DR. BABASAHEB AMBEDKAR MARATHWADA UNIVERSITY

CIRCULAR NO. ACAD / NP / B.Arch. / 35 / 2010

It is hereby notified for the information of all concerned that, the Hon'ble Vice-Chancellor has accepted the ***"Revised Syllabus of Bachelor of Architecture [Ten Semesters] under the Faculty of Engineering and Technology"*** on behalf of the Academic Council under Section-14(7) of the Maharashtra Universities Act, 1994 as appended herewith.

This will be effective from the academic year 2010-2011 and onwards.

All concerned are requested to note the contents of this circular for their information and necessary action.

University Campus,
Aurangabad-431 004.
REF.NO. ACAD/NP/B.ARCH./
2010/25197-216

Date:- 02-09-2010.

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Director,
Board of College and
University Development.

Copy forwarded with compliments to :-

1] The Principals, affiliated concerned Colleges,
Dr. Babasaheb Ambedkar Marathwada University.

Copy to :-

1] The Controller of Examinations,
2] The Superintendent, [Engineering Unit],
3] The Record Keeper,
Dr. Babasaheb Ambedkar Marathwada University.

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DR. BABASAHEB AMBEDKAR MARATHWADA UNIVERSITY, AURANGABAD.

Syllabus For Bachelor of Architecture

[B.Arch]

[Ten Semesters]

[Effective from June-2010 & onwards]

Curriculum and syllabus for Bachelor of Architecture

Under 2010 for Affiliated Institutions B.Arch – Curriculum 2010.

Dr. Babasaheb Ambedkar Marathwada University, Aurangabad
Regulation 2010 for Bachelor of Architecture Course
(Affiliated Institutions)

The following regulations shall be applicable to all Architecture Colleges / Architecture Departments in Engineering Colleges affiliated to this University, offering under-graduate programmes in Architecture.

Preliminary Definitions and Nomenclature

In these regulations unless the context otherwise requires;

i) "Controller of Examinations" means the authority of the University who is responsible for all the activities related to University Examinations.

ii) "Course" means a Theory or Practical subjects that are normally studied in a semester like Theory and Design of Structures, History of Architecture, Architectural Building Construction and Materials etc.

iii) "Director, Academic Course" means the authority of the University, who is responsible for all academic activities of the University Departments and affiliated colleges or implementation of the relevant ordinances and regulations.

iv) "Head of the Department" means Head of the concerned department of the College.

v) "Head of the Institution" means the Principal of a College / Institute who is responsible for all academic activities of that College / Institute and for implementing of relevant ordinances and regulations.

vi) "Programme" means an under-graduate Degree programme i.e. B. Arch.

vii) "University" means Dr. Babasaheb Ambedkar Marathwada University, Aurangabad.

(A) Admissions

No candidate, with less than 50% marks in aggregate, shall be admitted to the architecture course, unless she / he has passed an examination at the end of the new 10 + 2 scheme of the Secondary and Higher Secondary Certificate examination or equivalent, with Mathematics as one of the subject of examination at the end of 10 + 2 level,

OR

10 + 3 Diploma (any stream) recognized by Central / State Government, with minimum 50% aggregate marks,

OR

International Baccalaureate Diploma, after 10 years of schooling, with not less than 50% marks in aggregate and with mathematics as compulsory subject of examination.

AND

No candidate shall be admitted to the architecture course unless she / he has appeared for and passed any aptitude test (NATA or any other appropriate test) for the course

(B) Competent Authority

The admissions shall be carried out by the Competent Authority i.e. the Government or University or such authority as Association or Federation of Schools or Colleges of Architecture ,based on the marks obtained in the aptitude test in Architecture and the qualifying examination as mentioned above, in the ratio of 50:50. Admissions shall be carried out in a fair, transparent, and non-exploitative manner, based strictly on merit.

The Degree of Bachelor of Architecture

(Five Year Degree Course after 10+2 H.S.C. Examination)

(With effect from July 2010)

0.551 No candidate shall be admitted to the First Year Course for the degree of Bachelor of Architecture unless he / she has passed :

(i) The Higher Secondary School Certificate Examination (Std XII) of the Maharashtra State Board of Secondary and Higher Secondary Certificate Education or an examination recognized as equivalent thereto, with Mathematics as one of the subjects, and aggregate not less than 50% marks (45% marks for backward class candidates), and,
(ii) An Aptitude Test, as prescribed.

0.552 A Candidate to be eligible for award of a Degree will be required to pass the examinations us under:
1) First examination in Architecture or F.Y. Arch.
(Jointly constituting Part I and Part II Examinations),
2) Second examination in Architecture or S.Y. Arch.
(Jointly constituting Part I and Part II Examinations),
3) Third examination in Architecture or T.Y. Arch.
(Jointly constituting Part I and Part II Examinations),
4) Fourth examination in Architecture or IVth Year Arch.
(Jointly constituting Part I and Part II Examinations), and
5) Fifth examination in Architecture or B.Arch.
(Jointly constituting Part I and Part II Examinations)

O. 553 No Candidate will be admitted to any examination unless he / she keeps terms for that year at a college affiliated to the University and produces, from the Principal of the college, testimonials of :

a) Satisfactory attendance at the theory classes, and satisfactory performance at studio sessions, as prescribed, and
b) Satisfactory completion of Term-work, as prescribed.

O.554 (A) No candidate will be admitted to the S.Y. Arch. (Part I) Course unless he / she
(i) Passes his / her First Examination in Architecture within a period of three years from the date of his / her admission to the course.
Or
(ii) Is eligible for the concession of A.T.K.T. at his / her First Examination in Architecture within a period of three years from the date of his admission to the course.
(B) No candidate will be admitted to the T.Y. Arch. (Part I) Course unless he / she: -
(i) Passes his / her F.Y. Arch. and S.Y. Arch. Examination
Or
(ii) Passes his / her F.Y. Arch. Examination and is eligible for the concession of A.T.K.T. at his / her S.Y. Arch. Examination.

(C) No candidate will be admitted to the IVth Year Arch. (Part I) Course unless he / she passes his / her F.Y. Arch., S.Y. Arch., and T.Y. Arch. Examinations.
(D) No candidate will be admitted to the Fifth Year Arch. (Part I) Course, unless he / she passes his / her IVth Year Arch. Examination, or is eligible for concession of A. T. K. T. at his / her IVth year Arch. Examination.

R. 715 An Entrance Test for admission to the First Year Arch. Course for the Degree of Bachelor of Architecture shall be conducted as per the norms of Council of Architecture, New Delhi (CoA), as amended from time to time, known as the National Aptitude Test in Architecture (NATA).

R. 716 The scheme of instructions and examination for each examination for the Degree of Bachelor of Architecture shall be in accordance with the appropriate regulations, and the syllabi prescribed, subject to such revision, modification etc. made from time to time.

R.717 (a) At each Examination,
1 Term Work,
2 Practical Examination, and
3 Theory Examination,
as prescribed in the subjects, shall each constitute a separate head of passing. Aggregate marks of part I and part II examinations taken together shall also constitute a separate head of passing for that examination.
(b) To pass any examination, a candidate must obtain:
(i) A minimum of 45% marks in each head of passing excepting aggregate, and
(ii) A minimum of 50% marks in the aggregate.

R.718 In respect of Term work, a target date shall be fixed for completion of each assignment / Experiment / drawing / job / project, and the same complete or incomplete shall be collected on the target date.

R.719 The University shall conduct Practical Examination for a subject, as prescribed in the Teaching and Examination Scheme, by appointing Internal Jury and External examiners.

R.720 (i) In case a candidate fails in not more than three heads of passing at F. Y. Arch., and / or S. Y. Arch. Part I Examination, after taking that examination at the end of the year, as a regular student, he / she shall be allowed to appear again for only those heads of passing in which he / she has failed at his / her subsequent examination. Such a Candidate shall be allowed to keep terms and appear at his / her subsequent Part II examination.
(ii) Marks obtained by a candidate in any head or heads of passing at F. Y. Arch., and / or S.Y.Arch. Part I examination shall be carried over, unless the candidate desires to appear for any head or heads of passing in which he / she has failed, and the gracing of marks shall be done as a whole for any examination, with Part I and Part II Examinations taken together.

R.722 (a) A Candidate who secures 50% or more, but less than 60% in the aggregate and passes the examination shall be declared to have passed the examination in Second Division.

(b) A Candidate who secures 60% or more, but less than 66% in the aggregate and passes the examination shall be declared to have passed the examination in First Division.
(c) A Candidate who secures 66% or more marks in the aggregate and passes the examination shall be declared to have passed the examination in First Division with Distinction.

R.723 A candidate who fails, in not more than three heads of passing (including aggregate), at F.Y. Arch. and S.Y. Arch examination shall be allowed to keep terms at S.Y. Arch and T.Y. Arch. examination, respectively. However, the result of such candidate at the higher examination (S.Y.Arch. / T.Y. Arch.) shall not be declared, unless he / she passes in the lower examination (F.Y.Arch. / S.Y.Arch respectively), in accordance with the regulations.

R.724 In case a candidate fails in F.Y.Arch / S.Y.Arch. / T.Y. Arch. examination, but desires to appear again thereat,
(a) He / she may, as an option, claim exemption from appearing in the head or heads of passing in which he / she has passed.
(b) Such exemption, if claimed, shall cover all the heads of passing (excepting aggregate) in which it can be claimed.
(c) Such exemption, if not availed of, at the immediately subsequent appearance of the candidate at the examination, shall be deemed to have lapsed.
(d) The candidate may, as an option, claim exemption from appearing in the head / heads of passing of his / her choice, and appear in the remaining head / heads of passing to make up the deficiency in aggregate, if he / she has passed in all heads of passing but has failed to secure a minimum of 50% of the aggregate marks.
(e) For the purpose of deciding whether a candidate claiming exemption in accordance with (a), (b), (c) or (d) above, as required by Regulations, secures 50% of the total marks obtainable in the whole examination, his / her marks at his / her previous examination / examinations in the head or heads of passing in which he / she is exempted shall be carried over. Candidates passing at any examination in this manner shall not be eligible for any Award or Division or prizes at that examination.

R.725 The University may prescribe, from time to time, text-books or reference books for the different subjects shown, for any examination.

R.726 The Scheme of Instructions and Examination for the First Examination in Architecture, i.e. F.Y.Arch. shall be as follows:

R.727 As an integral part of Architectural Education Curriculum, and as a part of the teaching programme, the College shall arrange Study Tours and Visits to places of architectural interest.

R. 728 The syllabi in various subjects of the First Examination in Architecture shall be as follows :

Dr. Babasaheb Ambedkar Marathwada University, Aurangabad

Syllabus for First Year Architecture Course (Part I)

Teaching Scheme per Week					Examination Scheme				
Code No.	**Subject**	**Lecture Hours**	**Studio Hours**	**Total**	**Term Work**	**Pract. Exam.**	**Theory Exam.**	**Total Marks**	**Duration**
111	Basic Design & Visual Arts	--	10	10	100	150	--	250	--
112	Architectural Building Construction & Material -I	02	04	06	50	75	100	225	4 hours
113	Architectural Design & Graphics -I	--	04	04	25	75	--	100	--
114	Design Fundamentals in Architecture -I	04	--	04	--	--	100	100	3 hours
115	Early Civilization-Art, Culture, Architecture	04	--	04	25	--	100	125	3 hours
116	Environmental Science	04	--	04	--	--	100	100	3 hours
117	Communicative Skills	02	--	02	50	--	--	50	--
118	Workshop	--	02	02	50	--	--	50	--
		16	**20**	**36**	**300**	**300**	**400**	**1000**	

Note: Each Lecture / Studio Hour is of **50** minutes duration.

Dr. Babasaheb Ambedkar Marathwada University, Aurangabad

Syllabus for First Year Architecture Course (Part II)

Teaching Scheme per Week					Examination Scheme				
Code No.	**Subject**	**Lecture Hours**	**Studio Hours**	**Total**	**Term Work**	**Pract. Exam.**	**Theory Exam.**	**Total Marks**	**Duration**
121	Architectural Design -I	--	10	10	100	150	---	250	--
122	Architectural Building Construction & Material -II	02	04	06	50	75	100	225	4 hours
123	Theory & Design of Structures -I	04	--	04	25	--	100	125	3 hours
124	Architectural Design & Graphics -II	--	04	04	25	75	--	100	--
125	Design Fundamentals in Architecture -II	04	--	04	--	--	100	100	3 hours
126	History of Architecture - I	04	--	04	25	--	100	125	3 hours
127	Model Making	--	04	04	75	--	--	75	
		14	**22**	**36**	**300**	**300**	**400**	**1000**	

Note: Each Lecture / Studio Hour is of **50** minutes duration.

B. Arch (Regulations 2010)

Syllabus

Semester – I

Subject Code No. 111 — **Basic Design & Visual Arts**

Lecture Hours : Nil
Studio Hours : 10
Total : 10 Per Week

Term Work : 100
Practical Examination : 150
Theory Examination : Nil

Objective :

The study of this subject aims to make the students familiar to basics of Architectural Art. It also enhances the students to understand generation of geometrical forms & Importance of Visual Arts and its relation to Architectural design. The students are Expected to acquire the knowledge of Visual Designing & its application in Architecture. The students are taught to develop skills in free hand drawing and rendering. Different media are used for Visual expressions.

Syllabus :

1) Exercises in points and lines. Organization of a large number of identical geometric shapes to obtain symmetrical and asymmetrical patterns. Family of shapes, and developing of various shapes from a given geometric shape. Working out composition with such developed shapes.

2) Exercises on Planes and Forms. Organizing a large number of geometric shapes to express a given theme. Combining different geometric shapes and making a larger shape and using many such units, and expressing a design. Introducing value and color.

3) Textural Qualities. To achieve centre of interest in design using different textural elements. Development of geometrical pattern by division, subtraction and addition or overlapping and to express them with the use of colors. Expressing a given theme in geometric pattern.

4) Spatial Forms. Models, sculptures in different materials to understand the evolution of three-dimensional forms and dissimilar forms. Subtractive model out of given geometric form.

5) Study of Linearity. Models with linear members such ass match-sticks, straws, ice-creams spoons etc to understand architectural forms, and structural forms.

6) Visual composition. Posters with a given theme. Collage with a given theme.

7) Study of solid forms: This assignment shall include making of sculpture out of solid cubes, Pyramids, cylinders & other geometrical shapes and forms. These shall be finished with colour schemes and texture schemes.

8) Exercises on the study & application of Anthropometrics. Information with respect to furniture & other activities.

Visual Arts

9) Balance Unity, Pattern, mphasis, Movement, Rhythm and contrast. Exercises on the above to explain these conditions.

10) Freehand drawing experiences to be introduced to develop visual perception & thinking by drawing still life objectives & furniture etc.

11) Outdoor exercises for sketching buildings, streets, rows of buildings, trees, human figures in various activities. Use of various sketching materials like pencils, pen, ink, charcoal etc.

Books for Reference :

1) V.S.Pramar – Designfundamentals in Architecture, Somaiya Publications PVT.LTD.new delhi 1973.
2) Francis D.K.Ching- Architecture: Form , Space & order, Van Nostrand reinhod company
3) John Mills- The technique of sculpture. BT Bats ford LTD. New York
4) Caldwell Peter – Pen & ink Sketching , BT Bats ford London. 1995
5) Drawing – A creative process. Francis D.K.Ching, Van Nostrand reinhod company,N.Y.1990.

Subject Code No. 112 **Architectural Building Construction & Materials I**

Lecture Hours : 02
Studio Hours : 04
Total : 06 Per Week

Term Work : 50 Marks
Practical Examination : 75 Marks
Theory Examination : 100 Marks
(Four Hours)

Objective :

The Course is designed to expose the students to the process of Building Construction, the different components of Buildings, and the Building Materials. The emphasis is on familiarization by direct handling and observation. The students shall be encouraged to acquire taste for good workmanship and quality products.

The course is visualized as having three essential components viz. Lecture course in materials and methods of construction, and a building workshop, which may be conducted within the college, and / or at specific venues outside. The principles and practices shall be applied in the studio for meaningful working details and drawings.

A. Construction:

i) Components of a building: Structural and functional components.

ii) Masonry: Standard terms in brick, different types of bricks, bonds in brick-work (English, Flemish, Rat Trap Bond), Brick Pillars & Piers. Different types of stone Masonry, the function of through stone/ Headers, Bonder stone, Composite masonry etc.

iii) Foundations: Simple footings in bricks. Thumb rules. Foundations for load- bearing walls. Uncoursed rubble masonry in foundation and plinth. Damp proof course, brick steps, Isolated R.C.C. footings plinth beams etc. Bearing Capacity of Soil. Methods to find out the Bearing Capacity.

iv) Principles of construction, of various types of arches , lintels, perforated brick walls.

v) Panelld doors in timber, flush doors, joints in frame, styles, rails, panels. Fixtures and fastenings.

B. Materials:

i) Mud, clay, & Bamboo for use in buildings.
ii) Manufacture of Bricks, different types and their properties. Principles of construction of walls in bricks, stone and hollow concrete blocks. Different types of stones for construction. Quarrying of stone, dressing of stone, Natural Bed, properties of stone etc.
iii) Lime: Classification, and importance of lime in construction.
iv) Sand: Classification, uses, qualities of sand, and Bulking of sand.
v) Cement: different types of cements, testing of cement, storage of cement, and uses. Importance of cement in construction.
vi) Timber: Classification of trees, characteristics of good timber, defects in timber, seasoning of timber, uses in building construction. Industrial timber like plywood, block-board, particle-board, and other products available in the market.

NOTES:

(A) i) College shall undertake site visits of construction projects.
ii)Term work shall consist of minimum two sheets of imperial size on each of the items above i.e. (i), (ii), & (iii) in (A).
iii) Journal for notes on Building Materials and Reports on site visits.
iv) Minimum two class tests to be conducted.

(B) Weightage of 70% shall be given for construction component, & 30% for building materials component in theory examinations.

Books for Reference :

1) Building Construction by McKay (Vol. I)
2) Building Construction and Materials by Rangwalla. Character publishing house
3) UNO, Use of bamboo and reeds in constructions- UNO publications.
4) S.P.Arora & S.P.Bindra, text book of building construction, Ganapat ray publications Pvt.Ltd. New Delhi.
5) Barry, The construction of buildings , affiliated east west place, Pvt.Ltd. New Delhi.
6) Francis D.K.Ching , Building construction illustrated, John Wiley & sons 2000.

Subject Code No. 113 **Architectural Drawing & Graphics I**

Lecture Hours : Nil
Studio Hours : 04
Total : 04 Per Week

Term Work : 25 Marks
Practical Examination : 75 Marks
Theory Examination : Nil

Objective :

The course is designed to train the students in geometrical drawings and drafting techniques. The ability to present elements of design in graphic form. Learning to observe measure and draw to scale plans and elevations of simple objects like furniture etc.

Syllabus :

1) Introduction to the concept of scale. Plane geometry. Construction of planes, circles, curves, tangent and regular polygons, octagons, hexagons etc. Introduction to orthographic projections and first angle projection. Orthographic projections of objects and methods of drawing them. Introduction to projectional drawings.

2) Projectional drawings of solids, right prism, right pyramid, right cylinder, and right cone. Section lines in different angles and drawing of the section.

3) Introduction to methods of developments. Parallel line development, radial line development and approximate development. Development of oblique solids.

4) Classification, line of intersection, line or generator method and section plane method. Exercises related to intersection of simple solids, such as prisms, pyramids, cylinders and cones.

5) Drawing to a Scale. Measured drawings of simple furniture objects such as table, stool, chair etc, drawing representation format for presentation methods and techniques of measuring building and their details, detailing in terms of construction , ornamentation etc.

Term Work shall consist of

1) Sketchbook containing exercises based on topics given above.
2) Imperial size daring sheets on topics given above. (Minimum ten sheets)

Books for Reference :

1) Engineering Drawing by N. D. Bhatt
2) Building Drawing by Shah, Kale, Patki
3) Descriptive Geometry by S.H.Mulik.
4) Francis Ching- Architectural graphics Van Nostrand Reinhold company,N.Y.1964
5) C. Leslie Martin , Architectural Graphics, The Macmillan company N.Y. 1964.

Subject Code No. 114 **Design Fundamentals in Architecture I**

Lecture Hours : 04
Studio Hours : Nil
Total : 04 Per Week

Term Work : Nil
Practical Examination : Nil
Theory Examination : 100 Marks
(Three Hours)

Objective :
The study of this subject aims to make the students familiarize with the basics in the study and logical solution of the Architectural Design problems by using the knowledge foundation course for the ensuing design problems in the coming years.

Syllabus :

1) A brief description of architecture as an occupation. Architecture is to be compared with visual and temporal arts. Architecture and Science and Technology. Architecture with reference to Social Science. The work of an Architect compared to that of an Artist / Sculptor / Technologist. Total scope of architecture.

2) The concept of beauty. Philosophical and psychological view. Meaning of Art. Basic principles of visual perception. Form and its visual properties.

3) The concept of mass. Mass & space. Types of Spaces. Indoor space and outdoor space. Space in buildings. Relation between man and space. Defining spaces and the degree of enclosure. Organization of spaces. Fenestration and character of facade. Enclosure and internal space. Articulation of form.

4) Proportion. Its application and advantages in architecture. Application of order. Golden proportion. Modular, with examples from history of architecture. Scale and its application in architecture and advantages. Application of Human Scale and generic scale in architecture.

5) Ordering principles. Their need and application in architecture. Seven lamps of architecture. Its significance. Principles of colour and their application and advantages in buildings.

Books for Reference :

1)Time Saver Standards
2)Neufart's Data
3)Form, Space and Order by Ching
4) V.S. Pramar- Design fundamentals in Architecture
5) Paul Alan Johnson – The theory of Architecture- Concepts and theories, Van Nostrand Reinhold company, 1994.
6) Steen Eiler Rasmussel – Experiencing Architecture, MIT press 1964.

Subject Code No. 115 **Early Civilization, Art, Culture & Architecture**

Lecture Hours : 04
Studio Hours : Nil
Total : 04 Per Week

Term Work : Nil
Practical Examination : Nil
Theory Examination : 100 Marks
(Three Hours)

Course Objective :

1) The study of this subject is intended to understand the process of evolution and development in social, economical and cultural environment of man.
2) To gain knowledge of the development of the architectural form with reference to technology, style and character in the pre-historic world and in ancient Egypt, West Asia, Greece & Roam.

Syllabus :

1) PRE- HISTORIC AGE –
Introducing concepts of culture and civilization – Paleolithic and Neolithic culture- Art forms and evolution of shelter – agricultural evolution and its impact on culture and civilization.

2) ANCIENT RIVER VALLEY CIVILIZATION : Egypt
Landscape and culture of ancient Egypt – History – Religious and funerary beliefs and practices- Monumentality – Tomb architecture ; Evolution of the pyramid from mastaba-temple architecture, mortuary temples and cult temples. Great pyramid of Cheops, Gizeh, Temple of Ammon Ra, Karnak- Temple of Abu Simbel(rock-Cut).

3) ANCIENT RIVER VALLEY CIVILIZATIONS : MESOPOTAMIA
Urbanization in the furtile crescent – Sumerian , Babilonian, Assyrian, and Persian culture- Evolution of City states and their character – law and writing – theocracy and architecture- evolution of the ziggurat – palaces. Ziggurat of Ur, Urnamu – Palace of Sargon, Khorsabad.- Palace at Persipolis.

4) CLASSICAL PERIOD : GREECE
Landscape and culture of Greece – Minoan and Mycenaean cultures – hellinic and Hellenistic cultures – Greek character, Greek democrosy- greek city planning – architecture in archaic and classic periods – domestic architectures, public buildings ; Agora, Stoas, Theators , Stadias –Greek temples- Evolution and classification – Parthenon & Erechthion – orders In architecture ; Doric , ionic columns- optical illusions in architecture.

5) CLASSICAL PERIOD : ROME
Roman history : republic and empire – Roman religion and Roman temple – Roman character – lifestyle – Roman urban planning – art and architecture as imperial propogenda ; forums and basilicas – domestic architecture – structural forms, materials and techniques of construction – orders in architecture ; Tuskan and Composite.
Rome: Forum Romanum and other Imperial forums, enclosure and manipulation of space ; Pantheon – Public building ; circus maximus, Thermae of Caraculla.

Books for Reference :

1) Sir Banister Fletcher, History of Architecture, University of London, The Antholone Press 1996.
2) Spiro Kostof – History of Architecture – Setting and Rituals, Oxford University press, London 1985.
3) Leland Emroth : Understanding Architecture – Its elements, History and Meaning, Craftsman house, 1994.

Subject Code No. 116 **Environmental Science**

Lecture Hours : 04
Studio Hours : Nil
Total : 04 Per Week

Term Work : Nil
Practical Examination : Nil
Theory Examination : 100 Marks
(Three Hours)

Objective :

1) To provide an overview of natural resources , various eco systems and its characteristics and conservation of biodiversity.
2) To create an awareness about impact of human activities such as pollution and its consequences.
3) To stress the importance of environmental protection and sustainable development.

Syllabus :

1) Natural resources and associated problems. Role of an individual in conservation of natural resources. Equitable use of resources for sustainable lifestyles. Concept , Structure and function of an eco system. Energy flow of eco system. Introduction , types, characteristic features, structure and function of various eco systems.
2) Bio diversity : genetic, Species and eco system diversity. Bio geographical classification of India. Value of bio diversity. Endangered and Endemic species of india. Conservation of biodiversity.
3) Environmental pollution : definition , causes, effects and control measures of : Air pollution, Water pollution, Soil pollution, Marine pollution, Noise Pollution, Thermal Pollution, Nuclear pollution. Role of an individual in prevention pollution. Disaster management : Floods, Earthquake, Cyclone, And Landslides.
4) Social issues : sustainable development, Urban problems related to energy, Water conservation, Rain water harvesting, Water shade management and global warming. Environmental protection Act. Public awareness.
5) Human population : Population growth, Population explosion, environment and human health, Human rights, Value Education. HIV/AIDS, women and child welfare, role of information technology in environment and human health.

Books for Reference :

1) Miller T.G. Jr. , Environmental sciences, Wadsworth publication company.
2) Cunnigham , W.P.Cooper, T.H.Gorhani, E & Hepworth, MT 2001, Enviornmental encyclopedia, Jaico publication house, Mumbai.

Subject Code No. 117 **Communicative Skills**

Lecture Hours : 02
Studio Hours : Nil
Total : 02 Per Week

Term Work : 50 Marks
Practical Examination : Nil
Theory Examination : Nil

The objective is to give the students the required proficiency in English Language. The students should be able to communicate correctly what they know. Exercises shall be conducted for the following :

1) Skimming, scanning , Inferring, predicting, and responding to context.
Guessing the meaning of words from contexts – note making and vocabulary extension.

Listening and understanding , recorded structured talks and classroom lectures , understanding the links between different parts of speech, Practice in notes taking.

Feature of an effective speech – practice in speaking fluently, dialogue practice, simple social exchanges – short extempore talk, effective sentences.

Cohesive paragraphs- clear and concise writing – introduction to technical writing – definition , description, instruction – summery writing practice.

Use of library – role of bibliography , table of contents, index etc. – use of dictionary.

Term work : Presentations in the class based on the above.

Books for reference :

1) Technical English Language
2) Business Correspondence.
3) John Kirkman, Good style – writing for science and technology. E & FN spon, an imprint of Chapman & Hall 1992.

Subject Code No. 118 **Workshop**

Lecture Hours : Nil
Studio Hours : 02
Total : 02 Per Week

Term Work : 50 Marks
Practical Examination : Nil
Theory Examination : Nil

Objective :

The students of Architecture need basic knowledge of various operations in carpentry. The objective of this subject is to make the students aware of various carpentry activities like marking, sawing , planing, chesseling, drilling , moulding etc. the students shall be introduced to various nails, screws , adhesives , nut bolts etc.exercise on simple joints like, tounge and groove joint. Mortice n tenon joint. Dove tail joint. Mitre joint etc.

Exercise for working on mild steel grillwork, joints in steel, process of welding etc.

The students shall prepare a practical notebook also, showing the names, descriptions, and uses of the tools and equipments for carpentry.

Term work :

Preparation of minimum2 utility articles each, involving the use of the above operations.

Books for Reference :

1) Engineering Drawing by N. D. Bhatt

B. Arch (Regulations 2010)

Syllabus

Semester - II

Subject Code No. 121 **Architectural Design I**

Lecture Hours : Nil
Studio Hours : 10
Total : 10 Per Week

Term Work : 100 Marks
Practical Examination : 150 Marks
Theory Examination : Nil

Objective:

To involve students in a design project that will involve simple space planning and the understanding of the functional aspects of the good design.

To involve students in a small scale building project which will sensitize them to intelligent planning that is responsive to the environmental context.

To involve students in building case study by choosing appropriate examples to enable them to formulate and concretise their concepts and architectural programme.

To engage a discussion and analytical thinking by the conduct of seminars / workshops.

To enable the presentation of concepts through various modes and techniques that will move constantly between 2d presentations and 3d modelling.

Contents

1) Scale and complexity : Projects involving small span, single space, single use spaces with simple movement, predominantly horizontal, simple function public buildings of small scale.

Typology / Project

Bedroom, bathroom, living room, kitchen, shop , Exhibition pavilion, children's environment, snack bar, fast food, residence(small) fire station etc.

Term Work

At least two projects to be completed in the semester.

Reference books

1) Time Sever Standards for building types, Mc Graw Hill Professional 2001
2) Time Sever Standards for interior design and space planning, Mc Graw Hill Professional 2001
3) Neuferts Architects data, Blackwell 2002
4) Architectural graphic standards, Wiley 2000.

Subject Code No. 122 **Architectural Building Construction & Materials II**

Lecture Hours : 02
Studio Hours : 04
Total : 06 Per Week

Term Work : 50 Marks
Practical Examination : 75 Marks
Theory Examination : 100 Marks
(Four Hours)

Objectives :

To understand methods of construction using natural timber, plywood etc.

Window types : Panelled , Pivoted, Top hung, Louvered , Glazed windows, French windows, Bay windows, Corner windows.

Door types : Glazed, sliding , sliding folding, louvered.

Ventilator : Top hung , Bottom hung, Pivoted , Louvered glazed.

Hardware and fastenings for doors and windows.

Roof trusses – lean – to-roof, Couple roof , collar roof, King post and queen post roof trusses.

Materials :

- Plane cement concrete, ingredients of concrete, types of concrete, uses and proportions of concrete, curing methods.
- Qualities of good concrete, reinforcement of concrete, light weight concrete, methods of guniting.
- Floor finishes- Bricks, stone, concrete, timber, various artificial tiles, Indian patent stone.
- Roofing materials : asbestos cement sheets, galvanised iron sheets, Mangalore tiles, pan tiles, slits, etc.
- Different types plastering and pointing.

C) Notes :

1) Students have to be encouraged to do market survey of different types of floor finishes and roofing materials.

D) Reference Books :

1) Building Construction by McKay .
2) Engineering materials by S.C. Rangawala.
3) Barry, construction of buildings, volume I & II.
4) Francis D.K.Ching, building construction.
5) Bindra –Arora building construction

Subject Code No. 123 **Theory and Design of Structures I**

Lecture Hours : 03
Studio Hours : 01
Total : 04 Per Week

Term Work : 25
Practical Examination : Nil
Theory Examination : 100 Marks
(Three Hours)

Course Objectives :

To help the students understand the basic principles of structural behaviour and requirements of buildings, with emphasis laid, more on exposition of principles involved, rather than situational intricacies and computational rigor.

Syllabus :

1) Elasticity- stress and strain- types of stresses – elastic limit – hooks law – modulus of elasticity(young's modulus) – deformation of a body due to force acting on it – stresses in composite bars – relation between elastic constants. Introduction to strain energy.
2) Centralized – centre of gravity of simple figures – C.G. by geometrical considerations – solid bodies – C.G. with cut-out holes. Moment of inertia – theorems of M.I. of parallel and perpendicular axis – M.I. of a circular section, hollow section – M.I. of composite sections – modulus of section.
3) Beams and support conditions – types of supports, shear force and bending movement diagrams for simply supported beams, cantilevers, overhanging beams with concentrated , uniformly distributed and uniformly bearing lodes.
4) Theory of simple bending – stress distribution at a cross section due to bending moment and shear force – moment of resistance – bending stresses in sections.
5) Statically determinate plane trusses, perfect and imperfect frames – deficient and redundant frames - analytical methods for finding out the forces – method of joints.

Term Work ;

1) Bending Moment and Shear Force Diagrams for simple beams.
2) Graphical solution to at least two types of perfect frames.

Recommended Reading :

1) Strength of Materials by Khurmi R. S.
2) Applied Mechanics and Strength of Materials by Khurmi R. S.
3) Wzirani and Ratwani, Analysis of structures, khanna publishers.

Subject Code No. 124 **Architectural Design & Graphics II**

Lecture Hours : Nil
Studio Hours : 04
Total : 04 Per Week

Term Work : 25 Marks
Practical Examination : 75 Marks
Theory Examination : Nil

Syllabus :

1) Introduction to building terminology of various parts of a building. Learning to observe, measure, draw to scale the plan of a simple built up form, visualizing the sectional plans and developing wall sections through openings.

2) Drawing and developing elevations, sections and sectional elevations from a given drawing of adequate complexity.

3) Introduction to Sciography. Shadows of points, lines and shapes. Shades and shadows of simple two-dimensional plans. Shades and shadows of cubes, pyramids, prisms, cones, cylindrical forms and combination of these forms.

4) Shades and shadows of complex built forms, building plans and elevations.

5) Perspective ; scientific method, Characteristics of perspective drawing, concepts and methods of perspective drawing. One point and two point perspective of simple geometrical shapes like cube , prism, combination of shapes , simple one, two and three point perspective of building interiors and exteriors. Adding of figures, trees, furniture etc. Applying general techniques.

6) perspective short cut method : introduction of short cut method, adding of figures , trees, furniture etc. Shades and shadows and applying rendering techniques.

7) measured drawing documentation : documentation of a complete building of special interest in terms of history, building construction, architectural excellence or technology.

Term Work shall consist of Imperial size drawing sheets on the topics given above.

(Minimum Twelve Sheets)

Reference Books :

1) Engineering Drawing by N. D. Bhatt
2) Rendering with Pen and Ink
3) Building Drawing by Shah, Kale, Patki
4) Descriptive Geometry by S.H. Mulik

Subject Code No. 125 **Design Fundamentals Architecture II**

Lecture Hours : 04
Studio Hours : Nil
Total : 04 Per Week

Term Work : Nil
Practical Examination : Nil
Theory Examination : 100 Marks
(Three Hours)

1) Human Activities. The need for appropriate space and environment for performing the activities efficiently. The impact of built environment on the activity. The Architect's role in the creation of a built environment. The relationship between form and function in nature and man-made objects with examples.

2) Pattern of circulation and space taken by circulation routes. Five different types of circulation patterns. Path and space relationship. Access to buildings and types of entrances.

3) Impact of climate on buildings. Comfort factor. Building and site relationship. Site and surroundings. Positive and negative spaces.

4) Building materials and its impact on the aesthetics of a building. Form of a building. Construction techniques and structural concepts. Relationship between form, materials and aesthetics. Examples to be quoted from history of Architecture.

5) Culture, its values and aspirations of the user, and his built environment. Examples from history of Architecture. Styles of Architecture. Trends in Architecture, and the factors that cause them.

Books for Reference :

1) Form, Space and Order by Ching
2) Time Saver Standards
3) Neufert's Data
4) Design fundamentals in Architecture by Pramar.

Subject Code No. 126 **History of Architecture I**

Lecture Hours : 04
Studio Hours : Nil
Total : 04 Per Week

Term Work : 25 Marks
Practical Examination : Nil
Theory Examination : 100 Marks
(Three Hours)

Course Objective :

- To understand Indian architecture as evolving within specific cultural contexts, including aspects of society, revision, politics and climate.
- To gain knowledge of development of architectural form with reference to technology / style and character in the Indus valley civilisation, vaidic period and manifestation of Buddhist and Hindu architecture in various parts of country.

Syllabus :

ANCIENT INDIA : Indus valley civilization ; culture and pattern of settlement – Aryan civilisation – origins of early Hinduism – vaidic culture – origins of Buddhism and Jainism.

BUDDHIST ARCHITECTURE : Evolution of Buddhism, Buddhist thought , art and culture – hinayana and Mahayana – interaction of Hellenic and Indian ideas in northan india – evolution of building typologies – the stupa, vihara and the chaitya hall – symbolism of the stupa .

Ashokan piller, sarnath – rock cut caves barabar – sanchi stupa – rock cut architecture in ajantha and ellora – karle – viharas at nasic – rani gumpha.

EVOLUTION OF HINDU TEMPLE ARCHITECTURE : Hindu forms of worship – evolution of temple form – meaning , symbolism, ritual and social importance of temple – catagories of temple – elements of temple architecture – early shrines of the gupta snd challukyan periods.

Ladkhan and durga temple, aihole – papanatha, virupaksha temples, pattadakal – kailasnath temple ellora.

TEMPLE ARCHITECTURE –SOUTHERN INDIA : brief history of south india, Dravidian order – evolution and form of gopuram.

Rock cut productions under pallavas, shore temple mahabalipuram and kailasnath temple, kanchipuram – Temple gateways of madhurai and Chidambaram – temple towns ; madhurai, shrirangam and kanchipuram.

TEMPLE ARCHITECTURE – NORTHAN INDIA : Temple architecture of gujarath, orrisa Madhya Pradesh and rajasthan – their silent futures. Lingraja temple bhuvaneshwar – sun temple konark – Somnath temple Gujarat, Surya kunda Modhera – khajuraho , Madhya Pradesh and dilawada temple , mount abu.

Term work :

Files to be submitted with sketches of important temples in india.

Books for Reference :
History of Architecture by Percy Brown
History of Architecture by Sir Bannister Fletcher

Subject Code No. 127 **Model Making**

Lecture Hours : Nil
Studio Hours :04
Total : 04 Per Week

Term Work : 75 Marks
Practical Examination : Nil
Theory Examination : Nil

The students are encouraged to do working models of their design projects during their sketching stages and submit their final models after their designs projects have been completed.

Term work :

At least Two. models to be submitted of their design projects.