

RAJIV GANDHI PROUDYOGIKI VISHWA VIDYALAYA, BHOPAL (M.P.)
BACHELOR OF ARCHITECTURE - CBCS (DETAILED SYLLABUS)

FIRST YEAR – SECOND SEMESTER

AR 114

Architectural Design -II

Semester - II

1. Introduction of Architectural design with an approach of functional understanding and analysis of problems with studies of space requirements for different furniture (objects), activities and circulation. Relationship between occupied and unoccupied spaces.
2. Anthropometric study and analysis. Study of single units Viz / living area, sleeping area, cooking area, study area, toilet etc.
3. Design of small shelters and study of multi units involving max. 3 to 4 functional spaces natural and man made objects of functional and aesthetic value. Aspects of area determination in conjunction with relevant building Bye Laws and area relationship.
4. Colour theories and colour schemes and its effect on the users.
5. Case studies for measured drawing of small buildings and furniture. Introduction to draw presentation drawings. Small views (isometric and perspective) of the studied buildings.
6. Study and design of small structures like ceremonial gates, temporary exhibition stalls, drinking water fountains, milk booths etc.
7. Minimum one time problem of 6 hrs duration is to be attempted in class other than regular design problems.

Note: The sessional will be in the form of drawings and models along with technical report for the design dealt with. The evaluation should be done in intermediate reviews consisting of internal / external experts. There should be regular site visits to the building types dealt in the studio problem for which audio visuals should be prepared.

REFERENCES:

1. "Planning by E. & O.E". Liffé book Ltd., London.
2. D.E. CHIRAIRA & CALLENDAR, "Times Saver Standard for Building Types".
3. RUDOLF HERGE, "Nuferts Architects Data", Cross By Lockwood & Sons Ltd.
4. EDWARD D. MILLS, "Planning The Architects Hand Book".
5. National Building Code.

Final Scheme of Examination, (CBCS) for Bachelor of Architecture (B. Arch.), RGPV, Bhopal, w. e. f. July 2015 batch.

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FIRST YEAR – SECOND SEMESTER

AR 115

Building Construction-I

Semester – II

1. FOUNDATION: Brick, stone, plinth filling, entrance, steps/ramps plinth protection D.P.C. & coping, timbering.
 2. ARCHES and LINTEL: Brick, stone lintels, centering materials and methods.
 3. PRECAST UNIT MASONRY: Concrete block, decorative brick work, compound, mud wall (C.B.R.I) other bonds.
 4. DOORS (TIMBER): Ledged braced and battened door, panel door, glazed door, flush door.
 5. WINDOWS (TIMBER): Side and Top hung, pivoted, louvers, ventilators and fixed fanlight.
 6. DOORS (METAL) PRESSED STEEL AND 'Z' SECTION: With and without fanlight.
 7. WINDOWS (METAL) PRESSED STEEL AND 'Z' SECTION: Top and side hung, fixed, pivoted, louvers, ventilators and fanlight.
 8. MISCELLANEOUS: Jamb casing, architrave, pelmet, mouldings, skirting and window boards, door and window fixtures.
- Note: Sessional shall be done as drawing sheets and occasional visits to construction sites. Minimum 8 sheets shall be prepared out of which two may be in the sketch form (scaled).

REFERENCES:

1. W.B. MCKAY, "Building Construction Vol.1, 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, " Advance Building Construction", Allied Publishers Pvt. Ltd.

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FIRST YEAR – SECOND SEMESTER

AR 116

Graphics-II

Semester - II

PERSPECTIVE:

1. Introduction to basic terms, principles, types and techniques of perspective drawing: realistic expression of ideas through presentation techniques in various mediums.
 2. Two point perspective of simple objects (drafted & free hand)
 3. Presentation of interior and exterior views in one point perspective (drafted and free hand)
- An idea of development of surfaces is also to be given to the students, Stress should be given on Free Hand Sketching.

SCIOGRAPHY:

1. Introduction to basic principles of sciography and its application to the field of architecture.
2. Sciography of two dimensional objects in plan and elevation.
3. Sciography of three dimensional objects in plan, elevation and views, (Isometric, Axonometric and Perspective)
4. Sciography of simple building elements.

Note: The sessionals will be in the form of drawings and sketches.

REFERENCES:

1. S. MULLIK, “Perspective & Sciography”, Allied Publishers Ltd.
2. ROBERT W. GILL, “Basic Perspective”, Thames & Hudson, London 1974.
3. Interior Perspective in Architectural Design Graphics.
4. BERNARD ALKINS, “Architectural Rendering”, Walter, Foster, Art books.
5. ROBERT W. GILL, “Advance Perspective”, Thames & Hudson, London.

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AR 117

Architectural History-I

Semester - II

The course aims at understanding the influence of Geographical & climatic, cultural and political situation on Architecture in expressing philosophical and aesthetic concepts in built form.

1. Pre historic, vedic, Indus Valley civilization.
2. Buddhist and Jain period.
3. Egyptian, West Asiatic.
4. Chinese, Japanese
5. Pre Colombian, Mayan Civilization.

Note: Sessionals will be submitted in the form of sketches notes, audio-visuals and reports of site visit to some historical buildings etc. as per programme scheduled by the school per session.

REFERENCES:

1. SIR BANISTER FLETCHER, "History of Architecture", University of London.
2. S. LLOYD & H.W. MULLER, "History of World Architecture", Fibre & Fibre Ltd. London.
3. JAMES FERGUSON - "History of India & Eastern Architecture".
4. BASHAM - "WONDER THAT WAS INDIA" - A.L. BASHAM.

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AR 118

Structure

Semester - II

1. Fixed and continuous beams: Relation between free B.M. diagram fixed B.M. diagram, slope deflection, fixed beam subjected to couple, continuous beam, Clapeyron's theorem of three moments.
2. Moment distribution methods: fixed and continuous beams only.
3. Study of types of structures: load bearing framed, rigid jointed, pin jointed, determinate, indeterminate.
4. Loads and stresses: Dead load, live load, wind load, earthquake forces, soil and hydrostatic pressure, load combinations, factor of safety, permissible stresses, standard specification and codes of practice.
5. Analysis and stability of retaining walls: rectangular and trapezoidal only.

Note: Sessional work shall include assignments/tests on the above topics along with the drawings.

REFERENCES:

1. C.S. REDDY, "Basic Structural Analysis", Tata McGraw Hill.

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AR 119

Building Information Modelling

Semester - II

1. Introduction to basic understanding of application software, such as Auto cad, Coral Draw, Sketch Up and Photoshop
2. Architecture or allied project presentation technique.
3. Graphical analysis of development small project through computer.
4. Rendering techniques with the help of computers.

Note: Sessionals should be in the form of small exercises and written assignments.

REFERENCES:

1. SUBRAMANIAM, “Introduction to Computer Vol. 1 & 2, Tata McGraw Hill.
2. SCHAUMS SERIES, “ Computer Programming”.
3. Auto CAD reference Manual.

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FIRST YEAR – SECOND SEMESTER

ML 110

Environmental Sciences

Semester - II

COURSE CONTENT:

Introduction: Domestic and Global Environmental concerns, principles of sustainable development, Sustainable agriculture, organic farming, bio-fuels, Threats for sustainability

Environmental Ethics & Legislations: Enforcement of Environment laws in India – The water act, The Air (Prevention and Control of Pollution) Act, 1981, The Environment (Protection) Act, 1986, Environmental Auditing.

Environmental Pollution: Air Pollution – sources, types of air pollutants, National Ambient Air Quality Standards, Controlling Air Pollution. Water pollution – sources, types of water pollutants, water quality indicators, water quality standards. Soil Pollution - types of soil pollutants: industrial wastes, pesticides, fertilizers and manures, salination of soil, Controlling Soil Pollution.

Environmental Challenges: Local Challenges - Solid Waste – Impact of solid waste on natural resources, Deforestation;

Global Challenges - climate change and global warming, Kyoto Protocol, Greenhouse Gases, Ways to reduce Greenhouse gases emissions,

Sustainable Habitat, Industrialization and Urbanization, Concept of Green Building

Carbon Footprint, ways to reduce carbon footprint, Carbon Trading.

Volatile Organic Compounds (VOC), GRIHA Rating, LEED Rating, HVAC, Hybrid Car Technology, Industrial ecology, India's renewable energy capacity. Green Technology & Green Business: Green Business, Green Computing, E-waste management.

COURSE OUTCOMES

Student after successful completion of course must possess an understanding of environment, eco-system and its consequences of unbalancing the environment. After successful completion of this course, student will earn 2 credits.

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EVALUATION

Evaluation will be continuous an integral part of the class as well through external assessment.

REFERENCES

R. Rajagopalan, Environmental Studies, Oxford IBH Pub, 2011.

Kogent Learning Solutions Inc., Energy, Environment, Ecology and Society, Dreamtech, 2012.

Rag, R. L, Ramesh, Lekshmi Dinachandran, Introduction to sustainable engineering

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HU 112

Rural Outreach

Semester - II

The main objective of introducing this course is to sensitize students about the socio-cultural aspects of the rural areas parochial to their colleges. Students are expected to observe, investigate and learn about the following aspects of the rural region:

- i. Demographics, Literacy, Geographical parameters of the Village
- ii. Schemes of government of India and State of Madhya Pradesh in operation in the villages
- iii. Social/ Cultural aspects ranging from popular dance forms, music and customs of the concerned village.

This course shall be done by the students in a self-study mode. Study methodology shall comprise of combining field visits, case studies, analyzing policy documents from different government departments, discussions with field officers, active NGO's and so on.

The faculty associated with the course shall evaluate the candidate and grade him.

For evaluation purpose, students are expected to submit a *hand-written summary* on the government schemes and policies for the socio-cultural development of the concerned village. This shall be followed by final submission of two case studies covering broad spectrum of socio-cultural issues ranging from life in slums, infant mortality, watershed management, potability of water, animal welfare etc. These case studies (handwritten) shall be submitted to the mentor for the final evaluation of the coursework.