STATE BOARD OF TECHNICAL EDUCATION, JHARKHAND

TEACHING AND EXAMINATION SCHEME FOR POST S.S.C. DIPLOMA COURSES

COURSE NAME : DIPLOMA IN ARCHITECTURAL ASSISTANTSHIP

COURSE CODE : AA

DURATION OF COURSE : 6 SEMESTERS

SEMESTER : THIRD PATTERN · FULL TIME

WITH EFFECT FROM 2011-12 DURATION: 16 WEEKS

Sr.	SUD IECT TITLE	Abbrev SUB		Abbrev SUB		Abbrev SUB		TE S	ACHI CHEN	NG IE		EXAMINATION SCHEME					
No.	SUBJECT IIILE	iation	CODE	тц		DD	PAPER	TH (01)		PR	(04)	OR	(08)	TW (09)		SW	
						ГK	HRS	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	(16003)	
1	Building Construction System - I	BCS	12424	03		02	04	100	40			50#	20	25@	10		
2	Strength of Materials	SOM	12425	03		02	03	100	40					25@	10		
3	Perspective & Sciography	PSY	12426	01		04	03	100	40					50@	20		
4	Sanitary systems	SSS	12427	02		02	02	50	20					25@	10		
5	Town Planning & Building Regulations	TPR	12428	02			02	50	20							50	
6	Architectural Drawing & Design - I	ADD	12429	01	-	06						50#	20	25@	10		
7	Computer Aided Drawing - I	CAD	12430			04				50@	20						
	TOTAL					20		400		50		100		150		50	

Student Contact Hours Per Week: 32 Hrs.

THEORY AND PRACTICAL PERIODS OF 60 MINUTES EACH.

Total Marks : 750

@ Internal Assessment, # External Assessment, Ø - Common to All Conventional Diploma, #* Online Examination,

No Theory Examination.

Abbreviations: TH-Theory, TU- Tutorial, PR-Practical, OR-Oral, TW- Termwork, SW- Sessional Work

- Conduct two class tests each of 25 marks for each theory subject. Sum of the total test marks of all subject are to be converted out of 50 marks as sessional work (SW).
- > Progressive evaluation is to be done by subject teacher as per the prevailing curriculum implementation and assessment norms.
- Code number for TH, PR, OR and TW are to be given as suffix 1, 4, 8, 9 respectively to the subject code.

SBTE, JHARKHAND

Course Name : Diploma in Architectural Assistantship Course Code : AA Semester : Third Subject Title : Building Construction System - I Subject Code : 12424

Teaching & Examination Scheme:

Teaching Scheme				Examination Scheme							
TH	TU	PR	PAPER HRS.	TH	PR	OR	TW	TOTAL			
03		02	04	100		50#	25@	175			

NOTE:

- Two tests each of 25 marks to be conducted as per the schedule given by SBTE.
- Total of tests marks for all theory subjects are to be converted out of 50 and to be entered in mark sheet under the head Sessional Work. (SW)

Rationale:

This subject will help the students to comprehend the construction system of different parts of the structure & to secure knowledge about strength and stability of the different parts. It will also help the students to secure the knowledge about the materials of construction and market survey of materials of different sizes and use.

Objectives:

The student will be able to: -

- 1) Know the different types of suspended floors, stairs, roofs.
- 2) Draw different constructional details of suspended floors, stairs & roofs.
- 3) Know the properties uses and sizes of floor finishes, wall finishes etc.



Chapter	Name of the Topic	Hours	Marks
1	 Floor finishes 1.1 Artificial, Natural Flooring 1.2 Types of tiles: Marble mosaic tiles, terrazzo tiles, glazed, earthen and ceramic tiles, parquette tiles, cement concrete tiles, their size, availability and uses. 1.3 Manufacturing process of cement concrete tiles. 1.4 Marble stone, kota stone, linoleum rubber with their sizes, availability and uses 	05	10
2	 Wall finishes 2.1 Wall board – Homogeneous fibers, laminated fibers, polysterine wall tiles, plastic wall tiles properties and its uses. 2.2 Wall papers, foam rubber tiles and rolls: properties and its uses 	05	10
3	 Ceiling materials 3.1 Types of ceiling- True Ceiling, False ceiling 3.2 Hession cloth, gypsum plaster board, plain A.C. sheets, plywood, hard board, fibre boards, properties, availability, sizes and uses 3.3 Straw & glass wool tiles, asbestos tiles, availability, sizes and uses 	05	10
4	 Roofing materials 4.1 Mangalore & country tiles, asbestos - sheets, G.I. Sheets, proflex sheets & their standard sizes, suitability, applications 	03	08
5	 Building Hardware 5.1 fixture and fastenings 5.2 Types & their sizes, materials and uses as per ISI for tower bolts, hinges, door handles, hasps and staples, light catches, door springs, Litches, Floor door stopper, fan light pivots, mortise lock, door closer, lever handle barrel bolt, ventilator chains wire gauges mosquito & fly proof with their sketches. 	08	16
6	 Suspended Floor 6.1 Single, double and Triple jointed floors in Timber: Their diagrammatic representation, details of components 6.2 Jack Arch flooring :- Concrete Jack Arch Flooring Brick Jack Arch Flooring 	06	10
7	 Stairs 7.1 Basic requirements & Layout, purpose & types. 7.2 Constructional details for timber and R.C.C. stairs, balustrades/parapets, handrail etc. 	06	18
8	 Roofs in Timber 8.1 Classification: Pitched or sloped, Flat roofs or terrace, shell roofs, domes. 8.2 Technical Terms, type : Flat, pitch, lean to, gable, hipped. 	10	18

Types of pitched roof : Single, double and trussed		
8.3 Types of roof coverings supportings: Eaves, parapet gutter &		
valley gutter		
8.4 Details of King Post, Queen Post roof truss: sketches,		
detailing of components, Uses		
Total	48	100

Practical:

Skills to be developed:

Intellectual skills:

- 1) Understand types of suspended floors, stairs and roofs.
- 2) Get knowledge about construction details
- 3) Student can make selection of the type of the floor or stair or roof for given room sizes.
- 4) To do market surveys and prepare reports

Motor Skills:

- 1) To draw the drawings to the scale
- 2) Work out construction details of floors, stairs and roofs in timber
- 3) To visit the sites under construction

List of Practical:

- 1) Two full imperial size-drawing sheets on chapter No.6
- 2) Three full imperial size-drawing sheets on chapter No.7
- 3) Three full imperial size-drawing sheets on Chapter No.8
- 4) Market surveys and preparation of reports on floor finishes, wall finishes, ceiling materials & building hardware etc.

Note:

The studio work may be completed along with theory session. The subject teacher will arrange site visit for better understanding of content.

Learning Resources:

Books:

Sr. No.	Author	Title	Publishers & Address		
1	BARRY	Building Construction Vol I, II, III, IV	ELBS London		
2	Mckay	Building Construction Vol I, II, III, IV	Longman Group London		
3	Chudley	Building Construction Vol I, II, III, IV	ELBS with Longman England		
4	Rangwala S.C.	Engineering Materials	Charotar Publishing House, Anand		
5	P.N.Khanna	Handbook (Civil Engineers)	Engineers Publishers, Delhi		
6	Sushilkumar	Building Construction	Standard Publisher Distributors, Delhi		
7	S.P Arora & S.P Bindra	Building Construction	Dhanpat Rai Publications		

Course Name : Diploma in Architectural Assistantship

Course Code : AA

Semester : Third

Subject Title : Strength of Materials

Subject Code : 12425

Teaching & Examination Scheme:

Teaching Scheme			Examination Scheme							
TH	TU	PR	PAPER HRS.	TH	PR	OR	TW	TOTAL		
03		02	03	100			25@	125		

NOTE:

Two tests each of 25 marks to be conducted as per the schedule given by SBTE.

Total of tests marks for all theory subjects are to be converted out of 50 and to be entered in mark sheet under the head Sessional Work. (SW)

Rationale:

This subject will help the students to comprehend the fundamental facts, concepts. About designing the different structural members and secure sufficient knowledge about strength and stability of the structural member. This subject describes the stresses and strains created in body when force is applied on body, which affect the internal body structure, which helps the students to analyze the effects of loads on component parts of structures.

Objectives: -

The student will be able to: -

- 1) Design different structural members.
- 2) Know about the nature of failure of body due to load.
- 3) Know about effects of temperature on body.



Chapter	Name of the topic	Hours	Marks
1	 Simple Stress And Strain 1.1 Concept and definitions, units, type of stresses, Axial stresses in bars, strains. 1.2 Hook's law 1.3 Modulus of elasticity (young's modulus) 1.4 Tensile test on mild steel specimen 1.5 Deformation of body due to force acting on it. 1.6 Principle of superposition 1.7 Stresses in bars of varying sections 1.8 Stresses in composite bars 1.9 Working stress, yield stress and factor of Safety. 	18	38
2	Thermal Stresses and strains2.1 Introduction2.2 Thermal stresses in simple bars2.3 Thermal stresses in bars of varying sections2.4 Thermal stresses in composite bars	12	24
3	 Shear Force and Bending Moments 3.1 Introduction: - Definition and concept of shear force and Bending moments, sign conventions 3.2 calculation of support reactions of beam 3.3 Calculation of S.F. and B.M. on beam section 3.4 Drawing S.F. diagrams and B.M. diagrams for different beams: Simply supported, Cantilever and Overhang on one or both sides 3.5 Point of Contra flexure. 	18	38
	Total	48	100

Practical:

Intellectual skills:

- 1) To calculate simple & thermal stresses and strains in body
- 2) To calculate S.F. & B.M. analytically

Motor Skills:

1) To solve problems graphically

List of assignments:

- Assignment on simple stress and strain contains minimum one sample problem on each of the following:
 - a) Stress and strains in simple bars
 - b) Principle of Super position

- c) Stresses in bars of varying sections
- d) Stresses in composite bars
- 2) Assignment on thermal stress and strain contains minimum one sample problem on each of the following:
 - a) Thermal stresses in simple bars
 - b) Thermal stresses in bars in varying sections
 - c) Thermal stresses in composite bars
- 3) One Assignment containing four problems on S.F.D. and B.M.D. on graph paper with analytical solution.

Learning Resources: Books:

Sr. No.	Author	Title	Edition	Year of Publication	Publisher & address
1	S. Ramamrutham	Strength of Materials	7 th	1985	Dhanpat Rai and sons 1682 Naisarak Delhi- 110006.
2	R. S. Khurmi	Strength of Materials	21 st	1992	S.Chand & Co. ltd
3	Y. N. Walavalkar	Mechanics of Structure	1 st Edition	1993	Mrs.Jyoti Deepak Bhivpathki Everest Publishing House 94/777, Akkalkot swami society, Maharshi Nagar Pune - 411037

Course Name : Diploma in Architectural Assistantship Course Code : AA Semester : Third Subject Title : Perspective and Sciography Subject Code : 12426

Teaching & Examination Scheme:

Teaching Scheme			Examination Scheme						
TH	TU	PR	PAPER HRS.	TH	PR	OR	TW	TOTAL	
01		04	03	100			50@	150	

NOTE:

Two tests each of 25 marks to be conducted as per the schedule given by SBTE.

Total of tests marks for all theory subjects are to be converted out of 50 and to be entered in mark sheet under the head Sessional Work. (SW)

Rationale:

This subject will help the students to understand various facts, concepts and procedures of perspective drawing. The subject will also help in making models of different materials, free hand sketching of monuments etc.

Objective:

The student will be able to: -

- 1) Understand different methods of drawing perspective views.
- 2) Understand free hand coloured drawings of buildings and monuments.
- 3) Make models.
- 4) Sketch free hand coloured perspective.



Chapter	Name of the Topic	Hours	Marks
	Perspective	08	40
	1.1 Characteristics of perspective construction, determining		
	vanishing points		
	1.2 Relationship between station point (spectator), picture		
	plane and perspective. Comparative study of perspective by		
	changing position of station point from one side and front		
	of picture plane		
1	1.3 Two point perspective –		
	Two point perspective of a simple building with or without		
	overhang roof, two point perspective of a small house		
	1.4 Shades and Shadows in perspective –		
	Front lighting, side lighting, back lighting, point lighting		• 0
	from one light source and reflections in perspective		20
	1.5 Birds I eye view: No questions are to be asked on this topic		
	in examination		
	Water Colour Washes		
	2.1 wasnes: -		
	i) Flat wash		
	iii) Graded washes colour		
	iv) Grades washes (three colour)		
	y) Grades washes with a verical shine in the center		
2	v) Grades washes with digonal shine in the center	03	16
	vi) Glare wash		
	v_{iii} Two glare washes – one over the other		
	2.2 skies – Three types		
	2.3 Architectural trees		
	2.4 How skies help to define the building		
	2.5 Simple building landscapes		
2	Mural Design	03	10
3	3.1 Mural design and collage	02	12
	Sketching		
4	4.1 Free hand sketching of monuments and	02	12
	buildings in different techniques and medium		
	Modelling		
5	5.1 Practice of making models in different forms,	01	-
	shapes and materials		
	Total	16	100

Practical:

Skills to be developed:

Intellectual skills:

- 1) To understand one point and two point perspective method of drawing.
- 2) To learn model making and free hand drawings.
- 3) To identify and choose appropriate colour scheme.
- 4) To choose appropriate materials for making models.

Motor Skills:

- 1) Draw the perspective views neatly and correctly
- 2) To make model of the particular small structure.
- 3) To draw mural and free hand sketches
- 4) To apply appropriate paint on model.
- 5) To use safety devices while making model.

List of Practical:

Term Work:

Term work consists of: -

- 1) One full imperial size drawing sheet on one-point perspective view by changing the position of picture plane, eye level and station point etc.
- 2) One full imperial size drawing sheet on two-point perspective view of simple object, touching picture plane.
- 3) One full imperial size drawing sheet on two point perspective view by changing the position of picture plane, eye level and station point etc.
- 4) One full imperial size drawing sheet on two point perspective of 1 or 2 Bedroom, Hall, Kitchen bungalow with flat roof & partly pitched roof.
- 5) Two full imperial size drawing sheet on Sciography of a simple objects.
- 6) One half imperial size drawing sheets on chapter No.2
- 7) One half imperial drawing sheet on chapter No.3
- 8) Each student should make one model of building designed by him under Architectural Drawing and Design I subject.

Learning resources:

Books:

Sr. No.	Author	Title	Publisher & address		
1	Philip J Lawson	Practical Perspective Drawing	Mc Graw Hill Book Coropration, London		
2	W. Abbott	Theory and practice of perspectives	Balckie & sons Ltd. London		
3	Civil A Farey	Architectural Drawing Perspective & rendering`	B.T.Batsford Ltd. London		
4	James More head	Hadnbook of Perspective drawing	Elsever Press, Inc. Texas		
5	Robert W. Gill	Rendering with pen and ink	Thames & Hudson Ltd., London		
6	Bernaud Atkines	The water colour techniques of Architectural rendering	Walter T. Foster		
7	Shah, Kale, Patki	Perspective Drawing	Tata Mc Graw Hill Publication Ltd, Delhi		

Course Name : Diploma in Architectural Assistantship Course Code : AA Semester : Third Subject Title : Sanitary Systems Subject Code : 12427

Teaching & Examination Scheme:

Teac	Teaching Scheme			Examination Scheme							
TH	TU	PR	PAPER HRS.	TH	PR	OR	TW	TOTAL			
02		02	02	50			25@	75			

NOTE:

- Two tests each of 25 marks to be conducted as per the schedule given by SBTE.
- Total of tests marks for all theory subjects are to be converted out of 50 and to be entered in mark sheet under the head Sessional Work. (SW)

Rationale:

This subject will help the student to familarise with commonly used methods, materials and equipments for sanitation and house drainage and working of such systems

Objectives:

The student will be able to: -

- 1) Know the different sanitary fittings.
- 2) Know the methods for sanitary and plumbing services.
- 3) Prepare drainage layout of given building.

Application	Use of different sanitary fittings. Selecting methods for sanitary and plumbing
	services.

Procedure	Building sanitation, solid waste disposal, methods of sewage treatment	Methods of sewage disposal
Principle	Principles of analysis and treatment of sev	wage, principles of sanitation
Concept	Sewage, Quality of sewage, Refuse & C	Garbage, plumbing & internal fixtures
Facts	Waste from building and industry, s treatment and dis	ystems for collecting, conveyance posal of waste 12427 AA3

Chapter	Name of the Topic	Hours	Marks
Chapter	Name of the Topic Sanitation 1.1 Glossary of drainage terms 1.2 Methods of refuse collection & disposal of refuse collection patterns 1.3 Surface drainage: systems of drainage, combined and separate systems. Open drains in small towns, shape of street drains 1.2 Starm counters	Hours	Marks
1	 1.3 Storm overflow, self cleaning velocities, domestic drains, flushing of drains 1.4 Sewers: Sewers for different Systems, standard type of drains, R.C. drain sewers, making sewers, cement concrete, asbestos cement concrete, earthen ware pipes, cast iron pipes 1.5 Test of pipes, Masonry sewers, setting out sewer line and excavation, laying and joining pipes, sewers crossings, branch connections of sewers 	10	16
2	Manholes2.1 Spacing, size, covers2.2 Lamp holes.drop manhole2.3 Ventilation of sewers	04	08
3	 House Drainage 3.1 Trap types: Definitions, functions, requirements of good trap Classification of traps P,Q,S Trap, Intercepting traps, gully traps, grease traps, combined sand grease & oil trap Inspection chambers Ventilation of House drains: Antisyphonage, vent pipes, one and two pipe System 	10	08
	 3.2 Sanitary fittings: Sinks, bath, water closet, closet ranges, flushing cisterns, urinals, laboratory basins, bidets Size of pipes and traps for house drainage testing drainage pipes for leakage : smoke test, water test, cast iron pipes, soil & rain water pipes, wrought iron and steel and brass pipes, P.V.C. pipes 		08
4	Plumbing and Internal Fixtures4.1 Joints for various type of pipes4.2 Septic tanks, cess pools and seepage pits	08	10
	Total	32	50

Practical:

Skills to be developed:

Intellectual Skills:

- 1) Student should know importance of sanitary system in construction work
- 2) They should know commonly used methods and equipments for sanitation and house drainage

Motor skills:

- 1) Student should do site visit.
- 2) They should make drainage layouts so that student can familarise with method and equipments for sanitation, house drainage and actual working of such systems
- 3) They can understand need of septic tanks and how to design septic tank for given capacity.

List of Practical:

- 1) Report on Visit to different sanitary fittings, method of laying and jointing of sewers.
- 2) Report on Visit to plumbing arrangement for building
- 3) Drainage layout for single storied building
- 4) Design & drawing of septic tank for given capacity.

Note:

Practical work also consists of assignments on all chapters.

Learning Resources:

Books:

Sr. No.	Author	Title	Edition	Year of Publication	Publisher & address
1	Rangwala S.C.	Water Supply & Sanitary Engineering	16 th	1999	Charotar Publishing House, Anand
2	G.S.Birdi	Water Supply and Sanitary Engineering	6 th	1998	Dhanpatrai & Sons Publishing Co. New Delhi
3	V.V.Gharpure	A text book of sanitary engineering	3 rd	1984	M.G. Shahai Engg. Book Publishing Co, Pune 16
4	S.R.Kshirsagar	Sewage and Sewage treatment Vol I & II	4^{th}	1986	Roorkee publishing House Roorkee

Course Name : Diploma in Architectural Assistantship

Course Code : AA

Semester : Third

Subject Title : Town Planning & Building Regulations

Subject Code : 12428

Teaching & Examination Scheme:

Teaching Scheme					Examinati	on Scheme		
TH	TU	PR	PAPER HRS.	TH	PR	OR	TW	TOTAL
02			02	50				50

NOTE:

Two tests each of 25 marks to be conducted as per the schedule given by SBTE.

Total of tests marks for all theory subjects are to be converted out of 50 and to be entered in mark sheet under the head Sessional Work. (SW)

Rationale:

This subject will help the students to understand development control rules and byelaws of local authority.

Objectives:

The student will be able to:

- 1) Describe the importance of town planning.
- 2) Apply various building bye laws for Municipal Approval for Building Plan.



Chapter	Name of the Topic	Hours	Marks
	Introduction		
	1.1 Objects of Town Planning		
	1.2 Principles of Town Planning		
	1.3 Necessity of Town Planning		
1	1.4 Origin of towns	06	10
	1.5 Growth of towns		
	1.6 Growth according to direction		
	1.7 Growth according to origins		
	1.8 Stages in Town Development		
	Zoning		
	2.1 Meaning of term		
	2.2 Uses of land		
	2.3 Objects of zoning		
	2.4 Principles of Zoning		
2	2.5 Advantages of Zoning	08	10
	2.6 Importance of Zoning		
	2.7 Aspect of Zoning		
	2.8 Zonal plans for Military towns		
	2.9 Transition Zone		
	2.10 Zoning powers		
	Building Bye laws		
	3.1 General – Standard Norm, Regulations & Building Bye		
	laws		
	3.2 Object and importance of bye laws		
	3.3 Principles underlying building Bye Laws		
	3.4 Function of Local Authority & responsibility of owner		
	3.5 Applicability of Bye Laws		
	3.6 Requirement of open space – set back light plane		
3	3.7 Floor Space Index (F.S.I.) or Floor area Ratio (F.A.R.)	14	20
	3.8 Off street parking		
	3.9 Fire protection		
	3.10 Minimum plot sizes		
	3.11 Terms - Auditorium, consolidated open plot, Low rise		
	and High rise buildings, loft, mezzanine floor, domestic		
	industrial building, ownership tenement flats, penthouse		
	etc.		
	3.12 Building Bye laws for various residential schemes and		
	industrial schemes		
	Planned towns in India:		
4	According to the Principles of Town Planning - e.g	04	10
	Chandigarh & Gandhinagar		=
	Total	32	50

Note:

1) Byelaws of different Municipal Corporations should be referred.

Learning Resources: Books:

Sr. No.	Author	Title	Publisher & Address
1	Hiraskar G.K.	Fundamentals of Town Planning	Dhanpatrai & sons, New Delhi
2	Rangwala S.C.	Town Planning	Charotar Publishing Anand
3	Shah, Kale, Patki	Building Drawing	Tata Mc-Graw Hill, New Delhi
4	Ambedkar & Modak	Town & Country planning & Housing	Orient Longman Ltd., New Delhi
5	I.S.I.	National Building Code	B.I.S.
6	Govt. Of Maharashtra	Development Control Rules & regulations for A Class Municipal Corporations, B & C Class Municipal Councils of Maharshtra State	Govt. Of Maharashtra Publication

Course Code : Diploma in Architectural Assistantship Course Code : AA Semester : Third Subject Title : Architectural Drawing and Design – I Subject Code : 12429

Teaching & Examination Scheme:

Teaching Scheme					Examinatio	on Scheme	!	
TH	TU	PR	PAPER HRS.	TH	PR	OR	TW	TOTAL
01		06				50#	25@	75

Rationale:

Architectural drawing is basic of architecture. It prepares the students to become a good architectural assistant. It helps in learning further aspects of architectural drawings. Also this subject will help the students to understand and attain basic skills of Architectural Drawing in order to graphically represent what they learn in other subjects.

Objectives:

The students will be able to:

- 1) Understand drafting skills and techniques.
- 2) Develop the given sketch design in to final drawing.
- 3) Develop bubble diagram in to final drawings.
- 4) Prepare various types of 2 Dimensional drawings in CAD.
- 5) Design simple buildings as per requirements.



Chapter	Name of the Topic	Hours
1	Drafting skills with pencil and drawing pens, free hand lettering and stenciling	01
2	Development of architectural drawing from given sketch design of building involving two or more floors and split levels	11
3	Drafting skills in CAD. Two dimensional simple drawing of given sketch plan, sections, elevations, etc. (This exercise is to be carried out in coordination with CAD – I subject teacher and under his guidance as well)	04
	Total	16

Practical:

Skills to be developed:

Intellectual skills:

- 1) Read sketch design and visualise the different views.
- 2) Understand basic requirements of developing architectural drawings
- 3) Decide procedure for developing architectural drawings
- 4) Interpret presentation drawing and techniques such as 2D drawings in CAD

Motor Skills:

- 1) Draw free hand letterings and adopt drafting skills and techniques
- 2) Draw architectural drawings from given sketch design of building
- 3) Draw 2 D drawing in CAD

List of Practical:

- 1) One imperial drawing sheet on drafting skills and techniques
- Problem on development of Architectural Drawing from given sketch design of building (All the students should draw – plans of different floors, sections, all side elevations and site plan)
- One 2D drawing of simple building in CAD (Drawing requirement: Plan, section, elevation, schedule of doors and windows and site plan)

Notes:

- The content of this subject is expected to be implemented with a creative outlook. The subject teacher (of course an Architect) should find new ways and means to convey to the students the abstract and Non –tangible aspects along with basic technical skills.
- 2) All the students should present their certified Portfolio (Term Work) at the time of oral examination.

Learning Resources: Books:

Author	Title	Publisher & Address			
J.Calendar	Time saver standards	Mc – Graw Hill Publication			
Bousmaha B.	Neuferts Data Book	Black well science Home page			
E & O.E.	Planning – the architects Handbook	Illiffe & Sons, London			
V.S.Parmar	Design fundamentals in Architecture	Somaiyya Publication, Mumbai			
George Omura	Mastering Auto CAD	BPB, Publication			

Course Name : Diploma in Architectural Assistantship Course Code : AA Semester : Third

Subject Title : Computer Aided Drawing - I

Subject Code : 12430

Teaching & Examination Scheme:

Teac	hing Scł	neme			Examinati	on Scheme		
TH	TU	PR	PAPER HRS.	TH	PR	OR	TW	TOTAL
		04			50@			50

Rationale:

This subject help the students to understand the various facts, concepts and techniques of collecting the information from various architectural firms and creating the plans of presentation plans on CAD in 2 Dimensions.

Objectives:

The student will be able to: -

- 1) Know the skills of using drafting commands.
- 2) Know the skills of using editing commands.
- 3) Know dimensioning commands.
- 4) Analyse the information from various resources.
- 5) Create 2 dimensional presentation drawings.



Note	Contents	of the	ory ar	e to	he tai	ight	in	practical	neriod	i.
note.	Coments	or un	tory are		UE lai	igni	ш	practical	periou	

Chapter	Name of the Topic					
-	Basics of CAD					
	1.1 Introduction					
	1.2 Principle of CAD					
	1.3 Advantages of CAD over traditional Drawings					
	1.4 Intelligence					
	1.5 Customisation					
	1.6 Ease of Use					
	1.5 Numeric Methods					
	1.6 Features of CAD					
1	1.7 Co-ordinate Systems used in CAD					
	1.8 Typographical Conventions					
	1.9 User Interface of CAD					
	1.10 Study of Various Menus Available on screen					
	1.11 Study of Various toolbars					
	1.12 Introduction to Basic Commands					
	1.13 Special Keys used in CAD					
	1.14 Concept of Entity and Attribute in Drawing					
	1.15 Input & Output devices used in CAD					
	Note: - the students are expected to study the screen					
	Introduction to 2 – D Commands					
	2.1 Drafting Commands – Point, Line, Arc, Circle, Polygon, Polyline,					
	Rectangle, Multiline Text Editor, Ellipse, Boundary Hatch & various drafting					
	commands					
	2.2 Editing Commands					
2	Erase, Trim, Extend, Offset, Copy, Move, Scale Rotate, divide, Fillet,					
	Chamfer, Mirror, Break, Lengthen, stretch, Array, Explode, Editing Hatch,					
	Modifying Text					
	2.3 Enquiry Commands – List, ID point, Area, Distance, Time, Status, SetVar,					
	2.4 Changing Properties of Drawing such as - Linetype, Colours, LtScales etc.					
	Introduction to Dimensioning					
	3.1 Basics of Dimensions					
	3.2 Entering/Exiting in/from Dimension Mode					
	3.3 Types pf Dimensions –					
	3.4 Linear Dimensions					
	3.5 Angular Dimensions					
	3.6 Radial/ Diametrical Dimension					
	3.7 Ordinate Dimensions					
3	3.8 Dimensions Utility Commands					
	3.9 Commands those can be utilised in both Dimension as well as Command					
	mode					
	3 10 Associative Dimensioning commands –					
	3 11 Commands related to edition of dimensions after dimensioning					
	3.12 Study of Various Dimension Variables					
	3.12 Study of Various Difficulture variables in Dimension Style Dialog Poyes					
	2.14 Dimension Variable Settings for Converse Dimension Star for 1					
	3.14 Dimension Variable Settings for Common Dimensioning Standards					

Practical:

Skills to be developed:

Intellectual Skills:

- 1) To identify the various input and output devices of computer.
- 2) To know the basic commands used in CAD.
- 3) To analyse the various requirements of Architectural drawing.
- 4) To know the various dimensioning commands used.

Motor Skills:

- 1) Use of Basic Commands to set the working drawing area.
- 2) To prepare 2 Dimensional objects in CAD.
- 3) To dimension the plans, elevations appropriately.
- 4) To manipulate various inquiry commands to know the parameters.

List of practical:

- 1) Two Assignments on Chapter No.1
- 2) Three Assignments on Chapter No.2
- 3) Two Assignments on Chapter No.3
- 4) One 2D drawing of simple building in CAD
 - (Drawing requirement:- Plan, section, elevation, schedule of doors and windows and site plan)

Note:

The students should study the subject according to the syllabus and complete their term work under the guidance of the subject teacher. The students are expected to perform the practical work along with the guidelines provided by the Subject teacher of Architectural Drawing and Design – I subject.

Learning Resources: Books:

Sr.	Author	Title	Editio	Year of	Publisher &
No.			n	Publication	Address
1	George Omura	Mastering Auto	1 st	1994	B.P.B. Publication,
		CAD R 12			New Delhi
2	John Jibb	Teach Yourself	1 st	1995	B.P.B. Publication,
		Auto CAD			New Delhi
3	Sham Titkoo	Auto CAD 2006	2 nd	2005	Dramtas Press, 19/A,
		for Engineering			Ansari Road, Dariya
		& Designing			Ganj, New Delhi
4	Sham Titkoo	Auto CAD 2007	1 st	2006	Dramtas Press, 19/A,
		for Engineering			Ansari Road, Dariya
		& Designing			Ganj, New Delhi
5	Sham Titkoo	Customising	1 st	2006	B.P.B.Publication,
		Auto CAD 2004			New Delhi
6	George Omuar	Auto CAD 2006	1 st	2006	
		& Auto CAD LT			B.P.B.Publication,
		2006			New Deini