

Maharashtra State Board of Vocational Examination, Mumbai 400 051

1	Name of Course	Diploma Course in Interior Decoration and Designing									
2	Course Code	304403									
3	Max no. of Students	25									
4	Duration	2 year									
5	Course Type	Full Time									
6	No. of Days per week	6 days									
7	No. of hours per day	7 Hrs									
8	Space require	Theory Class Room – 200 sqft Three Practical Lab – 500 sqft each									
9	Entry qualification	S.S.C. Pass									
10	Objective of syllabus	To get Knowledge of Building Construction, To Understanding Building Drawing, To Prepare Estimate, To Prepare Building Drawing on CAD, To Prepare Interior Drawing and Design									
11	Employment opportunities	Office of Architect, Office of Consultant Civil Engineer, Office of Builder, any Civil Engineering Firm, his own practice as Interior Decoration and Design Consultant									
12	Teachers Qualification	1) For Vocational subject - B.E.Civil or Arch. 2) For Non Vocational Subject - Master Degree in Concern subject									
13	Teaching Scheme –										
	Sr.	Subject	Subject Code	Clock Hours / Week				Total			
				Theory	Practical						
	1	English (Communication Skill)	90000001	2 Hrs	1 Hrs			3 Hrs			
	2	Elective – I		2 Hrs	1 Hrs			3 Hrs			
	3	Elective – II		2 Hrs	1 Hrs			3 Hrs			
	4	Building Material and Construction	30440001	3 Hrs	8 Hrs			11 Hrs			
	5	Building Drawing and CAD	30440002	3 Hrs	8 Hrs			11 Hrs			
	6	Interior Decoration and Designing	30440006	3 Hrs	8 Hrs			11 Hrs			
	Total								42 Hrs		
14	Internship	Two Months Summer Internship from 1 st May to 30 th June is Compulsory.									
15	Examination Scheme – Final Examination will be based on syllabus of both years.										
	Paper	Subject	Subject Code	Theory			Practical		Total		
				Duration	Max	Min	Duration	Max	Min	Max	Min
	1	English (Communication Skill)	90000001	3 Hrs	70	25	3 Hrs	30	15	100	40
	2	Elective – I		3 Hrs	70	25	3 Hrs	30	15	100	40
	3	Elective – II		3 Hrs	70	25	3 Hrs	30	15	100	40
	4	Building Material and Construction	30440001	3 Hrs	100	35	3 Hrs	100	50	200	85
	5	Building Drawing and CAD	30440002	3 Hrs	100	35	3 Hrs	100	50	200	85
	6	Interior Decoration and Designing	30440006	3 Hrs	100	35	3 Hrs	100	50	200	85
										900	375
16	Teachers – Three Teachers per batch for vocational component. For English, Elective-I & II guest faculty on clock hour basis.										
17	a) For Elective I – Student can choose any one subject Code Subject Name 90000011 Applied Mathematics 90000012 Business Economics 90000013 Physical Biology (Botany & Zoology) 90000014 Entrepreneurship 90000015 Psychology						b) For Elective II – Student can choose any one subject Code Subject Name 90000021 Applied Sciences (Physics & Chemistry) 90000022 Computer Application 90000023 Business Mathematics				

Subject - Building Material and Construction

Code No – 30440001

Theory	Practical
Chapter 1: Stone and Coarse Aggregate 1.1. Classifications of Rocks 1.2. Quarrying for stone 1.3. Commonly used stones in building 1.4. Requirements of good building stone 1.5. Study of crushers for obtaining coarse Aggregate 1.6. Common sizes of coarse Aggregate used in concrete 1.7. Properties of coarse Aggregate	Practical 1) Visit to Quarry to observe quarrying operations 2) Conduct Compressive strength Test on stone 3) Conduct Abrasion Test of Metal
Chapter 2: Bricks 2.1. Study of earth (Soils) used in manufacturing of Brick 2.2. Procedure of manufacture of Bricks 2.3. Classification of Bricks 2.4. Properties of a good Brick 2.5. Other types of Brick	Practical 1. Field Tests of Brick 2. Conduct Compressive Test on Brick 3. Conduct Water absorption on Brick
Chapter 3: Cement 3.1 Grades of cement as per IS 12269 – 1987, IS 8182 - 1989 and IS 289 - 1989 3.2 Ingredients of Cement, Manufacture of Cement (only introduction) 3.3 Various Types of Cements and its uses 3.4 Effect of Cement on properties of concrete 3.5 Storing of Cement	Practical 1. Field Tests of Cement 2. Determining initial & final setting time of Cement 3. Determining fineness Modulus of Cement 4. Determination of Compressive strength of cement
Chapter 4: Fine Aggregates 4.1. Types of fine aggregates used in preparation of cement mortar and concrete 4.2. Sources of fine aggregate 4.3. Properties of River Sand 4.4. Silt content and necessity of Screening & Washing of fine Aggregates	Practical 1. Sieve Analysis of Sand for finding fineness modulus 2. Finding Silt content in Sand
Chapter 5: Cement Mortar 5.1. Ingredients of Cement Mortar 5.2. Preparation of Cement Mortar – Hand Mixing, Machine Mixing – Advantages and Disadvantages 5.3. Various Proportions of Cement Mortar 5.4. Lime Mortar, its properties and use	Practical 1. Preparation of Cement Mortar 1:6
Chapter 6: Concrete 6.1) Ingredients of Concrete 6.2) Types of Concrete Plain Cement Concrete, (PCC) and Reinforced cement concrete (RCC) 6.3) Various proportion of Concrete and its uses, Batching of concrete- Volume batching and weigh batching 6.4) Procedure for preparing concrete – Hand Mixing, Machine Mixing 6.5) Transportation of concrete, precautions to taken . 6.6) Laying of concrete & precautions to taken 6.7) Necessity of compacting of concrete, equipments used for compacting concrete 6.8) Necessity of curing, Methods of curing 6.9) Workability - water cement ratio and its importance	Practical 1) Conduct Compressive Test on Concrete (cube Test) 2) Conduct Test for Workability (slump test) 3) Conduct Compaction factor Test 4) Introduction to Non Destructive Tests on Concrete

6.10) Hydration of Cement 6.11) Quality of water 6.12) Finishing of concrete surface 6.13) Admixtures used in concrete and properties of such concrete 6.14) Ready mix concrete, Properties, Manufacturing and its uses 6.15) Advances in concreting such as self compacted concrete, Trimix Concrete, etc	
Theory	Practical
Chapter 7: Steel 7.1) Types of steel used in RCC as per ISI 7.2) High Tensile Steel its properties, study of IS 1786 7.3) Cover for steel as per IS 456 - 2000 7.4) Types of sections used in Steel Structure and its properties 7.5) Rolled steel Joist of different sections and its uses	Practical 1) Conduct Tensile Test on mild steel bar / HYSD Bars
Chapter 8: Flooring Tiles 8.1) Shahabad Tiles, Kotah Tiles, Cuddappa Tiles, Marble Tiles, Granite, its occurrence, Sources of availability and its uses 8.2) Cutting of tiles 8.3) Cement tiles, marble mosaic tiles, chequered tiles- process of manufacture, and its uses 8.4) Ceramic Tiles, process of manufacture, Normal sizes & its uses 8.5) Cement mortar Briquettes , Process of manufactures and its uses	Practical 1) Conduct Bending Test of tiles 2) Conduct Abbreviation test of tile
Chapter 9: Timber 9.1) Types of Timber. 9.2) Sections of Timber. 9.3) Characteristics of Good Timber. 9.4) Defects in Timber. 9.5) Decay of Timber and remedies. 9.6) Seasoning of Timber, necessity and methods. 9.7) Preservation of Timber. 9.8) Timber based Product Plywood; Block Board, Veneers, Particle wood 9.9) Finishing to Timber a) Painting b) Polishing c) Sun mica	Practical Report on Visit to a Timber Factory
Advance Building Materials 10.1) Study of latest materials used in Flooring, Thermal Insulation, Sound proofing, Wall finishing, structural glazing, Metal Cladding & rendering, Partitioning, and Painting	

Chapter 8: Reinforced Cement Concrete 8.1) Different types of RCC members Definitions, its properties and its locations 8.2) Ingredients of for R. C. C. Concrete 8.3) Batching of concrete ingredients- Definition and methods, volumetric method and weight batching method of concrete mixing 8.4) Shape and types of Reinforcing steel bars used in RCC members. Explain Terms used - Cutting of bar; Straightening of bar; Bending of bar; Hooking of bar; lapping of bar, Binding of bars, use of G.I. wire, cover for bars. 8.5) Standard Hook length for plan M. S. bar, Standard length of "EL" for Torque steel bar 8.6) Joints in RCC work, Necessity, Types of joints in RCC work, Construction Joint, Expansion Joint, location of joints, Material used, & Procedure of construction of Providing Joints.	Practical i) Visit to site for observing Bar bending, laying of Reinforcement bars ii) Observe method of providing cover, placing concrete in RCC Members iii) Draw Figures – RCC Bars reinforcement in column Footing, column, beam, slab, lintel, Chajja, Loft iv) Exercise on preparing standard Bar bending Schedule v) Perform bar bending and binding by using G.I. wire for forming Hook, EL, Bend, Lap, stirrups of 6 mm bar for column and beam
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Subject - Building Material and Construction - 2nd Year

Code No – 30440001

Theory	Practical
Chapter 1: Foundation 1.1) Necessity and Purpose of Foundation 1.2) Shallow Foundation 1.2.1) Spread Foundation 1.2.1.1) Footing for load Bearing Structure 1.2.1.2) Column Footing and combined Footing 1.3) Raft Foundation 1.4) Grillage Foundation 1.5) Deep Foundation and its types 1.5.1) Cast in-situ R.C.C. concrete pile 1.5.2) Pre cast concrete piles 1.6) Foundation in Black cotton soil, Under reamed pile	Practical 1) Line out for 3 to 4 Room Load Bearing Building 2) Line out for Framed structure
Chapter 2: Excavation 2.1) Manual method of Excavation 2.2) Mechanical Method of Excavation 2.3) Machines used for excavation 2.4) Disposal of Excavated Material 2.5) Dewatering of trenches different methods used 2.6) Shoring and strutting of Trenches 3.0) Precaution while excavation, Fencing, caution signs, removing excavated material	Practical Visit to Site to study different methods of Excavation
Chapter 3: Plain cement concrete 3.1) Mix design of concrete and uses of different mix of concrete 3.2) Procedure of preparing concrete. Manual and machine mixing, Transporting Laying, compacting and curing of concrete 3.3) Admixtures used in concrete 3.4) Ready mix concrete	Practical 1) Visit to site showing ingredients and process of mixing, transportation, laying, compacting and curing of concrete

Chapter 4: Stone Masonry 4.1) Terms used in stone masonry 4.2) Procedure of constructing un coursed Rubble and Coursed masonry, purpose of through stone in stone masonry 4.3) Points to be observed while constructing stone Masonry	Practical 1) Construction of UCR stone masonry in foundation work, UCR stone masonry for compound wall (ht 1.2 m to 1.5 m)
Chapter 5: Brick Masonry 5.1) Terms used in Brick Masonry. 5.2) Construction of Brick Masonry in English bond and Flemish Bond in cement mortar, pre-construction preparation, procedure of construction, post construction precaution 5.3) Brick Masonry stretcher bond and half brick thick masonry. 5.4) Hollow and solid concrete block masonry 5.5) Fixing of Door and window Frame in masonry 5.6) Brief information of Siporex block masonry 5.7) Brief information of Concrete Block masonry	Practical 1) Construction of Burnt Brick Masonry in superstructures in English Bond / Flemish Bond 2) Construction of concrete block masonry in superstructure
Chapter 6: Scaffolding 6.1) Purpose and Necessity of Scaffolding 6.2) Single and Double Scaffolding, name of parts erecting Scaffolding. 6.3) Materials used for Scaffolding, Tubular steel scaffolding	Practical 1) Erecting Single Scaffolding up to G + 1 floor 2) Erecting Double Scaffolding up to G + 1 floor
Chapter 7: Lintels and Sills 7.1) Necessity of lintels 7.2) R.C.C. Lintels 7.3) Jambs, Sills, Head cladding, its purpose, materials used and construction procedures.	1) Study of Laying Lintels and Sills on Construction Site
Theory	Practical
Chapter 8: Reinforced Cement Concrete 8.1) Different types of RCC members Definitions, its properties and its locations 8.2) Ingredients of for R. C. C. Concrete 8.3) Batching of concrete ingredients- Definition and methods, volumetric method and weight batching method of concrete mixing 8.4) Shape and types of Reinforcing steel bars used in RCC members. Explain Terms used - Cutting of bar; Straightening of bar; Bending of bar; Hooking of bar; lapping of bar, Binding of bars, use of G.I. wire, cover for bars. 8.5) Standard Hook length for plain M. S. bar, Standard length of "EL" for Torque steel bar 8.6) Joints in RCC work, Necessity, Types of joints in RCC work, Construction Joint, Expansion Joint, location of joints, Material used, & Procedure of construction of Providing Joints.	Practical i) Visit to site for observing Bar bending, laying of Reinforcement bars ii) Observe method of providing cover, placing concrete in RCC Members iii) Draw Figures – RCC Bars reinforcement in column Footing, column, beam, slab, lintel, Chajja, Loft iv) Exercise on preparing standard Bar bending Schedule v) Perform bar bending and binding by using G.I. wire for forming Hook, EL, Bend, Lap, stirrups of 6 mm bar for column and beam
Chapter 9: Centering and Form work 9.1) Definitions, Different members used in Form work and centering 9.2) Materials used in preparing centering and form work 9.3) Procedure of Erecting Centering and form work 9.4) Precautions while erecting centering and form for RCC work.	Practical 1) Draw Sketches of form work for column, Beams, Slab, Lintel and Chajja 2) Visit to site to study Centering and form work for abovementioned members and table formwork, Mivon formwork etc.

Chapter 10: Pointing and Plastering 10.1 Necessity of Pointing 10.1.1) Materials used for Pointing 10.1.2) Procedure of applying Pointing, preparation of surface to receive pointing, Procedure of applying pointing & post applying precautions 10.1.3) Type of Pointing 10.2 Necessity of Plastering 10.2.1 Materials used for plastering 10.2.2 Types of plaster internal wall plaster, External wall plaster, Ceiling plaster, different types of furnishings, Stucco plaster. 10.2.3 Procedure of plastering for each of above type, Use of machines for plastering 10.2.4 P.O.P. finish to wall	Practical 1) Visit to site for observing procedure for different type of plaster work 2) Hands on experience of applying plaster of size 3m x 3 m on internal & external wall surface
Chapter 11: Painting 11.1. Necessity of painting, Types of paints, thinner, varnishes. Surface preparation, Use of Primers 11.2. Anti corrosive paints, its primers, its necessity 11.3. White Washing to walls and ceiling, Materials used, procedure for new and old surface 11.4. Applying Dry Distemper to walls, Material, Procedure for new and old surface 11.5. Applying Oil Bound Distemper and Emulsion, Materials used, Procedure for new and old surface 11.6. Applying Cement Paint to External walls, Materials used, Procedure for New and old surface 11.7. Applying Oil Paint Primer coat, procedure of applying oil paint to woodwork, steel work and walls. 11.8. Melamine / French polish, its application on old and new wooden surfaces	Practical Hands on experience of Painting of surface with a) White wash 3m x 3m surface area b) Dry Distemper 3m x 3m surface area c) Oil Bound Distemper 3m x 3m surface area d) Cement Paint 3m x 3m surface area e) Oil Paint on new Steel work and old wood work
Theory	Practical
Stairs 1.1) Definitions of Terms used in Stair. 1.2) Classification of stairs based on shape and materials used for construction. 1.3) Requirements of good stairs 1.4) Design of stair Thumb Rules for Design of Dog legged stair 1.5) Hand Rails Types and Fixing Procedure	Practical 1) Draw neat Sketches of any 4 types of stairs 2) Prepare design for RCC Dog-legged stair 3) Draw its plan and sectional elevation 4) Visit site to site for observing various type of stair
Roofs 2.1 Definition & Purpose of Roof 2.2 Technical Terms used in Roof 2.3 Types of Roofs 2.3.1 Pitched Roof 2.3.2 Lean to Roof 2.3.3 Couple Roof 2.3.4.King Post Truss and Queen Post Truss 2.3.5 Steel Trusses 2.3.6 Roof Coverings necessity & Purpose 2.4 Types of Roof Covering and Procedure of fixing a) Country Tile b) Mangalore Tile c) CGI sheet Roof – Size and procedure of fixing d) Acc sheet Roof – Type, Sizes and Procedure of fixing 2.5 Flat Roof only R.C.C. Slab	Practical 1. Draw sketch of couple Roof 2. Draw sketch of King post and Queen post Truss. 3. Draw Line Diagrams of steel Truss 4. Draw sketch showing details of Joint King Post for steel Truss

<p>Flooring</p> <p>3.1 Definition and terms used in flooring</p> <p>3.2 Flooring at Plinth level, Plinth filling & Plinth PCC</p> <p>3.2 Types of Floor finishes and its suitability</p> <p>3.3 Procedure of Laying Tiles such as Rough Shahabad for Pavement. Cement Briquette for pavement</p> <p>3.4 Procedure of Laying polished Shahabad Tile floor.</p> <p>3.5 Procedure for Laying cement Tiles, Marble Mosaic Tile, ceramic Tiles and Marble Tiles on floors.</p> <p>3.6 Procedure for fixing PVC tiles on floors</p> <p>3.7 Skirting – Function, materials used and procedure for fixing tiles.</p> <p>3.8 Dado - Function, materials used and procedure for fixing.</p>	<p>Practical</p> <p>1. Fixing of Tiles for Pavement</p> <p>2. Fixing of Tiles in area 3mX4m</p> <p>3. Fixing Tiles for Dado</p>
<p>Door And Window</p> <p>4.1 Functions of Door, Functions of window</p> <p>4.2 Rules for providing Doors & windows</p> <p>4.3 Parts of a Door and Window</p> <p>4.4 Materials used in making of Door & window</p> <p>4.5 Wooden and Steel Door and Window frame</p> <p>4.6 Types of Door Shutters</p> <p> a) Fully paneled Shutter</p> <p> b) Fully glazed shutter</p> <p> c) Flush Door</p> <p>4.7 Fixtures & fastenings for Doors</p> <p>4.8 Rolling shutter, collapsible shutters, sliding doors</p> <p>4.9 Types of Windows Shutter</p> <p> a) Fully Paneled shutter</p> <p> b) Fully glazed</p> <p> c) Sliding shutters.</p> <p> d) Lowered window</p> <p> e) Steel Window</p> <p> f) Aluminum sliding windows</p> <p>4.10 Fixtures and Fastening for windows</p> <p>4.11 Grills for window</p>	<p>Practical</p> <p>1. Draw to a scale, drawing of fully paneled</p> <p>2. Draw to a scale, drawing of fully glazed window</p> <p>3. Visit to observe different types of doors and Windows</p> <p>4. Draw Sketches of commonly used fixtures for Door & windows</p>

List of Books

Building Material

- 1] TTTI Chandigarh Civil Engg. Materials N. Delhi, McGraw Hill, 1992
- 2] Rangwala S. C. Engg. Materials Chariot or Book Publications,
- 3] Anand Gujrath Kulkarni G. J. A Textbook of engg. Materials

Building Construction

- 1] Mackay Building Construction Vol. 1 to 4 VaynStrand
- 2] Mitchell Elementary Building Construction B. T. Batsford, London
- 3] Molnar Building Construction Drafting and Design CBS Publications. Delhi
- 4] Sushil Kumar Building Construction Delhi : Standard Publishers, 1999, 18th Ed.
- 5] Arora S. P. & Bindra S. P. Building Construction Jaipur : Dhanapat rai & Sons
- 6] Rangwala S. C. Building Construction Anand : Charotar & Publishing House

Raw Material:

Sufficient Raw Material for the Syllabus Practical should be compulsorily made available to perform the practical. (e.g. Bricks, Sand, Cement, Aggregate, Lime powder, white cement, Tiles, Reinforcement Bars, Binding wire, Color, Paint, Turpentine, Brush and other such consumable raw material)

List of Tools and Equipment

A] General Class room

Sr	Name of Item	No.
1	Steel lockers 8 compartments with individual lockers (1980 x 910 x 480 mm)	4
2	Chair with writing pad	25
3	Steel almari with self 6.5' x 3' (18 gauge)	2
4	Steel table 4' x 3'	2
5	Teacher chair	2

B] For Building Material and Construction Practical

Sr	Name of Item	No.
1	Compression Testing Machine 100 Ton Capacity (Hand Operated.)	1
2	Universal Testing Machine 40 T	1
3	Table Vibrator	1
4	Cube Mould (Small And Big)	4
5	Compaction Factor Test Apparatus	1
6	Aggregate Impact Test Apparatus	1
7	Shieve Shaker	1
8	Weighing Machine 100 Kg.	1
9	Small Sieve (All Type)	1
10	Mortar And Half Bag Concrete Mixer	1
11	Marble Cutter	1
12	High Speed Imact Drill	1
13	Marble Angle Grinder	1
14	Bench Grinder Double Ended Wheel Size 15 Cm	1
15	Vibratory Sand Screen	1

Sr	Name of Item	No.
16	Bolster 4" (100mm)	1
17	Pitching Tool (Mason)	1
18	Chisel Mason Hammer Headed Flat 200 Mm	10
19	Hammer Mason (Cube) 1.5 Lbs.	10
20	Hammer Mason	10
21	Level Masons 36" (1 Metre)	10
22	Plumb Bob.	10
23	Square (Steel) 2' X 1'	10
24	Trowel Plastering Double Hand	10
25	Trowel Brick 10"	10
26	Tasla (Tin) Pans	10
27	Spade	10
28	Measuring Steel Tape 15 Mtr.	5
29	Measuring Steel Tape 30 Mtr.	5
30	Wooden Straight Edges For Ft.	10
31	Ladders 2 To 4 Mtr.	2
32	Sledge Hammer 10 Lbs.	2
33	Buckets 14 Lits.	10
34	Bar Bending Tools And Cutting Tools 6mm To 12 Mm	2 set
35	Screw Driver 12 Inch	5
36	Pocket Steel Tape 2 Mtr.	25
37	Pick Axes	5
38	Wheel Barrow	3
39	Tubular Scaffolding 25 Mm Die With Coupling And Compete Fitting.	400 RFT
40	Steel Measuring Boxes 3 Nos. (6cft C Fts), 3 Nos. (12cfts)	6
41	Adjustable Props Steel	20
42	Platform 4 Ft X 4 Ft X 6 Ft.	2
43	Boaning Rods	2
44	Spanner Sets	1
45	Carpenter Claw Hammer	10
46	Mortise Chisel 6 Mm.	10
47	Firmer Chisel	10
48	Mallet	10
49	Pane (Iron)	10
50	Handsaw 1'6"	10
51	Drilling Machines	1
52	Sieve IS No. 9	1
53	Vicat'apparatus	1
54	Needle measuring flask	1
55	A set of 10 IS sieves 80mm, 40mm, 20mm, 10mm, 4.75mm, 1.18mm, 600u, 150u.	1 each
56	Top cover & bottom pan for sieves	1
57	Hacksaw frame	1
58	BSP Tap & Die set 18,20,25 mm	1 set
59	Pipe vice ½ " to 18" 2 each	2
60	Alluminum Level	2
61	Pipe Tube Level	2

Subject - Building Drawing and CAD - 1st Year

Code No – 30440002

Theory	Practical
A] Building Drawing	1 Year
Chapter 1: Introduction to Drawing 1.1) Different Drawing Instrument and their use 1.2) Letters its types, Sizes and its use in Drawing 1.3) Convention of different lines 1.4) Giving dimensions 1.5) Scales and its uses 1.6) Study of IS 962	Practical 1) Prepare Sheet on lettering 2) Prepare Sheet on lines 3) Prepare Sheets on Geometrical Construction 4) Prepare Sheets on Conventional Sign and Symbols
Chapter 2: Orthographic Projection 2.1) Introduction to orthographic projections 2.2) First Angle Projections Method 2.3) Third Angle Projections Method 2.4) Drawing orthographic Projections of simple pictorial view	Practical 1) 1 st Angle Projections ----- 2 Solids 2) 3 rd Angle Projections ----- 2 Solids
Chapter 3: Isometric View 3.1) Method of Preparing Isometric Views 3.2) Isometric View of Rectangular Objects 3.3) Isometric View of Circular Objects 3.4) Isometric View of Building	Practical 1) Isometric View of Rectangular Objects 2) Isometric Vies of Circular Objects 3) Isometric View of Building
Chapter 4: Building Drawing Dimensions and Details of Foundation C/S. DPC, Different Types of Door and Windows, Roof Trusses, Flooring C/S, Staircase, Brick Masonry, Lintel, Arches, Chajja, C/S details of RCC Chajja, Lintel, Beam, Footing, Column, Slab, Pardi, Staircase etc.	Practical Detailed Drawing of Foundation C/S. DPC, Different Types of Door and Windows, Roof Trusses, Flooring C/S, Staircase, Brick Masonry, Lintel, Arches, Chajja, C/S details of RCC Chajja, Lintel, Beam, Footing, Column, Slab, Pardi, Staircase etc.
Chapter 5: Building By Laws and Standard Norms 3.1) Definitions of Plot Area, Plinth Area, Built up Area, Carpet Area, Floor Space Index (FSI) 3.3) Permissible Built up Area for Residential Bldg., Public Building 3.4) Definition of Marginal Distance and their necessity, Normal Marginal Distances provided for Residential Buildings 3.5) Definition and Necessity of Building Line, Development Line 3.6) Min Dimensions for following 3.6.1) Plinth height, Sill height, Head Room in Residential Bldg, Public Buildings, Mezzanine floor, Basements and stilts for car parking 3.7) Minimum Dimensions of: Living Room, Bed Room, Master Bed Room, W.C. Bath, Toilet. 3.7.1) Min. Width for passage and Balcony 3.8) Rules for Window Opening 3.9) Min. width of step and Landing, Head Room, Thumb Rules for fixing Rise and Tread. 3.9.1) Permissible Height of Pardi, of Building as per FSI and Road Width	Practical 1) Student to Draw for A Residential. Bungalow (Load Bearing) i.e. minimum 2 Bedrooms (one Bed room with attached Toilet), 1Hall, 1Kitchen, Veranda, Staircase, Toilet block, and Car Parking. a) Plan, b) Elevation c) Two sections d) Schedule of door and window e) Site plan, f) Area statement, g) Construction notes. h) Schedule of finishes

Chapter 6: Development of Line Plan of a Building 4.1) Symbols and notations as per BIS 696 in Civil Engg. Drawing. 4.2) Preparing Line Plan of Building, necessity of preparing line plan. 4.3) Development of Plan of Residential Building having living Room, Kitchen Room, Bed Room, Bath room and w.c. with slab. Draw to scale – Plan, Elevation Sections in 3 directions 4.4) Working drawings and its necessity.	2) Draw tracing of above drawing 3) Prepare ammonia sheet 4) Prepare a working drawing for Staircase, Toilet block and kitchen
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Subject - Building Drawing and CAD - 2nd Year

Code No – 30440002

Theory	Practical
B] Computer Fundamental	6 Month
1] Fundamentals Of Computer Introduction Components of PC The system Unit Front part of system Unit Back part of system Unit CPU Memory of computer Monitor Mouse, Keyboard Disk, Printer, Scanner, Modem, Video, Sound cards, Speakers	List of Practical 1. Working with Windows 2000 desktop ,start icon, taskbar, Recycle Bin, My Computer icon ,The Recycle Bin and deleted files Creating shortcuts on the desktop 2. The Windows 2000 accessories, WordPad – editing an existing document, Use of Paint – drawing tools The Calculator, Clock 3. The Windows Explorer window, concept of drives, folders and files? Folder selection techniques, Switching drives, Folder creation, Moving or copying files, Renaming, Deleting files and folders 4. Printing, Installing a printer driver, Setting up a printer, Default and installed printers, Controlling print queues, Viewing installed fonts, The clipboard and 'drag and drop', Basic clipboard concepts Linking vs. embedding,
2] Introduction To Windows 2000/Xp Working with window Desktop Components of window Menu bar option Starting window Getting familiar with desktop Moving from one window to another Reverting windows to its previous size Opening task bar buttons into a windows Creating shortcut of program Quitting windows	5. Moving through a Word document menu bar and drop down menus toolbars 6. Entering text into a Word 2000 document, selection techniques Deleting text 7. Font formatting keyboard shortcuts 8. Paragraph formatting Bullets and numbering 9. Page formatting What is page formatting? Page margins Page size and orientation Page breaks, Headers and footers 10. Introducing tables and columns

<p>3] GUI Based Editing, Spreadsheets, Tables & Presentation</p> <p>Application Using MS Office 2000 & Open Office.Org Menus Opening, menus, Toolbars, standard toolbars, formatting toolbars & closing Quitting Document , Editing & designing your document Spreadsheets Working & Manipulating data with Excel Changing the layout Working with simple graphs Presentation Working With PowerPoint and Presentation</p>	<p>11. Printing within Word 2000 Print setup Printing options Print preview</p> <p>12. Development of application using mail merge Mail merging addresses for envelopes Printing an addressed envelope and letter</p> <p>13. Creating and using macros in a document</p> <p>14. Creating and opening workbooks Entering data</p> <p>15. Navigating in the worksheet Selecting items within Excel 2000 Inserting and deleting cells, rows and column Moving between worksheets, saving worksheet, workbook</p>
<p>4] Introduction To Internet</p> <p>What is Internet Equipment Required for Internet connection Sending &receiving Emails Browsing the WWW Creating own Email Account Internet chatting</p>	<p>16. Formatting and customizing data</p> <p>17. Formulas, functions and named ranges</p> <p>18. Creating, manipulating & changing the chart type</p> <p>19. Printing, Page setup, Margins Sheet printing options, Printing a worksheet</p> <p>20. * Preparing presentations with Microsoft Power Point. Slides and presentations, Opening an existing presentation , Saving a presentation</p>
<p>5] Usage of Computer System in various Domains</p> <p>Computer application in Offices, books publication data analysis ,accounting , investment, inventory control, graphics, database management, Instrumentation, Airline and railway ticket reservation, robotics, artificial intelligence, military, banks, design and research work, real-time, point of sale terminals, financial transaction terminals.</p>	<p>21. Using the AutoContent wizard ,Starting the AutoContent wizard, Selecting a presentation type within the AutoContent wizard Presentation type Presentation titles, footers and slide number</p> <p>22. Creating a simple text slide, Selecting a slide Layout Manipulating slide information within normal and outline view, Formatting and proofing text, Pictures and backgrounds, drawing toolbar, AutoShapes, Using clipart, Selecting objects, Grouping and un-grouping objects, The format painter</p>
	<p>23. Creating and running a slide show, Navigating through a slide show, Slide show transitions, Slide show timings. Animation effects</p> <p>24. Microsoft Internet Explorer 5 & the Internet Connecting to the Internet The Internet Explorer program window, The on-line web tutorial Using hyper links, Responding to an email link on a web page</p> <p>25. Searching the Internet, Searching the web via Microsoft Internet Explorer, Searching the Internet using Web Crawler, Searching the Internet using Yahoo, Commonly used search engines</p>

<p>6] Information technology for benefits of community Impact of computer on society Social responsibilities Applications of IT Impact of IT Ethics and information technology Future with information technology</p>	<p>26. Favorites, security & customizing Explorer Organizing Favorite web sites Customizing options – general, security, contents, connection, programs, advanced 27. * Using the Address Book Adding a new contact Creating a mailing group, Addressing a message, Finding an e-mail address 28. Using electronic mail, Starting Outlook Express Using the Outlook Express window, Changing the window layout, Reading file attachment, Taking action on message-deleting, forwarding, replying 29. Email & newsgroups, Creating and sending Emails Attached files, Receiving emails, Locating and subscribing to newsgroups, Posting a message to a newsgroup 30. Chatting on internet, Understating Microsoft chat environment, Chat toolbar</p>
<p>C] Computer Aided Designing and Drafting</p>	<p>6 Month</p>
<p>1.0 CAD Software Meaning, various CAD software available in the market AutoCAD, Felix Cad, Auto Civil, 3D Max; etc.) Starting up of CAD, CAD Window, Tool bar, Drop down menu, Command window, Saving the drawing. Introduction of Graphic screen.</p>	<p>Practical related Creating New file, Closing Drawing, Saving Drawing, Startup Methods, Modes in AutoCAD, Use of Function Keys, Use of Keyboard and Mouse in AutoCAD Practice.</p>
<p>2.0 CAD Commands WCS icon, UCS icon, co-ordinates, drawing limits, grid, snap, ortho features. All Drawing commands, line, circle, polyline, multiline, ellipse, polygon etc. All Editing commands – Copy, move, offset, fillet, chamfer, trim, lengthen, mirror, rotate, array etc. Working with Layers, Block, hatches, fills, dimensioning, text etc.</p>	<p>Practice on Small Drawing Objects using Commands in Draw Menu Practice of Editing command on above drawing objects, Dimensioning Drawing, Creating Title block, Area Statement and Schedule of Opening using Text in AutoCAD,</p>
<p>3.0 Use of Cad software for practice of: Generation of line plan, Detailed Plan, elevation, section, site plan, Area statement and print commands Generation of 3D view using 3D Modeling commands and 3d Operation commands, Creating 3D of Building Introduction to Auto desk Architect , 3D Max</p>	<p>Drawing Plan, Elevation, Section, Site Plan in AutoCAD Creating 3D Model of Building and Generating required 3D view from all sides. Other CAD Practical based on the Theory.</p>

List of Books

Building Drawing

- 1] Malik, R.S. & Meo G.S. Civil Engg Drawing Delhi: New Asian Publishing
- 2] Shah P. J. Engg. Drawing – 1 Ahmedabad : D. J. Shah Publishing
- 3] Bhat N. D. Engg. Drawing Anand : Charotor
- 4] Gurucharan Singh Civil Engg. Drawing Delhi : Standard Publishers
- 5] Sane Y.S Building planning
- 6] Shaha Kale & Patki Building Drawing
- 7] Mackay W. B. IS962 Beaur of standards India (ISI)

Computer Fundamental

- 1] Vikas Gupta Comdex Computer Course Kit First Dreamtech
- 2] Henry Lucas Information Technology for management 7Th Tata Mc-Graw Hills
- 3] B.Ram Computer Fundamentals Architecture and Organisation Revised 3rd New Age International Publisher

CAD Books

- 1] Reference Manual of AutoCAD AutoDesk
- 2] Reference Manual of Felix cad Felix CAD
- 3] Reference Manual of Intel CAD
- 4] Reference Manual of Auto Civil
- 5] Reference Manual of 3D-Max

List of Tools and Equipment

A] General Class room

Sr	Name of Item	No.
1	Steel lockers 8 compartments with individual lockers (1980 x 910 x 480 mm)	4
2	Chair with writing pad	25
3	Steel almari with self 6.5' x 3' (18 gauge)	2
4	Steel table 4' x 3'	2
5	Teacher chair	2

B] For Building Drawing Practical

Sr	Name of Item	No.
1	Drawing Board	25
2	Drawing Table	25
3	Mini Drafter	25
4	Triangular Scale	10
5	Glass board 8' x 4'	2

C] For Computer Fundamental and CAD Practical

Sr	Name of Item	No.
1	Computer System P4 with accessories Complete with license OS. compatible for- to run AutoCAD 2010 and Windows 7 OS.	5+1
2	Plotter- HP Design Jet 500 latest model	1
3	Scanner	1
4	Computer table	5+2
5	Chair for computer	10+2
6	Laser Printer	1
7	AutoCAD 2010 or above Software	1
8	M. S. Office Software	1

Interior Decoration and Designing – 1st year
Code No – 30440006

Theory	Practical
1: Introduction 1.1 Introduction, purpose of design & decoration 1.2 Process and factors of design & decoration 1.3 Structural design, decorative design with Characteristics & examples 2: Principles of design 2.1 The principles such as symmetry, balance, harmony, rhythm, colour, emphasis, scale & proportions 3: Elements of design 3.1 Elements such as line, form, texture, light, space, pattern, colour 4: Element of Interior Design 4.1 Lights, electric & Communication 4.2 Wiring, Water Supply & Drainage System 4.3 Landscaping, Upholstery, Painting	Practice oriented exercise: 8 Sheet Journal containing sketches and write up
5: Ergonomics & Anthropometrics 5.1 Ergonomics, a total study 5.2 Anthropometrics, a total study 5.3 Environmental Control 5.4 Comfortable Design 5.5 Natural Day Light 5.6 Climatology 5.7 Air-Conditioning 5.8 Fire Safety 6: History of interior design 6.1 Classical & Medieval interiors 6.2 Nineteenth century & Modern interiors 6.3 Oriental interiors & Indian interiors 6.4 Future Trends in interiors 7: Basic Joinery 7.1 Importance of Joint 7.2 Types of Joint 7.3 Butt Joint, Rebated Joint, Tongue & Groove Joint, Mitre Joint, Mortise & Tenon Joint, Dovetail Joint, Housing Joint, Cross Lab Joint	Practice oriented exercise: 8 sheet
8: Drawing presentations 8.1 Representing furniture items, plants, accessories etc as well as styles in parallel & orthographic projections. 8.2 Using cut & paste; black& white; colour rendering and such techniques of presentations. 9: Perspective presentations 9.1 Drawing 1-point perspective projections. 9.2 Drawing 2-point perspective projections. 10: Study of residential interiors 10.1 Living space 10.2 Dining space 10.3 Living-dining space 10.3 Kitchen 10.4 Kitchen-dining space	Practice oriented exercise: 12 sheet

Theory	Practical
11 Study of Residential Interior 11.1 Master bedroom with attached Toilets 11.2 Children's Bedroom 11.3 Guest Bedroom 11.4 Utility area (Store Room, Study Room etc.) 11.5 W. C., Bathroom or Toilet Block 12 Design Program for Residential Flat 12.1 1 BHK / Hostel Room / Bank / Restaurant 12.2 Detail Plan 12.3 Sectional Elevation 12.4 Furniture Detailing (Orthographic or Isometric view) 12.5 Electrical Layout & Falls Ceiling 12.6 Ceiling layout & Details 12.7 Prospective of Furniture Model (Any One) 12.8 Cut & Paste of Furniture & other accessories	Practice oriented exercise: 12 Sheet

Interior Decoration and Designing – 2nd year

Theory	Practical
Joints in Structure - Need for joints in building , construction joints –position of construction joints , method of forming construction joints	Construction joints – wall, column, slab details.
Expansion and construction joints-. Details of expansion and construction joints in wall roofs, spacing of expansion joints, materials used in expansion joints.	Expansion joints -details
False (Suspended) ceiling: Requirement of false ceiling, Materials used for false ceiling to suit different purposes like Acoustical / Thermal / Ordinary	Fixing Details. Design of False Ceiling in a residence (at Living, Dinning, Toilet etc.)
Lighting, Classification of false ceiling and related theory of Acoustics.	Design of False Ceiling in a Restaurant,
Construction details of false ceilings as per Materials & Design.	Reception / Lounge, Office Area etc.
Partition: Need for partition, Materials used for partitions, Brick partition, Glass partition, etc.,	Design & details of partition walls using Aluminum & Timber sections.
Metal lathe, timber, hollow block, concrete, AC sheet or GI sheet	Design & details of partition walls using GI, PVC & composite sections.
Acoustical partition, Gypsum, semi glazed, glass block, PVK, partition, construction details for fixing partition of different types.	Fixing details of materials used for partitions.
Paneling: Requirement of paneling, Materials used for paneling, Types of panel, Construction details	Plan elevation & sections. Construction details. Fixing details of materials used for paneling.
Traditional paneling, Modern paneling at Restaurants, Hospitals, Lounges at Hotels. Conference halls, convention centers, etc. Concept of False Flooring, Termite Control, Pest Control etc. for better maintenance of structures from pre-construction stage to post construction stage.	Plan ,elevation , fixing details of materials Constructional Detail: (using different material) for – Design theories related to Reception / Bank counters Wardrobe etc. Dining / conference table etc

<p>Fabrics: their classification, characteristics and identification. Different fabric, weave, texture, colour, taint ness and durability, shrinking treatment for different fabrics (cotton, wooden, silk and blended).</p>	<p>Design of furniture for different purpose – Bed rooms, dining hall, Library, Office Workshop, Classroom, Kitchen etc.</p>
<p>Painter hand tools, brushes of various sizes, diamond lazier, stopping knife, scrapers, palate Knife, chisel knife, shave hook, pump line, lining tool, rule file, etc. their description, use, care and maintenance.</p> <p>Paints and Varnishes – method of preparation- Different types – classification and their application on woods. Painter's equipments classification, function and their uses – principles of spray gun painting. Method of application and precautions. Painting by spray gun, brushes and roller - different specific application and their defects and remedies. Different colour used, selection of paints for different types of fitting, electrical fittings, water supply, sanitary and drainage line etc. Preparation of glue and putty</p>	<p>Practice of Painting on various surface for patch of 2x2 ft size using different paint and varnish.</p>
<p>Modes of Measurements</p> <p>Points Considered while fixing unit of measurement</p> <p>Modes of measurements of item of work as per IS 1200</p> <p>Desired Accuracy of measurement</p>	<p>Practical</p> <p>List our different item of interior decoration work and write unit of measurement and rate of each item using different CSR</p>
<p>Detail Estimate</p> <p>Definition of Detail Estimate, Uses of Detail Estimate</p> <p>Data required to prepare detailed estimate</p> <p>Procedure of preparing detailed estimate of any work</p> <p>Taking out quantities and entering the data in measurement sheet and completing abstract sheet.</p> <p>Abstracting using Abstract sheet, List of items with their unit of measurement, Definition of contingencies, work charge establishment, Provisions in details estimate for sanitary, water supply, Electrification.</p> <p>Types of Estimates, Detail Estimate, Revised Estimate, Supplementary Estimate, Annual report and Maintenance Estimate, Special Report Estimate, Additions and Alteration Estimate.</p> <p>Procedure of calculating Quantities for Different Item of work Rules for Deduction in concrete, Masonry, Pointing & Plastering, Painting, Multiplying factor related to oil painting</p>	<p>Practical</p> <ol style="list-style-type: none"> 1. Preparation of Detail Estimate of a Residential Building (Load Bearing Structure) 2. Details estimate of septic Tank 3. Details estimate of sump well <p>Note: No. 1 is Compulsory and any one out of 2 and 3</p>

List of Books

- 01] Time Saver Standards Joseph De chiara 1991 Mc.Graw Hill New York
- 02] Interior Design John Pile 1995 Harry N. A. London
- 03] Ahmed Kasu Interior Design Ahmed Kasu 1995 TWAIN
- 04] Pen & Ink REndering Thames & Hudson 1984 Thames & Hudson London
- 05] Time Saver Standards, Design Space Planning Joseph De chiara 1991 McGraw Hill New York
- 06] Interior Design John Pile 1995 Harry N.A.
- 07] Interior Design Ahmed Kasu 1995 Twain
- 08] Interior Design Illustrated Franeis D. K. Ching 1987 Van Norstrund
- 09] Living Area Shirish Bhagat 1993
- 10] Building Construction S. C. Rangniala 1993 Charotttar Anand
- 11] Building Construction Sushil kumar 1991 Van Norstrund New York
- 12] Architectural Material Science D. Airapetov 1986 Mir New York
- 13] Neuftrat Architects Data John Thackara 1986 Oxford London
- 14] Human Dimensions Julius Panerio 1974 Whitney New York
- 15] Pidilite Industries FEVICOL BOOK No – 1 To 14
- 16] Wood Work Theory & Practice John Walton –Canbera High school Sydney
- 17] Furniture Exhibitions articles

A] General Class room

Sr	Name of Item	No.
1	Steel lockers 8 compartments with individual lockers (1980 x 910 x 480 mm)	4
2	Chair with writing pad	25
3	Steel almari with self 6.5' x 3' (18 gauge)	2
4	Steel table 4' x 3'	2
5	Teacher chair	2

B] For Practical

Sr	Name of Item	No.
1	Measuring Tape 2 M	10
2	Jack Plane 50 Mm Anant	10
3	Molding Plane (Anant/Stenale)	10
4	Ball Pain Hammer	10
5	Pincer/ Taparia 7"	10
6	Chisel Firmer 25 Mm	10
7	Chisel Bevel 25 Mm	10
8	Chisel Mortise 9 Mm	10
9	Oil Stone 9"X 2"X 1" (Carborandom)	10
10	Flat File 10"	10
11	Half Round File 10"	10
12	Round File 10"	10
13	Hand Saw 18"	10
14	Trangular File 6"	10
15	File Crd	10
16	Carpenter Vice 8"	10
17	Electric Blower	1
18	Drawing Board	10
19	Glass Board 6'x4'	1
20	"T" Square	10
21	Tringular Scale 300 Mm	10
22	Carpentry vice 300 mm	10
23	Mortising M/c (combined hollow chisel & chein)	1
24	Tenoning M/c (single ended)	1
25	Fret saw M/c	1
26	Plywood cutter M/c	1
27	Portable electric drilling m/c 6mm	1
28	Auto spiral latne 3 S.H.P.	1
29	Jig saw machine with jewellers blade	1
30	Universal wood working M/c	1
31	Portable sander m/c	1
32	Portable router m/c (juty)	1
33	Radial arm saw m/c	1
34	Portable planner m/c	1
35	Saw sharpening vice 300mm	4
36	Carving tool set	4
37	Glass cutter	2
38	Spirit level 300mm	2
39	Computer P4 with laser printer all acssesseries	5
40	Surface plate 600 x 600 mm	1
41	Bench grinder 200 mm wheel (DE)	1
