ANNEXURE I

STATE BOARD OF TECHNICAL EDUCATION & TRAINING, TAMILNADU

1012: DIPLOMA IN ARCHITECTURAL ASSISTANTSHIP SYLLABUS

N-SCHEME

(To be implemented for the students admitted from the year 2020-21 onwards)

CURRICULUM OUTLINE

THIRD SEMESTER

Col. No	Subject Code	SUBJECT	HOURS PER WEEK				
			Theory Hours	Drawing	Tutorial	Practical hours	Total Hours
1	4012310	Building Materials	4	-	-	-	4
2	4012320	Theory of Architecture	5	-	-	-	5
3	4012330	History of Architecture – I	5	-	-	-	5
4	4012340	Building Construction and Detailing – I	-	-	-	4	4
5	4012350	Architectural Drawing – I	-	-	-	4	4
6	4012360	Basic Design	-	-	-	4	4
7	4012370	Computer Application in Architecture – I	-	-	-	6	6
Extra/ Co-curricular activities		Physical Education	-	-	-	-	2
		Library	-	-	-	-	1
TOTAL			**14**	**-**	**-**	**18**	**35**

ANNEXURE II

STATE BOARD OF TECHNICAL EDUCATION & TRAINING, TAMILNADU

1012: DIPLOMA IN ARCHITECTURAL ASSISTANTSHIP SYLLABUS

N-SCHEME

(To be implemented for the students admitted from the year 2020-21 onwards)

SCHEME OF THE EXAMINATION

THIRD SEMESTER

Subject Code	Subject Name	Examination Marks			Minimum for pass	Duration of Exam Hours
		Internal assessment Marks	Board Exam. Marks (Converted to 75)	Total Mark		
4012310	Building Materials	25	100	100	40	3
4012320	Theory of Architecture	25	100	100	40	3
4012330	History of Architecture – I	25	100	100	40	3
4012340	Building Construction and Detailing – I	25	100	100	50	3
4012350	Architectural Drawing – I	25	100	100	50	3
4012360	Basic Design	25	100	100	50	3
4012370	Computer Application in Architecture – I	25	100	100	50	3
TOTAL		**175**	**700**	**700**		

STATE BOARD OF TECHNICAL EDUCATION &TRAINING-TAMILNADU

DIPLOMA IN ARCHITECTURAL ASSISTANTSHIP SYLLABUS

N-SCHEME

(To be implemented for the students admitted from the year 2020-2021 onwards)

Course Name : 1012: DIPLOMA IN ARCHITECTURAL ASSISTANTSHIP

Subject Code : 4012310

Semester : III Semester

Subject Title : BUILDING MATERIALS

TEACHING AND SCHEME OF EXAMINATION

No. of weeks per Semester: 16 Weeks

Subject	Instructions		Examination			
			Marks			Duration
	Hours / Week	Hours / semester	Internal Assessment	Board Examinations	Total	
BUILDING MATERIALS	4 Hours	64 Hours	25	100*	100	3 Hours

*** Examinations will be conducted for 100 marks and it will be reduced to 75 marks.**

Topics and Allocation of Hours

UNIT	Topic	Hrs.
I	CLASSICAL BUILDING MATERIALS	12
II	CEMENT, MORTAR, CONCRETE	11
III	TIMBER AND GLASS	11
IV	PROTECTIVE AND DECORATIVE FINISHES	11
V	MISCELLANEOUS MATERIALS	12
TEST & MODEL EXAMINATION		7
Total		**64**

RATIONALE:

Diploma holders in Architectural Assistantship are supposed to prepare working drawings of buildings. Knowledge of building materials and their behavior under varied climatic conditions is very essential from the point of construction for providing detailed specifications in the working drawings. Therefore, the course in building materials includes imparting basic knowledge in the properties and use of the basic materials like: stones, bricks, lime, cement, paints, timber, exterior and interior finish, glass, plastics, building hardware, roofing materials etc. Teachers are expected to demonstrate the samples of different materials, discuss their properties with particular REFERENCES to their use and appearance in particular situations depending upon climate and environmental conditions of the site, where the materials are to be used. Students should be encouraged to collect samples of various materials and efforts should be made to maintain a good building material museum.

NOTE:

The students are also expected to go through Architecture Journals like Inside – Outside, Interiors Today, Design and Interiors, Architect and builder, Builders Friend etc. They should make scrapbook of relevant brochures.

OBJECTIVES:

To introduce the students to the world of building materials both traditional and modern so that they could make a proper choice for the various needs

DETAILED SYLLABUS

4012310- BUILDING MATERIALS

Contents: Theory

Unit	Name of the Topics	Hours
I	**CLASSICAL BUILDING MATERIALS** **STONE:** Formation & Classification – Characteristics of good stone – Characteristics and Uses of granite, lime stone, sand stone, marble, and kottah-. Manufactured Sand (M Sand), Plastering Sand (P Sand) & its Advantages. **BRICKS:** Methods of Brick Manufacturing - Characteristics of Good Bricks – Classification of Bricks and their Uses – Different Sizes and Shapes of Bricks and their Uses. **CLAY TILES:** Tile Manufacturing – Various Types of Tiles and their Uses. **LIME:** Source of Lime, Classification of Lime, Various Stage of Lime, Characteristics of Lime, Types and Uses.	4 5 1 2
II	**CEMENT, MORTAR, CONCRETE** **CEMENT:** Composition of ordinary Portland cement-functions of cement ingredients – Characteristics - Types of Cement and Uses – Grades of cement (33, 43 and 53) - Setting time of cement - White and Colored Cements – Storage of cement. **MORTAR:** Characteristics of mortar - Types of Mortar using Lime, Cement, Mud, - Composite mortars using fly ash and surkhi - Proportions and Uses. **CONCRETE:** Characteristics of Concrete – Types of concrete using lime and cement - P.C.C, R.C.C. - Proportion of Cement concrete - Composite Concrete - Water Cement ratio and strength of Concrete - Mixing, Laying, Curing and Admixtures. Hollow concrete block and Paver blocks (Interlocking tile)- Light weight concrete blocks	5 2 4
III	**TIMBER AND GLASS:** **TIMBER:** Characteristics of Timber - Classification of Timber - Defects of Timber and their Causes - Seasoning, Preservation and Fire-Proofing of Timber - Common Varieties used in construction.Wood based	7

	Products and Uses (Veneering, Laminate, Plywood, block board, batten board, particle board). Bamboo – characters and uses in building industry. **GLASS:** Types of Glass and Uses – Glass blocks - Definition of Curtain wall – Purpose of Curtain walls - Structural Glazing.	4
IV	**PROTECTIVE AND DECORATIVE FINISHES** Painting: Paints-Base, Vehicle, pigments, Solvent, Drier and Fillers. Preparation of various Paints and their Uses - Ready mix Paints - Cement, White wash, Colour wash, Oil Bound Distempers, Enamel, and Plastic Emulsion Paints- Defects in Painting, Painters Putty (solignum), Plaster Putty, Varnish, Lacquer, Epoxy Resin. Finishes for Granite, Marble, Mosaic, Wooden and Vitreous Tile – Anti skid and Anti stain measures, Anti- Termite and pest control Treatments.	11
V	**MISCELLANEOUS MATERIALS:** **THERMAL AND ACOUSTIC MATERIALS** – Thermocole, Cork, Glass Wool, Fiber boards and Patented Insulating Materials- Gypsum board **PLASTICS** – Classification and Uses - PVC, Fiber Reinforced Plastics (FRP), Ultra PVC sections. **METALS** - MS (Powdered Coated and Painted), Stainless Steel, Aluminum (Anodized and Powdered Coated) – Types and Uses Introduction to NANO materials – Vermiculate – Artificial sand – Recycled Aggregates. **WATER PROOFING AND DAMP PROOFING MATERIALS:** Various types of water proofing materials - Properties and functions- Various types of damp proofing materials - Properties and functions.	3 3 4 2

TEXT BOOKS

1. "Aggarwal & Arora" – "A Text book of Civil Engineering Materials"
2. "S.C.Rangwala" – "Building Materials"
3. "P.C.Varghese" – "Building materials"
4. "M.L.Gambhir & Neha Jamwal" – "Building Materials"
5. "S.K.Duggal" – "Building Materials"

REFERENCE BOOKS

1. “R.C. Smith” – “Materials of Construction”
2. “N.K.R. Moorthy” – “Building Materials”
3. “B.N.Das” – “Materials of Construction”
4. “S.L.Chawla” –“Text book of Engineering Materials”

WEBSITES

https://nptel.ac.in

https://ndl.iitkgp.ac.in

http://www.baboo-Flooring.com

http:// ag.avizona.edu/SWES

http://www/angelfite.com/in

http://www.idrc.ca/libary/documents/104800/chapz-e.htmlhttp://www/angelfite.com/inz/granite

1012

DIPLOMA IN ARCHITECTURAL ASSISTANTSHIP

II YEAR

N – SCHEME

III SEMESTER

THEORY OF ARCHITECTURE

IMPLEMENTED FROM 2020-2021

CURRICULUM DEVELOPMENT CENTRE

DIRECTORATE OF TECHNICAL EDUCATION
CHENNAI-600 025, TAMIL NADU

STATE BOARD OF TECHNICAL EDUCATION &TRAINING-TAMILNADU

DIPLOMA IN ARCHITECTURAL ASSISTANTSHIP SYLLABUS

N-SCHEME

(To be implemented for the students admitted from the year 2020-2021 onwards)

Course Name : 1012: DIPLOMA IN ARCHITECTURAL ASSISTANTSHIP
Subject Code : 4012320
Semester : III Semester
Subject Title : THEORY OF ARCHITECTURE

TEACHING AND SCHEME OF EXAMINATION

No. of weeks per Semester: 16 Weeks

Subject	Instructions		Examination			
	Hours / Week	Hours / Semester	Marks			Duration
			Internal Assessment	Board Examination	Total	
THEORY OF ARCHITECTURE	5 Hours	80 Hours	25	100*	100	3 Hours

*** Examinations will be conducted for 100 marks and it will be reduced to 75 marks.**

Topics and Allocation of Hours

UNIT	Topic	Hrs.
I	INTRODUCTION AND ELEMENTS OF ARCHITECTURE	15
II	ARCHITECTURAL FORMS & SPACE	15
III	COMPONENTS OF DESIGN AND PRINCIPLES OF COMPOSITION	15
IV	ORGANIZATION OF FORMS & SPACES	14
V	ARTICULATION AND CIRCULATION	14
TEST & MODEL EXAMINATION		7
Total		**80**

RATIONALE:

Students of Architectural Assistantship at diploma level are supposed to understand basic principles of theory of architecture while designing some building. All students should know the physical aspects of Architecture like: form, function, balance, light and shadow, shape, plane, volume, line, proportions, rhythm, texture, emphasis, contrast, color and other related elements. Therefore, the subject theory of architecture is very important for students undergoing diploma course in Architectural Assistantship because it is the basis of Architecture. Teachers while imparting instructions are expected to teach various elements used in designing buildings. Teachers may make use of models and audio-visual aids to clarify the concepts. Group discussions and seminars may also be organized to discuss various concepts and principles involved in the design. It is recommended that teachers may organize visits to work sites to clarify the concepts and principles involved.

OBJECTIVES:

At the completion of the study, the students will be able

- To know about the principles of architecture.
- To know about the elements of architecture.
- To understand the concepts of various buildings.
- To study the organization of forms and spaces.
- To gain knowledge about the articulation and circulation of buildings.

DETAILED SYLLABUS

4012320- THEORY OF ARCHITECTURE

Contents: Theory

UNIT	NAME OF THE TOPIC	HRS
I	**INTRODUCTION AND ELEMENTS OF ARCHITECTURE** Definition of Architecture - Architectural design –Difference between Architecture and Civil Engineering – Architect – Civil Engineer - An analysis, Integration of aesthetic and function - Elements of Architecture – point, line, plane and volume - various building examples.	15
II	**ARCHITECTURAL FORMS & SPACE** Form & space - Unity of opposites, Shapes, visual and emotional effects of geometric forms - The sphere, the cube, the pyramid, the cylinder and cone and their derivatives, Subtractive & additive forms – linear, radial, centralized, clustered, grid - various building examples - Form defining space – horizontal elements, vertical elements - Space defining elements, openings in space-defining elements.	15
III	**COMPONENTS OF DESIGN AND PRINCIPLES OF COMPOSITION** **COMPONENTS:** Proportion, scale - Ordering principles - balance, rhythm, symmetry, datum, hierarchy, pattern, and axis with building examples. **PRINCIPLES OF COMPOSITION:** Unity, harmony and specific qualities of design to include dominance, punctuating effect, dramatic effect, fluidity, climax, texture, color and contrast with building examples.	7 8
IV	**ORGANIZATION OF FORMS & SPACES** **SPATIAL RELATIONSHIPS:** i) Space within space ii) Interlocking spaces iii) Adjacent spaces iv) Space linked by a common space. **SPATIAL ORGANIZATION:** influencing factors and their types i) Centralized ii) Linear iii) Radial iv) Clustered v) Grid Works of contemporary architects and their ideologies and philosophies using the forms and space – F.L.Wright, Le Corbusier	7 7

V	**ARTICULATION AND CIRCULATION** **ARTICULATION OF FORM**: Types: i) Edges and corners, ii) Surfaces articulation - Works of contemporary architects and their ideologies and philosophies using the forms and space – Louis Sullivan, Philip Johnson. **CIRCULATION** Function of building circulation- components of building circulation - The building approach, the building entrance, configuration of the path, path space relationship, form of circulation space with examples - Simple circulation diagram for buildings - Examples - Circulation as a component in the works of modern and post-modern architects – Louis Khan, Charles Correa.	7 7

TEXT BOOKS

1. "V.S.Pramar", "Design Fundamentals in Architecture", "Samaiya Publications Private Ltd., NewDelhi".
2. "Paul Alan Johnson" – "The Theory of Architecture" – "Concepts and themes, Van Nostrand Reinhold Co., NewYork."
3. "Francis D.K.Ching", "Architecture-Form, Space and Order", "Van Nostrand Reinhold Company, New York,1979".

REFERENCE BOOKS

1. "Helm Marie Evans and Caria David Dunneshil," – "An initiation to Design", "Macmillan Publishing Co. Inc., NewYork"
2. "Ernest Burden" – "Elements of Architectural Design"
3. "Sir Bannister Fletcher" – "A History of Architecture," – "Butterworths, London,1987".
4. "G.Muthu Shoba Mohan"- "Principles of Architecture"
5. "Anupama Rani"- " Domestic Architecture".

1012

DIPLOMA IN ARCHITECTURAL ASSISTANTSHIP

II YEAR

N – SCHEME

III SEMESTER

HISTORY OF ARCHITECTURE – I

IMPLEMENTED FROM 2020-2021

CURRICULUM DEVELOPMENT CENTRE

DIRECTORATE OF TECHNICAL EDUCATION
CHENNAI-600 025, TAMIL NADU

STATE BOARD OF TECHNICAL EDUCATION &TRAINING-TAMILNADU

DIPLOMA IN ARCHITECTURAL ASSISTANTSHIP SYLLABUS

N-SCHEME

(To be implemented for the students admitted from the year 2020-2021 onwards)

Course Name : 1012: DIPLOMA IN ARCHITECTURAL ASSISTANTSHIP
Subject Code : 4012330
Semester : III Semester
Subject Title : HISTORY OF ARCHITECTURE - I

TEACHING AND SCHEME OF EXAMINATION

No. of weeks per Semester: 16 Weeks

Subject	Instructions		Examination			
	Hours / Week	Hours / Semester	Marks			Duration
			Internal Assessment	Board Examination	Total	
HISTORY OF ARCHITECTURE – I	5 Hours	80 Hours	25	100*	100	3 Hours

*** Examinations will be conducted for 100 marks and it will be reduced to 75 marks.**

Topics and Allocation of Hours

UNIT	Topic	Hrs.
I	EGYPTIAN & WEST ASIA	15
II	GREECE & ROME	15
III	EARLY CHRISTIAN AND BYZANTINE	14
IV	ROMANESQUE & GOTHIC	15
V	RENAISSANCE	14
TEST & MODEL EXAMINATION		7
TOTAL		**80**

RATIONALE:

Students of Architectural Assistantship at diploma level must be well conversant with the skills of preparing working drawings, vocabulary, broad exposure to communicate and understand the vocabulary and terminology in the field of Architecture. The course on History of Architecture develops appreciation regarding past and current trends in the field of architecture. The teacher should try to create interest among the students for this course by organizing site visits to the local old monuments. Use of audio-visual aids, emphasis on materials, construction methods, structural system and design concepts involved and also motivate the students.

OBJECTIVES:

At the completion of the study, the students will be able

- To understand the new technology and new materials, general trend, effect of society and terminology on Architecture.

DETAILED SYLLABUS

4012330- HISTORY OF ARCHITECTURE – I

Contents: Theory

Unit	Name of the Topic	Hours
I	**EGYPTIAN & WEST ASIA** **EGYPT:** Architectural Character - Mass to Trabeate construction and general characteristics of Egyptian Architecture - Great Pyramid of Cheops, Gizeh, Great temple of Amman, Karnak. **WEST ASIA:** Babylonian and Persian cultures - architectural character - Ziggurat, Urnammu, - Palace at Persepolis – hanging garden of Babylon	8 7
II	**GREECE & ROME** **GREECE** - Architectural character - Orders - Doric, Ionic, Corinthian: Parthenon, Athens: Theatre at Epidaurous **ROME** - Architectural Character - Advances in Engineering - About roman aqueducts - pont du gard, nimes –Pantheon, Rome	8 7
III	**EARLY CHRISTIAN AND BYZANTINE** Evolution of church forms - Pendentives & Dome in Byzantine Architecture - Architectural character - St. Sophia, Constantinople, St. Vitale, Ravenna	14
IV	**ROMANESQUE & GOTHIC** **ROMANESQUE** - Architectural character in Italy, France and England – Abbay Aux- Homes **GOTHIC** - Evolution of vaulting and development of structural systems - Architectural character –Notre Dame, Paris	8 7
V	**RENAISSANCE** The idea of rebirth and revival of art - Renaissance, High Renaissance and Baroque Periods - Features of a typical Renaissance Palace - Dome construction - St. Paul's, London. - St. Peter's, Rome.	14

TEXT BOOKS

1. "Sir Banister Fletcher" – "A History of Architecture", -"University of London, The Antholone Press".
2. "Spiro Kostof "- "A History of Architecture" - "Setting and Rituals, Oxford University Press, London".
3. "Percy Brown" – "Indian Architecture (Buddhist and Hindu Period)" – "Taraporevala and Sons, Bombay".
4. "Satish Grover" – "The Architecture of India (Buddhist and Hindu Period)",- "Vikas Publishing Housing Pvt.Ltd., NewDelhi."
5. "Percy Brown" – "Indian Architecture Buddhist & Hindu"
6. "Satish Grover" – "Buddhist & Hindu Architecture in India."
7. "James Fergusson" – "History of Indian & Eastern Architecture".

REFERENCE BOOKS

1. "A.Volwahsen" – "Living Architecture - India (Buddhist and Hindu)",- "Oxford and IBM, London".
2. "Christoper Tadgelli" – "The History of Architecture in India from the Dawn of Civilization to the end of Raj,Longman Group", - "U.K.Ltd., London".
3. "Carmen Kagal,Vistara" – "The Architecture of India," - "Published by Festival of India".
4. "Electa Moniteur" – "Architecture in India", -"M/s.ElectaFrance,Milan".
5. "George Mitchell" – "The Hindu Temple," – "BI Pub., Bombay".
6. "Sanjeev Matheshwari & Rajeev Garg"- "Ancient Indian Architecture"

WEBSITES

https://nptel.ac.in

https://ndl.iitkgp.ac.in

http://library.advanced.org/10098

http://www.encylopedia.com/articles/05371.html

1012

DIPLOMA IN ARCHITECTURAL ASSISTANTSHIP

II YEAR

N – SCHEME

III SEMESTER

BUILDING CONSTRUCTION AND DETAILING - I

IMPLEMENTED FROM 2020-2021

CURRICULUM DEVELOPMENT CENTRE

DIRECTORATE OF TECHNICAL EDUCATION
CHENNAI-600 025, TAMIL NADU

STATE BOARD OF TECHNICAL EDUCATION &TRAINING-TAMILNADU

DIPLOMA IN ARCHITECTURAL ASSISTANTSHIP SYLLABUS

N-SCHEME

(To be implemented for the students admitted from the year 2020-2021 onwards)

Course Name : 1012: DIPLOMA IN ARCHITECTURAL ASSISTANTSHIP

Subject Code : 4012340

Semester : III Semester

Subject Title : BUILDING CONSTRUCTION AND DETAILING – I

TEACHING AND SCHEME OF EXAMINATION

No. of weeks per Semester: 16 Weeks

Subject	Instructions		Examination			
			Marks			
	Hours / Week	Hours / Semester	Internal Assessment	Board Examination	Total	Duration
BUILDING CONSTRUCTION AND DETAILING – I	4 Hours	64 Hours	25	100*	100	3 Hours

*** Examinations will be conducted for 100 marks and it will be reduced to 75 marks.**

Topics and Allocation of Hours

UNIT	Topic	Hrs.
I	MASONRY – STONE, BRICK & COMPOSITE	16
II	FOUNDATION	16
III	CEMENT CONCRETE CONSTRUCTION (P.C.C. & R.C.C.)	16
IV	TIMBER JOINTS, DOORS & WINDOWS	16
TOTAL		**64**

RATIONALE:

Students of Architectural Assistantship at diploma level are supposed to prepare structural drawings, working drawings and detailed drawings of various components of buildings. Also students are expected to design small residential buildings. For this purpose, it is essential that students are taught various components of building construction comprising of: foundations, super structure, openings, roofs, staircases, flooring and finishing and other allied building components. Therefore, the subject of building construction is very important for students undergoing diploma course in

Architectural Assistantship. Teachers while imparting instructions are expected to show various components of buildings under construction, make use of models or other audio-visual media to clarify the concepts. While preparing drawings, teachers should lay considerable stress on proportioning, dimensioning, specification writing and printing and composition of drawing work. Teachers should also emphasis on environmental aspects like lighting, ventilation and orientation of buildings. Students should be asked to maintain a sketch book for recording the observations from site visits. While conducting viva, teachers should point out specific mistakes done by students in the preparation of drawings.

OBJECTIVES:

At the completion of the study, the students will be able

- To develop understanding about construction principles.
- To develop design abilities by applying basic principles of construction and choosing appropriate materials and techniques.
- To gain knowledge in the basic building materials and basic construction principles for foundation, masonry wall, doors & windows.

DETAILED SYLLABUS

4012340- BUILDING CONSTRUCTION AND DETAILING – I

Contents: Practical

Unit	Name of the Topic	Hours
I	**MASONRY – STONE, BRICK & COMPOSITE** **STONE MASONRY**: Definition – Technical terms – Dressing of Stones – Joints in Stone Masonry – Classification of Stone Masonry. **BRICK MASONRY**: Technical terms – Bonds in Brick Work (English and Flemish bond up to two brick wall) – Bonds in Pier – Tee junction – Squint junction **MASONRY AND PARTITION WALL** Masonry – load Bearing Wall – Partitions – Retaining Walls and Breast wall – cavity wall construction – reinforced brick work.	5 6 5
II	**FOUNDATION** Types of Soils – Types of Loads – Bearing Power of Soil – Types of Foundation – Causes of Failure of Foundation and measures to prevent such failures – Dewatering of Foundation Trenches – Pile Foundation – Types of Pile Foundations. **FLOORS & ROOFS** **FLOORS**: – Types of Flooring- Timber, P.C.C, R.C.C., Stone, Tile, Ribbed Flooring **ROOFS & ROOF COVERINGS -** Technical terms - Classification of Roofs –Pitched Roof—Types of Pitched Roof (excluding Steel Trussed Roof)– Flat Roofs – Roof coverings for Pitched Roofs – FRP, PVC,AC sheet, Aluminum Sheets and country & Mangalore tiled roofing	6 5 5
III	**CEMENT CONCRETE CONSTRUCTION (P.C.C. & R.C.C.)** Definition of P.C.C. & R.C.C. – Water Proofing of Concrete – Reinforcement – Advantages of R.C.C. – Causes of Failure, Rehabilitation of R.C.C. Structures Various Building Components in a Single Storied Building and their functions	8

	DAMP PROOFING: Source of dampness- Causes of dampness – Methods of Damp Proofing – Materials used for Damp Proofing – Selection of Material for D.P.C. – Damp Proofing Treatment in Buildings (Foundations, Floors, Walls, Roofs, and Parapet Walls & Basement).	**8**
IV	**TIMBER JOINTS, DOORS & WINDOWS.** TIMBER JOINTS: Technical terms – Classification of Joints. DOORS & WINDOWS: Technical terms – Location of Doors – Size of Doors – Types of Doors & Windows – Fixtures and Fastenings for Doors and Windows **ARCHES & LINTELS, DAMP PROOFING** ARCHES & LINTELS: Technical terms – Types of Arches – Materials used for Construction – Types of Lintels.	**10** **6**

LIST OF PLATES:

1. Plan, Elevation and Isometric view of stone masonry **(Sketch only).**
2. Plan, Elevation and Isometric view of alternate courses for English bond **(Sketch only).**
3. Plan, Elevation and Isometric view of alternate courses for Flemish bond **(Sketch only).**
4. Plan, elevation and section of Partition walls using timber, glass to half full size scale detailing. Details shall be prepared to half full sizescale.
5. Plan and sectional elevation of Spread Footing (Stone and Brick), Plan and sectional elevation of Isolated Footing, Combined Footing (R.C.C)
6. Cross section of different types of floors and Cross section of different types of Roof coverings.
7. Elevation of all types of Arches and Cross section of Lintels.
8. Damp proofing of Foundations, Basement wall, Floors, Roofs, and Parapet Walls **(Sketch only).**
9. Plan and Cross section of a single storied building showing various building components.
10. Plan, Elevation, Section and Construction details of Wooden Paneled Door and Flush Door. Details shall be prepared to full size scale.

11. Plan, Elevation, Section and Construction details of Partly Paneled and Partly Glazed Door. Details shall be prepared to full size scale.
12. Plan, Elevation, Section and Construction details of Aluminum Glazed door / Window. Details shall be prepared to full size scale.
13. Plan, Elevation, Section and Construction details of Steel door / Steel Glazed Window. Details shall be prepared to full size scale.
14. Plan, Elevation, Section and Construction details of Wooden Paneled window and Glazed window. Details shall be prepared to full size scale.

BOARD EXAMINATION

ALLOCATION OF MARKS

Part A: Theory questions 7 out of 10, two questions from each unit carry five marks each with a total mark **of 35**

Part B: Any two of the exercises from the exercises that are done in the studio during the semester carries 2x30 = **60 marks.**(By lot)

Viva-Voce : 5marks

Total : 100 Marks

TEXT BOOKS

1 “S.C.Rangwala” – “Building Construction”.
2 “Arrora & Bindrra” – “A text book of building construction”
3 “Dr.B.C.Punmia” – “Building Construction”
4 “Dr.J.Jha , Prof.S.K.Sinha & P.C Varghese” – “Building Construction”
5 “S.S.Bhavikatti” – “Building Construction”

REFERENCES:

1. ”R.C.Mitchell” - “Building construction”
2. “R.S. Deshpande” – “A Text book of Building Construction”
3. “Richard Greenhaigh” – “Building Construction”
4. “Shah &Kale” – “Building Drawing”
5. “S.S. Bhavikatti , M.V.Chitawadag” – “Building Planning & Drawing”
6. “W.B.Mckay” – “Building Construction Metric (fifth edition)”
7. “Roy Chudley & Roger Greeno” –“Building Construction Hand Book”

WEBSITES

https://nptel.ac.in

https://ndl.iitkgp.ac.in

http://www.baboo-Flooring.com

http:// ag.avizona.edu/SWES

http://www/angelfite.com/in

http://www.idrc.ca/libary/documents/104800/chapz-e.htmlhttp://www/angelfite.com/inz/granite

http://www.ibex-ibex-intl.comhttp://www.inika.com/

chitrahttp://www.routbdge.com http://www.ventura india.com

LIST OF EQUIPMENTS (for a batch of 30 students)

Drafting Table with stool	-	30 Nos
Pin-up board	-	1 No

4012340 - BUILDING CONSTRUCTION AND DETAILING – I

MODEL QUESTION PAPER

Duration: 3 HRS **Max.marks:100**

PART-A **(7X5=35 marks)**

Answer any 7 questions

1. What are the uses of stone masonry?
2. What is dressing of stone?
3. Define the following
   a) Header
   b) stretcher
4. Define bearing capacity of soil.
5. What are the different types of foundation? Explain any one in detail.
6. Write the classification of roof.
7. What are the different types of concrete? Explain any one in detail
8. Write a short note on Various Building Components in a Single Storied Building and their functions
9. What are the different types used in timber construction? Explain any one in detail.
10. What are principles to be followed in locating doors and windows in a building?

PART-B (By lot) **(2x30=60 marks)**

Answer all the questions

11. Draw the Plan, Elevation and Isometric view of alternate courses of two brick wall in English bond.
12. Draw the Plan, Elevation, Section and Construction details of Aluminum Glazed door

Viva-Voce - 5 marks

1012

DIPLOMA IN ARCHITECTURAL ASSISTANTSHIP

II YEAR

N – SCHEME

III SEMESTER

ARCHITECTURAL DRAWING - I

IMPLEMENTED FROM 2020-2021

CURRICULUM DEVELOPMENT CENTRE

DIRECTORATE OF TECHNICAL EDUCATION
CHENNAI-600 025, TAMIL NADU

STATE BOARD OF TECHNICAL EDUCATION &TRAINING-TAMILNADU

DIPLOMA IN ARCHITECTURAL ASSISTANTSHIP SYLLABUS

N-SCHEME

(To be implemented for the students admitted from the year 2020-2021 onwards)

Course Name : 1012: DIPLOMA IN ARCHITECTURAL ASSISTANTSHIP
Subject Code : 4012350
Semester : III Semester
Subject Title : ARCHITECTURAL DRAWING - I

TEACHING AND SCHEME OF EXAMINATION

No. of weeks per Semester: 16 Weeks

Subject	Instructions		Examination			
	Hours/ Week	Hours / Semester	Marks			Duration
			Internal Assessment	Board Examination	Total	
ARCHITECTURAL DRAWING - I	4 Hours	64 Hours	25	100*	100	3Hours

*** Examinations will be conducted for 100 marks and it will be reduced to 75 marks.**

Topics and Allocation of Hours

UNIT	Topic	Hrs.
I	PENCIL SKETCHING	18
II	ARCHITECTURAL ISOMETRIC DRAWINGS	15
III	MEASURED DRAWING	15
IV	DOCUMENTATION OF A BUILDING	16
TOTAL		**64**

RATIONALE:

The students of Diploma in Architectural Assistantship should have sufficient skills to draw isometric drawings, besides this they should also be introduced to pencil sketching and measured drawing of simple objects. They should be given sufficient exercises in rendering of isometric drawings, pencil sketching and measured drawing. So that they are able to perform well in the field/industry.

OBJECTIVES:

At the completion of the study, the students will be able

- To introduce architectural drawing techniques and to facilitate effective visual communication

DETAILED SYLLABUS

4012350 - ARCHITECTURAL DRAWING - I

Contents: Practical

UNIT	TOPICS	HOURS
I	**PENCIL SKETCHING** Exercise with Straight line, curvilinear line, Planes, Volume and Texture to understand various forms in Nature and Manmade forms Freehand Sketching Exercise to understand the Characteristic of Elements in Nature and Manmade forms Sketching from memory- Basic Knowledge of Scale, Proportion, Light and Shade - Enlarging and Reducing of drawing Sketching of various Compositions with Natural and Geometrical Form – Rendering and sketching exercises with Pencil. **(Minimum of 6 exercises)**	**6** **6** **6**
II	**ARCHITECTURAL ISOMETRIC DRAWINGS** Architectural details like pergolas, some alphabetical shapes Addition of solids and voids that will create more 3-dimensional expression -Sunshades, Steps, Stools, Table and Chair. **(Minimum of 5 exercises)**	**15**
III	**MEASURED DRAWING** Observation, measurement and drafting- plans, elevations of simple objects like furniture, Entrance gates, etc. and building components like columns, cornice, door, window, etc. Principle of basic architectural drafting - line value, lettering basic and sections - presentation formats. Measured drawing of simple objects like furniture, entrance gates, etc. and building components like columns, cornice, door, window, etc.**(Minimum of 3 exercises)**	**5** **5** **5**
IV	**DOCUMENTATION OF A BUILDING** Detailed measured drawing of a building. **(Minimum of 1 exercise)**	**16**

BOARD EXAMINATION

ALLOCATION OF MARKS

Part-A : Any one question from unit – I which carries **20 marks.** (By lot) (Pencil Sketching)

Part-B : Any one question from unit – II which carries **25marks.** (By lot) (Architectural Isometric drawings)

Part-C : Any one question from unit – III which carries **50 marks.** (By lot) **(**Measured Drawing)

Viva-voce : **5marks**

REFERENCES:

1. "IH.Morris", "Geometrical Drawing for Art Students" – "OrientLongman, Madras,1982".
2. "George K.Stegman,HarryJ.Stegman", "Architectural Drafting" "Printed in USA by \ American TechnicalSociety,1966".
3. "Francis Ching", "Architectural Graphics", "Van Nostrand Rein Hold Company, New York, 1964".
4. "C.Leslie Martin", "Architectural Graphics", "The Macmillan Company, New York,1964".
5. "Clande Batley", "Indian Architecture", "D.B,Taraporevale Sons andCo. Ltd.,Bombay".
6. "William Kirby Lockard", "Drawing as a Means to Architecture", "Van Nostrand,Reinhold Company, NewYork".
7. "George A.Dinsmore", "Analytical Graphics" – "D.Van Nostrand, Company Inc.,Canada".

9 "Francis D.K.Ching With Steven P.Juroszek"-" Design Drawing"

10 "Robert W.Gill" –"Manual Of Rendering With Pen & Ink (revised & enlarged edition)"

WEBSITES

https://nptel.ac.in

https://ndl.iitkgp.ac.in

http://www infinit.net - elements of design

http://www.Okino.com - design, visualization, rendering system

http://www.interface - signage.com

http://www.design community.com - arch rendering, 3D design

http://www.cs.brown.edu

http://www.dtcc.edu/-document,project info - Arch.dwg.

LIST OF EQUIPMENTS (for a batch of 30 students)

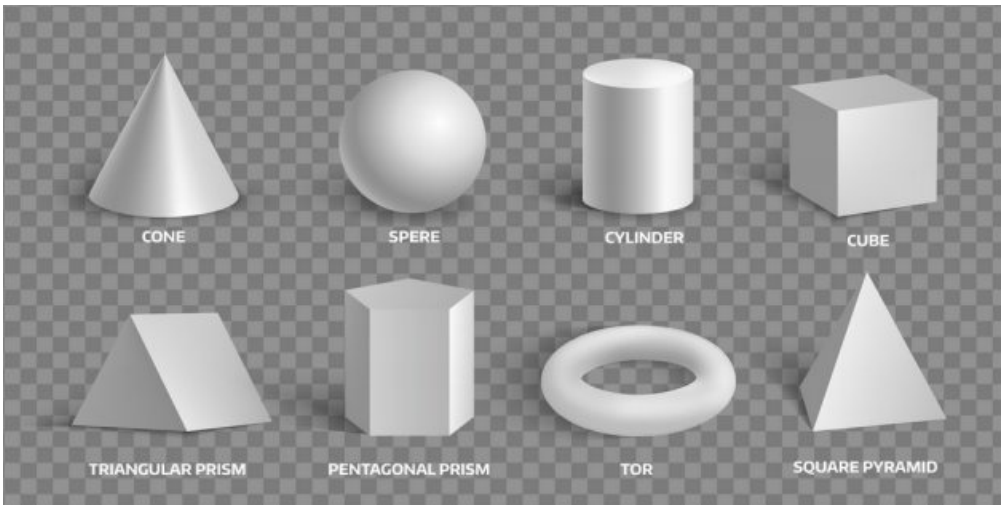
Drafting Table with stool	-	30 Nos
Pin-up board	-	1 No

4012350 - ARCHITECTURAL DRAWING – I

MODEL QUESTION PAPER

Duration:3hrs **Max.marks:100**

Part-A: Sketch the given object and render with light and shade. **- 20 marks.**



Part-B: Draw a plan, elevation and isometric view of Sunshade. **- 25marks.**

Part –C: Document and detail the drawings of given chair / door / window

Measure the objects and detail out the plan, section, elevations. **- 50 marks.**

(A2 sheets – 2 / student)

Viva–voce **- 5marks**