w. e. f Academic Year 2011-12

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 **WITH EFFECT FROM 2011-12**

SEMESTER : FIFTH **DURATION: 16 WEEKS**

PATTERN : FULL TIME

SR. NO.	SUBJECT TITLE	Abbreviation	SUB CODE	TEACHING SCHEME			EXAMINATION SCHEME									
				TH	TU	PR	PAPER HRS	TH (01)		PR (04)		OR (08)		TW (09)		SW (16005)
								Max	Min	Max	Min	Max	Min	Max	Min	
1	Building Technology	BTY	12556	02	--	04	04	100	40	--	--	25#	10	25@	10	50
2	Design of R.C.C. Structures - I	DRC	12557	04	--	01	03	100	40	--	--	--	--	25@	10	
3	Architectural Design - I	ADI	12558	01	--	05	06	100	40	--	--	50#	20	25@	10	
4	Quantity Surveying & Estimating - I	QSE	12559	02	--	02	02	50	20	--	--	--	--	25@	10	
5	History of Architecture	HOA	12560	03	01	--	03	100	40	--	--	--	--	--	--	
6	Working Drawing	WDG	12561	--	--	04	--	--	--	--	--	--	--	50@	20	
7	Computer Aided Drawing & Applications-I	CAA	12633	--	--	04	--	--	--	50@	20	--	--	--	--	
		TOTAL		**12**	**01**	**20**	--	**450**	--	**50**	--	**75**	--	**150**	--	**50**

Student Contact Hours Per Week: **33 Hrs.**

THEORY AND PRACTICAL PERIODS OF 60 MINUTES EACH.

Total Marks **: 775**

@ Internal Assessment, # External Assessment, ▭ 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 subjects is 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.

Course Name : Diploma in Architectural Assistantship

Course Code : AA

Semester : Fifth

Subject Title : Building Technology

Subject Code : 12556

Teaching & Examination Scheme:

Teaching Scheme			Examination Scheme					
TH	TU	PR	PAPER HRS	TH	PR	OR	TW	TOTAL
02	--	04	04	100	--	25#	25@	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:

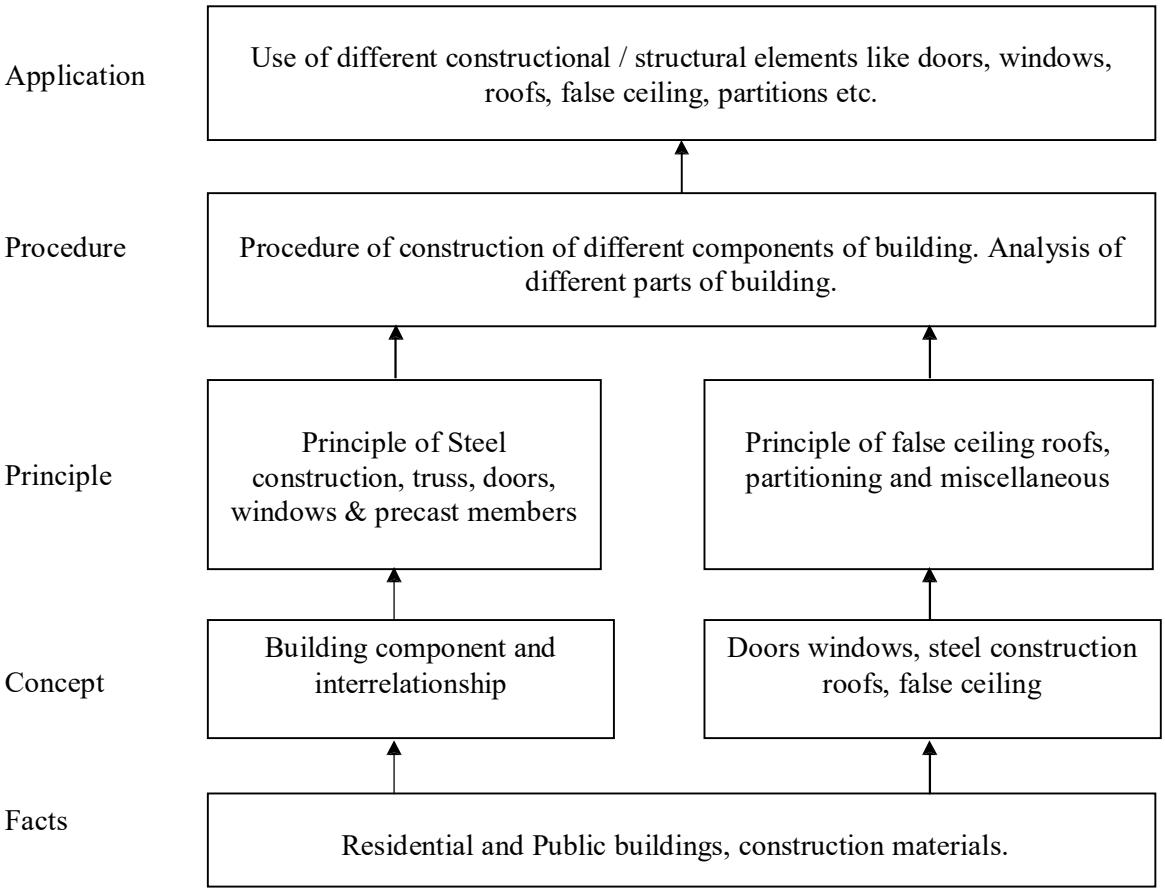
This subject will help the students to know various facts and concepts of different components of structure such as doors, windows, steel construction, roof and other miscellaneous and the students will learn to draw sketches of these components to the scale.

Objectives:

The students will be able to Understand:-

1) Various types of doors and windows.
2) Types of False ceilings, partitions.
3) Steel roof trusses & precast members.
4) Different constructional/ structural elements.

Learning Structure:



Contents: Theory

Chapter	Name of the Topic	Hours	Marks
1	**Doors and windows** 1.1 Types: Revolving, swing, collapsible, rolling shutter, sliding, folding, sliding and folding. [Advantages and construction details]	**05**	**18**
2	**False Ceiling** 2.1 Types, purpose, constructional details and materials.	**04**	**12**
3	**Partitions** 3.1 Advantages and requirements 3.2 Types - Brick partitions, wooden partitions, hollow block partitions, clay block partitions, concrete partitions, Glass block partitions, plaster slab partitions, straw board partitions, metal lath partitions, Asbestos cement partitions, double glazed partitions. [Materials, construction details and advantages] 3.3 Built in furniture Room divider, storage unit or showcase unit, movable wooden partitions. [Materials, finishes and construction details]	**06**	**14**
4	**Steel Roof Trusses** 4.1 Advantages and requirements 4.2 Types of steel trusses (Sketches only) 4.3 Materials for fabrication and roof coverings. 4.4 Construction details for a) Lantern light. b) Sky light. c) North light.	**10**	**32**
5	**Precast Members** 5.1 Introduction to various precast members such as piles, beams, columns, lintels, weather sheds, staircase, walls and slabs. 5.2 Advantages and disadvantages of various precast members.	**02**	**08**
6	**Miscellaneous** 6.1 Design and constructional details for, a) Railing. b) Gate. c) Grill. d) Compound wall.	**05**	**16**
	Total	**32**	**100**

Practical:

Skills to be developed:

Intellectual Skills:

1) To know the various constructional details
2) Understand the method of construction

Motor Skills:

1) To draw constructional details of structure
2) To know the various works carried out on site.
3) To take Precautions on site work.

List of Practical:

Drawing sheets:

1) Sheet on doors & windows to the scale
2) Sheet on false ceiling to the scale
3) Partition walls and room divider sketches
4) Roofs: Lantern lights, Sky lights, North lights in different materials, sketches
5) Type of steel trusses & sketches
6) Compound walls with gates with stairs
7) Grills and railings sketches

Assignments:

1) Assignment on false ceiling
2) Partition walls
3) Steel roof trusses
4) Precast members

Site visits & visit reports:

1) Site visit to workshop and data collection for doors and windows.
2) Visiting Auditorium, studio, where false ceiling is under construction.
3) Visiting industrial area, railway stations and departmental stores.
4) Site visit to office and workshop and data collections for partitions and their types.

Note:

The subject teacher should arrange site visit for better understanding of the subject and students would submit the site visit reports for the same.

Learning Resources:

Books:

Sr. No.	Author	Title	Publisher & Address
1	R.Barry	The construction of buildings Vol I to V	ELBS London
2	R. Chadley	Construction Technology Vol I to IV	ELBS with Longman, England
3	S.C.Rangwala	Building Construction	Charotar Publishing House Anand
4	S.P.Aroa & S.P.Bindra	Building Construction	Dhapatrai Ltd.Delhi
5	Mckay	Building Construction Vol I to IV	Longman's Group Ltd.London

Course Name : Diploma in Architectural Assistantship

Course Code : AA

Semester : Fifth

Subject Title : Design of R.C.C. Structures - I

Subject Code : 12557

Teaching & Examination Scheme:

Teaching Scheme			Examination Scheme					
TH	TU	PR	PAPER HRS.	TH	PR	OR	TW	TOTAL
04	--	01	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:

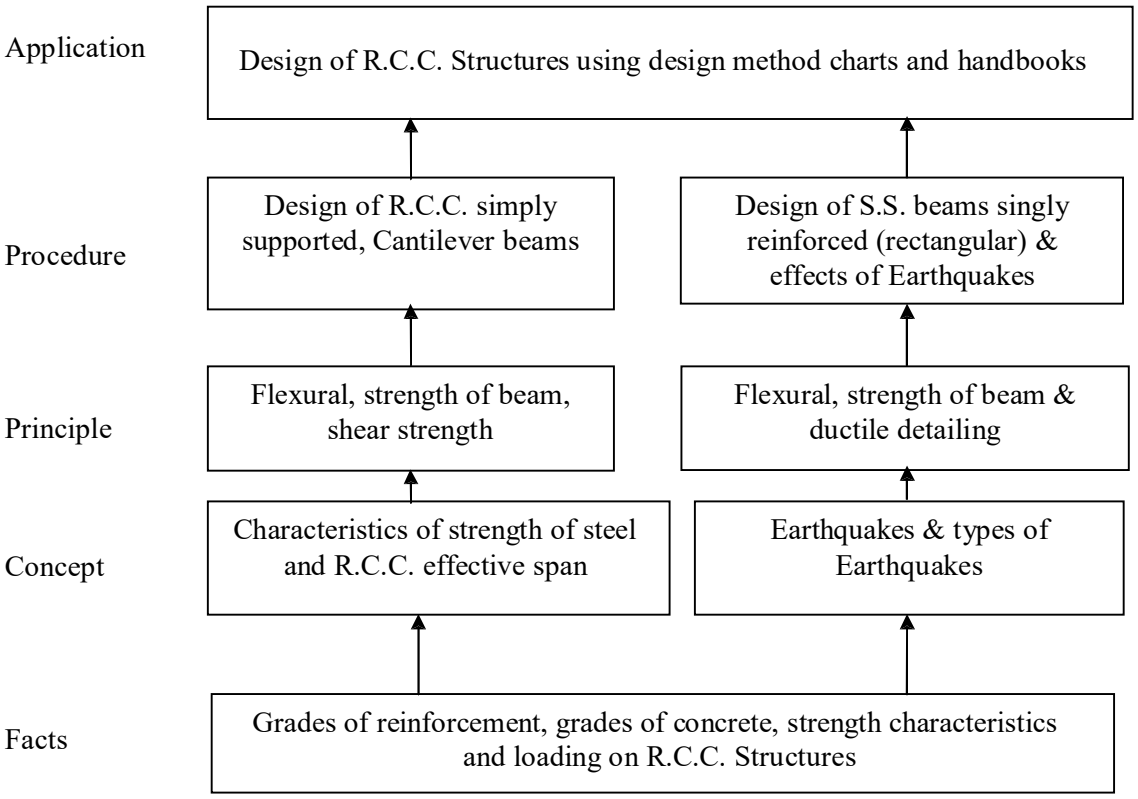
This subject will help the student to comprehend fundamental facts and concepts of designing different structural members and secure sufficient knowledge about strength and stability of structural members.

Objectives:

The students will be able to: -

1) Know different design methods of R.C.C. structures.
2) Use I.S. codes and handbooks
3) Design different structural members

Learning Structure:



Contents: Theory

Chapter	Name of the Topic	Hours	Marks
1	**Introductory methods of design** 1.1 Working stress method 1.2 Limit state method 1.3 Differentiation between Working stress method & Limit state method	02	04
2	**Singly Reinforced beam** 2.1 Assumptions before design of R.C.C. beam 4 2.2 Definition , Concept and Numerical on neutral axis, lever arm and moment of resistance. 4 2.3 R.C.C. Sections: Description and comparison. 2.3.1 Balanced or Critical Section. 2.3.2 Under reinforced section. 2.3.3 Over reinforced section. 4 2.4 ---------- 18 • Modular ratio of various grades of concrete. • Permissible tensile stress for various grades of steel • Permissible compressive stress for various • grades of concrete as per I.S.codes 456 : 2000 • Design constants for all grades of concrete and steel. • Design steps of simply supported and cantilever beam. • Section analysis and section design. Simple Numerical on 2.4 Use of I.S. codes 456 : 2000 be made for solutions.	22	28
3	**Shear analysis of R.C.C Beam.** 3.1 Shear stress in R.C. Section 3.2 Nominal shear stress 3.3 Shear strength of concrete 3.4 Maximum shear stress 3.5 Minimum shear reinforcement 3.6 Design of shear reinforcement a) Stirrups b) Bent up bars 3.7 Simple Numerical on 3.6 Use of I.S.codes 456 : 2000 be made for solutions.	14	24
4	**Beam design** (simply supported and cantilever only) 4.1 Effective span, Span depth ratio, modification factor 4.2 Calculation of Moment of resistance and area of Steel, check for shear and deflection. 4.3 Design steps of lintels (only triangular load) rectangular simply supported beams 4.4 Simple Numericals. Use of I.S.codes 456 : 2000 be made for solutions.	16	28
5	**Earthquake**	10	16

	5.1 Terminology – Mass, epicenter, Location of epicenter, focus, seismology, magnitude, intensity of earthquake, Seismic waves, Isoseismals. 5.2 Classification of earthquakes 5.3 Causes of earthquakes 5.4 Effects of earthquakes 5.5 Recording of earthquakes 5.6 Distribution of earthquakes 5.7 Earthquake resistant buildings 5.8 Earthquake problems in India, world seismicity. 5.9 Ductility and rigidity, Importance of ductile detailing with sketch only.		
	Total	**64**	**100**

Practical:

List of Assignment.

1) Assignment on methods of design
2) Assignment on singly reinforced beam
3) Assignment on shear reinforcement.
4) Assignment on beam design
5) Assignment on earthquake

Skills to be developed:

Intellectual Skills:

1) To read & refer I.S. codes.
2) To identify the types of loads, stresses acting on the section and their effects on the sections.
3) Calculate the strength of given section.

Motor Skills:

1) To be able to design the section safely by using I.S. Codes - 456 for R.C.C. Section.

Note:

1) Subject teacher will arrange visits to understand different concept on contents
2) All problems will be solved in limit state method only.

Learning resources:
Books:

Sr. No.	Author	Title	Publisher & address
1	M.G.Shah	R.C. Theory and design	S.G. Wasani for Macmilan India ltd. Madras, Jaipur, Bhopal
2	Ramamrutham	Design of R.C.C. Structures	Dhanpatrai &Sons, Delhi
3	Dr. V. L. Shah Dr. S. R. Karve	Illustrated Reinforced Concrete Design	Structures publishers 'Jai Tarang', 36 Parvati, Pune 411 009.

Code Practice by B.I.S., C.R.R.I. :

I.S. 456 – 1976 Code of Practice 1978(Revised) 1978 B.I.S.
I.S. 13920– 1993 Code of Practice
I.S. 1893– 1984 Code of Practice

Course Name : Diploma in Architectural Assistantship

Course Code : AA

Semester : Fifth

Subject Title : Architectural Design - I

Subject Code : 12558

Teaching & Examination Scheme:

Teaching Scheme			Examination Scheme					
TH	TU	PR	PAPER HRS	TH	PR	OR	TW	TOTAL
01	--	05	06	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:

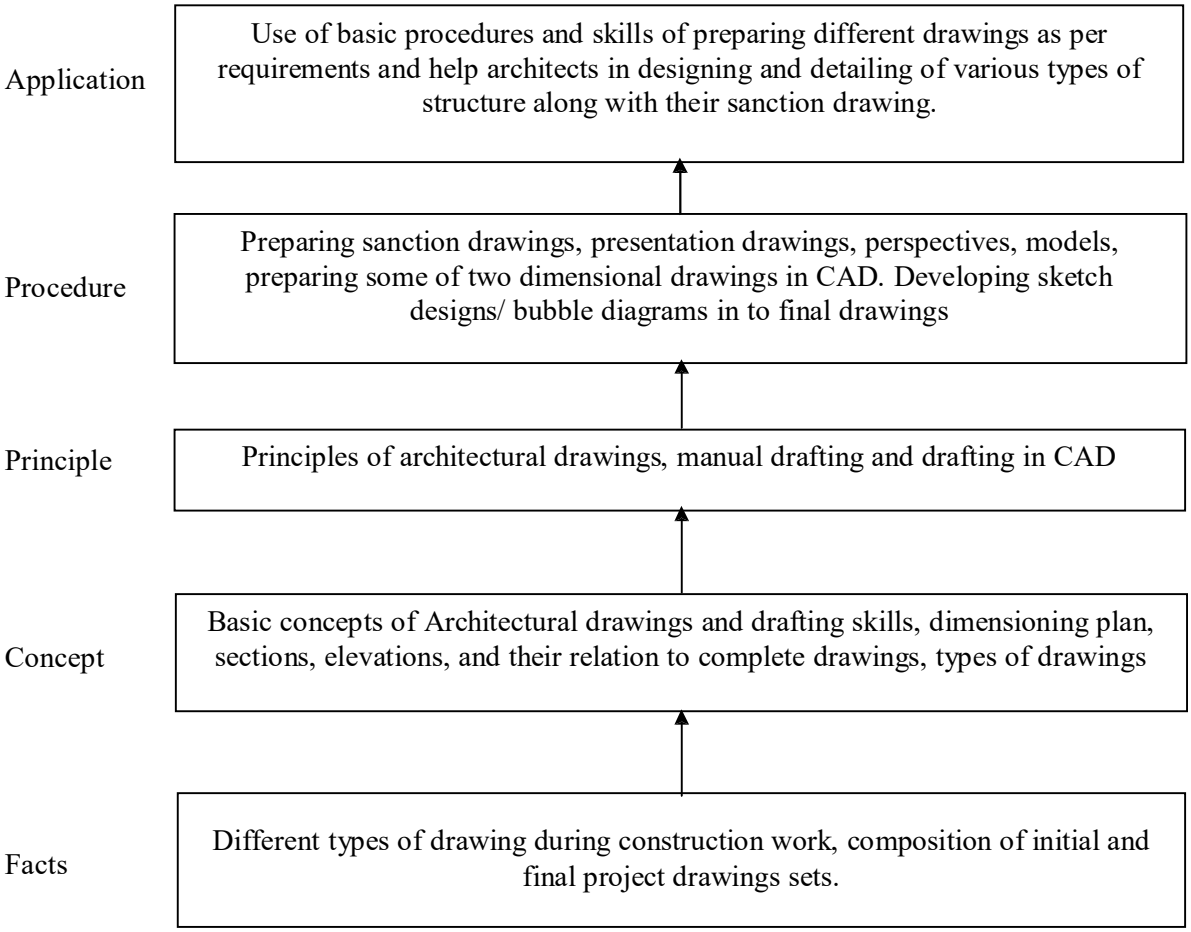
This subject will help the students to understand and attain basic skills of Architectural drawing in order to graphically represent what they learn in other related subjects and how to make sanction drawings.

Objectives:

The Student will be able to: -

1) Understand basic procedures and skills of preparing different drawings as required especially by architects and help architects in designing and detailing of various types of structure along with their sanction drawings.
2) Prepare 2 Dimensional drawings in CAD
3) Develop preliminary architectural design and drawing from given bubble diagram

Learning Structure:



Contents: Theory

Chapter	Name of the Topic	Hours	Marks
1	**Architectural design** 1.1 Development of Architectural design and drawing from given bubble diagram (of activities and circulation) of building (involving two or more floors, split levels, sloping sites) like Motels, Snack Centers, Branch of Post Office, small hospitals, apartments, detached / semi detached houses, row houses etc. 1.2 Students should prepare presentation drawings of designed building finalized by subject teacher. 1.3 Sanction drawing : – Requirements of sanction drawing, necessary drawings in that. Preparation of sanction drawing. 1.4 Two – dimensional drafting skills in CAD can be introduced for sanction drawing and student should be asked to submit ammonia print of the sanction drawing	**16**	**100**
	Total	**16**	**100**

Practical:

Skills to be developed:

Intellectual skills

1) Understand basic procedures and skills of development of different drawing
2) Design requirements of different types of building
3) Importance of preparation of sanction drawings and format of sanctioned drawings, study of by – laws while preparing sanction drawings.

Motor skills:

1) Student should asked to case study of given subject for designing
2) Workout requirements of given subject
3) Develop the given sketch, get finalized and prepare presentation drawing
4) Prepare sanction drawing

List of practical:

1) At least one project should be completed in semester. Student should be asked to do studies about subject, develop sketches and prepare presentation drawing including detailed plants, sections, elevations and site plan.
2) Model of the same project.

3) Sanction drawing in CAD and ammonia print of the same.

Problem on development of preliminary architectural design and drawing from given bubble diagram. (Total Marks: - 100)

Break up of marks as follows

a) Plan (Design) (40 marks)

b) Sections (25 marks)

c) Elevations (2 Nos.) or one elevation and a sketch perspective view (20 marks)

d) Site plans, showing landscape & sketch perspective view (15 marks)

Notes:

The syllabus 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 aspect, along with basic technical skills.

Learning Resources:

Books:

Sr. No.	Author	Title	Publisher & Address
1	V.S.Parmar	Design fundamentals in Architecture	Somaiyya Publication, Mumbai
2	J.Calendar	Time saver standards	Mc – Graw Hill Publication
3	John Jibb	Auto CAD manual	B.P.B.Publications,
4	George Omura	Mastering Auto CAD	BPB, Publication

Course Name : Diploma in Architectural Assistantship

Course Code : AA

Semester : Fifth

Subject Title : Quantity Surveying & Estimating – I

Subject Code : 12559

Teaching & Examination Scheme:

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:

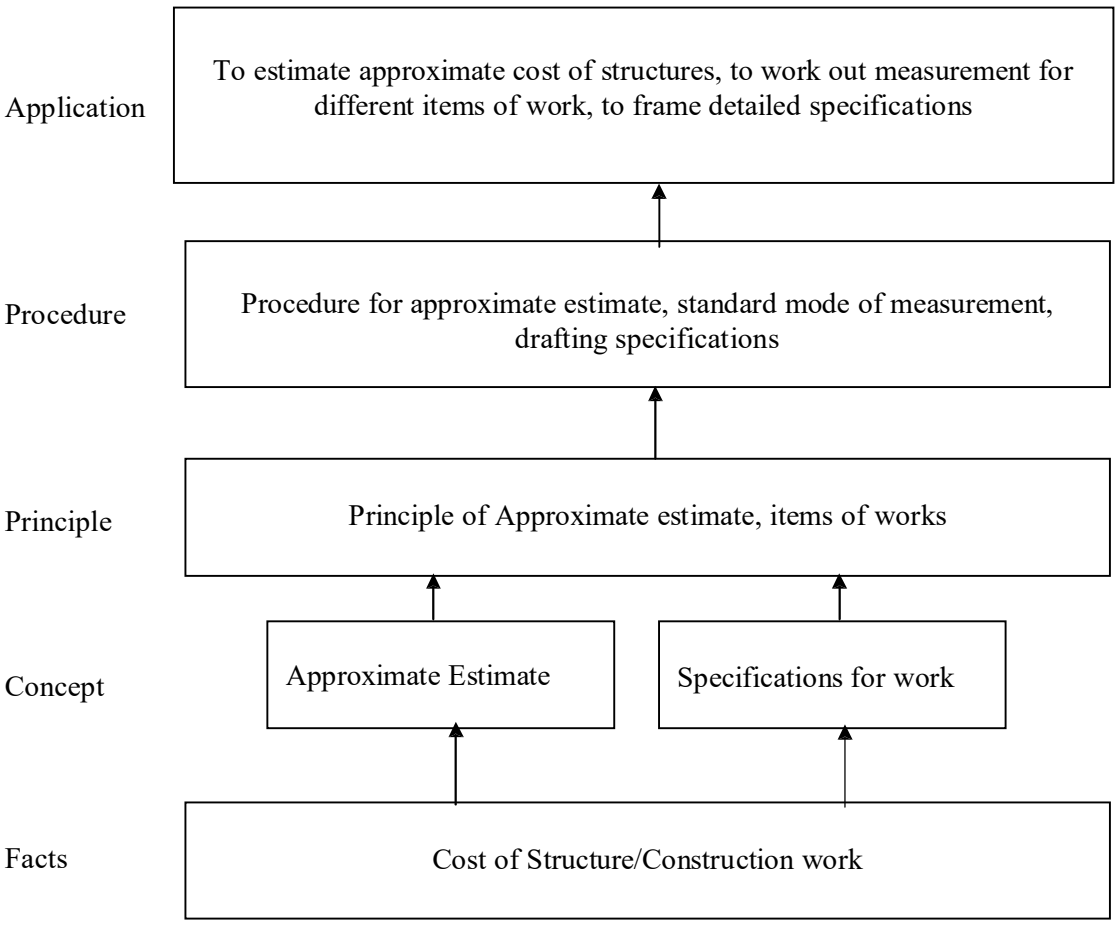
This subject will help the students to understand the different methods of estimating, mode of measurement and enable the student to prepare outline specification and learns to draft specification for building items. The basic concepts studied in this subject will be very useful for understanding of higher-level subject in further study.

Objectives:

The student will be able to

1) Know mensuration formulae.
2) Prepare approximate estimate for building.
3) Understand standard mode of measurement.
4) Work out measurements of different items of building works.
5) Write detailed specification for building works.

Learning Structure:



Contents: Theory

Chapter	Name of the Topic	Hours	Marks
1	**Introduction** 1.1 Meaning of the terms - Quantity Surveying, Estimation and Valuation 1.2 Purpose of Estimating and Costing 1.3 Type of Estimates: Approximate & Detailed 1.4 Various proformas used in estimates: Measurement/ Quantity Sheet, Abstract sheet & material consumption statement form	**04**	**04**
2	**Types of Approximate Estimates** 2.1 Uses of Approximate Estimates 2.2 Methods of Approximate Estimates for buildings only. 2.2.1 Plinth area / built up area 2.2.2 Cubical contents 2.2.3 Service unit/ Unit rate 2.2.4 Bay Method	**06**	**08**
3	**Detailed Estimates** 3.1 Uses of detailed Estimates 3.2 Types of Detailed Estimates – 3.2.1 Fresh/New estimate 3.2.2 Supplementary estimate, 3.2.3 Revised estimate, 3.2.4 Annual repair & maintenance estimate & special repairs estimate 3.3 Data required for preparing detailed Estimate - drawings, specification, rates & mode of measurements. 3.4 Steps in preparation of detailed estimate – taking off, squaring and abstracting 3.5 Main items of works for detailed estimates and their units	**10**	**18**
4	**Modes of measurements** 4.1 Fixing unit of measurement for items of work (Principle of Unit) 4.2 Desired accuracy in taking measurement 4.3 Standard modes of measurement of important items of Civil & Architectural works as per P.W.D. and I.S. – 1200 4.3.1. Earthwork in excavation and filling 4.3.2. Concrete work 4.3.3. Damp Proof Course/ Weather proof course 4. 3.4 Masonry work 4.3.5 Doors and Windows 4.3.6 Plastering & Pointing 4.3.7 Roofing & flooring 4.3.8 White Washing, Color Washing & Distempering 4.3.9 Painting, varnishing & polishing etc.	**06**	**08**
5	**Specifications** 5.1 Definition and purpose of specifications 5.2 Types – General, detailed, standard and	**06**	**12**

	Manufacturer's Specifications 5.3 Legal aspects of specification 5.4 Drafting of detailed specifications		
	Total	**32**	**50**

Practical:
Skills to be developed:

Intellectual skills:

1) Interpret Drawings.
2) Decide procedure for estimating.
3) Identify standard mode of measurement.
4) Identify and give specification for materials and constructions.

Motor Skills:

1) Prepare approximate/Block Estimate
2) Prepare small Estimate
3) Draft a Detailed Specification
4) Calculate quantities for different items of work.

List of Practical:

1) Collection of mensuration formulae
2) Detailed estimate of entrance step block
3) Simple problems on methods of approximate estimates for buildings only.
4) Simple problems on calculation of quantities of: -
   - Wood work for frames of doors & windows
   - Shutter of doors & windows
   - Box footing and Trapezoidal Footing
   - Mild steel on percentage basis of concrete
5) Writing/ drafting detailed specifications for some important items of Civil and Architectural Works. (Minimum 5 items)

Note:

The topic of specifications should not involve teaching of detailed specifications for each and every item. The student should be taught in details about a few basic items under each head explaining the basic underlying principles of drafting specifications, and then the student should be encouraged to frame his own specifications on any of the items. Students should be encouraged to refer any books on building technology, sample and catalogues etc.

Learning Resources:
Books:

Sr. No.	Author	Title	Publisher & address
1	B.N.Dutta	Estimating & costing	S.S.Dutta & co. Lukhnow
2	S.C. Rangwala	Elements of Estimating & Costing	Charotar Publishing House Ltd., Anand
3	B.I.S.	Units & Standard mode of measurements (I.S. – 1200)	B.I.S.
4	Govt. Of Maharashtra	PWD Handbook for specification	P.W.D.Maharashtra State

Course Name : Diploma in Architectural Assistantship

Course Code : AA

Semester : Fifth

Subject Title : History of Architecture

Subject Code : 12560

Teaching & Examination Scheme:

Teaching Scheme			Examination Scheme					
TH	TU	PR	PAPER HRS.	TH	PR	OR	TW	TOTAL
03	01	--	03	100	--	--	--	100

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:

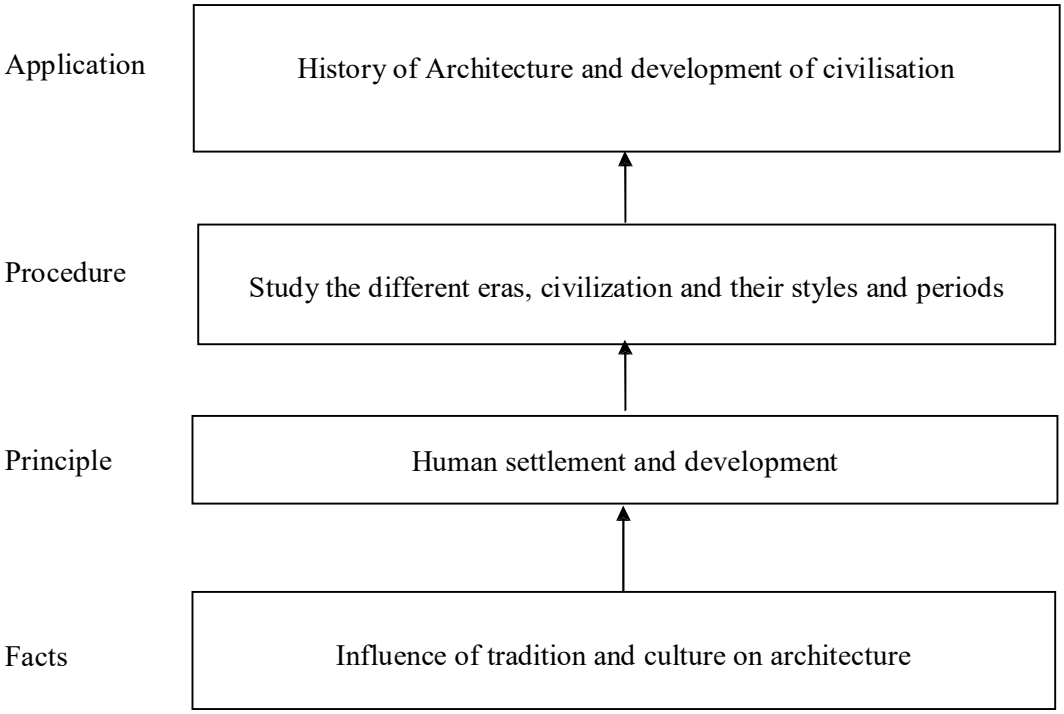
It helps student to know about the history and development of styles in architecture and importance of civilisations and development through it, main features, architectural styles of different civilization.

Objectives:

The students will be able to: -

1) Know the history of architecture and development with respect to ares.
2) Know the human settlement.
3) Know influence of tradition and culture on architecture.

Learning Structure:



Contents: Theory

Chapter	Name of the Topic	Hours	Marks
1	**Human Settlement:** 1.1 History of evolution of human being through different ages. 1.2 Man and environment – biological and behavioral response to human development. 1.3 Development in villages and small, medium and large towns and relationship with each other	12	16
2	**Egyptian Civilization:** 2.1 Geographical, Geological, Climatic, Religious, Social and Historical condition. 2.2 Typical example of Mastabas, Pyramids, temples, sphinx and obelisks. 2.3 Examples and important features.	10	20
3	**West Asiatic Civilization:** 3.1 Geographical, Geological, Climatic, Religious, Social and Historical condition. 3.2 Sumerian Period, Babylonian period, Assyrian Period, Persian period. 3.3 . Sumerian Architecture, Babylonian Architecture, Assyrian Architecture, Persian Architecture.	08	16
4	**Greek Architecture:** 4.1 Geographical, Geological, Climatic, Religious, Social and Historical condition. 4.2 Aegean Architecture, Greek Architecture, Examples and Importance. 4.3 Examples and important features	06	16
5	**Roman Architecture** 5.1 Geographical, Geological, Climatic, Religious, Social and Historical condition. 5.2 Etruscan Architecture and Roman Architecture. 5.3 Examples and important features	06	16
6	**Modern Architecture:** 1.1 Rise of Modern Architecture 1.2 Modern Architects a) Frank Loyd wright b) Mies Van der Rohe c) Le Corusier d) Charles corea e) B.V. Doshi f) Achut Kanvinde g) Raj Rawal	06	16
	Total	48	100

Notes:

Seminars should be arranged on chapter No.06

Learning resources:
Books:

Sr.No.	Author	Title	Publisher & Address
1	G.K.Hiraskar	The Great Ages of History of Architecture	Dhanpatrai & sons, New Delhi
2	Fletcher	History of Architecture	Thames & Hudson, London

Learning Web sources:

www.history of architecture.com

www.indian architecture.com

www. architects.com

Course Name : Diploma in Architectural Assistantship

Course Code : AA

Semester : Fifth

Subject Title : Working Drawing

Subject Code : 12561

Teaching & Examination Scheme:

Teaching Scheme			Examination Scheme					
TH	TU	PR	PAPER HRS.	TH	PR	OR	TW	TOTAL
--	--	04	--	--	--	--	50@	50

Rationale:

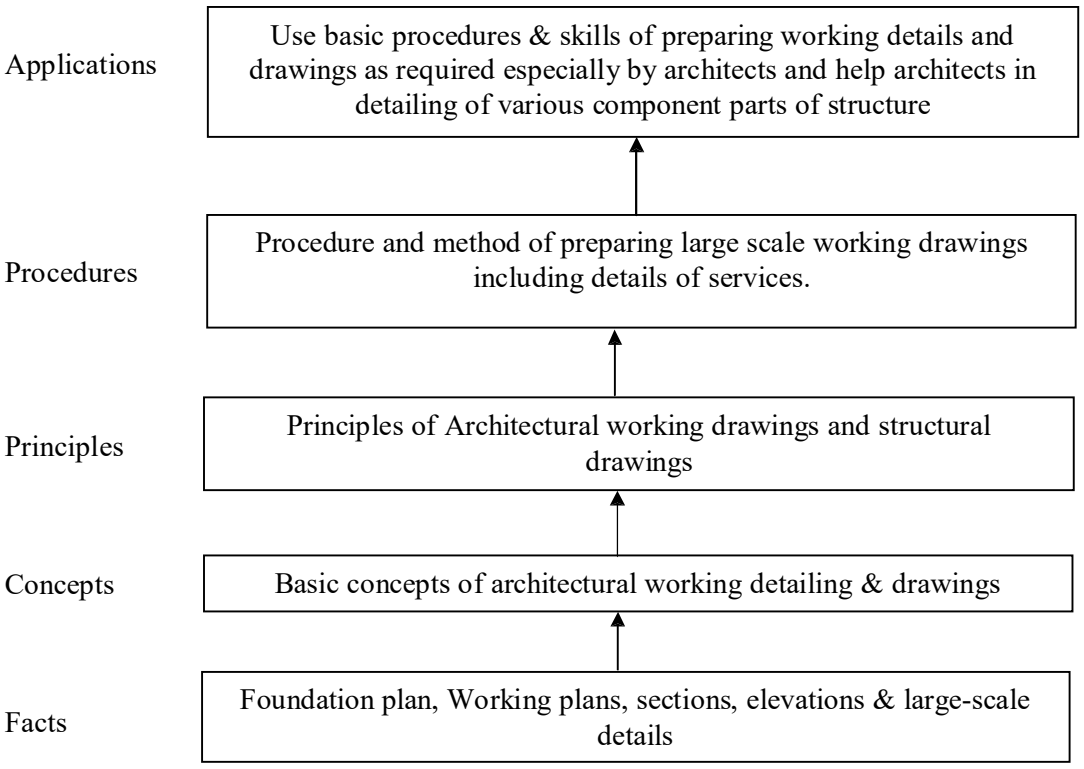
This subject will help the students to understand the methodology of preparation of working drawings based on principles of visual communication, interpretation and reading of drawings.

Objectives:

The student will be able

1. To understand methodology of preparation of working drawing.
2. To prepare working drawings of simple load bearing type structures.
3. To select different materials to be used for construction.
4. To draw working details of various component parts of structure.

Learning Structure:



Contents: Theory
Note: Contents of theory are to be taught in practical period

Chapter	Name of the Topic
1	**Preparing Working drawings of L.B. Structure** 1.1 Concept of presentation drawing 1.2 Concept of Submission drawing 1.3 Concept of Working drawing 1.4 Concept of Large scale drawing 1.5 Scales to be used for preparing working drawings and large scale drawings 1.6 Concept of Foundation plan & its use 1.7 Preparing working plans, sections & elevations.

Practical:
Skills to be developed:

Intellectual skills:

1) Identify and sheet scale for preparing working drawings.
2) Identify and select proper materials for construction
3) Identify and select colour scheme and shades of colour for different rooms
4) Read and interpret drawings.
5) Work out center line and distance of wall

Motor skills:

1) Foundation plan of given plan of structure
2) Draw working plans, sections & elevations
3) Prepare schedule of finishing
4) Prepare large scale working details of different component parts of structures

List of Practical:

1) Preparation of working drawings of simple single/double storied load-bearing type structure with flat R.C.C. roof or partly flat & partly Mangalore tiles pitched roof.

Working drawings should include: -

a) Foundation plan
b) Working plan/plans of different floors and terrace/roof plan
c) Working sections
d) Working elevations (Two sides including front)

List of practice oriented projects:

1) Students should observe procedure of setting out building (load bearing type structure) from foundation plan
2) Students should collect/ study working drawings of load bearing structures from local Architects office and submit the report/ drawings.

Note:

All the students should submit certified portfolio of working drawings (term work) prepared during practical hours.

Learning Resources:

Books:

Sr. No	Author	Title	Edition	Year of Publication	Publisher & Address
1	Shah, Kale, Patki	Building Drawing	4th	2002	Tata Mc-Graw Hill Publishing Co.Ltd New Delhi
2	J.K.Mckay	Building Construction Vol I to IV	5th	1985	Longmans, London
3	Mitchell	Advanced Building Construction	15th	1976	Allied Publishers, Mumbai
4	Barry	Construction of Building Vol I to IV	4th	1980	E.L.B.S.London

Course Name : Diploma in Architectural Assistantship

Course Code : AA

Semester : Fifth

Subject Title : Computer Aided Drawing & Applications – I

Subject Code : 12633

Teaching & Examination Scheme:

Teaching Scheme			Examination Scheme					
TH	TU	PR	PAPER HRS.	TH	PR	OR	TW	TOTAL
--	--	04	--	--	50@	--	--	50

Rationale:

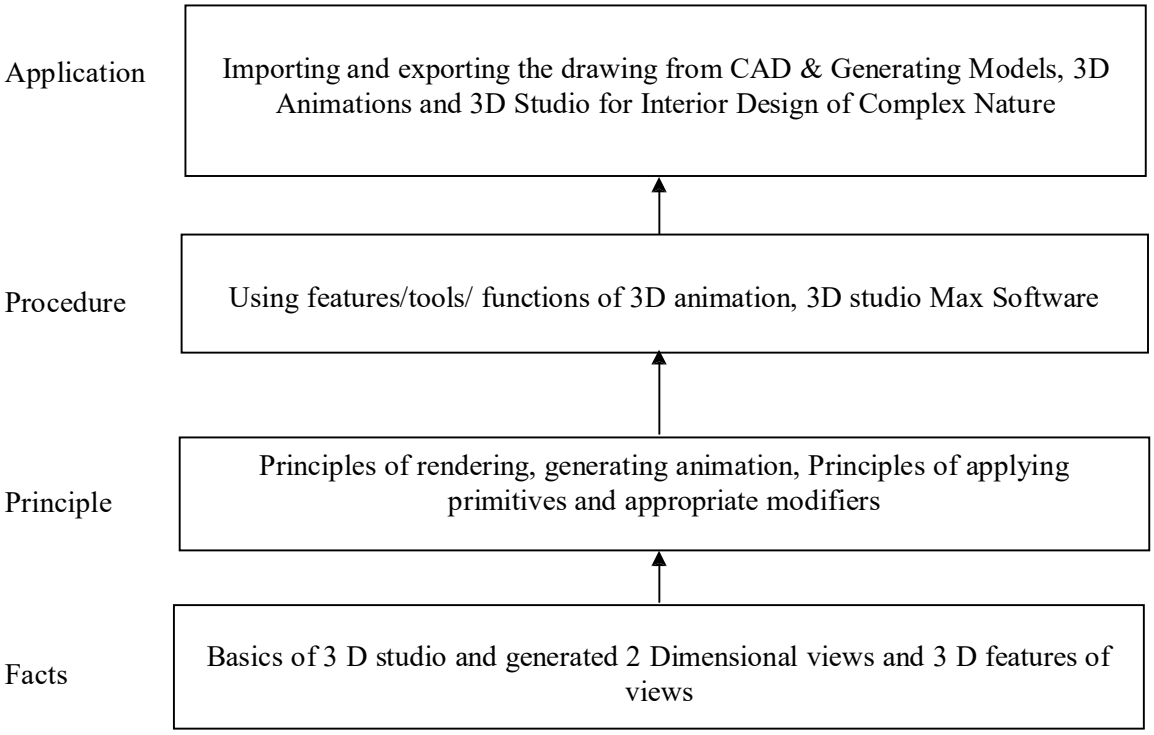
This subject intends to equip the students with throughout knowledge of application of computer in interiors & efficient working in 3D and 3D animation.

Objectives:

The students will be able to: -

1) Study the various shapes for their modeling in drawing.
2) Observe the various effects of edition on them.
3) The various effects of lights.
4) Observe various 3D objects through the cameras.

Learning Structure:



Contents: Theory

Note: Contents of theory are to be taught in practical period

Chapter	Name of the Topic
1	**Basics of 3D studio** 1.1 Importing and Exporting of 3D model to/from 3D studio to CAD and vice versa 1.2 Introduction to Photoshop 1.3 Creating and importing it to the Photoshop
2	**Introduction to 3D studio Max** 2.1 Getting Started 2.2 User Interface 2.3 The pull down menus 2.4 The icon panels 2.5 Various toolbars on screen of 3d Studio 2.6 Study of Standard primitives 2.7 Study of Extended primitives 2.8 Study of Compound Objects
3	**Creating and edition of Objects in 3D studio** 3.1 The 2D Shaper 3.2Creating shapes for lofting in 3D lofter 3.3 The 3D lofter 3.4 Importing 2D shapes for lofting 3.5 Exporting lofted objects in to 3D editor 3.6 Introduction of 3D – Editor 3.7Creating 3D models 3.8 Importing AutoCAD models/ 3D lofted objects 3.9 Understanding Vertex/ Face/ Element/ Object 3.10 Applying material to objects 3.11The material editors
4	**Applying lights and cameras and colours** 4.1 Applying different colour effects to objects 4.2 Use of colours 4.3 Fixing of lights 4.4 Setting cameras and understanding view ports 4.5 Rendering the image 4.6 Saving and colour prints of rendered images 4.7 Understanding selection sets

Practical:

Skills to be developed:

Intellectual Skills:

1) To know the basics of 3D Studio Max & observe the screen of 3D studio Max carefully.
2) To know the practical measurements of Architectural drawings
3) To know the basics of Photoshop commands
4) To know the different types of views of vision.

Motor Skills:

1) To import the given 3D drawing from CAD to 3D studio Max or vice versa

2) To use various commands to create the model
3) To use different modifiers for edition of drawing
4) To apply various light and rendering effects and apply material using material editor.

List of Practical:

1) To observe & note various elements of the screen of 3D Studio Max
2) To apply different commands from panels and toolbars
3) To import and export the CAD files to /from 3D studio Max and vice versa
4) To observe and note various modifiers
5) To create different objects like table, chairs, sofa set etc.
6) Applying various light effects to the objects and fixing cameras

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 Design – I subject.

Learning Resources:

Books:

Sr. No.	Author	Title	Edition	Year of Publication	Publisher & Address
1	Sham Titkoo	3D S Max for Animator, Interior Decorator & Architect	2nd	2006	Dramtas Press, 19/A, Ansari Road, Dariya Ganj ,New Delhi
2	Macromdedia	Character animation & 3D S max Vol I to V	5th	1996	Aptech Publications