

**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**

**FOURTH SEMESTER**

Col. No	Subject Code	SUBJECT	HOURS PER WEEK				
			Theory Hours	Drawing	Tutorial	Practical hours	Total Hours
1	4012410	Mechanics of Structures	6	-	-	-	6
2	4012420	Survey Theory	4	-	-	-	4
3	4012430	History of Architecture – II	4	-	-	-	4
4	4012440	Building Services	4	-	-	-	4
5	4012450	Building Construction and Detailing – II	-	-	-	4	4
6	4012460	Architectural Drawing – II	-	-	-	4	4
7	4012470	Architectural Design Studio – I	-	-	-	6	6
Extra/ Co-curricular activities		Physical Education	-	-	-	-	2
		Library	-	-	-	-	1
<b>TOTAL</b>			<b>18</b>	<b>-</b>	<b>-</b>	<b>14</b>	<b>35</b>

**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**

**FOURTH 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		
4012410	Mechanics of Structures	25	100	100	40	3
4012420	Survey Theory	25	100	100	40	3
4012430	History of Architecture – II	25	100	100	40	3
4012440	Building Services	25	100	100	40	3
4012450	Building Construction and Detailing – II	25	100	100	50	3
4012460	Architectural Drawing – II	25	100	100	50	3
4012470	Architectural Design Studio – I	25	100	100	50	3
<b>TOTAL</b>		<b>175</b>	<b>700</b>	<b>700</b>		

**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: DIPLOM IN ARCHITECTURAL ASSISTANTSHIP  
Subject Code : 4012410  
Semester : IV Semester  
Subject Title : MECHANICS OF STRUCTURES

**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	
MECHANICS OF STRUCTURES	6Hours	96 Hours	25	100*	100	3 Hours

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

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Topics and Allocation of Hours

UNIT	Topics	Hrs.
I	INTRODUCTION, STRESS, STRAIN & ELASTIC CONSTANTS APPLICATION OF STRESS AND STRAIN IN ENGINEERING FIELD BEHAVIOUR OF DUCTILE AND BRITTLE MATERIAL	18
II	SHEAR FORCE AND BENDING MOMENT	18
III	CENTRE OF GRAVITY & MOMENT OF INERTIA	18
IV	AREA MOMENT METHOD & THEOREM OF THREE MOMENTS	18
V	COLUMNS AND STRUTS & PIN JOINTED FRAMES	17
TEST & MODEL EXAMINATION		7
<b>TOTAL</b>		<b>96</b>

**RATIONALE:**

This is a fundamental subject which covers broad elements of Engineering Mechanics, Strength of Materials and Theory of Structures. Study of this subject enables the student to distinguish between different types of stress and strain in a material, under the action of external forces. The student will learn to analyse simple structural elements for their design which he usually needs in the professional life. Teachers while imparting instruction should stress on concepts and principles and provide considerable practice in problem solving.

**OBJECTIVES**

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

- Understand the Stress, strain and elastic constants.
- Understand the Application of stress and strain in engineering field.
- Know about the behavior of ductile and brittle materials.
- Locate the position of centroid of different geometrical section.
- Determine  $I_{xx}$ ,  $I_{yy}$ ,  $Z_{xx}$ ,  $Z_{yy}$  of different geometrical section.
- Understand stresses in beams due to bending.
- Determine the Slope and Deflection of Determinate beams by area moment method.
- Analyze of Continuous beam, fixed beam and propped cantilever by Theorem of Three moment and draw SFD &BMD.
- Define different types of Columns and to find Critical load of Columns.
- Analyze Pin jointed frames by graphical method.
- Solving problems in the course of study.

**DETAILED SYLLABUS**

**4012410- MECHANICS OF STRUCTURES**

Contents: Theory

Unit	Name of the Topic	Hours
I	<p><b>1.1 INTRODUCTION, STRESS AND STRAIN &amp; ELASTIC CONSTANTS:</b></p> <p>Importance of study of Engineering Mechanics/ Strength of Materials, Mechanical properties of materials – Elasticity, Plasticity, Hardness, Toughness, Brittleness, Ductility, Creep &amp; Fatigue.</p> <p><b>Stress and strain:</b></p> <p>Force-definition-Types of forces acting on a structural member- Definition of tension, compression, shear; Stress-strain-definition- Different types of stresses-tensile, compressive and shear stresses - Different types of strains –Tensile, Compressive and Shear strains; Longitudinal and Lateral strains-Poisson’s Ratio- Numerical problems on stress and strain.</p> <p><b>Modulus of Elasticity / Elastic constants</b></p> <p>Elasticity –Elastic limit- Hooke’s law – Young’s modulus of Elasticity –Rigidity modulus-Volumetric strain – Bulk modulus – Definition- Relation between three Moduli-(no derivation)-Young’s modulus for selected engineering materials- Numerical problems.</p> <p><b>1.2 APPLICATION OF STRESS AND STRAIN IN ENGINEERING FIELD:</b></p> <p>Deformation of Prismatic bars subjected to uni-axial load–Deformation of stepped bars – deformation of prismatic bars due to self-weight – Numerical problems.</p> <p><b>Behavior of ductile and brittle material</b></p> <p>Load extension curve of Ductile and Brittle material – Limit of proportionality, Elastic limit, Yield stress, Ultimate stress, Breaking stress, Factor of safety – Significance of percentage of elongation and reduction in area – Numerical problems.</p>	<p>2</p> <p>4</p> <p>6</p> <p>3</p> <p>3</p>

<b>II</b>	<p><b>2. 1 SHEAR FORCE AND BENDING MOMENT</b></p> <p>Definition of a beam– Support conditions and diagrammatic representation – Types of beams based on support conditions – Diagrammatic representation of beams – Static equilibrium equations – Determinate and indeterminate beams- Loads- Transverse loads-Types (Concentrated, uniformly distributed and varying loads)- Diagrammatic representation of beams with different loads - Shear force and Bending Moment - Definition – Conventional signs used for S.F. and B.M – S.F and B.M of determinate beams – Cantilever beam &amp; Simply supported beams - simple problems only (Concentrated loads and udl only) – Overhanging beams (No Problems) – Point of contra flexure – Economical overhanging.</p>	<b>18</b>
<b>III</b>	<p><b>GEOMETRICAL PROPERTIES</b></p> <p><b>3.1 CENTROID:</b></p> <p>Geometrical properties -Definition of centroid and center of gravity – Centroid of regular geometrical figures - Centroid of symmetric, asymmetric, and anti symmetric practical sections-Numerical problems.</p> <p><b>3.2. MOMENT OF INERTIA (MI):</b></p> <p>Definition and notation of Moment of Inertia, Polar moment of inertia, Radius of gyration, Section modulus and Polar modulus, Parallel and perpendicular axis theorems; M.I. of regular geometrical plane sections (rectangular, triangular and circular sections) – M.I. about centroidal axis - MI about base, Radius of gyration- section modulus- Polar moment of inertia – Polar modulus- problems- MI of symmetric, asymmetric and anti-symmetric practical sections - Problems.</p>	<b>9</b>  <b>9</b>

<b>IV</b>	<p><b>4.1 SLOPE AND DEFLECTION OF BEAMS (CANTILEVER &amp; SIMPLY SUPPORTED BEAMS):</b></p> <p>Deflected shape of beams with different support conditions – Flexural rigidity and stiffness of beams – Definition of slope and deflection-Area moment method – Mohr’s theorems for slope and deflection of beams – Derivation of expression for maximum slope and maximum deflection of simple standard cases by area moment method for cantilever and simply supported beams subjected to symmetrical UDL and point loads – Numerical problems on slope and deflection at salient points of cantilever and simply supported beam from first principles..</p> <p><b>4.2 THEOREM OF THREE MOMENTS:</b></p> <p>Introduction to continuous beam – Definition of indeterminate structures- Degree of indeterminacy of continuous beams- General methods of analysis of indeterminate structures – Clapeyron’s theorem of three moments – Statements – Application of Clapeyron’s theorem of three moments and sketching of SFD &amp; BMD for the following cases: problems on two spans simply supported ends, propped cantilever and fixed beams.</p>	<b>9</b>
<b>V</b>	<p><b>5.1 COLUMNS AND STRUTS:</b></p> <p>Definition of columns and struts - short and long columns – Equivalent length/Effective length- Slenderness ratio- Axially loaded and eccentrically loaded- End conditions – Euler’s formula and Rankine’s formula for buckling load (no derivation) - application of formula – columns subjected to axial loads – simple problems on simple single section only.</p> <p><b>5.2 PIN JOINED FRAMES:</b></p> <p>Frame / Truss – definition – Determinate and Indeterminate frames – Classification of frames – Perfect and Imperfect frames – Deficient and Redundant frames - Formulation of a perfect frame – Common types of trusses – Methods of analysis – Graphical method only - Space diagram – Bow’s notation – Resultant force– Vector diagram – Determination of forces in a cantilever / Simply supported determinate truss with vertical load only.</p>	<b>8</b>
		<b>9</b>

#### TEXT BOOKS

1. "B.C.Punmia"- "Strength of materials and Theory of structures- Vol I" - ,  
"Lakshmi publications, Delhi"
2. "S. Ramamrutham"-,"Strength of Materials" – "Dhanpatrai & Sons,Delhi".
3. "R.K. Bansal"- "Engineering Mechanics & Strength of Materials" -," Lakshmi  
publications, Delhi".
4. "S.Ramamrutham & R.Narayan"- "Theory of Structures"
5. "P.N.Chandramouli"- "Fundamentals of Strength of Materials"
6. "R.Subramanian"- "Strength of Materials"
7. "T.S.Venkatesh & D.K.Singh"- "Strength of Materials"
8. "S.S Bhavikatti"- "Strength of Materials"
9. "B.C.Punmia ,Er.Ashok K Jain & Dr.Arun K.Jain"- "Theory of Structures"
10. "R.S.Khurmi"- "Theory of Structures".

#### REFERENCE BOOKS

1. "V.N. Vazirani & M.M.Ratwani"- "Analysis of Structures".
2. "R.L.Jindal"- "Elementary Theory of Structures".
3. "S.B.Junnarkor"- "Mechanics of structures"
4. "V.Natarajan"- "Elements of Applied Mechanics"
5. "Dr A.Elangovan"- "Engineering Mechanics-Tamil Version"

#### WEBSITES

<https://nptel.ac.in>

<https://ndl.iitkgp.ac.in>





**1012**

**DIPLOMA IN ARCHITECTURAL ASSISTANTSHIP**

II YEAR

**N – SCHEME**

[www.binils.com](http://www.binils.com)  
IV SEMESTER

**SURVEY THEORY**

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 : 4012420

Semester : IV Semester

Subject Title : SURVEY THEORY

**TEACHING AND SCHEME OF EXAMINATION**

No. of hours per Semester: 16 Weeks

Subject	Instructions		Examination			Duration
	Hours / Week	Hours / Semester	Marks			
			Internal Assessment	Board Examination	Total	
SURVEY THEORY	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	Topics	Hrs.
I	CHAIN, COMPASS SURVEYING & LEVELLING	12
II	THEODOLITE SURVEYING & TRIGNOMETRICAL LEVELLING	11
III	TACHEOMETRY AND TOTAL STATION	12
IV	AREAS AND VOLUMES & CONTOUR SURVEYING	11
V	GPS & GIS	11
TEST & MODEL EXAMINATION		7
<b>TOTAL</b>		<b>64</b>

**RATIONALE:**

Students of Architectural Assistantship at diploma level are expected to manage the site which involves taking measurements surveying and inspection one of the main concerns which is required to be carried out for the development of township, residential colonies, public buildings etc. in the survey work. Therefore, thorough basic knowledge and skills of surveying including chain surveying, compass surveying, leveling, theodolite surveying, tachometric surveying and modern surveying is very essential. Teachers while imparting instructions are expected to explain various concepts and principles by showing various equipments and demonstration.

**OBJECTIVES:**

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

- Know basic concepts about surveying.
- Understand the principles of chain surveying
- Know principles of compass surveying.
- Understand the principles of leveling for different Architectural Purposes.
- Know the principle of Tachometry surveying
- Understand the contours.
- Understand the modern surveying instruments and methods.

**DETAILED SYLLABUS**

**4012420-SURVEY THEORY**

Contents: Theory

Unit	Name of the Topic	Hrs.
I	<p><b>1.1 CHAIN &amp; COMPASS SURVEYING</b></p> <p><b>Introduction:</b> Definition – object of surveying – Division of surveying – plane and geodetic survey – classification of survey.</p> <p><b>Chain surveying:</b> Instruments used for chaining –Ranging-Types – Direct &amp; Indirect ranging- Baseline – Check line – Tie line – offsets – Types of offsets (Description only).</p> <p><b>Compass surveying:</b> Purpose of compass surveying – magnetic dip &amp; declination - magnetic &amp; true meridian – magnetic true &amp; Arbitrary bearing – WCB &amp; RB – Fore and back bearing –calculation of included angle – closed frame work - simple problems only.</p> <p><b>1.2 LEVELLING:</b> Levelling –levels –functions – Types of levels – Dumpy level – Modern Tilting Levels – Quick setting levels – Automatic and laser level -Levelling staff – Types – Temporary adjustment –Back Sight - Fore sight – Inter sight – Change point – Bench mark – Height of instrument – Reduction of levels – Methods – Height of collimation and Rise and fall method-Simple Problems.</p>	<p>1</p> <p>2</p> <p>4</p> <p>5</p>
II	<p><b>2.1 THEODOLITE:</b> Type of Theodolite – Transit and non-Transit Theodolite – Vernier and Micrometer Theodolite -Technical terms used in Theodolite survey – Temporary adjustment – Fundamental lines – Relation between them. Measurement of Horizontal angle – methods - general, repetition and reiteration methods –measurement of vertical angle – Latitude and Departure – Consecutive coordinates – Independent coordinate. Computation of Area of closed traverse problems.</p> <p><b>2.2 TRIGNOMETRICAL LEVELLING:</b> Finding elevation of objects – Base accessible – Base inaccessible – Single plane &amp; Double plane methods – Simple problems only.</p>	<p>6</p> <p>5</p>

<b>III</b>	<p><b>3.1 TACHEOMETRY:</b></p> <p>Instrument used – system of Tacheometry – stadia and tangential systems– Tacheometric Constants -- Fixed hair method – Analatic lens (no Proof) – Distance and elevation formulae for horizontal and inclined sight- simple problems on determination of distance and elevation of objects (staff held vertical only) - determination of tachometric constants from field observations for horizontal and inclined line of sight. (staff held vertical only)</p> <p><b>3.2 TOTAL STATION:</b></p> <p>Introduction - applications of total station – components parts – accessories used – instrument preparation &amp; setting and measurement – creating a new job – measuring magnetic bearing of a line – field procedure for co- ordinates measurements – field procedure to run a traverse survey - linking data files.</p>	<b>6</b>
<b>IV</b>	<p><b>4.1 AREAS &amp; VOLUMES</b></p> <p>Computation of areas of irregular figure –General Methods of determining areas- Mid Ordinate rule-Average ordinate rule- Trapezoidal rule - Simpson’s rule- Problems –Computation of Volume –computation of earth work from cross section - one Level Cross Section only –simple problems on embankment and cutting by trapezoidal and prismatic formulae only.</p> <p><b>4.2 CONTOUR SURVEYING:</b></p> <p>Definition – Contour – Contouring – Characteristics of Contours - Contour Gradient – Uses of Contour plan and Map – Calculation of capacity of reservoirs – Simple problems only.</p>	<b>6</b>
<b>V</b>	<p><b>5.1 GLOBAL POSITION SYSTEM (GPS):</b></p> <p>Introduction – Fundamentals – Applications in Civil Engineering – GPS receiver- hand held GPS –Differential GPS - Various satellites used by GPS.</p> <p><b>5.2 GEOGRAPHICAL INFORMATION SYSTEM(GIS):</b></p> <p>MAP – Types of Maps – Development of GIS – Components of GIS – Ordinary mapping to GIS – Comparison of GIS with CAD and other system– Application of GIS -Land Information System.</p>	<b>6</b>

**TEXT BOOKS**

1. "Punmia.B.C"- "Surveying Volume-1 & Volume-2"- "Laxmi Publications(p)Ltd",
2. "Duggal .S.K"- "Surveying volume I & II "- "Tata McGraw hill New Delhi"
3. "Agor"- "A Text Book of Surveying Levelling ", -"Khanna publishers"
4. "Basak"- "Surveying & Leveling"

**REFERENCES:**

1. "Kanetkar.T.P. & S.V.Kulkarni"- "Surveying and levelling part I &II ",
2. "Rangwala.S.C" - "Surveying & Levelling", - "Charotar Publishing House",
3. "Sathesh Gopi,R.Sathikumar & N.Madhu"- "Advanced Surveying, (Total Station & Remote sensing)", "Pearson Education, Chennai, 2007".
4. "Burrough P A"- "Principles of GIS for Land Resources Assessment,"- "Oxford Publication, 2000".
5. "Michael N Demers", "Fundamentals of Geographical Information Systems",- "Second Edition, John Wiley Publications, 2002"

**WEBSITES**

<https://nptel.ac.in>

<https://ndl.iitkgp.ac.in>

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**1012**

**DIPLOMA IN ARCHITECTURAL ASSISTANTSHIP**

II YEAR

**N – SCHEME**

**www.binils.com**  
IV SEMESTER

**HISTORY OF  
ARCHITECTURE - II**

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 : 4012430  
Semester : IV Semester  
Subject Title : HISTORY OF ARCHITECTURE - II

**TEACHING AND SCHEME OF EXAMINATION**

No. of weeks per Semester: 16 Weeks

Subject	Instructions		Examination			Duration
	Hours / Week	Hours / Semester	Marks			
			Internal Assessment	Board Examination	Total	
HISTORY OF ARCHITECTURE - II	4 Hours	64 Hours	25	100*	100	3Hours

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

**Topics and Allocation of Hours**

UNIT	Topics	Hrs.
I	ANCIENT INDIA & BUDDHIST ARCHITECTURE	12
II	HINDU ARCHITECTURE	11
III	DRAVIDIAN ARCHITECTURE	12
IV	INDO - ARYAN STYLE	11
V	WORLD ISLAMIC AND INDO – ISLAMIC ARCHITECTURE	11
TEST & MODEL EXAMINATION		7
<b>TOTAL</b>		<b>64</b>



**RATIONALE:**

The teaching of Historical Architecture can have its emphasis upon Chronology, Building materials and Technology, Architectural styles and Architectural details. It is not essential to address the associated elements (the influences) and the context of particular styles. The various styles can be explained with selected examples, which can be expounded through schematic drawings of only Plans, concepts, Structural Principles and Architectural Styles. The Historical, Socio-Cultural, Geographical influences of various Architecture should be emphasized to the students.

**OBJECTIVES:**

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

- To understand ancient india Buddhist, hindu, Dravidian, indo-aryan style, world Islamic and indo –Islamic Architecture styles.

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**DETAILED SYLLABUS**

**4012430- HISTORY OF ARCHITECTURE - II**

Contents: Theory

**NOTE:** The teaching of Historical Architecture can have its emphasis upon Chronology, Building materials and Technology, Architectural styles and Architectural details. It is not essential to address the associated elements (the influences) and the context of particular styles. The various styles can be explained with selected examples, which can be expounded through schematic drawings of only Plans, concepts, Structural Principles and Architectural Styles. The Historical, Socio-Cultural, Geographical influences of various Architecture should be emphasized to the students.

*\*\*For better understanding Dravidian architecture visits are required during the course time in this semester\*\*.*

Unit	Name of the Topic	Hours
<b>I</b>	<b>ANCIENT INDIA &amp; BUDDHIST ARCHITECTURE</b>	<b>6</b>
	<b>ANCIENT INDIA</b> - Indus Valley Civilization - Culture and pattern of settlement. - Vedic village and the rudimentary forms of bamboo and wood, wooden construction under the Mauryan rule.	
	<b>BUDDHIST ARCHITECTURE</b> - Architectural Production during Ashoka's rule - Ashokan Pillar, Samath, Sanchi Stupa. Salient features of a Chaitya hall and Vihara, Rock cut architecture in the western and Eastern ghats - Karli, Takti Bhai, Gandhara.	<b>6</b>
<b>II</b>	<b>HINDU ARCHITECTURE</b> Evolution of Hindu Temple - Early shrines of the Gupta and Chalukyan periods - Durga Temple, Aihole and Virupaksha Temples, Pattadakal.	<b>11</b>
<b>III</b>	<b>DRAVIDIAN ARCHITECTURE</b> Dravidian architecture characters - Rock cut productions under Pallavas - Shore Temple, Mahaballipuram - Dravidian Order -Brihadeeswara Temple, Tanjore - Evolution and form of Gopuram - Complexity in temple plan due to complexity in Ritual - Meenakshi Temple, Madurai	<b>12</b>
<b>IV</b>	<b>INDO - ARYAN STYLE</b> Salient features of an Indo Aryan architecture - Lingaraja Temple, Bhuvaneswar and Sun Temple, Konark	<b>11</b>

<b>V</b>	<b>WORLD ISLAMIC AND INDO – ISLAMIC ARCHITECTURE</b> Introduction to world Islamic architecture – Middle East, south East Asia, Pakistan and Bangladesh – general architecture features. Introduction to indo – Islamic architecture - Change from trabeate to vaulted and dome construction - Mix of Islamic and Indian elements and early provincial indo – Islamic architecture Typical characters of mosque, fort, gateway and tomb (Masjid, Quila, Darwazza, Mausoleum) - Red fort, Delhi - Taj Mahal, Agra - Jami Masjid, Ahmedabad.	<b>11</b>
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### 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 & Hindu"

### REFERENCE BOOKS

1. "Pier Luigi Nervi, General Editor" – "History of World Architecture- Series", "Harry N.Abrams, Inc.Pub.,NewYork"
2. "S.Lloyd and H.W.Muller", "History of World Architecture-Series", "Faber and Faber Ltd.,London"
3. "Gosta, E.Sandsform", "Man the Builder", "Mc.Graw Hill Book Company, NewYork"
4. "Sanjeev Matheshwari &Rajeev Garg"- "Ancient Indian Architecture (from Blossom to Bloom)"
5. "Satish Grover"- " Buddhist & Hindu Architecture in India"
6. "James Fergusson"- " History of Indian & Eastern Architecture"

### WEBSITES

- <https://nptel.ac.in>  
<https://ndl.iitkgp.ac.in>  
<http://www.greatbuildings.com>  
<http://indianculture.tqn.com>  
<http://www.hindunet.org>  
<http://bishop.calpoly.edu>



**1012**

**DIPLOMA IN ARCHITECTURAL ASSISTANTSHIP**

II YEAR

**N – SCHEME**

**www.binils.com**  
IV SEMESTER

**BUILDING SERVICES**

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: 4012440

Semester : IV Semester

Subject Title : BUILDING SERVICES

**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	
BUILDING SERVICES	4 Hours	64 Hours	25	100*	100	3Hours

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

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Topics and Allocation of Hours

UNIT	Topics	Hrs.
I	ELECTRICAL SERVICES & LIGHTING	12
II	VENTILATION & AIR CONDITIONING	11
III	MECHANICAL SERVICES & FIRE PROTECTION	12
IV	RENEWABLE ENERGY SOURCES	11
V	ACOUSTICS AND SOUND INSULATION & BUILDING SAFETY AND SECURITY SYSTEMS	11
TEST & MODEL EXAMINATION		7
TOTAL		<b>64</b>

**RATIONALE:**

Building services engineering, technical building services, architectural engineering, or building engineering is the engineering of the internal environment and environmental impact of a building. It essentially brings buildings and structures to life. This includes design, installation, and operation & monitoring of the mechanical, electrical and public health systems required for the safe, comfortable and environmentally friendly, acoustically treated modern buildings. Building services engineers work closely with other construction professionals; architects, structural engineers and quantity surveyors. They influence the architecture of a building and play a significant role on the sustainability and energy demand of a building. Within building services engineering, new roles are emerging, for example in the areas of renewable energy, sustainability, low carbon technologies and energy management. A typical building services engineer has a wide-ranging career path include design, Construction, electrical, lighting, water supply, security systems, drainage and Environmental technology.

**OBJECTIVES:**

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

- To understand the electrical terms, units and symbols involved in the building industries both commercial and residential.
- To prepare electrical layout for residential buildings.
- To gain knowledge about lighting systems, units of lighting and types.
- To gain knowledge about the ventilation & Air conditioning.
- Familiarize various electrical & mechanical services required to the building.
- To understand fire hazards, safety & design regulations.
- To gain knowledge about Renewable energy sources.
- To understand building acoustics.
- To gain knowledge about modern buildings safety and security systems.

**DETAILED SYLLABUS**

**4012440 - BUILDING SERVICES**

Contents: Theory

Unit	Name of the Topic	Hours
I	<b>1.1 ELECTRICAL SERVICES</b> Conventional Architectural Symbols for Electrical installations Main, Sub-Mains - Types of Fuses - Distribution Panel-circuit breaker, Junction boxes –ceiling roses, – Various systems of wiring – wooden casing wiring, cleat wiring, CTS wiring, conduit wiring -Standard Wire Gauge – Types of Switches–2 pin and 3 pin sockets, –Two Pin & Three Pin Plugs– Exhaust Fan — change over switches. Use of generators, invertors, emergency lamps-Preparation of Electrical layout for a small residence	6
	<b>1.2 LIGHTING</b> Units of measurement – Lux, candela, Luminous flux - Types of lighting - Natural and Artificial Lighting – Requirements of good lighting – Day light factors – Day light Penetration – Aims of good lighting –Principles of openings to afford good lighting. Level of Illumination for different functions (general)- Light fittings –Fluorescent bulbs, Mercury Vapor lamps, Energy Efficient lighting. (CFL, LED)	6
II	<b>VENTILATION &amp; AIR CONDITIONING:</b>	
	<b>2.1 VENTILATION:</b> Definition – Necessity- Comfort conditions (Factors affecting ventilation- temperature control, humidity control, air filtration)– Types of ventilation (Natural & Mechanical ventilation in buildings)	5
	<b>2.2 AIR CONDITIONING:</b> Definition – Purpose – Principles of air conditioning (Temperature control, Air velocity control, Humidity control, control of purity of air) – Air Conditioning Systems– Types of air cleaners (Filters, Spray washers, Electric precipitators) – Types of Air Conditioners (Central type, Window Type &Split unit) - air conditioning layout for an auditorium & conference hall.	6
III	<b>3.1. MECHANICAL SERVICES:</b> Lifts – Definition – Location – Sizes – Component parts (Lift well, Travel, Pit, , Machine, Buffer, Door Locks ,Suspended rope, Lift car, Landing Door, Call Indicator, Call Push )–	6





**TEXT BOOKS**

1. "S. Gokulachari"- " Building Services"
2. "Mouafak Zaher"- "Building Services"
3. Roger Greeno (Author), .F.Hall (Author), Roger Green (Author)"- "Building Services"
4. "R.Uadyakumar"- " Building Services"

**REFERENCE BOOKS:**

1. "National Building code of India. 1983"
2. "A. Balasubramanian"- "Advanced Constructions Technology"
- 3 "David Gunttee"- "Fire & Human Behaviours "– "Jhon Willy & Sons"
4. "E.G. Bercher & A.C. Pernal"- "Designing for fire safety"
5. "Thomas Adam and Charles Black"- "Fire Safety in Building"
6. "E.G. Bucher & A.C. Parhall"- "Designing for Fire Safety"- "John Wiley & sons".
7. "Cybil M. Harris"- "Handbook of Utilities and Services for Buildings"
8. "A.K. Mittal"- "Electrical and Mechanical Services in High Rise Building: Design and Estimation Manual: Including Green Buildings"
9. "R.V.Srinivasa Murthy"- " Basic Electrical Engineering"
10. "Peter Morgan"- "Rural Water Supplies & Sanitation"
11. "Donald Watson"- "Time Saver Standards - Building Materials & Systems"
12. "M.David Egan"- "Architectural Acoustics"

**WEBSITES**

<https://nptel.ac.in>

<https://ndl.iitkgp.ac.in>



**1012**

**DIPLOMA IN ARCHITECTURAL ASSISTANTSHIP**

II YEAR

**N – SCHEME**

**www.binils.com**  
IV SEMESTER

**BUILDING CONSTRUCTION  
AND DETAILING – II**

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 : 4012450  
Semester : IV Semester  
Subject Title : BUILDING CONSTRUCTION AND DETAILING –II

**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	
BUILDING CONSTRUCTION AND DETAILING –II	4 Hours	64 Hours	25	100*	100	3 Hours

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

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Topics and Allocation of Hours

UNIT	Topic	Hrs.
I	FINISHES	8
II	R.C.C AND STEEL STRUCTURES	18
III	TEMPORARY STRUCTURES	18
IV	MISCELLANEOUS STRUCTURES & APPROVAL DRAWING	20
<b>TOTAL</b>		<b>64</b>

**RATIONALE:**

In Diploma level Architectural Assistantship Technical education development of auto motor skills plays a vital role. The auto motor skill development can be achieved by on hand experience in handling various instruments, apparatus and equipment for preparation of detail to the various building components. This is accomplished by doing drawings related to construction details of different components of the building in studios

**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 draw the detailed drawing of R.C.C and steel structures, stair and temporary structures.
- To prepare approval drawing by showing all necessary details required for getting approval from the local authority concerned

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**DETAILED SYLLABUS**

**4012450 - BUILDING CONSTRUCTION AND DETAILING – II**

Contents: Practical

UNIT	NAME OF THE TOPIC	HOURS
<b>I</b>	<b>FINISHES</b> Finishes – Plastering – Pointing – Cladding	<b>8</b>
<b>II</b>	<b>R.C.C AND STEEL STRUCTURES</b> Pre – cast concrete construction – pre – stressed concrete construction – joints in concrete work. <b>STEEL WORKS:</b> Mild steel sections for grills and gates – Knowledge of various types of roof trusses and their selection for commercial and industrial buildings – rolling shutters – collapsible gate – metal doors and windows.	<b>9</b>  <b>9</b>
<b>III</b>	<b>TEMPORARY STRUCTURES</b> Scaffolding – Types of Scaffolding – Shoring – Types of Shoring – Underpinning- Methods of Underpinning – Form work – Requirements of Form work – Materials for Form work – Construction of Form work for Columns, Beams and Floor Slabs – Centering for Arches. <b>STAIRS</b> Location of Stairs – Technical terms – Requirements of a good Stairs – Classification of Stairs – Stairs of different Materials.	<b>10</b>  <b>8</b>
<b>IV</b>	<b>MISCELLANEOUS STRUCTURES</b> Flat slab construction: types of Shell roof structures – Domes – Ruled surface – Folded plates (description of the structures only) –Cost effective construction techniques - Rat trap bond, Filler slab, Funicular shell – Use of Pre - Cast technology in construction. <b>APPROVAL DRAWING</b> The basic criteria required for an approval drawing are to studied – The students have to prepare an approval drawing by showing all necessary details required for getting approval from the local authority concerned.	<b>8</b>  <b>12</b>

**LIST OF PLATES:**

1. Details of Different plastering, pointing and cladding with different materials on Exterior surfaces (sketch only).
2. Details different types of joints in concrete work.
3. Details of Grill Gate, Rolling Shutter and Collapsible Gate.
4. Details of King Post Truss and steel Trusses for industrial buildings and go down. Details of Single and double scaffolding.
5. Details of formwork for shoring, underpinning, Beams and Floor Slabs, Arches.
6. Plan and sectional elevation of Dog-legged staircase and Open well staircase
7. Plan and sectional elevation of Spiral staircase and Bifurcated staircase
8. Details of Shell roof and folded plate roof, sectional plan of and cross section of Filler slab.
9. Plan, elevation, section and Isometric view of Rat Trap Bond
10. Details of Shell roof for a petrol filling station with plan, Elevation and Section

**BOARD EXAMINATION**

**ALLOCATION OF MARKS**

**Part A** : Theory question of 10 questions, two questions from each unit carry Five marks each with a total mark of **7X5=35 marks**

**Part B** : Any two of the exercises from the exercises that are done in the Studio during the semester carries **2x30= 60marks.**

**Viva-Voce : 5 marks**

**Total : 100Marks**

**TEXT BOOKS**

- 1 "S.C.Rangwala" – "Building Construction".
- 2 "Arrora & Bindra" – "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://ag.avizona.edu/SWES) <http://www.angelfite.com/in>

<http://www.idrc.ca/library/documents/104800/chapz-e.html><http://www.angelfite.com/inz/granite>

<http://www.ibex-ibex-intl.com><http://www.inika.com/chitra><http://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

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**4012450- BUILDING CONSTRUCTION AND DETAILING – II**  
**MODEL QUESTION PAPER**

**Duration: 3 HRS**

**Max. marks:100 marks**

- NB : 1. Answer any 7 question from Part A, each questions carries 5 marks.**  
**2. Answer the questions in Part B, by choosing it by lot which carry**  
**2x30=60 marks.**  
**3. Viva-Voce: 5 marks**

**PART – A (7 x 5 = 35 marks)**

1. Explain different types mortar used in plastering.
2. What are different types of pointing?
3. Explain the types of finishes.
4. Write about the types of roof trusses.
5. Explain with neat sketch 'Lean to Roof'.
6. What are advantages of steel roof truss over timber sloping roofs?
7. What are requirements of a formwork?
8. What is requirement of a good staircase?
9. What are assumptions to be made while detailing folded plate structures?
10. Write the bye-laws to be followed for the construction single storey residential building.

**PART – B ( 2 x 30 = 60 marks)**

1. Draw the details of formwork for Columns and Beams.
2. Draw the Details of Single and double scaffolding.





**1012**

**DIPLOMA IN ARCHITECTURAL ASSISTANTSHIP**

II YEAR

**N – SCHEME**

[www.binils.com](http://www.binils.com)

IV SEMESTER

**ARCHITECTURAL  
DRAWING – II**

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 : 4012460  
Semester : IV Semester  
Subject Title : ARCHITECTURAL DRAWING – II

**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 – II	4Hours	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	BASICS OF RENDERING	20
II	COLOR RENDERING	20
III	PERSPECTIVE & SCIOGRAPHY	24
<b>TOTAL</b>		<b>64</b>

**RATIONALE**

Graphic presentation and Art is considered to be the language of Engineers and Architects which is a means of communication among the designers, engineers, technicians, architects & draftsmen engaged in the field of construction of buildings. The translation of ideas into practice with the use of this graphic language is beyond imagination. Thus, for effective and efficient communication among all those involved in the system, it becomes necessary that the personal working in different capacities acquire appropriate skills in the use of this graphic language.

**OBJECTIVES:**

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

- To introduce architectural drawing techniques and to facilitate effective visual communication.
- To understand and apply rendering in drawings.
- To draw perspective drawings.

[www.binils.com](http://www.binils.com)

**DETAILED SYLLABUS**

**4012460- ARCHITECTURAL DRAWING – II**

Contents: Practical

UNIT	NAME OF THE TOPIC	HOURS
<b>I</b>	<p><b>BASICS OF RENDERING</b></p> <p>Rendering of finishing materials – Stones, Bricks, Plaster finishes Shading.</p> <p>Representation of Curves, Slopes Basics of Color Rendering – working with presentation drawings Rendering the above perspectives with different mode like color pencils or poster color or pen and ink – rendering of trees, cars and human figures – improvising presentation drawings. <b>(Minimum of 2 exercises)</b></p>	<p><b>6</b></p> <p><b>14</b></p>
<b>II</b>	<p><b>COLOR RENDERING</b></p> <p>Theory of Color - Color and Light - Color wheel -Classification of Color - Primary, Secondary &amp; Tertiary color - Hue, Chrome &amp; Values, Shades, Tones &amp; Tints - Color Schemes - Application of Color in Design Color rendering with objects.</p> <p>Coloring of various compositions with natural and geometric form – Objects – Imaginary drawings. <b>(Minimum of 3 exercises)</b></p>	<p><b>14</b></p> <p><b>6</b></p>
<b>III</b>	<p><b>PERSPECTIVE &amp; SCIOGRAPHY</b></p> <p>Perspective projection concepts and methods- Various types of perspective views –Vanishing point- Station point – Picture plane , horizon , cone of vision, etc. – Normal eye view, Bird’s eye view -simple and complex geometrical forms.</p> <p><b>Principles of Perspective – Two point &amp; One point - Principles of sciography – study of Light and Shade.</b></p> <p><b>(Minimum of 2 exercises one each in 2D and 3D)</b></p> <p>Application of shades and shadows of Architectural Elements like Sunshade, Steps Porch, Fins, Projections, Columns, Beams, Curved objects. <b>(Minimum of 2 exercises)</b></p> <p>Two points perspectives for exteriors – residence. <b>(Minimum of 2 exercises)</b></p> <p>One point perspective for simple interiors – living room, kitchen, bed room, Dining. <b>(Minimum of 4 exercises)</b></p>	<p><b>5</b></p> <p><b>4</b></p> <p><b>5</b></p> <p><b>5</b></p>

**BOARD EXAMINATION**

**ALLOCATION OF MARKS**

**Part-A:** One Point perspective with color rendering for interior spaces - **35 marks.**

**Part-B:** two Point perspectives with pencil rendering for exterior spaces - **60 marks.**

**Viva-voce** - **5marks**

**REFERENCES :**

1. "William Coomers and Adama Charle black"- " Background of perspective"
2. "N. G. shah and khala"- "Principles of perspective drawing"
3. "Cland"- " Step by step perspective drawing"
4. "Grunbacher"- "The art of perspective drawing"
5. "JohnM. Holmes", "- "Applied Perspective", "Sirlsaac, Piotman and Sons Ltd., London 1954".
6. "Robert W.Gill", "- "Basic Perspective", "Thames andHudson,London,1974".
7. "Interiors: Perspective in Architectural Design Graphic"- "SMA Publishing Co.Ltd., Japan,1967".
8. "C.Leslie Martin", "- "Architectural Graphics", "The Macmillan Company, NewYork, 1964".
9. "Francis Ching", "Architectural Graphics", "Van Nostrand and Reinhold Company, New York,1975".
10. "Emest Norling", "Perspective drawing", "Walter Fostor Art Books,California,1986".
11. "Bernard Alkins" – " Architectural Rendering", "Walter Foster ArtBooks,1986".
12. "Francis D. K. Ching" "Architectural Graphics 5e"
13. "Mo Zel"- "The Architectural Drawing Course: Understand the Principles and Master the Practices"
14. "Francis D.K.Ching With Steven P.Juroszek"- " Design Drawing"

**WEBSITE**

<https://nptel.ac.in>

<https://ndl.iitkgp.ac.in>

**LIST OF EQUIPMENTS ( for a batch of 30 students )**

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

4012460 - ARCHITECTURAL DRAWING – II

MODEL QUESTION PAPER

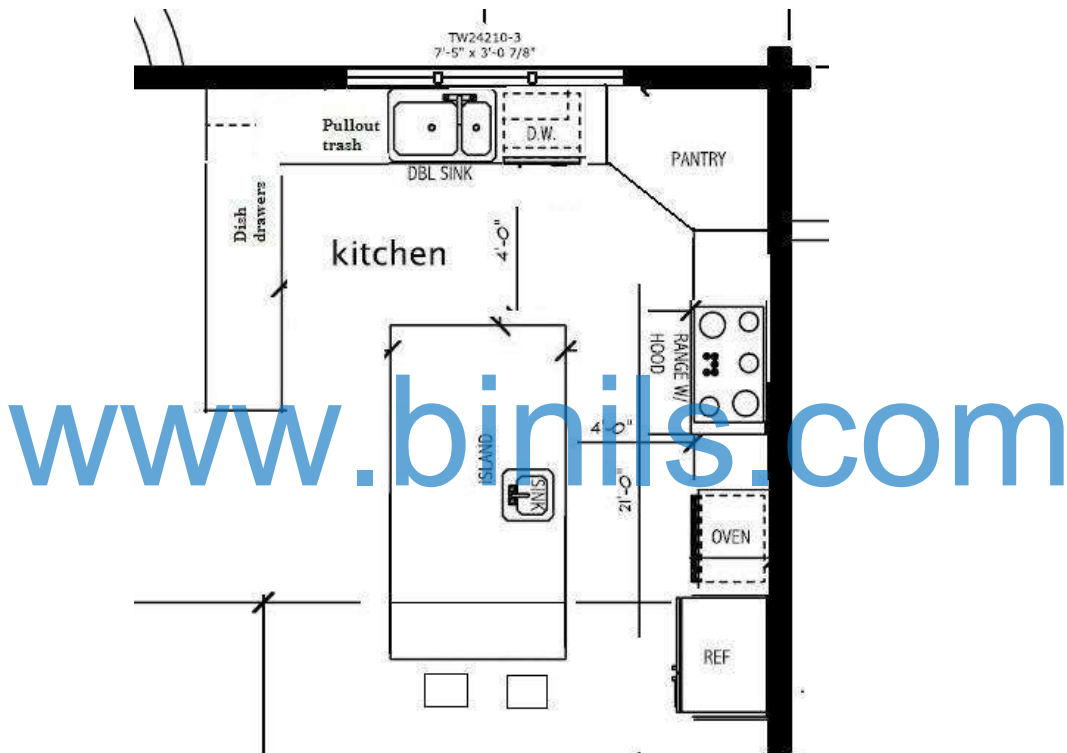
Duration: 3HRS

Max.marks:100 marks

PART- A (35 Marks)

PERSPECTIVE DRAWING

- I. Draw one point perspective for the given kitchen and render the drawing with color pens.



PART- B (60 Marks)

- II. Draw a two-point perspective for own plan and render the drawing with pens.



**1012**

**DIPLOMA IN ARCHITECTURAL ASSISTANTSHIP**

II YEAR

**N – SCHEME**

**www.binils.com**  
IV SEMESTER

**ARCHITECTURAL DESIGN STUDIO - I**

IMPLEMENTED FROM 2020-2021

CURRICULUM DEVELOPMENT CENTRE

**DIRECTORATE OF TECHNICAL EDUCATION  
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**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 : 4012470  
Semester : IV Semester  
Subject Title : ARCHITECTURAL DESIGN STUDIO – I

**TEACHING AND SCHEME OF EXAMINATION**

No. of weeks per Semester: 16 Weeks

Subject	Instructions		Examination			Duration
	Hours / Week	Hours / Semester	Marks			
			Internal Assessment	Board Examination	Total	
ARCHITECTURAL DESIGN STUDIO - I	6 Hours	96 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	DESIGN PROBLEM – 1	48
II	DESIGN PROBLEM – 2	48
<b>TOTAL</b>		<b>96</b>

**RATIONALE**

Large percentage of diploma holders in Architectural Assistantship find employment with private architects and also majority of them go for self-employment. Therefore, diploma holders are required to design small residential buildings. This course aims at providing practical exercises in designing so as to develop appropriate knowledge and skills in building design. Teachers are expected to show various types of designs of small to medium residential buildings to develop an appreciation of different designs.



**OBJECTIVES:**

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

- To develop space visualization application of materials to simple architectural forms.
- To apply the knowledge gained in other subjects and basic design to design of buildings of single/ simple activity.

**DETAILED SYLLABUS**

**4012470- ARCHITECTURAL DESIGN STUDIO - I**

Contents: Practical

**NOTE:** The problems involve simple space organization starting with single space single use - small span Horizontal movement - single bay-passive energy type spaces.

The study of space standards and anthropometrics related to each problem is stressed upon. Anthropometries as related to physically handicapped and elderly persons are required to be studied. Examples of exercises include

UNITS	NAME OF THE TOPIC	HOURS
<b>DESIGN PROBLEM – 1</b>	Bedroom with attached toilet, Kitchen, Hostel Room and Toilet for a physically challenged Person.	48
<b>DESIGN PROBLEM – 2</b>	Design problem shall deal with planning for small groups of people and minor activities for residence and shall include data collection, Literature study, Case study, Conceptual design scheme, Detailed Design and presentation drawings which includes Plan, Elevation, Section, Perspective Views etc.,	48

**BOARD EXAMINATION**

**ALLOCATION OF MARKS**

**Part-A:** One question from Design Problem - I - 35 marks. (By lot)

**Part-B:** Any one of the question from Design Problem – II - 60 marks.

**Viva – voce** - 5 marks

**REFERENCES :**

1. "E and O.E"-".Planning", "Life Books Ltd., London,1973".
2. "De.Chicara and Calendar", "Time-saver Standards for Building Types", "McGraw Hill Co., New York, 1973".
3. "Sid Del MarLeach", "Techniques of Interior Design Rendering and presentation", "McGraw Hill Co., New York,1973"

**WEBSITES**

[www.designbasic.com/](http://www.designbasic.com/)-(on house type - Americans)

<http://www.geosystems.gatech.edu/>-(on detail design method)

<http://www.c.s.berkeley.edu/>-(on bubble diagram builder interaction)

<http://www.plannet.com/resources.htm> - (on resource info)

**LIST OF EQUIPMENTS ( for a batch of 30 students )**

Drafting Table with stool - Each 1 per student

Pinner board - 1 No

**4012470 – ARCHITECTURAL DESIGN STUDIO - I**  
**MODEL QUESTION PAPER**

**Duration:3 Hrs**

**Max. Marks:100 marks**

**Part-A:** One question from Design Problem - I - **35 marks. (By Lot)**

**Part-B:** Any one of the question from Design Problem – II - **60 marks.**

**Viva – voce:** 5 marks

1. Design a bedroom with attached Toilet by considering space standards.

**Design Requirements:**

Plan - 1:50 - 25 Marks

Sectional Elevation - 1:50 - 10 Marks

2. Design a kitchen by considering space standards.

**Design Requirements:**

Plan - 1:50 - 25 Marks

Sectional Elevation - 1:50 - 10 Marks

3. Design a Hostel room by considering space standards.

**Design Requirements:**

Plan - 1:50 - 25 Marks

Sectional Elevation - 1:50 - 10 Marks

4. Design a Toilet for a physically challenged person by considering space standards.

**Design Requirements:**

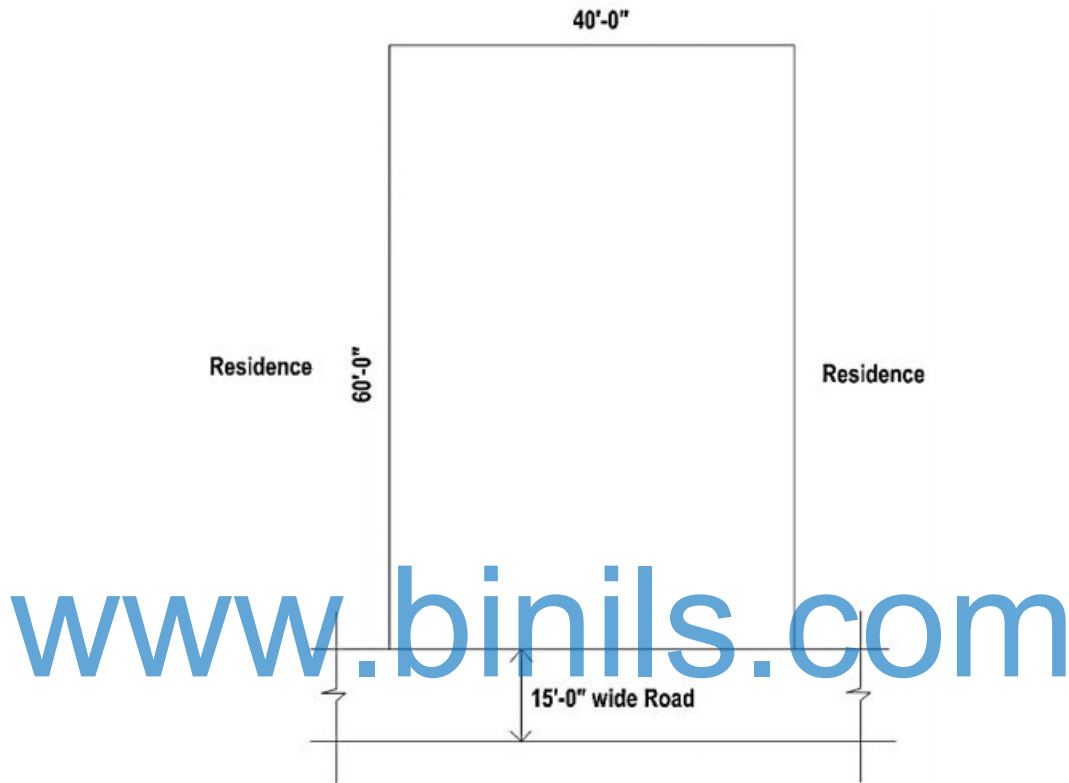
Plan - 1:50 - 25 Marks

Sectional Elevation- 1:50 - 10 Marks

**Part – B**

**1. (a) Residence at Thanjavur\_**

Design a residence of area 1200 sq ft in the given site. With your own requirements.  
By applying the rules and regulations of local authority.



**SITE PLAN**

**Drawing Requirements:**

Site plan	- 1:100	- 10 Marks
Plan	- 1:50	- 30 Marks
Elevation	- 1:50	- 10 Marks
Section	- 1:50	- 10 Marks

**VIVA-VOCE - 5 Marks**