

Rajiv Gandhi Proudyogiki Vishwavidyalaya, Bhopal

CBCS SCHEME OF EXAMINATION- BACHELOR OF ARCHITECTURE w. e. f. 2015

S.N o	Subject Code	Subject Name	Maximum Marks Allotted						Teaching Hours per Week			Total credits
			Theory			Practical			Lectures (L)	Tutorials (T)	Practical/ Studios (P/S)	
			End Sem	Mid Sem Test	Assignm ent/ Quiz	End Sem	Studio Work	Assignm ent/ Quiz				
1.	AR 221	Architectural Design with site & context as constraint	60	30	10	50	50	10	2	0	6	5

SECOND B. ARCHITECTURE – FOURTH SEMESTER

Aim: The aim of the studio is to introduce students to the site and context as prime generators of design decisions and to grow an ability to interpret site information as a decision-making aid.

Course Content:

- Focus will be on the site and context and their relationship to the built environment.
- Activities, services and construction methods, phenomena of social utilizations, growth and change shall also be studied and analysed.
- Introduction to element of site-planning and landscaping.
- Design of a group of buildings set in the context of the study with a focus on site and context.
- The design of the environment outside the building.

Methodology:

- Free hand architectural sketching should be given importance while doing all the exercises
- Minimum 4 problems should be attempted in whole semester in which 2 should be time problems of one week duration.
- Final results can be computer generated also with focus on architectural presentation
- Evolution of design through model making should be in focus
- Weekly assessment of studio work should be done
- Study tour should be done with on-site exercises and daily reviews

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2.	AR 222	Building Construction – Steel Components	60	30	10	50	50	10	2	0	4	4

Aim: The aim of the subject is to introduce the students about execution of building component with their constructional details.

Course Content:

1. Shoring

- Raking shores, horizontal or flying shores, vertical, dead or needle shores. (Drawing sheets)

2. Scaffolding

- Single, double, cantilevered, birdcage, suspended, trestle, boatswain's chair, etc. (Sketches & Assignment)

3. Expansion joints

- Expansion joints in walls, slabs, corner junctions. (Drawing sheets)

4. Industrial steel floor, jack arch roofing, stone slab roofing, stone stairs, stone floor on girder. (Drawing sheets)

5. Aluminum sections

- Doors ,windows(Drawing sheets)
- Different sections and details. (Drawing sheets)

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6. Miscellaneous

- Different type of steel stairs, railings, main gates and grills etc. (Sketches & Assignment)

7. Case study and market survey on relevant topics.

Note:

- There should be regular site visits to buildings under construction or constructed to explain the above topics. Use of audio-visuals should be stressed. The Sessional shall be in the form of handmade drawings, and the evaluation will be through review system presented before the Faculty and Studio In charge.

LIST OF TEXT AND REFERENCE BOOKS:

AR 222 – Building construction-III

1. W.B. MCKAY, "Building Construction Vol.1 to IV Orient Longman.
2. R.CHUDLEY, :Building Construction Handbook Vol. 1 to 4 "British Library Cataloguing in Publication Data 1990.
3. DR. B.C.PUNAMIA, "Building Construction", A. Sauraby& Co. Pvt. Ltd.
4. R. BERRY, "Construction of Buildings". The English Language Book Society London 1976.
5. MITCHEL, " AdvanceBuilding Construction", Allied Publishers Pvt. Ltd.

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3.	AR 223	Sanitation & Plumbing Building Services	60	30	10	0	20	10	2	1	0	3

Aim: The objective of the course is to provide a wide exposure to environmental support systems as they apply to human habitat. The course shall cover the basic aspects of (1) Environmental control (ii) Water and waste management and planning.

Course Content:

A) SANITATION

- Basic principles of sanitation, introduction to modern plumbing system. Study of Indian standards and plumbing bye laws. General introduction to various sanitary fitting & fixtures their placement and functions. Study of internal & external drainage system including study of duct for large verity of buildings including small residences, apartments, block of houses, public buildings etc.
- Study of various types of sanitary pipes, construction of joints and laying of pipes. Study of traps, inspection chamber, man hole, septic tanks, soak pit and public sewage line. Study of various stages of disposal of domestic effluent from fitting to sewer line. Study of "Sulabha" complex & other "CBRI" toilet details.
- Study of storm water disposal in various buildings and road side.
- Importance of sanitary services in the economics of buildings, planning & design disposal of city effluent, various treatment methods of city effluent and recycle of waste water.
- Study of refuse chutes in multi-strayed buildings and collection of refuse and recycle of city solid wastes.
- Standard Sewage Systems, technologically advanced sewage systems and off the grid sewage disposal systems

B) PLUMBING:

- Study of sources of water and water treatment for city domestic purpose. Study of quality of potable water. Study of Indian standards and water supply network. Architectural approach to plan the domestic water storage facilities and water distribution system in buildings

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4.	CE 224	Design of R. C. C. Structures	60	30	10	0	20	10	2	2	0	4

AIM: The aim of the subject is to introduce the students about the fundamentals of stability of structures in R. C. C. and various factors of R. C. C. structure designing.

Course Content:

1. Introduction to R.C.C., Working Stress method, Limit State method
2. Design of Beams :- analysis of beams, design of singly, doubly reinforced beam, T-beam, L-beam, (cantilever and simply supported) lintel, chhajjas
3. Design of Slabs :- analysis of slabs, design of One way, Two way, Continuous, Cantilever Slabs (simply supported and continuous)
4. Design of Columns:- axially loaded, columns with Uni-axial and Bi-axial bending
5. Design of Staircases :- dog-legged, and open well only

Note: Sessional work should include the analysis of simple elements along with the drawings.

List of Text and Reference Books:

CE 224- Design of R. C. C. Structures

1. Ramamurthan, "Theory of Structures", Dhanpat Rai & Sons.
2. Dr. B.C. Punamia, "Strength of Materials & Theory of Structure Vol.2", Laxmi Pub.
3. Jindal, "Indeterminate Structure".
4. Soloman, "R.C.C. Vol.I", CBS Publishers.
5. Sushil Kumar, "Treasure of R.C.C"

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5.	AR 225	History Of Modern Architecture	60	30	10	0	20	10	2	1	0	3

Aim: This course is studied in order to see how builders in the past solved their structural, functional and aesthetic problems. This survey of history gives the student a chance to study the structural basis of great styles, methods of admitting daylight, for decoration, for planning and so on, as related to structure. Importance is also attached to the sociological background i.e. political, economic, religious, technical and philosophic ideas and ideals which lie behind all buildings. This will be studied with the help of selected samples of buildings under the various historical civilizations of Indian and the oriental in general, in chronological order. This subject intends to develop an understanding in Contemporary Architecture in India and abroad.

Course Content:

- The impact of the Industrial Revolution on Architecture. Transformation from Iron to Steel and the demand for a new Architecture.
- The great Exhibition and their contribution to architecture custom entitle and his tower.
- Le Art Nouveau Movements, Victor Horta, Otto Wagner etc.
- Ferro Concrete in American Architecture, Plain surfaces in American Architecture Informal Plan.
- The Chicago School, Apartment, Office Building& Departmental Stores of Louis Sullivan& Others.
- F. L. Wright and the American Development, his urge towards organic architecture & his means of architectural expression
- Le Corbusier& his Philosophy, Bauhaus, Meis Van Der Rohe & the Integrity of Form. Alvar Alto, Irrationality & Eminent Standardization.
- Typical works & philosophy of eminent Architects like – Richard Neutra, Jorn Utzon, Oscar Neimyer, Lucio Costa, Marcel Frever Eero Serinen, Skidomore Owings & Merril etc.
- Influence of Modern Structural System on Architecture.
- Evaluation of early Architectural work in India.
- Colonial Architecture in India, emerging trends, works of Le Corbusier and Louis I. Kahn in India and their influence of Indian architecture.
- Meaning and element of vernacular architecture and related terms, Chronological development of vernacular architecture in India
- Contemporary Indian architects: A. P. Kanvinde, Charles Correa, B. V. Doshi, etc. their philosophies and examples.
- Postmodern architecture in India, examples.
- Postmodern architecture in World, examples.

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6.	AR 226	Landscaping , Ecosystems& Site Planning	60	30	10	0	30	10	2	1	2	4

Aim: The aim of the subject is to introduce the students about the aspects of electrical wiring , electrical layout & learning about various equipment and fittings available in the market . The aim is also to introduce various quality of light, glare, factors in considering selection of artificial lighting systems and lighting fixtures

Course Content:

- Definition of landscape, its scope and importance in architecture and planning Levels of landscape planning.
- Brief outline of development of gardens in history. The principles and design philosophy of Mughal & Japanese gardens Renaissance, 18th century –Brownian 19th century – Botanical gardens with examples. 20th century urban landscape. Roof gardens, Atriums, Roadside plantation, avenues Indoor landscape (general)
- Landscape design process, information needed for landscape survey. Land, water & plants as landscape elements, their functional & aesthetical considerations in landscape design.
- Grading its importance, grading process & methods of estimating earth volumes. Slopes for various outdoor functional activities. Surface runoff calculations & design of surface drainage system. Treatment of ground surfaces, kinds of paving materials.
- Planting Design-Understanding plant material as a design tool. Design characteristics of plants. Selection of plant materials for road side plantation, court yards, parking areas, near water bodies indoor areas etc. Details of establishing & grass lawn. Fertilizers their types & uses. Designing and execution of proposal:

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- a) Analysis of site.
- b) Identification of functional requirements.
- c) Site development by applying mutual forms.
- d) Hard surface - materials
- e) Elements in landscape design – lawns, hedges and shrubs, trees annuals, and seasonal rockeries.
- f) Use of street furniture.
 - Children's play area
 - Dwelling level
 - Neighborhood level
- g) Concept and use of national park.

SITE PLANNING

1. Site planning, its interpretations, scope its importance Natural & Man made environment. Ecosystem, Ecological balance, interaction between built environment & ecosystem Ecological approach to design.
2. Natural Resources, Land, Water & Plants their environmental & ecological considerations.
Macro & Micro climate, Microclimatic analysis, climatic Elements & their modification.
3. Site selection criteria, site survey, inventory & analysis, site planning process. Site development, guidelines for excavation & grading, circulation, site drainage, water supply, vegetation cover & Landscape furnishings.
4. Circulation systems: Types, hierarchy & layout patterns, planning & design criteria for pedestrian movement, vehicular movement & parking areas.
5. Buildings & outdoor spaces, their relationship & composition, Elements of visual design-point, line, form, colour & texture. Site Volumes, enclosures, site structure, expression.

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7.	HU123	Integrated Ethics & Attitude	0	0	0	-	50	0	0	0	4	2

Objective:

- To enable students to analyse moral issues and moral implications.
- To aware students about the social and cultural practices and morality, recognise good social conduct, and benefits of treading on the right paths in personal, social, official, and public domain.
- To impart logical thinking on issues related to policy and decision making.
- To understand what is social responsiveness.
- To enable students tread on the path of righteousness and self-governance.
- To learn to develop positive attitude in social and official conduct.

Course Content:

- Introduction: Definition of Ethics; Approaches to Ethics: Philosophical, Social.
- Psycho-social theories of moral development: Morality and Ideology, Culture and Morality, Morality in everyday context.
- Ethical Concerns: Work Ethics and Work Values, Business Ethics, Human values in organizations.
- Self-Awareness: Self Concept: Johari Window, Self and Culture, Self Knowledge, Self-Esteem; Perceived Self-control, Self-serving bias, Self-presentation, Self-growth.
- Self-Development: Character strengths and virtues, Emotional intelligence, Social intelligence.

Reference Books:

Hall, Calvin S., Lindzey, Dardner, & Cambell, John B., "Theories of Personality", Hamilton Printing Company. 1998
 Leary M.R., "The Curse of Self: Self-awareness, Egotism and the Quality of Human Life", Oxford University Press. 2004
 Louis P. P., "The Moral Life: An Introductory Reader in Ethics and Literature", Oxford University Press. 2007
 Corey, G., Schneider Corey, M., & Callanan, P., "Issues and Ethics in the Helping Professions", Brooks/Cole. 2011