

**Maharshi Dayanand Univerity, Rohtak  
Faculty of Engineering and Technology**

**B.ARCHITECTURE  
(BUILDING CONSTRUCTION MANAGEMENT)**

**ORDINANCE**

**SCHEME OF EXAMINATION**

**SYLLABUS**

**2010 – 2011**

## **EXAMINATION**

Notwithstanding anything contained in any other ordinance with regard to the matter hereunder, the courses of studies for the Degrees of Bachelor of Architecture (Building Construction Management) and the conditions for admission thereto shall be as under:-

1. The B.Arch. (Building Construction Management) Course shall extend over a minimum period of five academic years. Teaching in each academic year shall be divided into two semesters extending to about 16 to 18 weeks duration. Teaching for odd semesters will normally be during August to December and for even semesters from January to May.

### **2.1 A candidate may be admitted to the first semester of this course only if he fulfills the following requirements:**

- a) No candidate, with less than 50% marks in aggregate, shall be admitted to the architecture course unless he/she has passed an examination at the end of the new 10+2 scheme of Senior School Certificate Examination or equivalent with Mathematics as a subject of examinations at the 10+2 level.

Or

- b) 10+3 Diploma (any stream) recognized by Central/State Governments with 50% aggregate marks.

Or

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

### **2.2 National Aptitude Test in Architecture (NATA)**

As per the Minimum Standards prescribed by Council of Architecture (COA) under the Architects Act, 1972, admission of candidates to first year of 5-year B.Arch. degree course shall be subject to their passing an aptitude test in architecture. It is advisable to admit students in the 1<sup>st</sup> year of 5 year B.Arch. degree course on the basis of marks obtained in the National Aptitude Test in Architecture (NATA) administered by COA.

The Aptitude Test in Architecture shall consist of 2 papers:

- i. Test – I – Aesthetic Sensitivity -100 marks – duration of test: One hour.
- ii. Test – I – Drawing – 100 marks – duration of test: Two hours.

- 3.1 At the end of the each semester, there shall be an examination except in case of IX & X semester during which there shall be 12 Months of practical training for which the examination will be conducted according to the procedure laid in clause 4(e) of this

Ordinance. Each semester examination shall be designated as First Semester Exam, Second Semester Exam and so on.

- 3.2 The examination for all semesters will normally be held in December/January and also in May/June on such dates as may be fixed by the Vice-Chancellor. The date(s) of commencement of the examination forms and fees as fixed by the Vice-Chancellor shall be notified by the Controller of Examinations to the concerned University Teaching Departments and the Colleges/Institutes admitted to the privileges of the University. However, in case of late declaration of result by the University, forms can be submitted without late fee within 10 days of declaration of result by the University subject to the requirement of Clause 8.

4. The Course of the study and the subjects of examinations shall be as approved by the Academic Council from time to time.

The examination shall consist of:-

a) **Theory Papers:**

- i. The paper will be set by the internal/external paper setter.
- ii. The evaluation will be done by external examiner.

b) **Sessionals:**

Sessional works of all the subjects will be evaluated by the teachers of the various subjects based on the work done during semester in accordance with the guidelines/procedures recommended by the Head/Incharge Department of architecture and approved by the Director Principal of the college. The marks obtained in the Sessional work shall be awarded by the teacher concerned and duly counter-signed by the Head/Incharge Deptt. Of Architecture of the College and then duly countersigned and forwarded by the Director-Principal of the college to the Controller of Examination of the University before the last theory exams of that semester.

c) **Portfolio**

In the subjects conducted in the studio requiring drawing work there will be no theory examinations. The complete/ Part work done in these subject during the semester will be evaluated by a jury comprising one external and one internal examiner. The work will be presented as a portfolio and will be evaluated through viva-voce. This subject to be evaluated through portfolio examination will be according to the scheme of examination approved by University.

d) **Thesis**

- i. Every student shall prepare a thesis under the supervision of a faculty member on a topic approved by the Head of Department of Architecture of the college. The thesis shall be submitted in the form of research, Report Drawings, Models etc. through the Head, Deptt. Of Architecture to the Director-Principal.
- ii. The evaluation of the thesis will be through Sessional and portfolio evaluation. The Sessional work made up of numerous stages, as approved and given in the scheme of examination, will be evaluated through a viva-voce by a jury comprising the thesis coordinator, the guide and an external examiner. The portfolio evaluation will be conducted by a jury of two external

members, Head of Department of Architecture and the concerned guide. The Head, Department of Architecture will act as co-ordinator.

### e) Practical Training

- i. During the Final year i.e. IX & X semester and part of summer vacations after the 6<sup>th</sup> semester the students are required to undergo practical training of 12 Month. Every student is required to submit copies of representative work done and study report during this period together with a certificate from the organization to the Head of Department of Architecture. The Practical training work will be evaluated, through seminar/viva-voce by a jury consisting of one external and one internal examiner to be appointed by the University.

#### **The student will be required to repeat the training when:**

- i. The report from the employer is not satisfactory.
  - ii. The attendance in the office is less than 70% of the number of days required for training.  
The student will be required to repeat the study report if found unsatisfactory during seminar/viva-voce and which may be done while pursuing the studies for the subsequent semesters.
5. A candidate is allowed to take a theory paper, present the portfolio/thesis when:
    - a) The candidate has his name submitted to the Registrar/Controller of Examinations by the Director-Principal of the college.
    - b) The candidate has passed in Sessional of the concerned subject in the semester.
    - c) Of having attended not less than 75% of the total classes held in that semester in the subject offered by him/her for the examination provided that his/her subject attendance in each of the College/Chairperson of the concerned University Department may in bonafide cases, condone deficiency up to 10% in the total and/or 5% in individual subjects.
    - d) The candidate not covered under clause 6 below whose result declaration for no fault of his is delayed, should attend classes of the next higher semester provisionally at his own risk and responsibility. His attendance and/or Sessionals will be, however, credited subject to his passing the concerned semester examination. Such candidate shall also be governed by clause-5.
  6. If a candidate has after attending the course of studies in the college either not appeared or appeared in any semester examination and failed in one of more course(s) for that examination he can appear for such course(s) at subsequent examination(s) without attending a fresh course for the next semester(s) and appear in the examination(s) for the same along with the examination for the lower semester(s). Provided that a candidate shall not be allowed to attend classes and appear in that semester examination(s) mentioned in column (A) unless he/she has passed in the semester examination mentioned in column (B) below:-

**A**

**B**

5 <sup>th</sup> semester onwards	1 <sup>st</sup> semester
6 <sup>th</sup> semester onwards	2 <sup>nd</sup> semester
7 <sup>th</sup> semester onwards	3 <sup>rd</sup> semester
8 <sup>th</sup> semester onwards	4 <sup>th</sup> semester
9 <sup>th</sup> semester onwards	5 <sup>th</sup> semester
10 <sup>th</sup> semester onwards	6 <sup>th</sup> semester

Provided that a candidate who is unable to complete the first 6 semesters of the B.Arch. (Building Construction Management) course within a maximum of B.Arch. (Building Construction Management) course in 8 consecutive years from the date of his admission shall not be eligible for appearing in any subsequent B.Arch. (Building Construction Management) examination.

7. (a) The minimum marks required to pass the examination shall be:-
- 40% in each theory paper
  - 50% in each Sessional
  - 50% in portfolio evaluation
  - 50% in thesis
  - 50% in practical training
- (b) Any student who secures less than 50% marks in the Sessional part of any subject shall not be eligible to take the theory examination in the subject. Similarly in studio course and thesis any student who secures less than 50% marks in the Sessionals portfolio presentation. He may be permitted to appear in the pass marks in those subjects/thesis Sessionals.
- (c) Grace marks, if any, will be given by the University only in theory papers and not in Sessional, portfolio, and thesis of practical training.
8. In order to determine the division in which a candidate shall be placed the scaled marks will be:

<b>Name of Examinations</b>	<b>Scaled Marks</b>
1 <sup>st</sup> and 2 <sup>nd</sup> semester	40% of aggregate marks
3 <sup>rd</sup> and 4 <sup>th</sup> semester	60% of aggregate marks
5 <sup>th</sup> and 6 <sup>th</sup> semester	80% of aggregate marks
7 <sup>th</sup> , 8 <sup>th</sup> , 9 <sup>th</sup> and 10 <sup>th</sup> semester	100% of aggregate marks

Candidate who pass prescribed subject for all the semesters but obtain:

Less than 50%	Pass Class
50% or more but less than 60%	Second Division
60% or more but less than 70%	First Division

First Division with Honours provided they have passed all the semesters examinations within the normal period of five years of the course.

Provided that in the case of candidate who is permitted from any other University the marks obtained by him in this University will be taken into account. This marks, however, be increased proportionate so as to raise them to the level of maximum marks of M.D.University.

9. The medium of instruction and examination shall be English.
10. The amount of examination admission fee to be paid by a candidate for each semester shall be as decided by the University from time to time. A candidate who appears in one or more papers shall pay the full examination fee.
11. At the end of each semester examination, the Controller of Examination shall publish the result, permitted to take examination for higher semester under clause 6 has not cleared

the lower semester examination his result for the higher semester examination will be declared provisionally and would be confirmed only when he passes in all the written papers/Sessionals/architectural design etc. of the examination.

12. A candidate who has passed the final examination of this University and is desirous of improving his/her performance, will be allowed to appear as an ex-student in even/odd semester examinations, as and when held, twice within the period permissible under Clause-6. Such a candidate in the first instance shall be required to intimate all the paper(s) in which he/she would like to improve his/her performance. He /She will then appear in the respective paper(s) at the concerned semester examinations simultaneously as and when held. If eligible to do so in the following examinations which would be treated as second chance.
13. Notwithstanding the integrated nature of this course which is spread over more than one academic year, the Ordinance in force at the time of a student joins the course shall held good only for the examination held during or at the end of the academic year and nothing in this Ordinance shall be deemed to debar the University from amending the Ordinance and amended Ordinance, if any shall apply to all student, whether old or new.

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SYLLABUS

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## SEMESTER-1

### ARCHITECTURAL DESIGN I

ARBCM 101

Periods per Week: 6  
 Sessional Marks: 100  
 Portfolio Marks: 100

#### INTENT

**Introduce** in to the mathematical mind set of the students from the science stream an aesthetic line of thinking. Inculcating a sense of joy in ‘design’ and its process.

#### CONTENT

Potential of a line, composition using lines.

Two dimensional compositions of simple geometric shapes (triangles, rectangles, circles) as lines and as two dimensional solid shapes in monochromatic schemes and in color schemes. Application of form and color in differing visual creative situation like design of a carpet, a sari border, a necktie, a rangoli, a pavement pattern, curtain fabric and the like.

#### NOTE

Detailed teaching programme to be made before the commencement of the semester and circulated to the students at the commencement of the semester.

At least 12 exercises must be attempted out of which half should be on design of 2-D compositions applicable in different situations.

### BUILDING CONSTRUCTION MATERIALS-I

ARBCM 102

Periods per Week: 6  
 Sessional Marks: 100  
 Portfolio Marks: 50

#### INTENT

To introduce the students to the dynamics of Building Construction and an appreciation of the use of Building Materials in architecture as an integral component of the conversion of Architectural Concepts into tangible reality.

To make the students aware with the basic components of building envelope and to familiarize them with elementary and basic building material like brick and stone and with the principle of construction using these material.

#### CONTENTS

Basic components of a “building”  
 Role of Construction in Architecture  
 Brick as a building material  
 Brick Masonry tools  
 Brick walling and joints  
 Brick Jallies  
 Brick Arches  
 Stone as a building material  
 Stone Masonry Tools

#### NOTES

Detailed teaching programme to be made before the commencement of the semester and circulated to the students at the commencement of the semester

This course will be supported by site visits off the studio hours.  
At least 12 sheets must be prepared in the Studio.

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### **STRUCTURAL DESIGN-I**

ARBCM 103

Periods per Week: 2  
Sessional Marks: 50  
Theory Exam Marks: 50  
Duration of exam: 2hrs

#### **INTENT**

To inculcate the understanding of the basic principles of structural mechanics for understanding of Structural Systems and Design

#### **CONTENTS**

Forces in structures  
Moments in structures  
Loads in structures  
IS:875  
Types of supports  
Shear Force, Bending Moment  
Center of Gravity, Moment of Inertia  
Forces in a simple wooden truss  
Design of members of a wooden truss

#### **NOTE:**

Detailed teaching programme to be made before the commencement of the semester and circulated to the students at the commencement of the semester  
Exercises must be done at the end of each lecture.

**NOTE** – Examiner will set Seven questions in total, covering the whole syllabus. Students will have to attempt 4 Questions in all . All the questions carry equal marks [ 12.5 X 4 = 50]

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### **ARCHITECTURAL GRAPHICS –I**

ARBCM 104

Periods per Week: 6  
Sessional Marks: 100  
Portfolio Marks: 50

#### **INTENT**

To develop the skill of drafting using computers/manually.

#### **CONTENT**

Acquaintance with the computer  
Introduction to drafting equipment/computers  
Drafting of lines, Orthographic projections, Representing simple solids, Lettering,  
Architectural Graphic Symbols, Drawing Scales, Measured drawing of a simple object/  
Drawing, editing, modifying commands in 2-d using AutoCAD, Setting and plotting drawings on standard formats

#### **NOTES**

Detailed teaching programme to be made before the commencement of the semester and circulated to the students at the commencement of the semester  
At least 12 exercises must be prepared in the studio under supervision

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## **GRAPHICS I**

ARBCM 105

Periods per week: 4

Sessional Marks: 100

Portfolio Marks: 50

### **INTENT:**

To develop the skill of using the pencil in free hand drawing and rendering to support Architectural Design and Drawing

### **CONTENTS**

Use of Pencil

Lines

Shading with pencil

Indoor sketching

Drawing scaled graphics

### **NOTE:**

Detailed teaching programme to be made before the commencement of the semester and circulated to the students at the commencement of the semester

At least 8 sheets and 20 sketches to be made under supervision in the studio.

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## **HISTORY OF ARCHITECTURE –1**

ARBCM 106

Periods per Week: 2

Sessional Marks: 50

Theory Exam Marks: 50

Duration of exam: 2hrs

### **INTENT**

To inculcate the appreciation of 'History of Architecture' in the larger context of Time, Space, Man and Architecture; to develop a curiosity of a past era; to appreciate the glory of a past era through its Architecture.

### **CONTENTS –**

SECTION I (Indian Subcontinent)

Indus valley civilization

Aryan/Vedic civilization

Buddhist and Jain civilization

Indio Aryan Temple Architecture

Early and late Chalukyan architecture.

Dravidian Temple Architecture

SECTION II: Western world

Ancient civilizations-Mesopotamian, Sumerian, Babylonian, Persian, Assyrian

Egyptian civilization

Classical Greek architecture

Roman architecture

Early Christian architecture

Romanesque architecture

Early Gothic architecture

**NOTE:**

Detailed teaching programme to be made before the commencement of the semester and circulated to the students at the commencement of the semester

Each topic concerned should be followed by a written assignment by the students along with stress on sketches.

**NOTE** – Examiner will set Seven questions in total, covering the whole syllabus. Students will have to attempt 4 Questions in all . All the questions carry equal marks [ 12.5 X 4 = 50]

**ARCHITECTURAL DESIGN THEORY I**

ARBCM 107

Periods per Week: 2

Sessional Marks: 50

Theory Exam Marks: 50

Duration of exam: 2hrs

**INTENT**

To appreciate “design”, the background thinking in the design of art forms; the design of natural objects

**CONTENT**

Meaning of design

Appreciation of beautiful objects

Design in everyday life.

Logic in design.

Geometry in design

Elements of Design- Line, form, color texture

Principles of Design-Unity, variety, hierarchy,

Scale and proportions

Balance, emphasis,

Focus, fashion, decoration.

**NOTE:**

Detailed teaching programme to be made before the commencement of the semester and circulated to the students at the commencement of the semester

Assignments must be illustrated with visuals

**NOTE** – Examiner will set Seven questions in total, covering the whole syllabus. Students will have to attempt 4 Questions in all . All the questions carry equal marks [ 12.5 X 4 = 50]

**WORKSHOP –I**

ARBCM 108

Periods per Week: 4

Sessional Marks: 50

**INTENT**

To appreciate the complexity of working by ones own hand; to familiarize students with the complexity of making quick and rendered models to sport design presentation.

**CONTENT**

Bricks masonry tools

Brick masonry on building site

Model making materials

Model making techniques for quick study models

**NOTE:** detailed teaching programme to be made before the commencement of the semester and circulated to the students at the commencement of the semester

At least 6 quick models and 3 rendered models to be made

## SEMESTER-II

### ARCHITECTURAL DESIGN II

ARBCM-201

Periods/week: 6  
 Sessional Marks: 100  
 Portfolio Marks: 100

**INTENT**

To appreciate the process of design and the complexities involved in architectural design.

**CONTENT**

Exercises in composing 3 dimensional objects and their representation in 2-D  
 Exercises in design of simple mono cellular buildings like guard house, flower kiosk, milk parlor etc.

**NOTE**

Detailed teaching programme to be made before the commencement of the semester and circulated to the students at the commencement of the semester.

Visits to proto type situations to be arranged off the studio hours

At least 2 exercises in 3-D composition studies and 6 exercises in design should be done.

### BUILDING CONSTRUCTION MATERIAL-II

ARBCM-202

Periods/week: 6  
 Sessional Marks: 100  
 Portfolio Marks: 50

**INTENT**

The intention of the course is to familiarize the student with the various aspects of building construction with the basic material as wood.

**CONTENT**

Timber as a building material  
 Carpentry tools  
 Plywood and boards – types and qualities  
 Types of Doors, Windows, Ventilators, and their details  
 Moldings.  
 Types of wooden staircase and their details  
 Sliding and folding wooden doors, sliding wooden doors  
 Substitute wood products

**TEACHING AIDS:**

Detailed teaching programme to be made before the commencement of the semester and circulated to the students at the commencement of the semester

### STRUCTURAL DESIGN-II

ARBCM-203

Periods/week: 2  
 Sessional Marks: 50  
 Theory Exam Marks: 50  
 Duration of exam: 2hrs

**INTENT**

To develop an understanding of simple timber (monolith material) and brick masonry (composite material) structural elements.

**CONTENTS**

Timber as a structural material

Design of simple timber beams

Design of simple timber short and long columns

Design of simple trusses and their members

Brick as a structural material

Design of load bearing brick walls

Design of brick wall footings.

**NOTE:**

Detailed teaching programme to be made before the commencement of the semester and circulated to the students at the commencement of the semester.

Appropriate Standards must be explained and used.

Exercises must be done in each class

**NOTE** – Examiner will set Seven questions in total, covering the whole syllabus. Students will have to attempt 4 Questions in all . All the questions carry equal marks [ 12.5 X 4 = 50]

**ARCHITECTURAL GRAPHICS –II**

ARBCM 204

Periods/week: 6

Sessional Marks: 100

Portfolio Marks: 50

**INTENT**

To develop in the students the capability of understanding and drawing three dimensional solids and their various complex sections to finally make drawings required in the representation of architectural design.

**CONTENT**

Projection of group of solids, section of solids, development of surface, inter penetration of solids, isometric view of simple forms Axonometric view/Drawing, editing, modifying commands in 3-d using AutoCAD

**NOTE:**

Detailed teaching programme to be made before the commencement of the semester and circulated to the students at the commencement of the semester.

At least 12 sheets to be prepared in the studio under supervision

**BUILDING SERVICES-II  
(SEWERAGE AND WATER SUPPLY)**

ARBCM-205

Periods/week: 2

Sessional Marks: 50

Theory Exam Marks: 50

Duration of exam: 2hrs

**INTENT**

Appreciating designing and layout of water supply, plumbing, drainage and sanitation of simple buildings.

**CONTENT**

Sources of surface and ground water, treatment of water, transportation and distribution at town level.

Water supply system: fittings, direct and indirect supply, layout and sizes of pipes, hot water supply, storage.

Sewerage system: systems, fitting and fixtures, sizes and layout, sewage collection, sewage treatment and disposal at town level.

Solid waste management

Rainwater drainage

**NOTE:**

Detailed teaching programme to be made before the commencement of the semester and circulated to the students at the commencement of the semester.

Theory to be supported with site visits to be conducted off the class hours.

**NOTE** – Examiner will set Seven questions in total, covering the whole syllabus. Students will have to attempt 4 Questions in all . All the questions carry equal marks [ 12.5 X 4 = 50]

**GRAPHICS-II**

ARBCM-206

Periods/week: 4

Sessional Marks: 75

Portfolio Marks: 25

**INTENT**

To make students experiments in different color mediums for the final application of rendering architectural drawings.

**CONTENT**

Use of pencil colors for rendering

Color wheel

Theory of color aesthetics

Representing building material and color

Use of poster color and rendering

Use of ink for rendering

Rendering on different kinds of paper

**NOTE**

Detailed teaching programme to be made before the commencement of the semester and circulated to the students at the commencement of the semester

At least 10 sheets to be made in the studio under supervision

Drawing of current semester in arch. design may be taken up for rendering exercises.

**ARCHITECTURAL DESIGN THEORY-II**

ARBCM-207

Periods/week: 2

Sessional Marks: 50

Theory Exam Marks: 50

Duration of exam: 2hrs

**INTENT**

To generate and appreciation of background aspects of thinking required in architectural design.



**CONTENT**

Basic Design and Architectural Design- Elemental Differentiation  
 Perception and Experience  
 Tangible and Intangible in Architecture  
 Function, Structure and Form  
 Space, Space Usage and Interrelationship of spaces  
 Circulation within Spatial Units  
 Horizontal Circulation  
 Vertical Circulation  
 Circulation and Spaces Between buildings  
 Relationship of plan, Section and Elevation  
 Architectural Scale  
 Programming in Architectural Design

**NOTE**

Detailed teaching programme to be made before the commencement of the semester and circulated to the students at the commencement of the semester.  
 Each lecture to be followed by a written assignment

**NOTE** – Examiner will set Seven questions in total, covering the whole syllabus. Students will have to attempt 4 Questions in all . All the questions carry equal marks [ 12.5 X 4 = 50].

**SURVEYING –II**

ARBCM-208

Periods/week: 2  
 Sessional Marks: 50  
 Theory Marks: 50  
 Duration of exam: 2hrs

**INTENT**

Acquaintance with instruments and techniques of simple Surveying and leveling as used by an architect in the profession.

**CONTENT**

Definition and concepts; Instruments used; acquaintance with electronic surveying instruments  
 Principles of surveying; Units of measurements  
 Chain surveying  
 Compass surveying  
 Leveling  
 Contouring: Topographic maps  
 Plane tabling  
 Marking foundations  
 Measuring buildings under construction

**NOTE:**

Detailed teaching programme to be made before the commencement of the semester and circulated to the students at the commencement of the semester  
 Field work to be done off class hours.

**NOTE** – Examiner will set Seven questions in total, covering the whole syllabus. Students will have to attempt 4 Questions in all . All the questions carry equal marks [ 12.5 X 4 = 50]

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## **ENVIRONMENTAL STUDIES – II**

ARBCM-209

Periods/week: 3

Sessional Marks:

Theory Marks: (Only qualifying examination)

### **INTENT**

To acquaint the students with issues related to environmental problems.

### **CONTENTS**

- Unit 1: The Multidisciplinary nature of environmental studies, Definition, scope and importance.
- Unit 2: Natural Resources:  
Renewable and non-renewable resources:  
Natural resources and associated problems.
- Unit 3: Ecosystems
- Unit 4: Biodiversity and its conservation
- Unit 5: Environmental Pollution
- Unit 6: Social issues and the Environment
- Unit 7: Human Population and the Environment
- Unit 8: Field Work

### **NOTE:**

Detailed teaching programme to be made before the commencement of the semester and circulated to the students at the commencement of the semester

Field work to be done off class hours.

## SEMESTER III

### ARCHITECTURAL DESIGN-III

ARBCM-301

Periods/week: 6  
 Sessional Marks: 100  
 Portfolio Marks: 100

**INTENT**

Appreciation of the complexities and contradictions in the architectural design process

**CONTENT**

Exercises in design of small buildings like primary health clinic, nursery school, neighborhood shopping incorporating services and basic elements of structural systems.

**NOTE:**

Detailed teaching programme to be made before the commencement of the semester and circulated to the students at the commencement of the semester

Visits to proto type situations to be arranged off the studio hours

At least 4 exercises should be done.

### BUILDING CONSTRUCTION MATERIAL-III

ARBCM-302

Periods/week: 6  
 Sessional Marks: 100  
 Portfolio Marks: 50

**INTENT**

To understand the RCC construction details used in 3-4 storied buildings.

**CONTENT**

RCC as a material

RCC staircase

Flooring and roofing details

Detailed section through a 4 storied building

Concept of frame structures

RCC frame structure with in-fills

RCC footings and foundations

**NOTE:**

Detailed teaching programme to be made before the commencement of the semester and circulated to the students at the commencement of the semester

At least 10 sheets to be made under supervision.

### STRUCTURAL DESIGN-III

ARBCM-303

Periods/week: 2  
 Sessional Marks: 50  
 Theory Exam Marks: 50  
 Duration of exam: 2hrs

**INTENT**

To understand the principles of design of RCC structures

**CONTENT**

Concept of RCC and introduction to IS: 456 Working stress method of design for RCC structure

Theory of singly reinforced sections – neutral axis, under reinforced sections, over reinforced sections, and moment of resistance

Shear, Bond and development length

Analysis and design of singly reinforced rectangular RCC beam

Analysis and design of double reinforced rectangular RCC beam

Theory and design of: one way RCC slab, two way RCC slab and Cantilever slab

Theory and design of long and short square, rectangular and circular RCC columns

**NOTE**

Detailed teaching programme to be made before the commencement of the semester and circulated to the students at the commencement of the semester

Appropriate standards must be explained and used

Exercises must be done in each class

**NOTE** – Examiner will set Seven questions in total, covering the whole syllabus. Students will have to attempt 4 Questions in all . All the questions carry equal marks [ 12.5 X 4 = 50]

**ARCHITECTURAL GRAPHICS-III**

ARBCM 304

Periods/week: 6

Sessional Marks: 100

Portfolio Marks: 50

**INTENT**

To make students understand the concept of computer representation and study of advanced software.

**CONTENT:**

Autocad / Drawing, editing, modifying commands Revit.

**NOTE:**

Detailed teaching programme to be made before the commencement of the semester and circulated to the students at the commencement of the semester

Exercises related to other subjects may be given to make the subject more useful and relevant.

**BUILDING SERVICES-III(CLIMATOLOGY)**

ARBCM-305

Periods/week: 2

Sessional Marks: 50

Theory Exam. Marks: 50

Duration of exam: 2hrs

**INTENT**

Basic intent of this course is to make student familiar with concepts of climatology which they can incorporate their design exercise.

**CONTENTS**

Traditional use of material and shelter design

Climate and its elements

Classifications of various climatic zones and their characteristics

Human Comfort design guidelines  
 Micro climate  
 Thermal comfort factors  
 Solar position, shadow angles shading devices  
 Architectural climatic control devices  
 Ventilation and air movement and their architectural implications  
 Climate design rules affecting settlement planning and architecture

**NOTE**

Detailed teaching programme to be made before the commencement of the semester and circulated to the students at the commencement of the semester.

**NOTE** – Examiner will set Seven questions in total, covering the whole syllabus. Students will have to attempt 4 Questions in all . All the questions carry equal marks [ 12.5 X 4 = 50]

**GRAPHICS III**

ARBCM-306

Periods/week: 4  
 Sessional Marks: 75  
 Portfolio Marks: 25

**INTENT**

The intention of this course is to further augment and enhance the architectural rendering techniques of students using viral mediums ( in relation to appropriate base material ) with an ultimate objective, that at the completion of this particular programme the students should be able to render a set of arch. Presentation drawings of a small building in varied medium color pencil water color including landscape, automobiles and human figures.

**CONTENT**

Perspective drawing, its concepts and various elements and methods.  
 2 point Perspective drawings of simple forms with changes in different parameters  
 2 point Perspective drawings of small structures with changes in different parameters  
 1 point perspective drawing of a simple situation  
 Shade and shadow of object of different shape at different levels and planes  
 Shade and shadows of architectural fenestrations  
 Shade and shadow of façade of simple building

Techniques for rendering drawings in color pencil, water color and  
 Rendering of plan, sections and elevation in different mediums  
 Rendering of two point perspective of a building in different mediums  
 Rendering of one point perspective of an interior space in ink

**Note:** Detailed teaching programme to be made before the commencement of the semester and circulated to the students at the commencement of the semester

Drawing made by the student in architectural design may be taken up for rendering exercises.

**HISTORY OF ARCHITECTURE –III**

ARBCM- 307

Periods/week: 2  
 Sessional Marks: 50  
 Theory Exam. Marks: 50  
 Duration of exam: 2hrs

**INTENT**

To appreciate the growth and development of architecture from the 12<sup>th</sup> to the 18<sup>th</sup> century in the Indian subcontinent and Europe in terms of the idea of the time converted to architectural enterprise at that time.

**THE INDIAN SUBCONTINENT**

The coming of Islam to the region and its Architectural Implications  
 Architecture of the Sultans in the Delhi Region  
 Development of architecture in the important provinces  
 Architecture of the Early Rulers of the Mughal Dynasty  
 Shahjahan's Contribution to Mughal Architecture.

**EUROPE**

**THE BIRTH OF** Renaissance in Florence  
 16<sup>th</sup> century Renaissance in Italy  
 Renaissance and the Cult of personality  
 Baroque And Rococo as outlying Styles of Renaissance  
 Influence of Italian Renaissance on Architecture in England.

**NOTE:**

Detailed teaching programme to be made before the commencement of the semester and circulated to the students at the commencement of the semester.

**NOTE** – Examiner will set Seven questions in total, covering the whole syllabus. Student will have to attempt **4** Questions in all . All the questions carry equal marks [ 12.5 X 4 = 50] .

**WORKSHOP –III**

ARBCM- 308

Periods/week: 4

Sessional Marks: 100

**INTENT**

To study the characteristics of timber and importance of carpentry joints in architecture model making helps to inculcate skills in architectural model making which is a important component of design.

**CONTENT**

Use of carpentry tools  
 Characteristics of wood  
 Exercise in making of carpentry joints  
 Exercises using commercial boards  
 Model making in mount board and thermocol  
 Making of one detailed model of a building  
 Making of detailed site model of a contouring site

**NOTE:** Detailed teaching programme to be made before the commencement of the semester and circulated to the students at the commencement of the semester

## SEMESTER IV

### ARCHITECTURAL DESIGN –IV

ARBCM-401

Periods/week: 6  
 Sessional Marks: 100  
 Portfolio Marks: 100

#### **INTENT**

To explore the process and complexities in architectural design;  
 Physical pattern of a small settlement built form and various factors that contribute to its development

#### **CONTENT**

Study of built environment of a rural settlement, covering various aspects related to physical built form. This semester shall have preferably minimum of three problems First shall deal with physical study of environment of a rural settlement, covering various aspects related to physical and civil infrastructure. Second problem shall deal with the study of an urban area, covering various aspects related to physical and civic be a small problem related to design of a community building related to the studied urban area.

**Note:** The Design of this semester shall be supported by frequent site visits. Service the students have studied climatologic, so they should be encourage to perform climatic evaluation appraisal of few selected buildings.

### BUILDING CONSTRUCTION MATERIAL-IV

ARBCM- 402

Periods/week: 6  
 Sessional Marks: 100  
 Portfolio Marks: 50

#### **INTENT**

To make the students aware of steel as building material The course aims to bring about an awareness about enormous potential of steel that goes beyond its role of reinforcement in RCC Programme explores possibilities in steel constructions frame foundation to roof.

#### **CONTENT**

Structural Steel members and sections  
 Joining detail of various steel members  
 Steel connections  
 Steel foundations  
 Structural steel frame  
 Steel staircase  
 Steel mezzanine floor  
 Steel sport system for roofing  
 Steel trusses  
 Steel cladding  
 Collapsible and rolling shutters.

#### **NOTE:**

Detailed teaching programme to be made before the commencement of the semester and circulated to the students at the commencement of the semester

This course will be supported with site visits and market surveys outside studio hours

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## **STRUCTURAL DESIGN IV**

ARBCM-403

Periods/week: 2  
 Sessional Marks: 50  
 Theory Exam Marks: 50  
 Duration of exam: 2hrs

### **INTENT**

To enhance the understanding of RCC structures

### **CONTENTS**

Theory and design of simply supported circular and ribbed slabs subjected to uniformly distributed loads

Fixed beams: Bending moment diagrams for a fixed beam subjected to uniformly distributed load and point load. Formula to be explained – no derivation)

Theory and design of reinforced T-beams, inverted T-beams and isolated T-beams, singly reinforced L-beams

Theory and design of isolated sloped column footing for a square, rectangular and circular column subjected for axial loads

Column footings subjected to eccentric loading

RCC footing for axially loaded RCC and brick walls.

### **NOTE:**

Detailed teaching programme to be made before the commencement of the semester and circulated to the students at the commencement of the semester

Appropriate Standards must be explained and used

Exercises must be done in each class.

**NOTE** – Examiner will set Seven questions in total, covering the whole syllabus. Students will have to attempt 4 Questions in all . All the questions carry equal marks [ 12.5 X 4 = 50]

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## **LANDSCAPE DESIGN –IV**

ARBCM- 404

Periods/week: 6  
 Sessional Marks: 100  
 Portfolio Marks: 50

### **INTENT**

To appreciate the issues related to site planning and small landscape situations.

### **CONTENT**

Principles of landscape design

Elements of landscape design and their various manifestations

Plant material: Shrubs, trees, plants, ground cover.

Water and its manifestations

Use of earth and stone as element of landscape.

Site planning

Landscape Design Exercises for different architectural situations.

Landscape and climatology.



**NOTE:**

Detailed teaching programme to be made before the commencement of the semester and circulated to the students at the commencement of the semester

This course should be supported with appropriate and manageable visits to the concerned works off the class hours

Extensive field visits to various landscape design Nursery so as to have actual feel of various plant material are required.

**BUILDING SERVICES –IV (LIGHTING)**

ARBCM- 405

Periods/week: 2  
 Sessional Marks: 50  
 Theory Exam. Marks: 50  
 Duration of exam: 2hrs

**INTENT**

To understand the implication and application of natural and artificial lighting in Architecture.

**CONTENT**

Natural lighting  
 Artificial lighting  
 Requirement for different situations  
 Lamps and luminaries  
 Outdoor lighting  
 Specialized lighting like art galleries etc.  
 Electrical system wires  
 Electricity distribution system with a building  
 Safety devices  
 Electrical wiring systems  
 Generation transmission and distribution of electricity  
 Graphic electrical symbols  
 Load calculation of a small building

**NOTE:**

Detailed teaching programme to be made before the commencement of the semester and circulated to the students at the commencement of the semester

**NOTE** – Examiner will set Seven questions in total, covering the whole syllabus. Students will have to attempt 4 Questions in all . All the questions carry equal marks [ 12.5 X 4 = 50] .

**ARCHITECTURAL DESIGN THEORY –IV**

ARBCM- 406

Periods/week: 2  
 Sessional Marks: 50  
 Theory Exam. Marks: 50  
 Duration of exam: 2hrs

**INTENT**

The intention of this particular course is to make students aware about the life, time, workshop and philosophy of contemporary recognized architectures in India and abroad.

**CONTENTS**

- historical scene in Europe, America and India after the Industrial Revolution.
- Study of life, philosophy and works of Walter Gropius
- Study of life, philosophy and works of Frank Lloyd Wright
- Study of life, philosophy and works of Mies Van Der Rohe
- Study of life, philosophy and works of LeCorbusier
- Study of life, philosophy and works of Alvar, Alto
- Study of life, philosophy and works of Louis Khan
- Study of life, philosophy and works of Joseph Alleen Stein
- Study of life, philosophy and works of Charles Correa
- Study of life, philosophy and works of Achut. P. Kanvinde
- Study of life, philosophy and works of B.V. Doshi
- Study of life, philosophy and works of Raj Rewal

**NOTE:**

Detailed teaching programme to be made before the commencement of the semester and circulated to the students at the commencement of the semester

**NOTE** – Examiner will set Seven questions in total, covering the whole syllabus. Students will have to attempt 4 Questions in all . All the questions carry equal marks [ 12.5 X 4 = 50] .

**COMMUNICATION SKILLS IV**

ARBCM- 407

Periods/week: 2

Sessional Marks: 50

Theory Exam. Marks: 50

Duration of exam: 2hrs

**INTENT**

To inculcate the technique and skill of effective communication mediums for the running of an effective architectural practice.

**CONTENT**

Principles of communication

Office English

Interview skill, technical presentation

Report writing

Writing for publication:

Spoken English (oral presentation)

Meetings

Annotative English

Creative writing

**NOTE:**

Detailed teaching programme to be made before the commencement of the semester and circulated to the students at the commencement of the semester

An exercise should be done in each class.

**NOTE** – Examiner will set Seven questions in total, covering the whole syllabus. Students will have to attempt 4 Questions in all . All the questions carry equal marks [ 12.5 X 4 = 50] .

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**WORKSHOP-IV**

ARBCM- 408

Periods/week: 4

Sessional Marks: 100

**INTENT**

To develop skills of making architectural models.

**CONTENT**

Various model making materials

Tools for model making

Practicing cutting and joining for architectural models

Making one detailed model of individual designs

**NOTE:**

Detailed teaching programme to be made before the commencement of the semester and circulated to the students at the commencement of the semester

## SEMESTER V

### ARCHITECTURAL DESIGN –V

ARBCM-501

Periods/week: 12  
 Sessional Marks: 125  
 Portfolio Marks: 125

#### **INTENT**

To inculcate the appreciation of the design process and an understanding of the design complexities and contradictions to resolve architectural design problems for different situations.

#### **CONTENT**

Design of an institutional/ educational building (6 weeks)

Time problem of six hours.

Design of a housing (7 weeks)

#### **NOTE:**

Detailed teaching programme to be made before the commencement of the semester and circulated to the students at the commencement of the semester

This course needs to be supported by frequent site visits but care must be taken that drawings are prepared under supervision in the studio

Design problem can have a thrust direction such as socio economic studies or some building service

### BUILDING CONSTRUCTION MATERIAL-V

ARBCM- 502

Periods/week: 6  
 Sessional Marks: 100  
 Portfolio Marks: 50

#### **INTENT**

To understand the design, detailing and drawing of building elements in different materials like PVC and aluminum.

#### **CONTENT**

PVC as a material

PVC sections

PVC doors and windows

Aluminum as a material

Aluminum doors and windows

Aluminum cladding

Different cladding materials like aluco-bond etc.

### STRUCTURAL DESIGN-V

ARBCM-503

Period per wk : 2  
 Sessional Marks : 50  
 Theory Exam Marks: 50  
 Duration of exam: 2hrs

**INTENT**

To understand the principles and design of simple steel structures

**CONTENT**

Design of steel beams  
 Design of built-up girders  
 Design of steel columns, long and short, built-up  
 Column bases slabs, grillage, gusted  
 Steel joints  
 Theory and design of steel frames

**NOTE:**

Detailed teaching programme to be made before the commencement of the semester and circulated to the students at the commencement of the semester

Appropriate IS codes should be explained

**NOTE:** – Examiner will set Seven questions in total, covering the whole syllabus. Student will have to attempt 4 Questions in all . All the questions carry equal marks [ 12.5 X 4 = 50] .

**URBAN DESIGN –V**

ARBCM- 504

Periods/week: 4

Sessional Marks: 100

**INTENT**

To familiarize the students with basic aspects of urban design as one of the specialization of Architecture.

**CONTENT**

Urban design vocabulary  
 Elements of urban design  
 History of urban design  
 Urban spaces  
 Circulations: intercity/intra-city urban  
 Visual surveys  
 Building typology and its impact on urban form  
 Physical and non physical determinants of city form patterns  
 Urban design tools  
 Principles and techniques of urban design, legislations related to urban design

**NOTE**

Detailed teaching programme to be made before the commencement of the semester and circulated to the students at the commencement of the semester.

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## **BUILDING SERVICES-V (ACOUSTICS AND FIRE FIGHTING)**

ARBCM- 505

Periods/week: 2  
 Sessional Marks: 50  
 Theory Exam. Marks: 50  
 Duration of exam: 2hrs

### **INTENT**

To appreciate the role of acoustics and fire protection in building.

### **CONTENT**

Terminology in acoustics.  
 Behavior of sound.  
 Acoustical defects and their solutions.  
 Acoustics material  
 Principles of good acoustical design for different building types.  
 Noise  
 Fire-fighting  
 First resistant rating  
 Fire resisting materials  
 Fire protection equipments  
 NBC standards for fire fighting

### **NOTE:**

Detailed teaching programme to be made before the commencement of the semester and circulated to the students at the commencement of the semester

**NOTE:** – Examiner will set Seven questions in total, covering the whole syllabus. Student will have to attempt 4 Questions in all . All the questions carry equal marks [ 12.5 X 4 = 50] .

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## **HISTORY OF ARCHITECTURE –V**

ARBCM- 506

Periods/week: 2  
 Sessional Marks: 50  
 Theory Exam. Marks: 50  
 Duration of exam: 2hrs

### **INTENT**

To understand the growth and development of architecture and appreciation of the role of the intangibles that brought this growth and development from the 18<sup>th</sup> century to the advent of European modernism.

### **COURSE MODULES**

#### **SECTION I: THE WESTERN WORLD**

- i) Industrial Revolution and its architectural Implications
- ii) 19<sup>th</sup> century Neo Classicism in Europe and America
- iii) Development of Architecture in Victorian England
- iv) Technology of Iron and Steel

- v) Town Planning Trends in Europe
- vi) Rise of the Idea of Expositions
- vii) Birth of the American Skyscraper
- viii) Alternate Trends in late 19<sup>th</sup> and early 20<sup>th</sup> century in Europe.

#### SECTION II: INDIA

- i) Culture of colonialism and British Response to Indian Context
- ii) Early British Architecture
- iii) Birth of Indo Saracenic Style
- iv) Classical Revival and Building of New Delhi.

#### **NOTE:**

Detailed teaching programme to be made before the commencement of the semester and circulated to the students at the commencement of the semester

**NOTE** – Examiner will set Seven questions in total, covering the whole syllabus. Student will have to attempt 4 Questions in all . All the questions carry equal marks [ 12.5 X 4 = 50] .

#### **ESTIMATING AND COSTING –V**

ARBCM- 507

Periods/week: 2  
 Sessional Marks: 50  
 Theory Exam. Marks: 50  
 Duration of exam: 2hrs

#### **INTENT**

To make students understand the importance, techniques of estimating and costing and valuation and principles of economics in building design.

#### **CONTENT**

- i) Importance and estimating costing
- ii) Costing and valuation, different types of estimates
- iii) Thumb rules used in estimating
- vi) Methods of preparing BOQ, long wall short wall method
- v) Centre line Method
- vi) BOQ for journey works
- vii) Quantity estimation for finishes
- viii) Principles of economics in building planning.
- ix) Price rise Mechanism in tenders.
- x) Abstract of cost of estimate of Project.
- xi) Valuation
- xii) Various forms of tenders in building civil works
- xiii) Analysis of rates for various building works.

#### **NOTE:**

Detailed teaching programme to be made before the commencement of the semester and circulated to the students at the commencement of the semester

**NOTE** – Examiner will set Seven questions in total, covering the whole syllabus. Students will have to attempt 4 Questions in all . All the questions carry equal marks [ 12.5 X 4 = 50] .

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**BUILDING BYE LAW AND OFFICE MANAGEMENT –V**

ARBCM- 508

Periods/week: 2

Sessional Marks: 50

Theory Exam. Marks: 50

Duration of exam: 2hrs

**INTENT**

To acquaint the student with building legislation and basic office procedure and management techniques .

**CONTENT**

Building Bye Laws professional practice, office management, project management.

**TOPIC**

Study of building Bye laws and study of national building code.

Study of building Bye laws of Chandigarh and Delhi

Submission drawings – study and requirements

Architect's Act 1972, Council of Architecture, norms and standards regarding fees and scale of charges.

Architectural office administration

Office Correspondence, Filing and record keeping.

Dealing with different personnel.

Legal responsibilities and ethics.

Architectural competitions.

Notice inviting tenders, tender documents agreement contract.

Professional practice: Negotiation arbitration, arbitrator its advantages/disadvantages, billing, accounting .

Project management

Site organization and Networking techniques

Time analysis , CPM PERT.

Value engineering Man power and labor laws.

Basic accounts techniques and book keeping.

**NOTE:**

Detailed teaching programme to be made before the commencement of the semester and circulated to the students at the commencement of the semester

**NOTE** – Examiner will set Seven questions in total, covering the whole syllabus. Students will have to attempt **4** Questions in all . All the questions carry equal marks [ 12.5 X 4 = 50]

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## SEMESTER VI

### ARCHITECTURAL DESIGN – VI

ARBCM 601

Periods/week: 12  
 Sessional Marks: 125  
 Portfolio Marks: 125

**INTENT**

To inculcate the appreciation of the design process and an understanding of the design complexities and contradictions to resolve architectural design problems for complex situations.

**CONTENT**

Design of a recreational building (club, theatre etc.) (6weeks)

Time problem of six hour

Design of a commercial organization (sector shopping, small shopping mall, etc.) (7weeks)

**NOTE:**

This course needs to be supported by frequent site visits but care must be taken that drawings are prepared under supervision in the studio.

Design problems can have a thrust direction such as climatic control or some other building service.

Second major project to form the portfolio assignment

### BUILDING CONSTRUCTION AND MATERIALS – VI

ARBCM 602

Periods/week: 6  
 Sessional Marks: 100  
 Portfolio Marks: 50

**INTENT**

To be aware of the content, methodology and technique of preparing working drawings before proceeding on practical training.

**CONTENT**

Complete working drawings with specification documentation of the previous semesters design project preferably an appropriate part of the housing comprising:

Foundation plan

All floor plans

All elevations

Necessary sections

Joinery details

Kitchen detail

Toilet detail

Staircase detail

Wardrobe detail

Services layout

Site plan

**NOTE:**

Detailed teaching programme to be made before the commencement of the semester and circulated to the students at the commencement of the semester

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**STRUCTURAL DESIGN-VI**

ARBCM-603

Periods/week: 2

Sessional Marks: 50

Theory Exam. Marks: 50

Duration of exam: 2hrs

**INTENT**

To appreciate the numerous possibilities of structural systems and the techniques of dealing structural drawings.

**CONTENT**

Analyze of the structure of a previous design(preferably an appropriate part of the housings).

Calculation of the structural component of the selected design.

Preparing structural drawings for the selected design.

Bulk active structures

Form active structures

Surface active structures

Vector active structure

**NOTE**

Detailed teaching programme to be made before the commencement of the semester and circulated to the students at the commencement of the semester

**NOTE** – Examiner will set Seven questions in total, covering the whole syllabus. Students will have to attempt 4 Questions in all . All the questions carry equal marks [ 12.5 X 4 = 50]

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**GREEN ARCHITECTURE –VI**

ARBCM- 604

Periods/week: 2

Sessional Marks: 100

**INTENT**

To appreciate the issues and features related to green architecture.

**CONTENT**

Ecological impact of buildings

Sustainable methods of construction

LEED

Green Building Councils

Green features in buildings

Greening the city

**NOTE**

Detailed teaching programme to be made before the commencement of the semester and circulated to the students at the commencement of the semester.

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## **BUILDING SERVICES –VI (AIR-CONDITIONING)**

ARBCM- 605

Periods/week: 2

Sessional Marks: 50

Theory Exam. Marks: 50

Duration of exam: 2hrs

### **INTENT**

To appreciate how building can be made more comfortable by adding mechanical systems like artificial ventilation, air conditioning and conveyor systems.

### **CONTENT**

Human comforts conditions

Natural and mechanical ventilations

Air-conditioning principles, systems and methods

Architectural interventions in air-conditioned buildings, study of materials (interiors) for air conditioned spaces

Types and layout of centrally air-conditioning systems

Lift location, systems, sizes equipment spatial requirement

Escalators location, equipment

### **NOTE**

Detailed teaching programme to be made before the commencement of the semester and circulated to the students at the commencement of the semester.

This course should be supported with site visits arranged of the class hours and expert lectures.

**NOTE** – Examiner will set Seven questions in total, covering the whole syllabus. Students will have to attempt 4 Questions in all . All the questions carry equal marks [ 12.5 X 4 = 50]

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## **GRAPHICS –VI**

ARBCM- 606

Periods/week: 4

Sessional Marks: 75

Portfolio Exam. Marks: 25

### **INTENT**

To argument and enhance the skill and techniques in architectural rendering using different mediums.

### **CONTENT**

Rendering of all architectural drawings in

Oil Patels

Markers

Charcoal Pencil

Cut and Paste

Water Color

Poster Color

**NOTE**

Detailed teaching programme to be made before the commencement of the semester and circulated to the students at the commencement of the semester.

At least 12 sheets to be prepared for the portfolio in as many different mediums as possible.

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**HISTORY OF ARCHITECTURE – VI**

ARBCM- 607

Periods/week: 2

Sessional Marks: 50

Theory Exam. Marks: 50

Duration of exam: 2hrs

**INTENT**

The 6<sup>th</sup> semester History of Architecture course is tailored to trace the development of architecture in a chronological sequence from the advent of the Modern Movement in the early decades of the 20<sup>th</sup> century to contemporary trends. The evaluation of the various architectural stylistic 'isms' is to be studied in the context of both the sub-continent and the west. The course aims at tracing the evaluation and development of an architectural event or trend and its illustration through the work of contemporary architects.

**CONTENT**

SECTION I: The western world:

Early modernism

Post War decades: The international Styles

Alternatives to the International Styles

Late Modernism

Sick Tech. Architecture

Post Modernism

Neo Modernism

SECTION II: India

Post independence Architecture

The arrival of modernism

Rediscovering our Roots

Current trends in Indian Architecture

Exploring Regionalism in Indian Architecture

**NOTE**

Detailed teaching programme to be made before the commencement of the semester and circulated to the students at the commencement of the semester.

**NOTE** – Examiner will set Seven questions in total, covering the whole syllabus. Students will have to attempt 4 Questions in all . All the questions carry equal marks [ 12.5 X 4 = 50]

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**SPECIFICATION –VI**

ARBCM-608

Periods/week: 2

Sessional Marks: 50

Theory Exam. Marks: 50

Duration of exam: 2hrs

**INTENT**

Techniques and Phraseology of writing specifications of basic and composite materials and various building works.

**CONTENT**

Writing specifications of

Excavations

Earthwork

Foundations

Damp proof course

Brick Masonry

Concreting

Flooring

Timber doors and windows

Metal doors and windows

Painting and other finishes

Sanitary fittings and fixtures

Electrical wiring and fixtures

Specifications as part of the tender document

**NOTE**

Detailed teaching programme to be made before the commencement of the semester and circulated to the students at the commencement of the semester.

**NOTE** – Examiner will set Seven questions in total, covering the whole syllabus. Student will have to attempt 4 Questions in all . All the questions carry equal marks [ 12.5 X 4 = 50] .

## SEMESTER VII

### ARCHITECTURAL DESIGN AND PROJECT MANAGEMENT –VII

ARBCM 701

Periods/week: 12

Sessional Marks : 150

Portfolio Marks : 100

#### **Intent**

The intent of the course is to make students understand design as a process of problem identification, space analysis, formulation of requirements, evolution of design criteria and design.

Incorporating elements of site planning and landscape in the design process and preparation of computer aided presentation drawings.

Understanding design as a function of specific agenda of complex services, acoustics, building byelaws and structure

#### **Content**

No. of problems to be done in studio

Case study - 2 weeks (of relevant topic or building structure)

One Major problem- 10-12weeks

Problem types can be classified as:

Commercial – Commercial/office/institutional complex, shopping arcade etc.

Commercial – Auditorium, performing arts center

Recreational – 3-5 star Hotel, multifunctional center

Public Health – 50 bedded hospital

Industrial – Industrial building involving the layout of manufacturing process based on flow sheet

Miscellaneous – Religious building, orphanage or ashram, any other public building.

Besides the architectural design the problem will be resolved as a project that needs to be managed.

Introduction to THESIS PROJECT –Introduction to synopsis, Criterion for the selection of the subject/proposal, submission of synopsis

#### **Note**

Greater stress shall be laid on discussion of the problems of design and project management in the studio than on general lectures. Minimum two prototype case studies should be conducted for the major problem.

### BUILDING CONSTRUCTION –VII

ARBCM- 702

Periods/week: 6

Sessional Marks : 100

Portfolio Exam. Marks : 50

#### **Intent**

The concept is to make the students familiar with special construction details of interior works in buildings with special construction details with emphasis on management of construction together with an appreciation of interior design and detailing.

#### **Content**

An interior space like a shop, office etc. can be chosen to detail out the following with an appreciation of construction techniques, material studies and construction management:

Furniture layout

False ceiling layout with complete specifications of materials and construction programme  
 Flooring layout with complete specifications of materials and construction programme  
 Partition details with complete specifications of materials and construction programme  
 Paneling design with complete specifications of materials and construction programme  
 Staircase design with complete specifications of materials and construction programme  
 Shop front design with complete specifications of materials and construction programme  
 Electrical layout with complete specifications of materials and construction programme  
 Interior accessories planters signage, display boards etc  
 Study of different materials used in interiors with their usage and applications.

**Note**

Detailed teaching programme to be made before the commencement of the semester and circulated to the students at the commencement of the semester. This course needs to be supported by frequent site visits but care must be taken that drawings are prepared under supervision in the studio.

**ADVANCED SERVICES –VII**

ARBCM- 703

Periods/week: 2

Sessional Marks : 50

Portfolio Exam. Marks : 50

**Intent**

The concept is to familiarize the students with the theoretical background of complex services used in multi storied/ high rise buildings with details of material, method and processes.

**Content**

Detailed study and analysis of building services and the materials used for the following:

Water supply and disposal systems for complex situations.

Rainwater and surface water disposal systems

Air conditioning of large spaces

Heating and ventilation of large spaces

Mechanical systems like escalators, elevators and travelators

Electrical and lighting fixtures

Acoustics for specialized situations

Fire fighting and fire protection devices and fixtures

**Note**

Detailed teaching programme to be made before the commencement of the semester and circulated to the students at the commencement of the semester.

**STRUCTURAL SYSTEMS –VII**

ARBCM- 704

Periods/week: 2

Sessional Marks : 50

Exam. Marks :50

Duration of exam: 2hrs

**Intent**

To understand the basics of soil mechanics and foundation engineering

To understand the design of steel structures

**Content**

Content of Soil Mechanics & foundation engineering- Properties of Soil, Safe bearing Capacity. Active & Passive earth Pressure.

Types of foundations and their Design- Spread, Piles & raft foundation.

Steel Structures- Riveted & welded connections (Simple cases only), Tension & Compression members, Beam & Plate Girder, introduction to grillage foundation, Trusses.

**Note**

Detailed teaching programme to be made before the commencement of the semester and circulated to the students at the commencement of the semester. The lectures by the experts in the field will be arranged.

**NOTE** – Examiner will set Seven questions in total, covering the whole syllabus. Students will have to attempt 4 Questions in all . All the questions carry equal marks [ 12.5 X 4 = 50] .

**ELECTIVES-** (Any four)

**HOUSING –VII**

ARBCM- 705 (E)

Periods/week: 3

Sessional Marks : 50

Theory Exam. Marks : 50

Duration of exam: 2hrs

**Intent**

This course addresses the basic issues related to housing and should help in understanding and knowing the present day scenario and handling the housing projects through innovative building technologies.

**Content**

Definition and vocabulary

History of housing

Housing scenario in the context of the National and the State

Housing surveys

National housing

Housing sites and planning

Architectural design of various types of housing

Housing and planning codes

Ownership types, cooperatives

Factors influencing land value

Housing finance

Slums

Housing construction technology

Housing physical infrastructure

Housing legislation

**Note**

Detailed teaching programme to be made before the commencement of the semester and circulated to the students at the commencement of the semester.

**NOTE** – Examiner will set Seven questions in total, covering the whole syllabus. Students will have to attempt 4 Questions in all . All the questions carry equal marks [ 12.5 X 4 = 50] .



**URBAN DESIGN -VII**

ARBCM- 706(E)

Periods/week: 2

Sessional Marks : 50

Theory Exam. Marks : 50

Duration of exam: 2hrs

**Intent**

To familiarize the students with basic aspects of urban design as one of the specialization of Architecture

**Content**

Urban design vocabulary

Elements of urban design

History of urban design

Urban spaces

Circulations: intercity/intra-city urban

Visual surveys

Building typology and its impact on urban form

Physical and non physical determinants of city form patterns

Urban design tools

Principles and techniques of urban design, legislations related to urban design

**Note**

Detailed teaching programme to be made before the commencement of the semester and circulated to the students at the commencement of the semester.

**NOTE** – Examiner will set Seven questions in total, covering the whole syllabus. Students will have to attempt 4 Questions in all . All the questions carry equal marks [ 12.5 X 4 = 50]

**CONSTRUCTION QUALITY CONTROL –VII**

ARBCM- 707 (E)

Periods/week: 2

Sessional Marks : 50

Theory Exam. Marks : 50

Duration of exam: 2hrs

**Intent**

To familiarize the students with basic aspects and importance of quality controls in construction management.

**Content**

Quality standards of different construction materials

Quality checks of construction materials

Construction quality standards for different stages of construction

Post construction quality checks and methods

Quality and Safety Concerns in Construction

Organizing for Quality and Safety

Work and Material Specifications

Total Quality Control

**Note**

Detailed teaching programme to be made before the commencement of the semester and circulated to the students at the commencement of the semester.

**NOTE** – Examiner will set Seven questions in total, covering the whole syllabus. Students will have to attempt **4** Questions in all . All the questions carry equal marks [ 12.5 X 4 = 50]

### **CONSTRUCTION EQUIPMENT AND METHODS –VII**

ARBCM- 708(E)

Periods/week: 2

Sessional Marks : 50

Theory Exam. Marks : 50

Duration of exam: 2hrs

#### **Intent**

To familiarize the students with the various manual and mechanical equipments and their usages in building construction

#### **Content**

Availability & selection of equipments

Need of automation in construction

Different manual equipments used on construction sites

Mechanical equipments

Safety controls & precautions

Training of mechanics

#### **Note**

Detailed teaching programme to be made before the commencement of the semester and circulated to the students at the commencement of the semester.

**NOTE** – Examiner will set Seven questions in total, covering the whole syllabus. Students will have to attempt **4** Questions in all . All the questions carry equal marks [ 12.5 X 4 = 50]

### **COMPUTER APPLICATIONS IN PROJECT MANAGEMENT –VII**

ARBCM- 709 (E)

Periods/week: 2

Sessional Marks : 50

Theory Exam. Marks : 50

Duration of exam: 2hrs

#### **Intent**

To familiarize the students with the usage of computer applications in construction management

#### **Content**

Project management as a system, data crunching and data management

Acquaintance with the exiting software for different project management activities

Revising simple computer operations for customized management.

#### **Note**

Detailed teaching programme to be made before the commencement of the semester and circulated to the students at the commencement of the semester.

**NOTE** – Examiner will set Seven questions in total, covering the whole syllabus. Students will have to attempt **4** Questions in all . All the questions carry equal marks [ 12.5 X 4 = 50]

**BUILDING BYE LAWS –VII**

ARBCM- 710 (E)

Periods/week: 2

Sessional Marks : 50

Theory Exam. Marks : 50

Duration of exam : 2hrs

**Intent**

To familiarize the students with basic aspects and importance of building bye laws in construction management.

**Content**

Importance of laws in building industry

Detailed study of the National Building Code

Detailed study of local building bye laws

The building sanctioning process

Sanction drawings

**Note**

Detailed teaching programme to be made before the commencement of the semester and circulated to the students at the commencement of the semester.

**NOTE** – Examiner will set Seven questions in total, covering the whole syllabus. Students will have to attempt 4 Questions in all . All the questions carry equal marks [ 12.5 X 4 = 50]

**BUILDING SYSTEMS INTEGRATION –VII**

ARBCM- 711 (E)

Periods/week: 2

Sessional Marks : 50

Theory Exam. Marks : 50

Duration of exam 2hrs

**Intent**

To familiarize the students with basic components in construction of a building and their performance as a system complete in itself.

**Content**

Building as a system

Sub systems in the building

Execution of the sub systems

Integration of the sub systems to a single unit

Integration of the units within the sub systems

Maintenance of the units of a sub system

Maintenance of the sub systems

**Note**

Detailed teaching programme to be made before the commencement of the semester and circulated to the students at the commencement of the semester.

**NOTE** – Examiner will set Seven questions in total, covering the whole syllabus. Students will have to attempt 4 Questions in all . All the questions carry equal marks [ 12.5 X 4 = 50]

**PROJECT CONTRACT SYSTEMS -VII**

ARBCM- 712 (E)

Periods/week: 2

Sessional Marks : 50

Theory Exam. Marks : 50

Duration of exam: 2hrs

**Intent**

To familiarize the students with importance of contracts in construction management.

**Content**

Need for contracts

The main people involved in project contracts

Concept of contracts

Issues of Law related to contracts

Language of contracts

Failure of contracts and remedial measures required

**Note**

Detailed teaching programme to be made before the commencement of the semester and circulated to the students at the commencement of the semester.

**NOTE** – Examiner will set Seven questions in total, covering the whole syllabus. Students will have to attempt 4 Questions in all . All the questions carry equal marks [ 12.5 X 4 = 50]

**INTELLIGENT BUILDINGS –VII**

ARBCM- 713 (E)

Periods/week: 2

Sessional Marks : 50

Theory Exam. Marks : 50

Duration of exam: 2hrs

**Intent**

To familiarize the students with basic Building Management Systems to achieve efficiency in less of energy consumption and quality living.

**Content**

Need of automation in buildings

Building as a combination of sub systems

Automation of systems and sub systems

Methods of introducing automation in building systems

Equipment used for automation building sub systems

Efficiency achievement by using intelligence in buildings

**Note**

Detailed teaching programme to be made before the commencement of the semester and circulated to the students at the commencement of the semester.

**NOTE** – Examiner will set Seven questions in total, covering the whole syllabus. Students will have to attempt 4 Questions in all . All the questions carry equal marks [ 12.5 X 4 = 50]

**MODULAR COORDINATION – VII**

ARBCM- 714 (E)

Periods/week: 3

Sessional Marks: 50

Theory Exam. Marks: 50

Duration of exam: 2hrs

**Intent**

To familiarize the students with importance of modular coordination in contemporary design & construction

**Content**

Need for modular building systems

Advantages in using modules in construction, management and maintenance of buildings

Building components in which modular development can be used

Developing a module

Coordination of modules within a sub system

Coordinating modular systems in a building

**Note**

Detailed teaching programme to be made before the commencement of the semester and circulated to the students at the commencement of the semester.

**NOTE** – Examiner will set Seven questions in total, covering the whole syllabus. Students will have to attempt 4 Questions in all . All the questions carry equal marks [ 12.5 X 4 = 50]

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**BUILDING ECONOMICS –VII**

ARBCM- 715 (E)

Periods/week: 2

Sessional Marks : 50

Theory Exam. Marks : 50

Duration of exam: 2hrs

**Intent**

To familiarize the students with basic aspects of real estate economics and maintaining quality in design of building

**Content**

Real Estate Economics

Low cost technologies

Costing of building components and stages

Material and time management for reducing costs

Reducing costs without reducing quality in design of buildings

Making and time management for reducing costs

Making construction cost effective

Reducing costs of maintenance and regular running of services

**Note**

Detailed teaching programme to be made before the commencement of the semester and circulated to the students at the commencement of the semester.

**NOTE** – Examiner will set Seven questions in total, covering the whole syllabus. Students will have to attempt 4 Questions in all . All the questions carry equal marks [ 12.5 X 4 = 50]

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**SITE MANAGEMENT –VII**

ARBCM- 716 (E)

Periods/week: 2

Sessional Marks : 50

Theory Exam. Marks : 50

Duration of exam: 2hrs

**Intent**

To familiarize the students with basic aspects of selection, maintenance of materials & site management

**Content**

Site selection

Layout for construction management

Storage and labor housing and facilities

Site security

Site supervision

Measurement and record keeping

Material testing techniques

**Note**

Detailed teaching programme to be made before the commencement of the semester and circulated to the students at the commencement of the semester.

**NOTE** – Examiner will set Seven questions in total, covering the whole syllabus. Students will have to attempt **4** Questions in all . All the questions carry equal marks [ 12.5 X 4 = 50]

## SEMESTER-VIII

### ARCHITECTURAL DESIGN AND PROJECT MANAGEMENT –VIII

ARBCM- 801

Periods/week: 12

Sessional Marks : 150

Portfolio Marks : 100

#### **Intent**

The intention is to develop the skills and capabilities of students in generating effective architectural designs and preparing their construction management strategies.

#### **Content**

One time problem on a medium size building project for making quick architectural design decisions

One major problem involving urban design constraints and the development of constructional management strategies of this problem as a holistic constructional programme

#### **Note**

Detailed teaching programme to be made before the commencement of the semester and circulated to the students at the commencement of the semester.

### BUILDING CONSTRUCTION & MATERIALS –VIII

ARBCM- 802

Periods/week: 6

Sessional Marks : 100

Portfolio Marks : 50

#### **Intent**

To make the students learn about advance construction technology and its application, advance building materials and typical construction details of multistoried building and areas requiring special detailing.

#### **Content**

Modern Formwork techniques in steel, lift slab construction and slip form formwork and formwork of special detailing.

Prefabrication using prestresses and post stressed RCC and post stressed RCC joints in prefabrication, construction joints.

Water proofing construction details. And basement construction

Construction details of energy efficient buildings.

Construction Details including insulation, drainage materials and construction system of large span structures.

Advance building material and their properties

Curtain walls and their detailing

#### **Note**

Extensive site visits and model of various systems coupled with market surveys of material will be required to conduct the course.

### ADVANCED STRUCTURES –VIII

ARBCM- 803

Periods/week: 2

Sessional Marks : 50

Theory Exam. Marks : 50

Duration of exam: 2hrs

**Intent**

The intention is to familiarize the students with complex structural situations in building construction.

**Content**

Structural analysis of shells, domes, large span structures, high rise structures, underground and under water structures, earthquake resistant structures.

**Note**

Detailed teaching programme to be made before the commencement of the semester and circulated to the students at the commencement of the semester.

**NOTE** – Examiner will set Seven questions in total, covering the whole syllabus. Students will have to attempt **4** Questions in all . All the questions carry equal marks [ 12.5 X 4 = 50]

**RESEARCH SKILLS AND PROJECT INTRODUCTION –VIII**

ARBCM- 804

Periods/week: 2

Sessional Marks : 50

Theory Exam. Marks : 50

Duration of exam: 2hrs

**Intent**

The intention is to acquaint the students with research methodologies for attempting their undergraduate architectural thesis and further research programmes.

**Content**

Meaning of research

Need for research

Data sources

Methods of collecting data

Sorting and compiling data

Analyzing data and drawing conclusions for applications

**Note**

Detailed teaching programme to be made before the commencement of the semester and circulated to the students at the commencement of the semester.

**NOTE** – Examiner will set Seven questions in total, covering the whole syllabus. Students will have to attempt **4** Questions in all . All the questions carry equal marks [ 12.5 X 4 = 50]

**PROJECT PLANNING & MANAGEMENT–VIII**

ARBCM-805

Periods/week: 2

Sessional Marks : 50

Theory Exam. Marks : 50

Duration of exam: 2hrs

**Intent**

The intention is to familiarize the students with some fundamental management techniques and tools that can be used for construction management.



**Content**

History of project management

Project management approaches –The traditional approach, Critical Chain Project Management, Extreme Project Management, Event chain methodology, Process-based management, Rational Unified Process

Project development stages –Project control systems, Initiation, Planning and design, Executing, Monitoring and Controlling, Closing

Project management topics – Project managers, Project Management Triangle, Work Breakdown Structure, Project control variables, International standards

**Note**

Detailed teaching programme to be made before the commencement of the semester and circulated to the students at the commencement of the semester.

**NOTE** – Examiner will set Seven questions in total, covering the whole syllabus. Students will have to attempt 4 Questions in all . All the questions carry equal marks [ 12.5 X 4 = 50]

**ELECTIVES(Any three)****OPERATIONS RESEARCH –VIII**

ARBCM- 806 (E)

Periods/week: 2

Sessional Marks : 50

Theory Exam. Marks : 50

Duration of exam: 2hrs

**Intent**

The concept is to familiarize the students with the role of operations research in construction management.

**Content**

Project planning through critical path analysis using operation research

Introduction to statistics,

Optimization in constructional processes,

Probability theory as applicable in constructional management application,

Queuing theory as applicable in constructional management application,

Game theory as applicable in constructional management application,

Graph theory as applicable in constructional management application,

Decision analysis theory as applicable in constructional management application

Management information system as applicable in constructional management applications

**Note**

Detailed teaching programme to be made before the commencement of the semester and circulated to the students at the commencement of the semester.

**NOTE** – Examiner will set Seven questions in total, covering the whole syllabus. Students will have to attempt 4 Questions in all . All the questions carry equal marks [ 12.5 X 4 = 50]

**CONSTRUCTION COST CONTROLS –VIII**

ARBCM- 807(E)

Periods/week: 2

Sessional Marks : 50

Theory Exam. Marks : 50

Duration of exam: 2hrs

**Intent**

The intention is to familiarize the students with methods and systems by which costs can be controlled in building projects

**Content**

Cost controls in architectural design

Time scheduling

Construction phasing and procurement of materials

Labor control

Use of automation

Site management

**Note**

Detailed teaching programme to be made before the commencement of the semester and circulated to the students at the commencement of the semester.

**NOTE** – Examiner will set Seven questions in total, covering the whole syllabus. Students will have to attempt 4 Questions in all . All the questions carry equal marks [ 12.5 X 4 = 50]

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**RETROFITTING OF BUILDINGS –VIII**

ARBCM-808 (E)

Periods/week: 2

Sessional Marks : 50

Theory Exam. Marks : 50

Duration of exam: 2hrs

**Intent**

The concept is to make the students appreciate the methods and ways of retrofitting buildings.

**Content**

Need for retrofitting

Seismic retrofitting

Retrofitting for fire prevention

Retrofitting for energy conservation

Retrofitting historic buildings

Retrofitting masonry buildings

**Note**

Detailed teaching programme to be made before the commencement of the semester and circulated to the students at the commencement of the semester.

**NOTE** – Examiner will set Seven questions in total, covering the whole syllabus. Students will have to attempt 4 Questions in all . All the questions carry equal marks [ 12.5 X 4 = 50]

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**LABOR LAWS AND MANAGEMENT –VIII**

ARBCM- 809(E)

Periods/week: 2

Sessional Marks : 50

Theory Exam. Marks : 50

Duration of exam: 2hrs

**Intent**

The intention is to acquaint the students with labor related to the construction industry and basic principles of labor management

**Content**

Need for laws

Minimum wages

Child labor

Gender bias

Safety of labor on sites

Social security, EPF

Labor unions

Labor insurance

**Note**

Detailed teaching programme to be made before the commencement of the semester and circulated to the students at the commencement of the semester.

**NOTE** – Examiner will set Seven questions in total, covering the whole syllabus. Students will have to attempt 4 Questions in all . All the questions carry equal marks [ 12.5 X 4 = 50]

**EXPERTS SYSTEMS ADVANCED COMPUTING –VIII**

ARBCM- 810(E)

Periods/week: 2

Sessional Marks : 50

Theory Exam. Marks : 50

Duration of exam: 2hrs

**Intent**

The intention is to familiarize the students with advanced usage of computers in construction management.

**Content**

Use of computers in design, drawing and drafting

Use of computers in project management

Use of computers in material management

Use of computers in human resource management

Use of computers in financial management

Use of computers in maintaining records and correspondence

**Note**

Detailed teaching programme to be made before the commencement of the semester and circulated to the students at the commencement of the semester.

**NOTE** – Examiner will set Seven questions in total, covering the whole syllabus. Students will have to attempt 4 Questions in all . All the questions carry equal marks [ 12.5 X 4 = 50]

**MARKETING SKILLS –VIII**

ARBCM- 811(E)

Periods/week: 2

Sessional Marks : 50

Theory Exam. Marks : 50

Duration of exam: 2hrs

**Intent**

The intention is to acquaint the students with the skills required to market the profession and themselves professionally within the ethical codes.

**Content**

Need for marketing

Code of ethics

Marketing methods

Marketing skills

**Note**

Detailed teaching programme to be made before the commencement of the semester and circulated to the students at the commencement of the semester.

**NOTE** – Examiner will set Seven questions in total, covering the whole syllabus. Students will have to attempt 4 Questions in all . All the questions carry equal marks [ 12.5 X 4 = 50]

**INFRASTRUCTURE PLANNING AND MANAGEMENT –VIII**

ARBCM- 812(E)

Periods/week: 2

Sessional Marks : 50

Theory Exam. Marks : 50

Duration of exam: 2hrs

**Intent**

Physical Infrastructure planning -Water Supply, Sewerage System, Rain Water Harvesting and solid waste

Environmental Pollution Control Management- Noise pollution control, Air pollution control, Water pollution control

Social Infrastructure Planning- School, Playing areas, Public places, Community centre etc.

**Note**

Detailed teaching programme to be made before the commencement of the semester and circulated to the students at the commencement of the semester.

**NOTE** – Examiner will set Seven questions in total, covering the whole syllabus. Students will have to attempt 4 Questions in all . All the questions carry equal marks [ 12.5 X 4 = 50]

**ESTATE MANAGEMENT –VIII**

ARBCM- 813 (E)

Periods/week: 2

Sessional Marks : 50

Theory Exam. Marks : 50

Duration of exam: 2hrs

**Intent**

The intention is to acquaint the students with the basic percepts and principles of estate management.

**Content**

Role of an estate manager

Building maintenance

Maintaining building and site services

Estate security

Providing running services like laundry, crèche etc.

Maintaining site landscape

**Note**

Detailed teaching programme to be made before the commencement of the semester and circulated to the students at the commencement of the semester.

**NOTE** – Examiner will set Seven questions in total, covering the whole syllabus. Students will have to attempt 4 Questions in all . All the questions carry equal marks [ 12.5 X 4 = 50]

**LOW COST CONSTRUCTION TECHNIQUES –VIII**

ARBCM- 814 (E)

Periods/week: 2

Sessional Marks : 50

Theory Exam. Marks : 50

Duration of exam: 2hrs

**Intent**

The intention is to acquaint the students with low cost construction techniques.

**Content**

Situations where low cost construction techniques can be applied

Reducing construction costs by design decisions

Using automation in construction to reduce costs

Pre fabrication

Using human resource efficiently

Using low cost materials

Reducing costs by material management

**Note**

Detailed teaching programme to be made before the commencement of the semester and circulated to the students at the commencement of the semester.

**NOTE** – Examiner will set Seven questions in total, covering the whole syllabus. Students will have to attempt 4 Questions in all . All the questions carry equal marks [ 12.5 X 4 = 50]

**DISASTER MANAGEMENT–VIII**

ARBCM- 815 (E)

Periods/week: 2

Sessional Marks : 50

Theory Exam. Marks : 50

Duration of exam: 2hrs

**Intent**

The intention is to acquaint the students with different natural disasters, effects and study of building designs to resist these disasters.

**Content**

Different types of Hazards

Typology of hazards

Standards &amp; Regulations (NFIP)

Community Rating Systems

Hazards Identifications

Risk Assessments

Mitigation

Planning and Management to resist these hazards

**Note**

Detailed teaching programme to be made before the commencement of the semester and circulated to the students at the commencement of the semester.

**NOTE** – Examiner will set Seven questions in total, covering the whole syllabus. Students will have to attempt 4 Questions in all . All the questions carry equal marks [ 12.5 X 4 = 50]

## SEMESTER-IX

### PROFESSIONAL PRACTICE –IX

ARBCM- 901

Periods/week: 2

Sessional Marks : 50

Theory Exam. Marks : 50

Duration of exam: 2hrs

#### **Intent**

To acquaint the students with the theory of allied areas of practice which is required for practice.

#### **Content**

Easements & Dilapidations: Introduction of easement act, various easements, process and precautions of protecting easements, schedule of dilapidations and repairing clause.

Arbitrations: Arbitration, arbitrators, umpire, nature of arbitration. Appointment, conduct, power and duties of arbitrators and umpire. Procedure for arbitration and preparation of award.

Valuation: Valuation, techniques of valuation, elements of valuation and factors, affecting valuation. Methods, valuation of landed property and building property, rate of interest for sale, purchase, mortgage, capital gains tax, wealth tax, estate duty and death duty.

#### **Note**

The course will be covered through lectures citing practical examples.

Specialist should supplement the course through extension lectures.

**NOTE** – Examiner will set Seven questions in total, covering the whole syllabus. Students will have to attempt 4 Questions in all . All the questions carry equal marks [ 12.5 X 4 = 50]

### THESIS –IX

ARBCM- 902

Periods/week: 30

Sessional Marks : 400

Exam. Marks : 500

The development of thesis is the students opportunity to prove that he has adequate ability to prove. It is a subject for scholastic study through analysis. It is a development and presentation of the design of a building including its setting in a specific environment and its technical aspects. In former –times the thesis was perhaps the only evidence of a student's academic ability in the subject.

After on orientation talk by the thesis coordinator each student will submit to the Principal his/her proposes to work upon. The criterion for the choice of the subject will be its relevance to the actual needs of the region/country. The student will commence the work on the subject only after it has been approved by the guidance to a thesis guide who will be responsible for one particular group.

#### Contents of Thesis

Among other things, a thesis project will comprise of the following:

A written and illustrated report which should include validity of the chosen project, methodology, prototype studios, client's and architect's briefs, conclusion design criteria along with sketches, photographs, tables and diagrams etc.

A fully worked-out design/project proposal.

**Submission of Thesis** (Up to Conceptual stage)

Students will submit two copies of their thesis up to conceptual stage i.e. Plan, Elevation, Sections etc. on standard format complete in all respects to the Principal, on the date decided by him/her.

Other thesis material, such as drawings and models, etc. will be received and retained by the principal, on a subsequent date to be fixed by him/her for subsequent portfolio evaluation.

**NOTE** – Examiner will set Seven questions in total, covering the whole syllabus. Students will have to attempt **4** Questions in all . All the questions carry equal marks [ 12.5 X 4 = 50]



## **SEMESTER-X**

### **THESIS –X**

ARBCM- 1001

Periods/week: 30

Sessional Marks: 400

Theory Exam. Marks: 600

The development of thesis is the students opportunity to prove that he has adequate ability to prove. It is a subject for scholastic study through analysis. It is a development and presentation of the design of a building including its setting in a specific environment and its technical aspects. In former –times the thesis was perhaps the only evidence of a student’s academic ability in the subject.

After an orientation talk by the thesis coordinator each student will submit to the Principal his/her proposes to work upon. The criterion for the choice of the subject will be its relevance to the actual needs of the region/country. The student will commence the work on the subject only after it has been approved by the guidance to a thesis guide who will be responsible for one particular group.

Contents of Thesis

Among other things, a thesis project will comprise of the following:

A written and illustrated report which should include validity of the chosen project, methodology, prototype studios, client’s and architect’s briefs, conclusion design criteria along with sketches, photographs, tables and diagrams etc.

A fully worked-out design/project proposal.

### **Final Submission of Thesis**

Students will submit two copies of their thesis report on standard format complete in all respects to the Principal, on the date decided by him/her.

Other thesis material, such as drawings and models, etc. will be received and retained by the principal, on a subsequent date to be fixed by him/her for subsequent portfolio evaluation.

**NOTE** – Examiner will set Seven questions in total, covering the whole syllabus. Students will have to attempt **4** Questions in all . All the questions carry equal marks [ 12.5 X 4 = 50]