B. ARCH. SEMESTER - IX AR - 901 ARCHITECTURAL DESIGN - IX

Scheme of Teaching				Scheme of Examination				Duration of Examination
L	P/V	S/T	Total	S	Exam. T	Exam P/V.V	Total	
1	-	10	11	100	100	50	250	3 X 6 = 18 Hrs

OBJECTIVES:

- Understanding design as a process of problem identification, space standards, formulation of requirements, evolution of design criteria and development of design of buildings in urban context, phasing and development;

- Understanding relationship of buildings amongst themselves and with a given environment.

CONTENTS:

- Urban intervention Projects: Design of buildings/building complexes in specific urban context such as heritage zones, near existing and within built environments.

- Development Projects containing group of buildings with multiplicity of constraints such as relationship of land uses, space, architectural character, circulation, movement, landscape and buildings.

Suggested Design exercises:

1. Redevelopment, rehabilitation and urban improvement projects.
2. Development Projects such as Universities, District Centers and City Centers etc.

APPROACH:

1. The design methodology will take precedence over design.
2. Model of existing site shall be a pre requisite for urban intervention programs.
3. Part of the project must be done in groups to develop teamwork and a multi-faceted approach to design.

Note: The subject will be taught by at least one teacher for every 15 students.

CONDUCT OF EXAMINATIONS: The duration of examination for this subject is 6X3=18 hours. The examination shall be held over three days. The drawings completed on the first and the second days shall be left in the examination hall and shall be completed and submitted on the third day.

B. ARCH. SEMESTER - IX AR - 902 CONSTRUCTION & MATERIALS - IX

Scheme of Teaching				Scheme of Examination				Duration of Examination
L	P/V	S/T	Total	S	Exam. T	Exam P/V.V	Total	
1	-	6	7	100	50	50	200	3 Hrs

OBJECTIVES:

- To introduce and familiarize the students with the various construction equipments required for speedy and effective construction works.
- To study the causes and remedies of various defects in existing and new construction.
- Understanding the need and application of modular coordination in buildings.

CONSTRUCTION:

Construction Equipments: Electric hand tools, Vibrators, Power Floats, Pumps, Rollers. Earth Moving & Excavation: Dozers, Scrapers, Graders, Shovels, Skimmers, Backactor, Dragline, Trenchers. Transportation: Lorries, Trucks, Dumpers, Elevators, Conveyors, Hoist, Cranes (mobile, static, tower). Concrete Mixers, Pumps etc.

Defects and Remedies: The study of various defects in buildings and their remedies, Defects caused by dampness, applied forces and changes in size.

Modular Coordination: Aims, basis, planning, dimensioning,
Assembly of components, tolerances, modules, reference system, grids, positioning of functional elements – slabs, walls, staircases; Standardization in buildings' design and their components.

APPROACH:

- The students would be familiarized with vernacular terminology prevalent in this part of the country.
- The emphasis will be on construction details as applicable to Indian conditions.
- Site visits and market surveys will be an integral part of sessional - work.

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B. ARCH. SEMESTER – IX AR - 903 PROFESSIONAL PRACTICE - I

Scheme of Teaching				Scheme of Examination				Duration of Examination
L	P/V	S/T	Total	S	Exam. T	Exam P/V.V	Total	
2	2	-	4	50	100	-	150	3 Hrs

OBJECTIVES:

- To acquaint the students with the role of an architect in society; scale of charges; an architect's conduct in architectural Practice.
- To familiarize a student with requirements of Architectural Competitions and appointment of a contractor through tenders.

CONTENTS:

Role of Professional Bodies: The Indian Institute of Architects, its working constitution and byelaws, categories of membership, election procedures; The Uttar Pradesh Architects Association.

Architects' Act 1972: Detail study of the Act, Council of Architecture; procedures of membership.

Scale of charges: Conditions of engagement of an architect – Duties; Responsibilities and liabilities of a professional architect; Scale of charges, mode of payment etc.

Code of Professional conduct: Clauses governing conduct of professional architect.

Architectural Competition: Types of competitions; need and procedure for conducting competitions.

Tender and Contract: Type of building contracts, their demands. Preparation of tender documents, method of inviting tenders, opening of tenders, preparation of comparative statement, recommendation and award of projects, preparation of contract documents, general conditions of contract, interim certificates, defect liability period, retention amount and virtual completion.

APPROACH:

- The course will be covered through lectures citing practical examples.
- Specialist should supplement the course through extension lectures.

B. ARCH. SEMESTER – IX AR - 904 BUILDING ECONOMICS

Scheme of Teaching				Scheme of Examination				Duration of Examination
L	**P/V**	**S/T**	**Total**	**S**	**Exam. T**	**Exam P/V.V**	**Total**	
1	**2**	**-**	**3**	**50**	**50**	**-**	**100**	**3 Hrs**

OBJECTIVES:

- Understanding Architectural Projects as an Economic function and understanding their evaluation techniques

CONTENTS:

Elementary Concepts of Economics

-Utility, Demand and Supply, Wants, Cost, Value, Price,
-Micro & macro Economics

Meaning & Scope of Building Economics

-Issues
-Importance of Building Economics

Project Costing

-Initial Costing

- Elements of Cost Components

-Future Costing

- Different Types of Costs and their impact on Building Projects

-Non-Monetary Cost

Benefits of Buildings

Monetary and Non Monetary Benefits of Buildings

Economic performance of Building

-Types of Economic Performance
-Accounting for Risks & Uncertainty
-Techniques of Performance Analysis
-Cost Benefit Analysis, Incremental Analysis, Bread-even Analysis,
-Life Cycle Cost Analysis, Rate of Return Analysis etc.

Value Engineering

Concept, its application to Architectural Projects, Real Estate PRO-FORMA Analysis

Feasibility Analysis

Concept and Types of Feasibility, Feasibility Analysis

METHODOLOGY;

- Lecture based delivery of Subject exemplified with tutorial Projects.

B. ARCH. SEMESTER – IX AR – 905 ELECTIVE - II

Scheme of Teaching				Scheme of Examination				Duration of Examination
L	P/V	S/T	Total	S	Exam. T	Exam P/V.V	Total	Only viva voce, no examination
2	-	2	4	50	-	50	100	

General Guidelines:

As already mentioned in the syllabus of B.Arch. Semester VIII syllabus, the electives of B. Arch VIII and IX Semesters have been broadly classified into three parts: Communication Skills and Humanities (Elective 1, which will run in VIII Semester), Design and Technology (Elective - II), and Independent Directions (Elective - III). Elective I, Communication Skills and Humanities has already been covered in Semester VIII and therefore Elective II and Elective III will run in IX Semester. These electives will enable students to initially suit their interests at the undergraduate level and later assist them pursue their specific interests at the postgraduate level. Students are expected to choose one elective from each from the choices being offered by the institution the outlines of each elective have been broadly outlined to suit the availability and interests of faculty in different institutions. Considering the broad outline for each elective, in which only viva-voce examinations is to be held, students are expected to submit a minimum of 5 studios/written assignments, depending on the type of elective chosen, so as to enable uniformity in awarding sessional marks to the students in different institutions of the university. The scheme of teaching, the scheme of examination and the duration of the examination as mentioned above is to be followed separately for the two electives being offered in the IX Semester.

Semester IX Elective - II (Design and Technology Group)

Furniture Design: Furniture design as a creative, problem solving design process based on ergonomics, materials, working parameters and visual perception, both as an independent entity as well as a part of a system in a given interior space.

Art Appreciation: To develop an understanding and appreciation of art through study and criticisms of some major art movements of twentieth century and their ways of expression.

Architecture Design Theory: Insight into aspects of architecture design theory through critical readings and discussions of primary theoretical texts to serve precedence and means for development of ideas and solutions to guide contemporary thinking and practice.

Waste Disposal: To identify the problem and understand the different types of processes, mechanisms and techniques involved for the disposal of solid wastes in urban areas.

Advanced Services: Comprehensive exploration of electrical, water supply and sanitation, and other services related issues through the design of ongoing studio project to provide practical insight and interaction between architectural design and appropriate

services.

Advanced Structures:	Exploration of issues related to structural design from supporting to roofing systems through the design of ongoing studio project to provide practical insight and interaction between architectural design and appropriate structures.
Earthquake Resistant Structures:	Development of attitudes to design as well as understanding the types and issues involved in designing and construction of earthquake resistant structures.
Human Values:	Exploring human values that make ‘good’ human being and society through study of work and personal lives of modern Indian P

B. ARCH. SEMESTER – IX AR - 906 ELECTIVE - III

Scheme of Teaching				Scheme of Examination					Duration of Examination
L	P/V	S/T	Total	S	Exam.	T	Exam	P/V.V	Total	Only viva voce, no examination
2	2	-	4	100		-		50	150	

General Guidelines:

As already mentioned in the syllabus of B.Arch. Semester VIII syllabus, the electives of B. Arch VIII and IX Semesters have been broadly classified into three parts: Communication Skills and Humanities (Elective 1, which will run in VIII Semester), Design and Technology (Elective - II), and Independent Directions (Elective - III). Elective I, Communication Skills and Humanities has already been covered in Semester VIII and therefore Elective II and Elective III will run in IX Semester. These electives will enable students to initially suit their interests at the undergraduate level and later assist them pursue their specific interests at the postgraduate level. Students are expected to choose one elective from each from the choices being offered by the institution the outlines of each elective have been broadly outlined to suit the availability and interests of faculty in different institutions. Considering the broad outline for each elective, in which only viva-voce examinations is to be held, students are expected to submit a minimum of 5 studios/written assignments, depending on the type of elective chosen, so as to enable uniformity in awarding sessional marks to the students in different institutions of the university. The scheme of teaching, the scheme of examination and the duration of the examination as mentioned above is to be followed separately for the two electives being offered in the IX Semester.

Semester IX Elective – III (Independent Directions Group)

Urban Design: To develop an introductory understanding of history, concepts, issues, techniques and processes fundamental for practice and design of urban form.

Landscape Design: To develop an understanding of history, theory and practice of landscape architecture with emphasis on site planning through related design issues and concepts.

Conservation: Understanding need and ways to identify buildings for architectural conservation along with familiarization and investigation into techniques of conservation of historical structures.

Energy Conscious Architecture: To develop an understanding of energy conservation methods and study of solar energy systems as well as other alternative sources of energy being developed for use in architectural applications.

Housing: To develop an understanding of theory and practice of housing as well as familiarizing and investigating key issues and factors that influence housing design.

Transportation Planning: Understanding significance of transportation in development of urban areas and study of the history, context, issues, and

problems necessary for the development and practice of transport planning.

Low Cost Construction Technology: To develop appreciation for low cost construction for building economy and understanding of different issues, types and techniques involved in the design and construction of low cost structures.

Rural Design and Planning: Understanding of context, available technology, economy and other related issues involved in the design and planning of rural settlements.

B. ARCH. SEMESTER – X AR - 1001 ARCHITECTURAL THESIS

Scheme of Teaching					Scheme of Examination			
L	P/V	S/T	Total		S	Exam. T	Exam P/V.V	Total
-	-	26	26		350	-	350	700

Intent: To prepare a student to independently handle and present all aspects of an architectural design: from its evolution to final solution in totality;

To understand the importance of the evolutionary stages of a design process and various techniques required for a successful presentation of an architectural design;

To develop in students the ability to handle specific aspects of design relevant to the topic.

Thesis Programme:

Each student is required to conduct an intensive study and present a design thesis on any of the design topics.

The students should submit synopsis for the least three different, design or research oriented topics, to the respective Institution, of which one will be approved to carry on the research and design. Each student shall be attached with a faculty member who will guide his work. The arrangement of the assessment of the progress through the semester for all the students and a 'Programme Schedule' will be declared separately for each session by the respective Institution.

The work of the student should result into a 'Design Proposal' based on the complete and detailed study of site including its selection, topography, climate, spatial requirements of the project, special functional and physical needs of the project, and the standard data, construction and services and all other factors that the involved with a particular thesis topic.

At least two of the following items, for complete design or an approved part thereof, should be covered in full detail and included in the design and presentation, along with the final design proposal-

1. Structural calculations and design.
2. Detailed estimate and specification.
3. Working drawing and construction details.
4. Proposal for Mechanical services to cove 'Air-conditioning & Mechanical conveying system'.
5. Proposal for Electrical Services and Illumination.
6. Proposal for Water supply and waste disposal services.
7. Proposal for Acoustical design & specification.

8. Proposal for Interior design – including furniture, fittings and finishes.
9. Landscape design proposals in detail.

The design proposal should be prepared and presented with the help of charts, Drawings, perspective views, models and other audio-visual aids. A thesis report must also be prepared and submitted in one soft copy (on CD) and three hard copies (one to be returned to the student) type written and bound together with prints and photographs of all the drawings & models. The thesis report should explain the objectives, scope, case studies, literature study – research and data, design concept/approach, design proposals, construction programming & financing etc.

The original drawings, models and one copy of the thesis report will be returned to the students in due course of time as decided by the respective Institution.

Thesis Jury:

The final assessment of the thesis will be made through a panel of external jury, in accordance with the 'Thesis Evaluation Regulations' to be issued separately.

B. ARCH. SEMESTER – X AR - 1002 PROFESSIONAL PRACTICE - II

Scheme of Teaching				Scheme of Examination				Duration of Examination
L	P/V	S/T	Total	S	Exam. T	Exam P/V.V	Total	
2	2	-	4	50	100	-	150	3 Hrs

OBJECTIVES:

- To acquaint the students with most of the general aspects of valuation and arbitration.
- To familiarize the students with Easement rights and organization of an architect's office.

CONTENTS:

Valuation:	Valuation of immovable properties, elements of valuation and factors affecting valuation; Techniques of valuation of landed and building property; Value classification and types of valuation.
Easement:	Introduction to various easements processes, and precautions to protect easement rights.
Arbitration:	Arbitration, Arbitrator, Umpire, Nature of arbitration, Appointment, Conduct, Powers, and duties of arbitrators and umpires; Procedure of arbitration and preparation of awards.
Office organization & Administration:	Professional organization, setting of practice, salaried appointments, public sector, private sector jobs, procedure of operation in government organization

APPROACH:

- The spectrum of lectures will be covered through lectures citing practical examples. Specialist should supplement the courses through extension lectures.

B. ARCH. SEMESTER – X AR - 1003 DEVELOPMENT LEGISLATION

Scheme of Teaching				Scheme of Examination				Duration of Examination
L	P/V	S/T	Total	S	Exam. T	Exam P/V.V	Total	
2	1	-	3	50	50	-	100	3 Hrs

OBJECTIVES:

- To acquaint the students about an elementary knowledge of various instruments of law and legislation to safeguard the professional interest.

CONTENTS:

Jurisprudence and Legal Theory:	Nature and source of law, brief history and evolution of Urban Development laws.
Law Related to land:	The land acquisition Act, The effect of Urban Land Ceiling Act 1976, UP Urban Development Act 1973.
Law related to slum up gradation:	Law of environment.
Law related to Development and management of population:	Elements and effect of the Rent Control Act, The Apartment ownership Act.
Laws of Controls:	The partnership Act 1932.
Law related to Conservation:	The elements of the Ancient monument, (site and remains) Act 1956.

APPROACH:

- The course will be covered through lectures drawings and citing the appropriate case law. Specialist will supplement the courses through extension lectures.

DETAILED SYLLABUS OF ELECTIVE HOUSING

Scheme of Teaching				Scheme of Examination				Duration of Examination
L	P/V	S/T	Total	S	Exam. T	Exam P/V.V	Total	
2	-	2	4	50	-	50	100	No Examination

OBJECTIVES:

- Introduction to housing policies programmes, housing process and design.
- Study and design of housing schemes with defined parameters.

CONTENTS:

Policies and Programmes:

Introduction to the subject, importance in National development.
Housing Problem and Housing shortages.
Obstacles to progress of Housing in Developing countries.
Public Policy trends in low-cost urban settlements: Pre-built Housing, Aided Self-Help Housing, Site and Services Schemes.
National Housing Policy.

Housing Terms:

House, housing and settlement.
Density, Zoning, F.A.R., F.S.I., T.L.S.R., C.S.I.,
Terrace, Semi-Detached and Detached House types.
Neighborhood and Neighborhood Planning.

Economics of Housing:

Parameters of housing Economics equation: Capital cost, Annual Household Income, Annual Rent, their inter-relationship.
Design Factors, which affect costs: plan shape, plan size, circulation, height of buildings, structural systems etc.
Housing Finance: loaning agencies, loan conditions working of a non-banking financial institution.

Housing Design: Housing Surveys: Definition, need and objectives, Planning of a housing survey, Types of surveys, drafting a questionnaire for a housing survey. Housing Layout, Organisation of space, Access roads, Parking, Pedestrian movement in housing areas.

APPROACH:

- Expert lectures may be arranged for specialised topics.
- The stress should be on analysis of housing layouts rather than on housing design.

DETAILED SYLLABUS OF ELECTIVE URBAN DESIGN

Scheme of Teaching				Scheme of Examination				Duration of Examination
L	**P/V**	**S/T**	**Total**	**S**	**Exam. T**	**Exam P/V.V**	**Total**	
2	-	2	4	50	-	50	100	No Examination

OBJECTIVES:

- To introduce the subject of urban design and to prepare students for post graduate programme in urban design

CONTENTS:

- Concept of Urban Design. Identification of common areas, sequential order and design stages and distinction from architectural design and city planning. Participative approach to develop urban design thought.
- Parameters of urban design including building byelaws and architectural control.
- Role of visual, aesthetic and cultural aspirations. Concept of total space design and articulation Effect of movement from pedestrian to vehicular scale.
- Principles of urban design and their functional aspects, Effect of urban growth patterns and the resultant influence of urban design forms on cityscape.
- Development of urban design from historic expression of socio-cultural systems to regulated group design effort. Appreciation of current examples as multi-disciplinary creations.
- Analytical and referential study of urban design thought. Evolution and reconstructive study of live examples of urban design.

APPROACH:

- The course shall be covered through lectures, slides, site visits and seminars.

DETAILED SYLLABUS OF ELECTIVE ARCHITECTURAL CONSERVATION

Scheme of Teaching				Scheme of Examination				Duration of Examination
L	**P/V**	**S/T**	**Total**	**S**	**Exam. T**	**Exam P/V.V**	**Total**	
2	-	2	4	50	-	50	100	No Examination

OBJECTIVES:

- To bring in an awareness of the value of natural and historical heritage and sensitise students to the issues of conservation.
- It is an initiation course for students who might wish to take up conservation as a specialization in future.

CONTENTS:

Concepts:
Natural and cultural heritage.
Definitions of basic terms in conservation.
History and Theory of conservation.
Legislation in conservation.

Instructions & Specifications:
Structural aspects of historic buildings beams , arches, vaults, domes, trusses, frames, walls, piers, column and foundations
Causes of decay in Materials and Structures, Climatic, Botanical, Biological, Man –made.

Work of the Conservation Architect:
Research, Analysis and recording (documentation)
Presentation.
Preventive maintenance of historical buildings.
Management of historic precincts including vernacular.

APPROACH:

- Lectures would be through slide lectures.

- One small project to be taken, which could be adaptation of a historical building or within historical precincts.

- A small workshop could the organized to make the students aware of the techniques of handling building materials.

DETAILED SYLLABUS OF ELECTIVE TROPICAL DESIGN

Scheme of Teaching				Scheme of Examination				Duration of Examination
L	**P/V**	**S/T**	**Total**	**S**	**Exam. T**	**Exam P/V.V**	**Total**	
2	-	2	4	50	-	50	100	No Examination

OBJECTIVES:

- To bring in a total understanding of climatology, climatic factors and its application in building design.

CONTENTS:

The Physical Elements of weather and climate:	Climatology and architecture; Global factors affecting climate.
Patterns of World Climate:	Approaches to climatic classification Climatic regions of the world; Climatic characteristics of various climates.
Responsive Climatic Buildings:	Vernacular architecture; Vernacular architecture of different regions; Climate and town planning; Responsive architecture in history.
Climate and Architecture:	Revision- solar radiation, air Movement, sun-shading devices; Ventilation; Building Materials.
Design of Buildings:	Design criteria of buildings for various climates.

APPROACH:

- The emphasis will be to teach climatology as it finds application in building design.

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