

Y E A R 4 (Semester VII)

CODE	SUBJECT	CLASSES					CREDIT S	EXAM HOUR S
		L	T/ ST	WR	VV	TOT		
BARC-0701	DESIGN –VII	2	4	WR	VV	100	3	6
BARC-0702	BUILDING MATERIALS & CONSTRUCTION –VII	2	4	WR	VV	100	2	3
BARC-0703	URBAN AND RURAL PLANNING	2	4	WR	-	100	1	3
BARC-0704	STRUCTURE- VII	2	-	WR	-	100	1	3
BARC-0705	LANDSCAPE ARCHITECTURE	1	3	WR	VV	100	1	3
BARC-0706	PROJECT MANAGEMENT	2	-	WR	-	100	1	3
BARC-0707	BEHAVIORIAL PSCYCHOLOGY	2	-	WR	-	100	0.5	3
BARC-0708	SEMINAR-II	-	2	-	VV	100	0.5	-
TOTAL		13	17				10	-

YEAR 4 (Semester VIII)

CODE	SUBJECT	CLASSES					CREDIT S	EXAM HOUR S
		L	T/ ST	IA	VV	TO T		
BARC-0801	ARCHITECTURAL TRAINING	-	-	IA	VV	100	10	-
TOTAL		-	-	-			10	-

YEAR 5 (Semester IX)

CODE	SUBJECT	CLASSES					CREDIT S	EXAM HOUR S
		L	T/ ST	WR	VV	TOT		
BARC-0901	DESIGN -VIII	2	4	WR	VV	100	3	6
BARC-0902	ADVANCED BUILDING TECHNOLOGY	2	4	WR	VV	100	2	3
BARC-0903	ECOLOGY & ENVIRONMENT	2	2	WR	-	100	1	3
BARC-0904	ADVANCED STRUCTURES	2	-	WR	-	100	1	3
BARC-0905	ELECTIVE-I	1	3	WR	-	100	1	3
BARC-0906	ELECTIVE-I	1	3	WR	-	100	1	3
BARC-0907	SEMINAR- III		3	-	VV	100	1	-
TOTAL		10	19				10	-

3. Micro Economics: National income and its distribution, inequalities of income distribution, its causes and measures,
4. Money and Banking: Meaning and function of money, value of money and its functions. Types and functions of banks in India, Central Banking in India, Bank financing and industry, Foreign Trade Implication of currency devaluation.
5. Economic development of India: Characteristics of Indian Economy, industrial resources in India, poverty and the measures to overcome it, Economic planning in India, Board features of India's Five Year plans.

BARC- 0607: CAAD LAB

OBJECTIVE: Advanced learning of software available for architectural applications.

METHODOLOGY: Integration of practical exercises along with the design studio project.

CONTENTS:

MAX

Understanding Co-ordinate systems.
 Introduction of solid modeling.
 Learning solid modeling commands, editing solid modeling.
 Working on different planes.
 At least one exercise should be completed in 3D modeling.

ARCHICAD

Introduction of ARCHICAD
 Advantages of ARCHICAD.
 Learning various 2D & 3D Commands supported with suitable exercise.

BARC- 0608: SEMINAR-I

INTENT: To equip the students with the art of paper presentations and preparation of report.

METHODOLOGY: The students will be preparing paper presentations with guidance under a faculty for the paper presentation.

CONTENTS:

Independent study and documentation of architectural and allied subjects by individual student alongwith oral and visual presentation.

The seminar shall be a research paper on a current topic related to Architecture. The overall supervision shall be done by the seminar coordinator and the individual guidance may be provided by the experts in the subject.

<u>YEAR FOUR SEMESTER SEVEN</u>
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BARC- 0701: ARCHITECTURAL DESIGN – VI

INTENT:

- Integration of all aspects about a building design and its workings- including service details, assessment of environmental impact, innovative structural systems and materials etc.
- Evolving sensitivity to design of spaces at the urban scale – creation of nodes and links, visual landmarks, activity and interaction zones, relationship between commercial, recreational and residential areas.

METHODOLOGY:

- Site studies to be carried out on a larger scale to analyze implications of the entire context within which the project is to be executed.
- Large scale models to be used for assessing site conditions and restrictions.
- Design process to incorporate panel discussion and seminar presentations.
- Presentations to be made using 3-D visualization.

CONTENTS:

Group Housing

One project would address the solution to a large-scale multi story project like group housing, commercial complex etc. Design proposals should study and address issues like movement of people and traffic, services, waste disposal management through detailed case studies. Sensitivity to use of materials, lighting, landscape and services must be a part of the solution.

The project could also focus on the design for economically weaker section- slum up-gradation projects, site and services schemes etc. In such projects the focus would be on devising economically viable alternative building materials, structural systems and service options.

BARC-0702 : BUILDING CONSTRUCTION & MATERIALS -VII

OBJECTIVE: Introduction to construction details of specialized building elements like skylights, soundproof paneling, pre-cast and pre-stressed concrete elements etc.

METHODOLOGY:

- Lectures and Studio assignments for understanding construction details.
- Site visits and library studies to supplement the studio work regarding materials and construction methods.

CONTENTS:

Construction:

Doors and Windows: Soundproof doors, Bay windows, Skylights.
 Foundations: Pile foundation- details of pile, pile caps and types of piles.
 Partitions: Construction and details of glazed, lightweight and soundproof partitions and soft paneling.
 Pre-cast and Pre-stressed and post tensioning of concrete members.
 Modular construction.

Materials:

Study of various patent materials of construction available under different trade names with their specifications, properties and uses like Vineertex, Marblex, Fixopan, Anchor Boards, Novapan etc.

BARC- 0703: URBAN DESIGN

INTENT : To familiarize students with the aspects of urban design and to give the introductory knowledge about the urban design.

METHODOLOGY:

- The course will be conducted through lectures, studio assignments.
- Site studies to be carried out on a larger scale to analyze the aspects of urban design

CONTENT:

INTRODUCTION: Meaning, scope and purpose of Urban design.
Understanding of differentiation of Architecture, Urban design & planning.
Principles of Urban design.
Introduction to analytical techniques in urban design.
Survey techniques in urban design.
Urban design regulations and controls.
Comprehensive role of urban design in planning process.

BARC-0704: STRUCTURES –VII

OBJECTIVE: To understand the modern trends and challenges in building structural systems.

METHODOLOGY: Lectures by the experts in the field will be arranged to make the students to understand advance structure techniques available for construction of complex structures.

CONTENTS:

Earthquake resistant design

Elements of Earthquake Engineering, zoning, base shear, Lateral forces, Ductile detailing
Introduction to new codes.

Introduction to Computer Aided Structural Design

Demo of practical problems using STAAD

BARC-0705 : LANDSCAPE ARCHITECTURE

INTENT:

- Introduction to the role of landscape elements in architectural design.
- Impacts of landscape elements on environment.

METHODOLOGY: Landscape design work shall be conducted as part of Architectural Design Studio.

CONTENTS:

Basic elements of Landscape

- Land
- Water
- Vegetation

Study and detailing of hard and soft landscape

Services related to landscape:

- Plumbing
- Electrical
- Sewage management
- Water supply

Plant Material: A study of Indian vegetation, its characteristics and design aspects

- Trees
- Shrubs
- Ground cover
- Indoor plants

Grading and Slopes**Landscape Design Concepts of**

- Europe
- Japan
- India
- China
- Renaissance

BARC-0706: PROJECT MANAGEMENT

INTENT: To equip students with basic management techniques needed for office and project management.

METHODOLOGY: Lectures.

CONTENTS:**Management and the environment**

Evolution of management thought.
Managing in a global environment.
Social and ethical responsibility of management.

Managing work and organization

Decision-making and the planning functions including strategic planning.
The organization function, the controlling function.

Managing people

Human resource management- managing work groups.
Leadership: motivation: communication and negotiations.
Organization change and development.

Financial management

Functions of financial management.
Financial objectives, analysis and interpretation of financial information.
Sources of long term and short term finance.
Project appraisal and capital budgeting.

Office management and procedure

Organizing work, staffing, delegation and decentralization.
Filing and Indexing.

IT application in office management and procedure.
Enterprise Resources Planning (ERP).
Customer Relationship Management (CRM) .
Customer satisfaction, Quality and Excellence.

Entrepreneurship

The entrepreneurs' tasks and special challenges of entrepreneurship.
Design office management
Construction management.

Reference:

Donnelly, Gibson and Ivancevich, *Fundamentals of Management* Ed. Irwin.
Hellriegel and Slocum, *Management*, 7th ed. South Western College Publishing.
Anderson, *Customer Relationship Management*, Tata McGraw Hill.
Hampton, *Management*, Tata McGraw Hill.

BARC- 0707: BEHAVOURIAL PSYCHOLOGY

INTENT: To equip students with basic study of human behavior

METHODOLOGY: Lectures and exercises.

CONTENTS:

Man- Environment relationship: Positive and normative theories. Behavioral Science and modern movement. Substantive theory on Environment and human behavior, Social Stimulation and interaction, the affordances of the built Environment, Gestalt theory of Perception- Cognition and effect, Spatial behavior. Environmental Determinism, Environmental possibilism and Environmental probabilism Concept of Fit- adoptability and flexibility. Anthropometries and Ergonomic, Barrier free Environmental design. Territoriality. Defensible space, Social space the Westgate theory, Behavioral concepts in Neighborhood and Urban Design. Speculative aesthetics and symbolic aesthetics. Semantic and Semiotic approaches. Contemporary Sociophysical issues in Environmental design.

BARC- 0708: SEMINAR-II

INTENT: To equip the students with the art of paper presentations and preparation of report.

METHODOLOGY: The students will be preparing paper presentations with guidance under a faculty for the paper presentation.

CONTENTS:

Independent study and documentation of architectural and allied subjects by individual student along with oral and visual presentation.

The seminar shall be a research paper on a current topic related to Architecture. The overall supervision shall be done by the seminar coordinator and the individual guidance may be provided by the experts in the subject.

YEAR FOUR SEMESTER EIGHT

BARC- 0801: TRAINING

Each student shall have to undergo Professional Training for a period of at least 16 Weeks in an establishment approved by the class coordinator and Prof. In charge. The practical training will commence during the VIII semester after passing the VII end semester exams.

A student will be required to submit a performance report from the Architect under whom training was completed as well as a detailed report on the work carried out by him during the training.

The Internal assessment marks for the practical training will be awarded to each student by the Prof. in charge in consultation with the course coordinator on the basis of; The performance report from the Architect under whom the training was carried out.

On the assessment of the report of works rendered by the student during the training. The external Jury will award the marks for the practical training on the basis of Viva-voce examination of the student on the work rendered by the student during training.

YEAR FIVE SEMESTER NINE

BARC- 0901: ARCHITECTURAL DESIGN – VI

OBJECTIVES:

- Integration of all aspects about a building design and its workings- including service details, assessment of environmental impact, innovative structural systems and materials etc.
- Evolving sensitivity to design of spaces at the urban scale – creation of nodes and links, visual landmarks, activity and interaction zones, relationship between commercial, recreational and residential areas.

METHODOLOGY:

- Site studies to be carried out on a larger scale to analyze implications of the entire context within which the project is to be executed.
- Large scale models to be used for assessing site conditions and restrictions.
- Design process to incorporate panel discussion and seminar presentations.
- Presentations to be made using 3-D visualization.

CONTENTS:

Urban Design

The design problem of Urban design scale is to be introduced, example; Redesigning of existing Urban area by studying and identifying the problems associated with it. The project would be a medium sized urban design intervention.

The design solution would address issues like demography, market value, land use patterns etc. Other design issues are the detailing of open and built areas after studying human and vehicular traffic movement patterns. The project should be substantiated by detailed site surveys and reading about urban design principles. Study models must accompany every stage.

BARC-0902 : ADVANCED BUILDING TECHNOLOGY

INTENT: To familiarize the students with the various advanced construction methods and technology.

METHODOLOGY:

- Lectures and Studio assignments for understanding construction details.
- Site visits and library studies to supplement the studio work regarding materials and construction methods.

CONTENTS:

Introduction of pre-stressing, prefabrication and systems building. Jointing, tolerances and modular coordination. Mass production, transportation, storage and handling of materials. Characteristics, performances and application of mechanized construction equipments. Advanced construction techniques.

BARC- 0903: ECOLOGY AND ENVIRONMENT

INTENT: To familiarize students with the concepts of ecology and its importance in architecture

METHODOLOGY: The subject will be taught through lectures, exercises and assignments.

Introduction

Meaning and scope of ecology; evolution of ecology; man, environment and ecosystem; components of nature and basic concepts and processes of ecology; flow of material water energy, invasion, succession, predation, regulatory forces, adaptation, trophic levels, food chain, food web, ecological pyramids; Environmental zones.

Ecosystem and its Relevance to Environment

Resources and human settlements impact of advanced agricultural methods, urbanization and industrialization on nature; urban ecosystem approach evolution and significance; soil, water, land, vegetation and solar, biomass, wind, hydro energy resources; settlement planning and energy conservation; development and management

Quantitative Ecology

Introduction to quantitative ecology, identification of ecological parameters for planning at different levels; site planning, settlement planning and regional planning; data needs and format for data collection; types of analysis required to evolve ecological parameters. Planning for environmentally sensitive areas.

Environmental Impact Studies

EIA - meaning, significance and framework; Methodologies - checklist, matrices, network and social cost-benefit analysis; sources and acquisition of environmental information; Environmental land use classification; Environment impact studies of development projects.

Environmental Policies

Global and national policies on environment; Five year plans in relation to environmental aspects; Legal measure for protection of environment; Environmental awareness and education in India; Agencies involved in environment protection; Public participation; Role of planners in shaping the future environment

BARC-0904: ADVANCED STRUCTURE

OBJECTIVE: To understand the modern trends and challenges in building structural systems.

METHODOLOGY: Lectures by the experts in the field will be arranged to make the students to understand advance structure techniques available for construction of complex structures.

CONTENTS:

Theory of Domes, Shells & Folded Plates.(Following systems and techniques are to be understood conceptually. Calculations / Design for these techniques and systems are not expected.)

- Synthesis of force systems to create Structural system.
- Vector Active, Surface Active and Bulk Active systems.
- Theory of Folded Plates, Domes, Shell, Vault.
- Space Frame, Flat Slabs, Hollow Floor.
- Portal Frame, Cables and Suspension Structures.
- Structure System for Seismic Zone
- Inflatable Structure

BARC-0905 : ELECTIVE -I

INTENT: To familiarize students with the various allied subjects of Architecture.

METHODOLOGY: The students will choose from the list of electives any one subject of their choice to do an in-depth study of the selected topic

List of Electives for Elective –I & II

- 1 Energy efficient design.
- 2 Real Estate valuation.
- 3 Low cost Building Techniques.
- 4 Barrier free Environment.
- 5 Architectural Conservation Techniques.
- 6 Vastu Shastra
- 7 Building Automation and Management system.
- 8 Advanced theory of Architecture & Research methodology.
- 9 Sustainable Architecture
- 10 Energy Conscious Architecture
- 11 Intelligent Buildings
- 12 Modular Coordination

BARC-0906: ELECTIVE- II

INTENT: To familiarize students with the various allied subjects of Architecture.

METHODOLOGY: The students will choose from the list of electives any one subject of their choice to do an in-depth study of the selected topic

List of Electives for Elective –I & II

- 1 Energy efficient design.
- 2 Real Estate valuation.
- 3 Low cost Building Techniques.
- 4 Barrier free Environment.
- 5 Architectural Conservation Techniques.
- 6 Vastu Shastra
- 7 Building Automation and Management system.
- 8 Advanced theory of Architecture & Research methodology.
- 9 Sustainable Architecture
- 10 Energy Conscious Architecture
- 11 Intelligent Buildings
- 12 Modular Coordination

BARC- 0907: SEMINAR-III

INTENT: To equip the students with the art of paper presentations and preparation of report.

METHODOLOGY: The students will be preparing paper presentations with guidance under a faculty for the paper presentation.

CONTENTS:

Independent study and documentation of architectural and allied subjects by individual student alongwith oral and visual presentation.

The seminar shall be a research paper on a current topic related to Architecture. The overall supervision shall be done by the seminar coordinator and the individual guidance may be provided by the experts in the subjects.