glass and aluminium) hardware fixtures, joinery, ventilator fixing details.	<b>Sheet 10:</b> Woode/UPVC/Metal Ventilators
8	05-Sep-22	Introduction, Application of RCC in building components (foundation, columns, beams, slabs and walls)	<b>Assignment 3:</b> Market Survey on Doors and Windows <b>Sheet 11:</b> RCC Building Components (focus on Lintel and Cantiliver)
9	12-Sep-22	<b>Mid Semester Examination</b>	
10	19-Sep-22	<b>Holiday - Ganesh Chaturthi</b>	
11	26-Sep-22	Typical details for RCC footing, pile foundation - precast pile, cast in situ piles, types of piles, method of driving piles, walls, column, beams, lintels, sunshades, floor and roof slabs (1 & 2 way slabs) cantilever.	<b>Sheet 12:</b> RCC Footing, Columns
12	03-Oct-22	RCC filler slab and waffle slab.	<b>Sheet 13:</b> Beam, Slab (One way and Two way)
13	10-Oct-22	Principles and methods of construction including techniques and details of form-work. Construction of Masonry Vaults and Domes	<b>Sheet 14:</b> Masonry Vaults and Domes
14	17-Oct-22	Concepts of Reinforced Concrete Domes and Vaults with formwork design.	<b>Sheet 15:</b> RCC Vaults and Domes
15	24-Oct-22	<b>Holiday - Dussehra</b>	
16	31-Oct-22	Evaluation of Assignment 3	Presentation on Market Survey on Doors and Window products. Introduction to Assignment 3(Extended) part



17	07-Nov-22	Definition, problems in deep excavation, terms of timbering, methods of timbering, precautions to be taken in deep excavation, de-watering.	<b>Sheet 16:</b> Deep Excavation with supporting materials
18	14-Nov-22	Types of scaffolding, formwork (slab, arches, vaults and domes)	<b>Sheet 17:</b> scaffolding and Formwork
19	21-Nov-22	shoring and underpinning, precautions to be taken and methods adopted.	<b>Assignment 3 (Extended):</b> Photographical Study of Excavation, Scaffolding, Shoring and Underpinning

S. No.	Stages of Evaluation	Weightage
1	First stage: Assessment –1	15
2	Second stage: Mid-semester Examination	20
3	Third stage: Assessment –3	15
	Total	50

**Reference Books:**

1. Barry, R. (1999). The Construction of Buildings Vol.II. 5th Ed. New Delhi : East-West Press.
2. Bindra, S. P. and Arora, S. P. (2000). Building Construction: Planning Techniques and Methods of Construction, 19th Ed. New Delhi : Dhanpat Rai Publications.
3. BIS and relevant IS codes.
4. Ching, F. D. K. (2000). Building Construction Illustrated. 3rd Ed. Wiley.
5. Chudley, R. (2008). Building Construction Handbook. Noida : Elsevier.
6. McKay, W. B. (2005). Building Construction Metric Vol. 1–IV, 4th Ed. Mumbai :Orient Longman.
7. Meghashyam, K. K. (2005). Reinforced Concrete Constructions for 21st C. New Delhi :J.M. Jaina.
8. Rangwala, S. (2004). Building Construction. 22nd Ed. Anand : Charotar Publishing.
9. Rangwala, S. C. (1963). Building Construction: Materials and types of Construction, 3rd Ed. New York : John Wiley and Sons, Inc.
10. Sushil-Kumar, T. B. (2003). Building Construction. 19th Ed. Delhi : Standard Publications.

**Course Instructors:**

Asst. Prof. Vijesh Kumar V

**Head of Department/Coordinator:**



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Department of Architecture

**Course:** ARC 213; Geomatics and Site Planning

**Instructors:** Ar. Tanaya Paul / Dr. P. Siva Prasad

**Class:** II Yr B.Arch III Sem A.Y. 2023-24

**Internal Assessment:** 50

**External Theory Exam:** 50

**Total Marks:** 100

**Credits:** 4

**Contact Periods/ week:** 04 periods (55 min each)

**Time Table:**

**Attendance:** Min 75%

**Min. Passing Marks:** 50% each in Internal & External Assessment, 50% in Aggregate

**Objectives:**

To teach the importance of site and its content in architectural creations

To orient the students towards several influencing factors which govern the siting of a building or group of buildings in a given site.

To teach various techniques of site analysis through exercises and case studies.

To teach the students the methodology of preparing a site analysis diagram. This will serve as a prelude to any architectural creation through exercises.

To introduce various techniques associated with site surveying.

**Out Line of the Course:**

**LECTURE PLAN**

WEEK	DATE	TOPIC OF CLASS LECTURE & DISCUSSION	TOPIC OF STUDIO WORK& ASSIGNMENTS / REMARKS
1	Week-1	Definition of plot, site, land and region, units of measurements. Definition-Uses of surveying overview of plane surveying (chain, compass and plane table)	Lecture & Studio
2	Week-2	Definition-Objectives, Principles and classifications of surveying – Errors in survey measurements.	Lecture & Studio
3	Week-3	Importance of site analysis; On site and off site factors; Analysis of natural, cultural and aesthetic factors – topography, hydrology, soils, vegetation, climate.	Lecture & Studio
4	Week-4	Importance of site analysis; On site and off site factors; Analysis of natural, cultural and aesthetic factors – surface drainage, accessibility, size and shape, infrastructures available - sources of water supply and means of disposal system, visual aspects; Preparation of site analysis diagram.	Lecture & Studio
5	Week-5	Study of microclimate:- vegetation, landforms and water as modifiers of microclimate. Study of land form;- contours, slope analysis, grading process, grading criteria, functional and aesthetic considerations.	Lecture & Studio
6	Week-6	Case studies and exercises on Study of land form;- contours, slope analysis, grading process, grading criteria, functional and aesthetic considerations.	Lecture & Studio

7	Week-7	Context of the site. Introduction to existing master plans land use for cities, development control Rules. Preparation of maps of matrix analysis & composite analysis.	Lecture & Studio
8	Week-8	<b>Mid-Semester examination</b>	<b>Mid-semester examination</b>
9	Week-9	Site selection criteria for housing development, commercial and institutional projects - Case studies.	Lecture & Studio
10	Week-10	Organization of vehicular and pedestrian circulation, types of roads, hierarchy of roads, networks, road widths and parking, regulations. Turning radii & street intersections	Lecture & Studio
11	Week-11	Distance measurement conventions and methods; use of chain and tape, Electronic distance measurements (EDM)-principles of electro optical EDM-errors and corrections to linear Measurements, computation of angle.	Lecture & Studio
12	Week-12	Traversing - Purpose-types of traverse-traverse computation – traverse adjustments.	Discussion
13	Week-13	Concept and Terminology, Levelling Instruments and their Temporary and permanent adjustments-method of levelling.	Lecture & Studio
14	Week-14	Characteristics and Uses of contours- methods of conducting, Contour surveys and their plotting. Types of curves.	Lecture & Studio
15	Week-15	Introduction to geodetic surveying, Total Station and Global positioning system	Lecture & Studio

S. No.	Stages of Evaluation	Weightage
1	First stage: Assessment –1	15
2	Second stage: Mid-semester Examination	20
3	Third stage: Assessment –3	15
	Total	50

**Reference Books:**

1. B.C.Punmia, Ashok K. Jain, Ashok Kr. Jain, Arun Kr. Jain, "Surveying", Vol.I, Firewall Media, 2005.
2. P.B.Shahani, "Text of surveying", Vol. I, Oxford and IBH Publishing Co, 1980
3. Joseph De.Chiarra and Lee Copleman, "Urban Planning Design Criteria", Van Nostrand Reinhold Co., 1982
4. Storm Steven, "Site engineering for landscape Architects", John wiley & Sons Inc, 2004.
5. White, Edward T. Site analysis: Diagramming information for architectural design. Architectural Media, 1983.
6. Lynch, Kevin, Kevin R. Lynch, and Gary Hack. Site planning. MIT press, 1984.
7. LaGro Jr, James A. Site analysis: Informing context-sensitive and sustainable site planning and design. John Wiley & Sons, 2013.

**Course Instructors:**

sd/-  
(Ar. Tanaya Paul / Dr. P. Siva Prasad)

**Head of Department (I/C):**

sd/-  
(Dr. Uma Sankar Basina )



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Department of Architecture

**Course:** ARC 214; Structural Mechanics

**Instructors:** Dr. P. Siva Prasad

**Class:** II Yr B.Arch III Sem A&B A.Y. 2023-24

**Internal Assessment:** 50

**External Theory Exam:** 50

**Total Marks:** 100

**Credits:** 4

**Contact Periods/ week:** 04 periods (55 min each)

**Time Table:**

**Attendance:** Min 75%

**Min. Passing Marks:** 50% each in Internal & External Assessment, 50% in Aggregate

**Objective:** To impart the knowledge of methods of determining Centroid, Moment of Inertia, Bending stresses, forces in Arches, deflection in beams and also plotting shear force and bending moment diagrams

**Out Line of the Course:**

**LECTURE PLAN**

WEEK	DATE	TOPIC OF CLASS LECTURE & DISCUSSION	TOPIC OF STUDIO WORK& ASSIGNMENTS / REMARKS
1	Week-1	Centre of gravity, Moment of inertia and section modulus for various structural shapes.	Lecture, Discussion & Tutorial/Studio
2	Week-2	Types of beams and their behaviour, types of supports and reactions, bending moment and shear forces.	Lecture, Discussion & Tutorial/Studio
3	Week-3	Simply supported, cantilever and overhanging beams, relation between bending moment and shear force.	Lecture, Discussion & Tutorial/Studio
4	Week-4	Assumptions made in the theory of simple bending. Applications of pure bending equation.	Lecture, Discussion & Tutorial/Studio
5	Week-5	Determination of different types of stresses induced in beams and shafts due to bending and twisting moments respectively.	Lecture, Discussion & Tutorial/Studio
6	Week-6	Material testing laboratory on Tension test on steel bars, Torsion test on steel bars	Demo
7	Week-7	<b>Mid-Semester examination</b>	<b>Mid-semester examination</b>

8	Week-8	Bending stresses and Shearing stresses in beams.	Lecture, Discussion & Tutorial/Studio
9	Week-9	Distribution of shear stress over different sections like, rectangular, circular, triangular, I and T-sections.	Lecture, Discussion & Tutorial/Studio
10	Week-10	Understanding structural concepts of post & lintel, arch, dome, & vault construction.	Lecture, Discussion & Tutorial/Studio
11	Week-11	Two hinged, three hinged arches and behavior of heterogeneous material in direct force and bending.	Lecture, Discussion & Tutorial/Studio
12	Week-12	Deflections of determinate beams, cantilevered beams with different loading,	Lecture, Discussion & Tutorial/Studio
13	Week-13	Simply supported beams with different loading, relation between slope and deflection.	Lecture, Discussion & Tutorial/Studio
14	Week-14	Material testing laboratory on Determination of the fineness of cement, Determination of consistency of cement, Study of strain recording	Demo
15	Week-15	Material testing laboratory on Voids ratio and porosity of sand, Bulk density and specific gravity of Fine aggregate, Bulk density and specific gravity of Coarse aggregates	Demo

S. No.	Stages of Evaluation	Weightage
1	First stage: Assessment –1	15
2	Second stage: Mid-semester Examination	20
3	Third stage: Assessment –3	15
	Total	50

**Reference Books:**

1. Bansal, R. K. Engineering Mechanics. New Delhi : Laxmi Publications.
2. Junnarkar, S. B. (1991). Mechanics of Structures. Vol. 1. 20th Ed. Delhi : Charotar.
3. Kurmi, R. S. Strength of Materials. New Delhi : S. Chand & Company.
4. Mukherjee, S. Elements of Engineering Mechanics. New Delhi : PHI Learning.
5. Ramamrutham, S. (2008). Engineering Mechanics: A Textbook of Applied Mechanics. Dhanpat Rai Publishing.
6. Vazirani and Ratwani. (2008). Analysis of Structures. Vol. I. New Delhi : Khanna Publishers.

**Course Instructors:**

sd/-

(Dr. P. Siva Prasad)

**Head of Department (I/C):**

sd/-

(Dr. Uma Sankar Basina )

**SCHOOL OF PLANNING AND ARCHITECTURE, VIJAYAWADA  
(LECTURE PLAN)**

Subject: **History of Architecture III (ARC215)**

Class: HOA, III Semester

Faculty: Ar. Bhartendu Vimal,  
Ar. Manali Basu (Scholar)  
Internal Marks: 50

Dept: Architecture  
External Marks: 50

Number of Hours:03

Total Marks: 100

**Objectives:**

- To provide an opportunity of understanding Social, religious and political character, construction methods, building materials and their influence on the built form and settlement pattern.
- To understand the combined influence of geology, geography, climate, beliefs, religion and culture on the architecture must be highlighted so as to appreciate how architecture embedded in place specific context.
- To enable students to do a comparative evaluation of various civilizations, appreciate chronological developments along the timeline and across geographies.
- To equip the students with an ability to study architectural history as a means for critical appraisal than a mere understanding of history.

S.NO	DATE	TOPIC OF CLASS LECTURE & DISCUSSION	REMARKS
1	Week 1	<b>Classical Architecture - Greek Architecture and Roman Architecture</b> <ul style="list-style-type: none"> <li>• Study of principles of design, proportion</li> <li>• Optical corrections and Classical Orders</li> </ul>	Lecture
2	Week 2	<b>Classical Architecture - Greek Architecture and Roman Architecture</b> Building types such as <ul style="list-style-type: none"> <li>• Sanctuaries and Temples</li> </ul>	Lecture
3	Week 3	<b>Classical Architecture - Greek Architecture and Roman Architecture</b> <ul style="list-style-type: none"> <li>• Building types such as Temples</li> <li>• Study of planning principles adopted in Agora</li> <li>• Introduction to Roman Architecture - Study of principles of design, Sanctuaries and Temples, Forum, Thermae</li> </ul>	Lecture
4	Week 4	<b>Classical Architecture - Greek Architecture and Roman Architecture</b> <ul style="list-style-type: none"> <li>• Amphitheatres</li> <li>• Circuses</li> <li>• Aqueducts</li> <li>• Thermae</li> </ul>	Lecture
5	Week 5	<b>Early Christian Architecture</b> <ul style="list-style-type: none"> <li>• Study of Architectural character</li> <li>• Evolution of Church form</li> </ul> Introduction to first assignment	Lecture
6	Week 6	<b>Early Christian Architecture</b> <ul style="list-style-type: none"> <li>• Baptisteries</li> <li>• Early Basilican churches</li> <li>• Settlement planning, and fortification systems</li> </ul>	Lecture
7	Week 7	<b>FIELD WORK / CASE STUDY VISITS</b>	-
8	Week 8	<b>Buddhist Architecture in India</b> <ul style="list-style-type: none"> <li>• Study of religious philosophy</li> <li>• Resultant evolution of building typologies</li> <li>• Building elements and associated forms during Hinayana phase</li> <li>• Types of structures and elements developed -</li> </ul>	Lecture



		Stupas, Viharas, Chaityas, Stambhas, Toranas, sacred railing etc. in India	
9	Week 9	<b>MID -TERM Assessment</b>	-
10	Week 10	<b>INTERNAL TEST / ASSIGNMENT</b>	-
11	Week 11	<b>Buddhist Architecture in India</b> <ul style="list-style-type: none"> <li>• Building elements and associated forms during Mahayana phase</li> <li>• Viharas</li> <li>• Study of form variations across various countries</li> </ul>	Lecture
12	Week 12	<b>Dravidian Architecture</b> <ul style="list-style-type: none"> <li>• Introduction</li> <li>• Study of worshipping places – rock-cut and structural temples</li> </ul>	Lecture
13	Week 13	<b>Dravidian Architecture</b> <ul style="list-style-type: none"> <li>• Evolution of temple-place’ form; influence of socio-political and geographical factors on temple architecture as a whole</li> <li>• Parts of temple</li> </ul>	Lecture
14	Week 14	<b>HOLIDAYS – DUSSEHRA BREAK</b>	-
15	Week 15	<b>Dravidian Architecture</b> <ul style="list-style-type: none"> <li>• Design of gopuram, shikhara and temple complexes</li> <li>• Structure and ornamentation</li> <li>• Settlement planning, consolidation patterns and the causative factors.</li> <li>• Development of fortification, walled towns.</li> </ul>	Lecture
16	Week 16	<b>INTERNAL TEST / ASSIGNMENT</b>	-
17	Week 17	<b>Indo Aryan Architecture</b> <ul style="list-style-type: none"> <li>• Study of worshipping places– rock-cut and structural temples; Evolution of temple-place’ form</li> <li>• Influence of socio-political and geographical factors on temple architecture as a whole</li> <li>• Parts of temple</li> </ul>	Lecture
18	Week 18	<b>Indo Aryan Architecture</b> <ul style="list-style-type: none"> <li>• Design of shikhara and temple complexes, structure and ornamentation</li> <li>• Settlement planning, consolidation patterns and the causative factors.</li> <li>• Development of fortification, walled towns.</li> </ul>	Lecture

#### **Tentative Break-up of Internal Assessment**

S. No.	Evaluation	Marks	Note
1	Assignment 1	15	1. Marks allotted at each stage is tentative 2. New stages or categories of evaluation may be included if and when the need arises
2	Mid Term Assessment	20	
3	Assignment 2	15	

### **Reference Books**

1. Brown, P. (2010). Indian Architecture: Buddhist and Hindu period. Mumbai: D. B. Taraporevala Sons and Co.
2. Bubbar, D. K. (2005). The Spirit of Indian Architecture. New Delhi: Rupa & Co.
3. Copplestone, T. and Lloyd, S. (1971). World Architecture: An Illustrated History. London: Verona Printed.
4. Crouch, P. D. (1985). History of Architecture: Stonehenge to Skyscrapers. London:McGraw-Hill.
5. Costof, S. (2012). A History of Architecture: Settings and Rituals. New York: Oxford University Press.
6. Dutt, B. B. (2009). Town Planning in Ancient India. Delhi: Isha Books.
7. Kimball, F. and Edgell, G. H. (2012). A History of Architecture. Amazon: Ulan Press.
8. Fletcher, B. (1996). A History of Architecture on the Comparative Method. 20th Ed. London:B.T. Batsford Ltd.
9. Grover, S. (2003). Buddhist and Hindu Architecture in India. 2nd Ed. New Delhi: CBS Publishers.
10. Hamlin, T. F. 1953. Architecture through the Ages. New York: Putnam Adult.
11. Hardy, A. (2007) The Temple Architecture of India
12. Harris, M. C. (1977). Illustrated Dictionary of Historic Architecture. New York: M. Courier Dover Publications.
13. Ingersoll, R. and Kostof, S. (2013). World architecture: a cross-cultural history. Oxford: Oxford University Press.
14. Pramar, V. S. (2005). A social history of Indian architecture. New Delhi: Oxford University Press India.
15. Roth, M. L. (2006). Understanding Architecture: Its Elements, History, and Meaning. Columbia: West-view Press.
16. Sengupta, B. K., Sen, J. and Banerji, H. (2010). Reading material on Human Settlements. Institute of Town Planners of India, New Delhi.
17. Singh, U. (2009). A history of ancient and early medieval India: from the Stone age to the 12th C. Delhi: Pearson India.
18. Watkin, D. (2005). A History of Western Architecture. 4th Ed. London: Laurence King Publishing.

### **Course Instructors:**

Sd/-  
(Ar. Bhartendu Vimal / Ar. Manali Basu)

### **Head of the Department**

Sd/-  
(Dr. Uma Sankar Basina)

**LECTURE PLAN**

WEEK	DATE	TOPIC OF CLASS LECTURE & DISCUSSION	TOPIC OF STUDIO WORK& ASSIGNMENTS / REMARKS
1	Week-1 20-07-2023	Climate and Weather	Lecture
3	Week-2 27-07-2023 to 03-08-2023	Classification of tropical climates	Lecture
4	Week-3 10-08-2023 to 17-08-2023	Climate balanced Architecture	Lecture
5	Week-4 Date 24-08-2023		<b>Internal Assessment -1</b>
6	Week-5 Date 31-08-2023	Human Comfort & Thermal Comfort Factors	Lecture
7	Week-6 Date 07-09-2023	Bioclimatic Requirements	Lecture
8	Week-7 Date 14-09-2023	Relation of climatic elements to comfort	Lecture
9	Week-8 Date 21-09-2023	The Bio-Climatic Chart	Lecture
10	Week-9 Date 28-09-2023	Site & building design, Building Orientation and Placement	Lecture
11	Week-10 Date 05-10-2023	Site Selection, Site Planning	Holiday
12	Week-11 12-10-2023		<b>Internal Assesment-2</b>
11	Week -12- 19-10-23	Effect of Landscaping	Lecture
12	Week-13 26-10-23	Basics of Solar Control	Lecture
13	Week 14- 02-11-23	Wind effect and Air Flow Pattern, Stack Effect and thermally induced air currents. •Air movement around the buildings.	
14	Week-15 Date - 09/11/23	Shelter for warm-humid climates, Shelter for hot-dry climates	Lecture
15	Week-15 Date : 16/11/23	Shelter for cold and composite climates.	Lecture
16	Week-16, Date: 23/11/23		Internal Assessment -3

S. No.	Stages of Evaluation	Weightage
1	First stage: Assessment –1	15
2	Second stage: Assesment-2	20
3	Third stage: Assessment –3	15
	Total	50

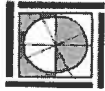
**Reference Books:**

1. Narashimhan; An Introduction to Building Physics.
2. O.H. Koenigsberger and others, Manual of Tropical Housing and Building – Part I – Climatic Design, Longmans , 1980.
3. M.Evans- Housing Climate & Comfort – Architectural Press, London, 1980.
4. B. Givoni, Man, Climate and Architecture, Applied Science, Banking Essex, 1992.
5. Donald Watson and Kenneth Labs; Climatic Design – McGraw Hill Book Company – New Yark – 1983
6. Gupta,J.,Housing, Climate and Comfort published by Nolegein, An Imprint of E-Learning Consortium, under 'Centre for Construction and Architectural Excellence (CAAE). (Journal Pub), May 2022, ISBN: 978-93-87376-56-4
07. Mitja Kosir, Climate Adaptabilty of Buildings-Bio Climatic Design in the Light of Climate Change, 2019.

**Course Instructors:**

sd/-  
(Dr J Gupta)

**Head of Department:**



**School of Planning and Architecture: Vijayawada**  
(An institution of National Importance under the Ministry of Education, Govt. of India)  
Survey No.4/4, ITI Road, Vijayawada-520008, Andhra Pradesh, India

Department of Architecture

<b>Course:</b> ARC 216 Climate and Built Forms	<b>Class: Yr :</b> B. Arch (LA) III Sem A.Y. 2022-23 B- Section
<b>Instructors:</b> Dr. Shanmuga Priya G	<b>Internal Assessment:</b> 50
<b>Contact Periods/ week:</b> 03 periods	<b>External Theory Exam:</b> 50
<b>Time Table:</b> Wednesday 9:00 am to 11:45 am	<b>Total Marks:</b> 100
<b>Attendance:</b> Min 75%	<b>Credits:</b> 3
<b>Min. Passing Marks:</b> 40% each in Internal & External Assessment, 40% in Aggregate	
<b>Objective:</b>	
<ul style="list-style-type: none"> <li>• To list the different elements of climate and classify them.</li> <li>• To identify the various aspects affecting thermal-comfort.</li> <li>• To analyze the impact of climatic forces on built-form.</li> <li>• To assess the effect of site, sun and wind in climate-responsive architecture.</li> <li>• To design appropriate shelters for different climatic regions</li> </ul>	

**LECTURE PLAN**

WEEK	DATE	TOPIC OF CLASS LECTURE & DISCUSSION	TOPIC OF ASSIGNMENTS and CLASS EXERCISES / REMARKS
1	20-Jul-23	Introduction to Climate responsive architecture; Climate and Weather; Elements of Climate	Precourse Survey and discussion
2	27-Jul-23	Classification of Climates : Coppen Classification and Atkinsons Classification	
3	03-Aug-23	Classification of Tropical Climates	
4	10-Aug-23	Human Comfort, Thermal Comfort Factors - Climate responsive Architecture	In Class Exercise: Sun Path Diagram
5	17-Aug-23	Bioclimatic Chart; Psychrometric chart	In Class Exercise: Sun Path Diagram
6	24-Aug-23	Microclimate- Influencing factors; Site Selection and Planning,	Climate data sources - Introduction
7	31-Aug-23	Site Planning - Building orientation and Form; Effect of landscaping	Selection of city for Analysis
8	07-Sep-23	Solar Controls - Horizontal and Vertical Shadow angles	In Class Exercise: Sun Path Diagram - Obtaining climate data for a chosen city
9	14-Sep-23	<b>Mid Semester Examination</b>	
10	21-Sep-23	Basic Principles of Natural Ventilation; Stack effect and thermally induced air currents; Factors affecting air flow	In Class Exercise: Sun Path Diagram - Finding Over Heated Period in a selected period
	28-Sep-23	Closed Holiday	
11	05-Oct-23	Air flow around Buildings; Building Examples	Inclass Exercise: Horizontal and vertical sun angle
12	12-Oct-23	Solar Control - Shading Devices ; Day lighting Principles.	Overview -Instruments available in Climatology lab for measuring Air temperature, Humidity etc.
13	19-Oct-23	Climate responsive design - Hot Dry Climate - Case Studies	Introduction to Assignment 1
14	26-Oct-23	Climate responsive design - Warm-Humid climate - Case Studies	In Class Exercise - Submission

15	02-Nov-23	Climate responsive design - Cold Climates - Case Studies	Assignment I -Submission and Presentation.
16	09-Nov-23	Climate responsive design - Composite Climate Climates - Case Studie;	Assignment I - Presentation.
17	16-Nov-23	Review of key concepts, Applications and case studies: Resources available for further learning.	

S. No.	Stages of Evaluation	Weightage
1	In Class Exerccises	15
2	Second stage: Mid-semester Examination	20
3	Assignments I	15
	Total	50

**Reference Books:**

1. Narashimhan; An Introduction to Building Physics.
2. O.H. Koenigsberger and others, Manual of Tropical Housing and Building – Part I – Climatic Design, Longmans , 1980.
3. M.Evans- Housing Climate & Comfort – Architectural Press, London, 1980.
4. B. Givoni, Man, Climate and Architecture, Applied Science, Banking Essex, 1992. Donald Watson and Kenneth Labs; Climatic Design – McGraw Hill Book Company – New York – 1983
5. Krishan, A et.al(2001), Climate Responsive Architecture: A Design Handbook For Energy Efficient Buildings, McGraw Hill

*G. Shanmuga Priya*  
 Course Instructors: 17/7/23  
 Dr. Shanmuga Priya G

Head of Department



**School of Planning and Architecture: Vijayawada**  
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Department of Architecture

<b>Course:</b> MLAR213;Energy Efficient Landscape	<b>Class:</b> M. Arch (LA) and M.Arch (SA) III Sem A.Y. 2023-24;
<b>Instructors:</b> Dr. Shanmuga Priya G	<b>Internal Assessment:</b> 50
<b>Contact Periods/ week:</b> 03 periods	<b>External Theory Exam:</b> 50
<b>Time Table:</b> Tuesday 9:00 am to 11:45 am	<b>Total Marks:</b> 100
<b>Attendance:</b> Min 75%	<b>Credits:</b> 3
<b>Min. Passing Marks:</b> 40% each in Internal & External Assessment, 40% in Aggregate	
<b>Objective:</b> To give an opportunity to students to study energy efficient landscapes in detail to enhance its application in landscape planning or landscape design process.	

**LECTURE PLAN**

WEEK	DATE	TOPIC OF CLASS LECTURE & DISCUSSION	TOPIC OF ASSIGNMENTS and CLASS EXERCISES / REMARKS
1	18-07-2023	Introduction - Need for Energy Efficient Design; Sunpath Diagram and visualization tools	Class Exercise I - on Sunpath Diagram and Visualization of Global wind patterns and ocean currents
2	25-07-2023	Climate and Weather; Factors influencing climate, Climate Classification- Koppen Classification, elements of climate and thermal Comfort.	Class Exercise II - Identification of cities in different climatic zones and analysis of climatic elements using Climate consultant software, Andrew Marsh tools
3	01-08-2023	Transfer of energy in the atmosphere; green house gases; Urban heat island effect. Thermal Comfort and indices	Class Exercise II - Continued Visit to Climatology Lab t- Demo of the instruments available for collecting micro-meteorological data
4	08-08-2023	India - Climatic Zones and seasons, Growing seasons and conditions of plant growth; agricultural zones and Forest types	Class Exercise - III on forest type and key species in a selected regions in India
	15-08-2023	Closed Holiday	
5	22-08-2023	Landscape Elements ; Hard and Soft Landscape elements;	Introduction to Assignment II
6	29-08-2023	Micro climate and Landscape; Modifications of Solar radiation and Wind	Discussion on Assignment 1 Progress
7	05-09-2023	Passive strategies in different climatic zones and case studies	Discussion on Assignment 1 Progress
8	12-09-2023	<b>Mid-semester examination</b>	<b>Mid-semester examination</b>
	19-09-2023	Closed Holiday	
9	26-09-2023	Green Building rating systems- Introduction and LEED, IGBC and GRIHA discussion on elements related to landscape; Living Building Challenge; Green Rated Projects - Discussion	Comparison of different GBRS on Landscape Elements
10	03-10-2023	Effectiveness of Passive strategies and landscape elements in different climatic zones and case studies/ research at city scale	Presentation of Assignment 1



11	10-10-2023	Effectiveness of Passive strategies in different climatic zones and case studies at neighborhood and site level	Presentation of Assignment 1
12	17-10-2023	Energy efficiency in Landscapes - analysis, Softwares and simulation ( Envi-met Analysis )	Introduction to Assignment II
	24-10-2023	Closed Holiday	
13	31-10-2023	Embodied carbon and Landscape Design; Use of Pathfinder Tool.	Discussion on Assignment II Progress
14	07-11-2023	Case studies of Energy Efficient Landscape Design	Discussion on Assignment II Progress
15	14-11-2023	Presentation of Assignment II	
16	21-11-2023	Review of key concepts, strategies and cases	

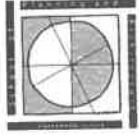
S. No.	Stages of Evaluation	Weightage
1	Class Exercises	5
2	Second stage: Mid-semester Examination	20
3	Assignments I & II	15+10
	Total	50

**Reference Books:**

- Brown, R. D., & Gillespie, T. J. (1995). Microclimatic landscape design: creating thermal comfort and energy efficiency (Vol. 1). New York: Wiley.
  - CPWD (2013 ) Integrated Green Design for Urban & Rural Buildings in Hot-Dry Climate Zone
  - GRIHA Version 2019 Manual (Volume I)
  - Haque, M. T., Tai, L., & Ham, D. (2004). Landscape design for energy efficiency.
  - Krishan, A et.al(2001), Climate Responsive Architecture: A Design Handbook For Energy Efficient Buildings, McGraw Hill
  - Oke, T. R. (2002). Boundary layer climates. Routledge. - Chapter 5 - "Climates of non-uniform terrain"
  - Schultz, J., & Schultz, J. (2005). The Ecozones of the World: The Ecological Divisions of the Geosphere. Springer Science & Business Media. Berlin, Heidelberg. [https://doi-org.aurarialibrary.idm.oclc.org/10.1007/3-540-28527-X\\_1](https://doi-org.aurarialibrary.idm.oclc.org/10.1007/3-540-28527-X_1)
  - Seçkin, N. P. (2018). Environmental control in architecture by landscape design. A/Z ITU J. Fac. Archit, 15, 197-211.
  - Vashist, A. Energy efficient landscapes: a case study in the national capital region of Delhi. NAGARLOK VOL. LII, Part 4, October-December 2020
- <http://andrewmarsh.com/apps/staging/shading-box.html>
  - <https://sustainabilityworkshop.venturewell.org/node/1515.html>
  - <https://earth.nullschool.net/#current/wind/surface/level/orthographic=124.85,10.40,223>

G. Shanmuga Priya  
 Course Instructors: *G. Shanmuga Priya*  
 Dr. Shanmuga Priya G *17/7/23*

Head of Department



# School of Planning of Architecture, Vijayawada

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## Department Of Architecture

### M. Arch (Landscape Architecture) II Year III Semester

### MLAR 211 - Landscape Architecture Studio III

<b>Course:</b> M.Arch (Landscape Architecture) II Year III Semester			
<b>Subject:</b> MLAR 211 - Landscape Architecture Studio II, Studio Course			
<b>Periods per Week:</b> 12 (06 on Mondays + 06 on Fridays)			<b>Credits:</b> 12
<b>Internal Assessment:</b> 50 Marks <b>External Assessment:</b> 50 Marks (Jury)	<b>Total Marks:</b> 100	<b>Passing Marks:</b> Internal: 40% in Aggregate External: 40% in Aggregate	<b>Attendance:</b> 75% Min.
<b>Faculty in-charge:</b> Dr. Shanmuga Priya G. and Visiting Faculty			

## CAMPUS LANDSCAPES

### Introduction:

Campus development is a complex design challenge that requires a multi-faceted approach including physical assessment, program development as well as place-making approach. In cities, network of green open spaces in campuses can help to offset urban heat island effects, reduce storm water run-off, connect wildlife corridors, and absorb more carbon thereby protect our limited natural resources while promoting human and habitat health. In addition, an institutional campus has the potential to foster partnership with the community by providing spaces and places for social interaction, rest and relaxation, recreation, exchange of ideas and support a strong sense of belonging.

### Context and Objectives

The studio explores design of institutional landscapes in Vijayawada, Andhra Pradesh with the following objective:

- To make the students understand the workings of a large site, design and implementation factors with the involvement of the stakeholders.
- To develop design proposals that take into consideration and convey the environmental, economic, experiential, and social values of landscapes

### Schedule:

Stage	Weeks	Dates	Deliverables	Marks Weightage
I	Week 1	22-07-2023	Introduction to the Exercise – Reading the region and site	10% (Stages I to III)
II	Week 2 and 3	04-08-2023	Literature Review and Data Collection	

III	Week 4 and 5	11-08-2023 to 18-08-2023	Data Analysis and Identification of Case Studies	
IV	Week 6 and 7	25-08-2023 to 01-09-2023	Analysis and Synthesis Vision and generating programs	10 %
V	Week 8	08-09-2023	Master Plan Development and expression of vision	15%
	Week 9		Midterm week	
VI	Week 10	18-09-2023	Master Plan Refinement	5 %
VII	Week 10	22 -09- 2023	Individual design development based on master plan	
VIII	Week 11 and 12	06-10-2023	Design Proposal / Concept	10 %
IX	Week 13 and 14	16-10-2023	Design Scheme 1	15 %
X	Week 14 and 15	27-10-2023	Design Scheme 2 – Plan , section and views	15 %
XI	Week 16	3-11-2023	Design details	10 %
XII	Week 17 and 18	14- 11 - 2023	Presentation – final internal marks	10%

### References:

1. Dober, R. P. (2000). *Campus landscape: Functions, forms, features*. John Wiley & Sons.
2. Campus Master Plan , University of Guelph - <https://uoquelfh.civicweb.net/document/69644/>
3. Firmansyah, I. S., & Widjaja Martokusumo, B. F. (2017). Development of visual quality evaluative assessment method in campus landscape. *TATALOKA*, 19(4), 256-265.
4. LaGro Jr, J. A. (2011). *Site analysis: A contextual approach to sustainable land planning and site design*. John Wiley & Sons.
5. Marcus, C. C., & Francis, C. (Eds.). (1997). *People places: design guidelines for urban open space*. John Wiley & Sons.
6. Whyte, W. H. (1980). *The social life of small urban spaces*. [https://edisciplinas.usp.br/pluginfile.php/4097533/mod\\_resource/content/1/the%20social%20life%20of%20small%20urban%20spaces.pdf](https://edisciplinas.usp.br/pluginfile.php/4097533/mod_resource/content/1/the%20social%20life%20of%20small%20urban%20spaces.pdf)

  
Course Instructors: 17/23

Dr. Shanmuga Priya G

Head of Department