

# Master of Architecture

## FIRST SEMESTER

Theoretical Courses	Subjects		Periods/Weeks		Marks		Credit Points
	Subject Code	Specialization Subject Name	Lecture	Sessional	Examination	Sessional	
Departmental / Specialization Basket		Urban Design (UD) Housing (H)					
Paper-I	PG / ARCH / T / 111A	Cybernetics of Visual Perception ( UD)	3		100		3
	PG / ARCH / T / 111B	Application of Research Techniques in Urban Design ( UD)					
	PG / ARCH / T / 111C	Rural Environment ( H)					
	PG / ARCH / T / 111D	Application of Research Techniques in Housing ( H)					
Paper-II	PG / ARCH / T / 112A	Science of Human Settlement (UD /H)	3		100		3
	PG / ARCH / T / 112B	Climatology and Housing (UD/H)					
	PG / ARCH / T / 112C	Solar Energy and Housing (UD/H)					
Paper-III	PG / ARCH / T / 113A	Introduction to Urban Design (UD)	3		100		3
	PG / ARCH / T / 113B	Architectural Criticism (UD/H)					
	PG / ARCH / T / 113C	Introduction to Housing(H)					
<p><b>Note: The students have to select 3 subjects from the departmental/ specialization basket, i.e. one subject each from the list given in the baskets of Paper-I, Paper-II and Paper-III</b></p>							
Inter-Disciplinary Basket	Subject Code	Subject Name	Lecture	Sessional	Examination	Sessional	
Paper-IV	PG / ARCH / T / 114A	Urban Research / Revitalization	3		100		3
	PG / ARCH / T / 114B	Introduction to Research Methods & Techniques					
Paper-V	PG / ARCH / T / 115A	Urban Amenities	3		100		3
	PG / ARCH / T / 115B	Slum & Squatter Settlement					
Paper-VI	PG / ARCH / T / 116A	Project Management	3		100		3
<p><b>Note: The students have to select 3 subjects from the inter-departmental basket, i.e. one subject each from the list given in the baskets of Paper-IV, Paper-V and Paper-VI</b></p>							
Sessional Courses							
Sessional 1	PG / ARCH / S / 111	Laboratory		4		100	3
Sessional 2	PG / ARCH / S / 112	Seminar		3		200 marks to be included in 2 <sup>nd</sup> semester	
			<b>18</b>	<b>7</b>	<b>600</b>	<b>100</b>	<b>21</b>

**Total Periods/Week = 25**

**Total Marks = 700**

**SECOND SEMESTER**

Theoretical Courses	Subjects		Periods/Weeks		Marks		Credit Points
	Subject Code	Specialization Subject Name	Lecture	Sessional	Examination	Sessional	
Departmental / Specialization Basket		Urban Design (UD) Housing (H)					
Paper-VII	PG / ARCH / T/ 127A	Contemporary Works in Urban Design (UD)	3		100		3
	PG / ARCH / T/ 127B	Information Science For Urban Design (UD)					
	PG / ARCH / T/ 127C	Information Science For Housing (H)					
	PG / ARCH / T/ 127D	Contemporary Works in Housing (H)					
Paper-VIII	PG / ARCH / T/ 128A	Advanced Landscape Architecture ( UD/H)	3		100		3
	PG / ARCH / T/ 128B	Building Technology (UD/H)					
Paper-IX	PG / ARCH / T/ 129A	Urban Design Theory (UD)	3		100		3
	PG / ARCH / T/ 129B	Urban and Rural Housing ( H)					

**Note: The students have to select 3 subjects from the departmental/ specialization basket, i.e. one subject each from the list given in the baskets of Paper-VII, Paper-VIII and Paper-IX**

Inter-Disciplinary Basket	Subject Code	Subject Name	Lecture	Sessional	Examination	Sessional	
Paper-X	PG /ARCH / T/ 1210A	Land Use & Traffic System	3		100		3
	PG / ARCH / T/ 1210B	Conservation & Restoration of Heritage Buildings					

**Note: The students have the freedom to choose one subject from the list under Paper-X, offered by any department/school including his/her own department/school.**

Sessional Courses							
Sessional 1	PG / ARCH / S / 121	Term Paper Leading to Thesis		3		100	3
Sessional 2	PG / ARCH / S / 122	Seminar		3		200	6
			<b>12</b>	<b>6</b>	<b>400</b>	<b>300</b>	<b>21</b>

**Total Periods/Week = 18**

**Total Marks = 700**

**THIRD and FOURTH SEMESTER**

Courses						
1	PG / ARCH / TH / 21	Thesis Work		16		300
2	PG / ARCH / VV/ 22	Viva-Voce on Thesis				100
				<b>16</b>		<b>400</b>

**Total Periods/Week = 16**

**Total Marks = 400**

# SYLLABUS OF MASTER OF ARCHITECTURE

## First Semester

### Category - Departmental / Specialization Basket

#### Paper - I

##### **PG / ARCH / T/ 111A Cybernetics of Visual Perception**

Concept of cybernetics; Importance of cybernetics of vision; Construction of Brain; Visual path; Concept of black box, Causes of perception; Contribution of external stimulus, memory, electro-chemical processes; Consciousness, Discussion on visual aesthetic experience through study of various case studies.

##### **PG / ARCH / T/ 111B Application of Research Techniques in Urban Design**

Introduction of fundamentals of research and investigation; basic theories and methods. Different research methods and techniques. Application of research methods to Architecture; Urban design and planning including field study and case studies.

##### **PG / ARCH / T/ 111C Rural Environment**

Basis of Rural Environment. Components of Rural Environment. Organization and Process, Rural Infrastructure, Rural Economics, Rural development, policies and strategies, Legal Framework.

##### **PG / ARCH / T/ 111D Application of Research Techniques in Housing**

Design of experiment, Design of Sample survey, Writing questionnaires, for survey, Analysing of data inference for a practical research problem

#### Paper - II

##### **PG / ARCH / T/ 112A Science of Human Settlement**

Ekistics and Principles of Human Settlements - Evolution Process, Form and Structure, followed by project work.

Pattern and Form of Human Settlements - Socio-Cultural, Political, Economic, Physical and Technological determinants, with respect to related case studies.

River Valley Civilizations, along Nile, Tigris and Euphrates, Indus - Cities and Planning Principles.

Greeks and Roman Periods - Cities and Planning Principles.

Renaissance and Pre-Industrial Periods - Cities and Planning Principles.

Industrial Revolution Period - Cities and Planning Principles, as group discussion.

New Towns - Chandigarh, Islamabad, Brasilia and Canberra, etc., as seminar presentations.

##### **PG / ARCH / T/ 112B Climatology and Housing**

Study of climatic elements. Micro climate, Macro climate and their influence on design layout and development; prevalent wind direction and their influence on planning and design day light, solar and load factor, aspects of day lighting etc. Aims of good lighting and ventilation and their realization in design and layout. Consideration of sound and noise as factors affecting use of suitable building materials, Conventional as well as how over.

### **PG / ARCH / T/ 112C Solar Energy and Housing**

Introduction to potentiality of using solar energy in buildings. Active and Passive heating/cooling of buildings. Solar collectors; their details and installations of the same in buildings. Electricity from solar energy and its use in buildings. Design development of buildings using solar energy directly or indirectly. Implications related to building by law for group solar housing.

### **Paper – III**

#### **PG / ARCH / T/ 113A Introduction to Urban Design**

Interactive session on design theory and its application to urban design. Points of departures and convergences in planning, architecture and urban design to establish boundaries and etching out distinctions. Multiple ways of seeing urban design, from Mega-Architecture to co-ordination of all physical inputs. Reading the city Social structure, cognition, experience and urban form. Dimensions of urban design. Grain, texture scale, socio spatial schema etc. Urban design vocabulary. A brief history of development of urban design theory.

#### **PG / ARCH / T/ 113B Architectural Criticism**

The building development is an intrinsic work of art and beauty. The building development generates a cognisable frame of architecture in the mind of the people who sees it. The building development adds information to the advancement of technology. The building development sets up an example of economic balance. Effect upon the environmental set-up. The bldg development adds to socio-cultural and historical back ground of the environment of which it stands.

#### **PG / ARCH / T/ 113C Introduction to Housing**

Historical, psychological and sociological aspects of housing. Situation of housing, Issues of sustainability and Housing Development. Housing Policy and Strategic Planning. Economics of Housing. Housing market indicators, Housing finance and management. Issues in housing Renewal and Community Regeneration. Research and Information for Housing. Housing, Health and Well Being.

### **Category – Inter - Disciplinary Basket**

### **Paper –IV**

#### **PG / ARCH / T/ 114A Urban Research / Revitalization**

Historic overview of recycling cities. Conservation area practice, adaptive sense, up gradation programmes in old areas, infill design. Financial and implementation framework for urban conservation and adaptive re-use projects. Urban recycling and brown field projects, urban renewal and development strategies for regeneration of inner cities area. Conservation management community participating, economic regeneration, upgrading infrastructure, financing and implementation framework for development and revitalisation projects.

#### **PG / ARCH / T/ 114B Introduction to Research Methods & Techniques**

The course offers "An overview of research methodology including basic concepts employed in quantitative and qualitative research methods". This course introduces research methods through case studies as they apply to the higher education field of study. This provides a macro perspective of

the methods associated with conducting scholarly research in all follow-on core, elective, quantitative and qualitative courses; and the doctoral dissertation.

#### Student Learning Outcomes:

Upon completing this course, each student will be able to:

- demonstrate knowledge of research processes (reading, evaluating, and developing); 2. perform literature reviews using print and online databases;
- identify, explain, compare, and prepare the key elements of a research proposal/report;
- define and develop a possible research interest area using specific research designs;
- compare and contrast quantitative and qualitative research paradigms, and explain the use of each in research;
- describe, compare, and contrast descriptive and inferential statistics, and provide examples of their use in research;
- describe sampling methods, measurement scales and instruments, and appropriate uses of each;
- explain the rationale for research ethics, and the importance of and local processes for review; and
- demonstrate how educational research contributes to the objectives of your doctoral program and to your specific career aspirations in higher education

#### Paper-V

##### **PG / ARCH / T/ 115A Urban Amenities**

Amenities defined study of amenities considered as elements offering convenience, satisfaction, development of facilities, physical and mental recreation etc, to the population living in an area – urban or rural, considered as raw materials creating urban/rural environment (indoor and outdoor) their standards etc.

Parks and playground, Paths and pavements, Street furniture, Community centre, Theatre and opera, house, Cinema., Open Air Theatre , Lakes, Stadium etc.

##### **PG / ARCH / T/ 115B Slum & Squatter Settlement**

Defining slum in a) India b) Kolkata c) Developing countries d) Developed countries. How designation of an area as slum exercises its influences on Urban development strategy. Study of growth of urban slums: Case studies in cities or/and in urban areas. Study of different measures to restrict slums/Bustees. Slum improvement, Slum modernisation, Slum redevelopment, Squatters colony and its problems particularly in Kolkata.

#### Paper- VI

##### **PG / ARCH / T/ 116A Project Management**

Different types of contract including preparation of tender documents. Problems related to execution of projects through a tender. Site & services management. Different techniques of project management including knowledge of C.P.M. Bar chart and other up-to-date techniques.

## **Category – Sessional Courses**

### **Sessional 1**

#### **PG / ARCH / S / 111 Laboratory**

##### **For Urban Design**

A project on Urban Design will be assigned by the concerned teacher to each student. Drawings and study reports are required to be prepared by the students as a solution to the problem.

##### **For Housing**

A project on Housing will be assigned by the concerned teacher to each student. Drawings and study reports are required to be prepared by the students as a solution to the problem.

### **Sessional 2**

#### **PG / ARCH / S / 112 Seminar**

Each student will be given a project work on various urban design theories and concepts and the students are required to apply those on a primary case study based on these concepts and propose various interventions in the First Semester and to be continued into the Second Semester. The students also work on various urban analytics software to understand the urban morphology, urban microclimate and urban design interventions. In the Second Semester, a group discussion to be arranged to discuss on various Contemporary urban issues. The student will be required to give a write up and present a seminar in the Second Semester.

The appointed teacher or coordinator will guide the students for both First and Second Semester.

## **Second Semester**

### **Category - Departmental / Specialization Basket**

#### **Paper – VII**

##### **PG / ARCH / T/ 127A Contemporary Works in Urban Design**

Types of indigenous contemporary settlements. Comparison of functional structure of Western and Asian cities. Nature of city form, climate, typologies, public space systems and architectural expression. Cross-cultural influences in the development of city. Historic cores and contemporary urbanism. Issues of growth and value additions in the context of globalization. Examples and Typology of Contemporary Urban Design works.

##### **PG / ARCH / T/ 127B Information Science For Urban Design**

Major information sources for urban design and information they offer a) sources in India b) source abroad. Data and computer for information; data bank on urban design. A) Indian context b) West Bengal. Data related to : urban and rural infrastructure i.e. roads, utilities, recreation (indoor and outdoor), education, health, housing, open spaces etc.

##### **PG / ARCH / T/ 127C Information Science For Housing**

Major information sources for housing and information they offer

a) Sources in India, b) Sources abroad

Data and computer for information storing and analysis. Collection and storage of information; data bank on housing a) Indian context b) West Bengal. Data related to Urban and rural infrastructure i.e. roads utilities recreation (indoor and outdoor) education, health, housing open spaces etc.

### **PG / ARCH / T/ 127D Contemporary Works in Housing**

Types of indigenous contemporary settlements. Comparison of functional structure of Western and Asian cities. Nature of city form, climate, typologies, public space systems and architectural expression. Cross-cultural influences in the development of city. Historic cores and contemporary urbanism. Issues of growth and value additions in the context of globalization.

## **Paper – VIII**

### **PG / ARCH / T/ 128A Advanced Landscape Architecture**

Fundamentals of landscape architecture (Natural & man-made elements, landscape styles etc.), Urban landscape; Historic landscape; Landscape illumination; Preparation of landscape drawings & details; Seminar presentation on urban landscape/s.

### **PG / ARCH / T/ 128B Building Technology**

Growth and development of building technology Appropriate technology for i) low rise ii) Medium rise iii) high rise building taking into consideration the requirements of material, structure, illumination, ventilation, orientation etc.

Appropriate technology for efficient realisation of low cost residential buildings. Building technology against cost control and maintenance cost. Precast and prefabrication techniques. Material handling equipment.

## **Paper – IX**

### **PG / ARCH / T/ 129A Urban Design Theory**

Introduction to urban design. Urban communication medium. Urban image. Elements of urban image. Integration of different elements to present an integrated urban image.

### **PG / ARCH / T/ 129B Urban and Rural Housing**

Introduction to housing; Review of existing housing conditions, housing stock and their quality. Land for housing (Urban and Rural). Finance and other resource for housing. Materials: Conventional as well as new materials development by different institutions and organization. Construction techniques conventional as well as those newly development by different organizations.

## **Category – Inter - Disciplinary Basket**

## **Paper - X**

### **PG /ARCH / T/ 1210A Land Use & Traffic System**

Fundamentals of land use and related government policies and legislation on the subject. Methods of effectuating general land use plan, administration and legal aspect. Relationship of land use and traffic. Traffic generation, distribution, assignment and management. Mass rapid transit.

### **PG /ARCH / T/ 1210B Conservation & Restoration of Heritage Buildings**

The signification of cultural property moveable and immovable-Venice charter – conservation and restoration – the problem of choice – preservation of monuments in India and abroad – the conservation of urban sites – legislation for the protection of heritage – local case study for the application above.

#### **Category – Sessional Courses**

##### **Sessional 1**

#### **PG / ARCH / S / 121 Term Paper Leading to Thesis**

Each student will be given a Thesis / Project problem at the beginning of the Second Semester. He/She will work on the literature survey, set scope of work, find stages of completion, study site and constraints which should be satisfied **through group discussion** and submit a report / dissertation. Thesis /Project work will, however, be done in the Third Semester.

##### **Sessional 2**

#### **PG / ARCH / S / 122 Seminar**

Each student will be given a **project work on various urban design theories and concepts and the students are required to apply those on a primary case study based on these concepts and propose various interventions** in the First Semester and to be continued into the Second Semester. **The students also work on various urban analytics software to understand the urban morphology, urban microclimate and urban design interventions. In the Second Semester, a group discussion to be arranged to discuss on various Contemporary urban issues.** The student will be required to give a write up and present a **seminar** in the Second Semester.

The appointed teacher or coordinator will guide the students for both First and Second Semester.

### **Third and Fourth Semester**

##### **Sessional 1**

#### **PG / PE / TH / 21 Thesis Work**

Each Student will devote full time in the Third and Fourth Semester on Thesis / project on an assigned research problem or Design /Development work under the supervision of a Faculty Member. **The project should involve case studies.** He/ She will present a Thesis / Project Report at the end of the Fourth semester which will be evaluated by a Board of Examiners consisting of the Supervisor and External Examiner. The Evaluation of the Thesis / Project will be followed by a viva-voce in front of faculty members and other post- Graduate students.

##### **Sessional 2**

#### **PG / PE / VV/ 22 Viva – Voce**