

STUDY AND EVALUATION SCHEME – SECOND SEMESTER

Code No	Subject	Study scheme Hrs/week			Credits	Evaluation Scheme						Total marks
		L	T	P		Internal Assessment		External Assessment				
						Theory / Practical		Written		Practical		
						Paper/Drawing		Paper/Drawing				
		L	T	P		Max marks	Max marks	Max marks	hrs	Max marks	Hrs	
CM-202	Communication Techniques- II	3	-	3	2	25	-	100	3	-	-	125
BS-212	Applied Mathematics-II	3	1		2	25	-	100	3	-	-	125
AA-230	Graphic Presentation-II	-	-	8	3	-	50	100	6	-	-	150
AA-231	Building Materials-II	3	-	-	2	50	-	100	3	-	-	150
ME-235	Workshop Practice	-	-	3	3	-	50	-	-	50	3	100
AA-232	Building Construction-I	2	-	6	6	-	50	100	3	-	-	150
AA-233	Theory of Design & Design Practical	2	-	9	9	25	75	100	6	-	-	200
AA-234	Portfolio & Viva	-	-	-	-	-	-	-	-	-	-	100
	Total	13	1	26	31							1100

Notes:

1. Portfolio & viva will be jointly marked by Internal and external examiners
2. Portfolio will consist of Design Projects (50 marks) Constructions sheets (50 marks) and Graphic Presentation (50 marks)
3. Field practice based minor project work shall be handed out to the students at the beginnings of second semester and marked at the end of fourth semester.

STUDY AND EVALUATION SCHEME – FIRST SEMESTER

Code No	Subject	Study scheme Hrs/week			Credits	Evaluation Scheme						Total marks
		L	T	P		Internal Assessment		External Assessment		Max marks	Hrs	
Theory / Practical					Written		Practical					
						Paper/Drawing		Paper/Drawing				
						Max marks	Max marks	Max marks	hrs	Max marks	Hrs	
CM-102	Communication Techniques- II	3	-	-	3	25	-	100	3	-	-	125
BS-112	Applied Mathematics-II	3	1		3	25	-	100	3	-	-	125
BS-115	Applied Sciences	4	-	-	4	50	-	100	-			150
AA-130	Sketching Lettering & Printing	-	-	9	6	-	50	100	3	-	-	150
AA-131	Graphic Presentation -I		-	12	8		50	100	3	-	-	150
AA-132	Building Materials-I	3	-	-	3	50		100	3	-	-	150
AA-133	Portfolio & Viva	-	-	-	-	-	-	-	-	-	-	100
ES-122	Introduction to Computers	-	-	6	4	-	50	-	-	100	3	150
	Total	13	1	26	31							1100

Note

1. In first semester there are more credits for skills.
2. Portfolio & viva will be jointly examined by internal and external examiners.
3. Portfolio will consist of Sketching Lettering & Printing (50 marks) and Graphic presentation (50 marks).

STUDY AND EVALUATION SCHEME – THIRD SEMESTER

Code No	Subject	Study scheme Hrs/week			Credits	Evaluation Scheme						Total marks
		L	T	P		Internal Assessment		External Assessment		Max marks	Hrs	
Theory / Practical					Written		Practical					
		Paper/Drawing		Paper/Drawing								
		Max marks	Max marks	Max marks	hrs	Max marks	Hrs					
AA-330	History of Architecture -I	3	-	-	3	50	-	100	3	-	-	150
AA-331	Architectural Design-I	-	-	12	8		100	150	6	-	-	250
AA-332	Building of Architectural Design-I	2	-	6	7	-	50	100	3	-	-	150
AA-333	Surveying	3	2	6	7	25	25	50	3	50	3	150
AA-334	Climatology Environment & Ecology	3	-		3	25	-	75	2			100
AA-335	Building Services	3	-	-	3	50		100	3	-	-	150
AA-336	Portfolio & Viva	-	-	-	-	-	-	-	-	-	-	150
	Total	14	-	2	24	31	50	-	-			1100

Note

1. Portfolio & viva will be jointly marked by Internal and external examiners
2. Portfolio will consist of Design projects (100 marks) and construction sheets (50 marks).

STUDY AND EVALUATION SCHEME –FOURTH SEMESTER

Code No	Subject	Study scheme Hrs/week			Credits	Evaluation Scheme						Total marks
		L	T	P		Internal Assessment		External Assessment		Max marks	Hrs	
Max marks	Max marks				Max marks	hrs	Max marks	Hrs				
AA-430	History of Architecture –II	2	-	-	3	25	-	100	3	-	-	125
AA-431	Architectural Design-II	-	-	1	8	-	100	150	12	-	-	250
AA-432	Building Construction-III	2	-	6	6	-	50	100	3	-	-	150
AA-433	Working Drawing & Detailing –I	-	-	9	6	-	50	-	-	-	-	50
AA-434	Theory of Structures	3	-	-	3	50	-	100	3	-	-	150
AA-435	Building Bye- Laws and Municipal Drawings	1	-	3	3	-	25	50	2	-	-	75
AA-436	Field Practice/ Based Minor Project Work	-	-	2	3	-	50			-		50
AA-437	Portfolio & Viva	-	-	-	-	-	-	-	-	-	-	250
	Total	9	-	31	31							1100

Note

1. External evaluation will be done as part of Portfolio & Viva
2. Portfolio & viva will be jointly marked by internal and external examiners
3. Portfolio will consist of Design projects (50 marks) and construction sheets (50 marks). Working Drawings (10 marks). Field Practice based minor project work (50 marks)
4. Field practice based major project work shall be handed out to the students at the beginning of fourth semester. It will carry on up to the end of sixth semester.
5. Field practice based minor projects work will be marked at end of fourth semester.

STUDY AND EVALUATION SCHEME – FIFTH SEMESTER

Code No	Subject	Study scheme Hrs/week			Credits	Evaluation Scheme						Total marks
		L	T	P		Internal Assessment		External Assessment (Exams)				
Theory / Practical					Written		Practical		Paper/Drawing		Paper/Drawing	
					Max marks	Max marks	Max marks	hrs	Max marks	Hrs		
AA-530	Architectural Design-III	-	-	12	9	-	100	150	12	-	-	250
AA-531	Building Construction- IV	2	-	9	9	-	50	100	6	-	-	150
AA-532	Working Drawing & Detailing –II	-	-	9	6	-	75	-	-	-	-	75
AA-533	Structural Design	3	1	-	3	50	-	100	3	-	-	150
CM-504	Architectural Professional Practice	2	-	-	2	25	-	50	2	-	-	75
	Elective -I	2	-	-	2	25	-	75	3	-	-	100
AA-534	Portfolio & Viva	-	-	-	-	-	-	-	-	-	-	300
	Total	9	-	1	30	31		-	-			1100

Notes

1. External evaluation will be done as part of Portfolio & Viva
2. Portfolio & viva will be jointly marked by internal and External examiners
3. Portfolio will consist of Design projects (100 marks) and construction sheets (100 marks) working Drawing (100 marks)

STUDY AND EVALUATION SCHEME – SIXTH SEMESTER

Code No	Subject	Study scheme Hrs/week			Credits	Evaluation Scheme						Total marks
		L	T	P		Internal Assessment		External Assessment (Exams)				
Theory / Practical					Written		Practical		Paper/Drawing		Paper/Drawing	
					Max marks	Max marks	Max marks	hrs	Max marks	Hrs		
AA-630	Working Drawing & Detailing-III	-	-	9	6	-	75	-	-	-	-	75
AA-631	Estimating and Specification Writing	3	1	-	3	50	-	100	3	-	-	150
AA-632	Computer Graphics	-	-	6	4	-	50	-	-	100	4	150
AA-634	Architectural Design IV	-	-	12	9	-	100	150	12	-	-	250
AA-633	Field Practice based major Project work	-	-	6	6	-	75	-	-	-	-	75
	Elective –II	3	-	-	3	50	-	50	2	-	-	100
AA-635	Portfolio & Viva	-	-	-	-	-	-	-	-	300	-	300
	Total	6	1	33	31			-	-			1100

Notes

- External Evaluation will be done as part of Portfolio & Viva
- Portfolio & viva will be jointly marked by internal and external examiners
- Portfolio will consist of Design projects (50 marks). Construction sheets (50 marks). Working drawing (100 marks) and Field Practice based major project work (100 marks)
- Field practice based major project will be started at the end of fourth semester and market at the end of sixth semester.

DETAILED SYLLBUS
CM-102 COMMUNICATION TECHNIQUES –I

L T P
Hours/week 3 -- --

RATIONALE

Diploma holders are supposed to write official, business and personal letters. Technical report writing forms another activity. Keeping in view, the above and the continuing education needs, an English and communication technique has been considered as essential core subject. The emphasis *of* teaching should be to develop necessary competencies in written and oral communication.

DETAILED CONTENTS

1. Prose Text Book (40%).
A prose text- book of 150 pages well illustrated. It should contain roughly though not necessarily
Biographies of two engineers and scientists, biographies of two great men (one religious leader and *one* national leader), two literary short stories, two humorous ‘ short stories, one short story of the type of scientist fiction; one essay. This text-book shall be officially prescribed.
2. Terminology (10%)
Common terms administrative and technical, (along with their Hindi equivalents) from a prescribed list Foreign students *or* those who do not know Hindi may be asked to explain the terms in English.
3. Grammar (30%)
A brief review of easy form of tenses (past indefinite, past continuous, past perfect, past perfect continuous, present indefinite, present continuous, present -perfect, present perfect continuous, future indefinite). Conversion of direct narration into indirect form of narration and vice versa (only simple sentences). Punctuation.

Essay

(20%)

Preferably on scientific topic from the given outlines. Paper setter instructed to give a choice of attempting one out of three topics. The paper shall provide the outlines. The essay will be of 250 to 300 <w> examiner may select three topics one from each of the following fields

- i) Science.
- ii) Technology
- iii) General

4. Practice of Speaking in English Language by Organizing:
(Not for examination)

- Paper reading contests
- Discussion sessions
- Conduct of seminars on current topics
- Declamation contests

RATIONALE

Applied Mathematics forms the backbone of engineering students. Basic elements of algebra, trigonometry, coordinate geometry, differential calculus and integral calculus have been included in the curriculum as foundation course and to provide continuing education base to the students.

DETAILED CONTENTS

1. Vector Algebra (20%)
 - 1.1. Definition, notation and rectangular resolution of a vector.
 - 1.2. Addition and subtraction of vectors
 - 1.3. Scalar vector products of 2 vectors only.
 - 1.4. Simple problems related to work, moment and Angular velocity.
2. Matrices (20%)
 - 2.1. Definition and types of matrices.
 - 2.2. Addition and subtraction of matrices, multiplication of matrices.
 - 2.3. Inverse of a 3.3 matrix by adjoin matrix method.
 - 2.4. Solution of linear equations containing upto 3 unknowns only.
3. Elementary Numerical Analysis (20%)
 - 3.1 Newton's forward and backward differences shift operator
 - 3.2. Difference table
 - 3.3. Newton-Gregory forward and backward interpolation formulae.
 - 3.4. LaGrange's interpolation formulae.
4. Coordinate Geometry (40%)
 - 4.1. Point: Cartesian and polar co-ordinates and their conversion, distance between two points, internal and external division formulae, coordinates' of centroid and in center. Area of Triangle, conditions of Collinearly of points, simple problems on locus
 - 4.2 Straight Line, Equation of a straight line in various standard forms, Angle between straight lines-Perpendicular distance formulae.

- 4. 3 Circle: The equation of circle in standard and general form, finding the equation of circle when, its center and radius are given and when any three points on it are given.
- 4. 4 Conics
 - 4.4.1 Definitions of Conics, parabola, ellipse and hyperbola and the standard equations.
 - 4.4.2 Finding the equation of parabola when its focus and directrix and vertexes are given.
 - 4.4.3 Finding the equation of an ellipse hyperbola when focus directrix and eccentricity are given.
 - 4.4.4 Given the standard equation of conic, to find its focus, directrix, vertexes axis, eccentricity and the length of latus rectum.

BS-115 APPLIED SCIENCES

L T P
Hrs/week 4 -

RATIONALE

Applied sciences are very essential to develop scientific temper, continued learning skills and appreciation of physical and chemical changes of concern in the field of Architecture. This course covers elements of Applied Physics and Applied Chemistry and Applied Physics contain units of measurements, force and Motion temperature and its measurement. Acoustics of buildings and fundamentals of light Applied Chemistry part covers: metals, corrosion and its prevention, plastics, refractory and paints and varnishes. Note Teachers while imparting instructions are expected to demonstrate various physical and chemical processes to clarify the concepts and principles involved in this course

DETAILED CONTENTS

Part A Physics (as applied to Architecture)

1. Units of measurement in SI system Dimensions and use of dimensional analysis
2. Force and motion - Newton's Laws. Conservation of momentum work and energy. Forms of energy, conservation of energy stress, strain, elastic module
3. Spring mass system Vibration of bodies: amplitude, frequency and energy of vibrations free and forced vibrations, resonance, vibration of structural members
4. Temperature and its measurement liquid in glass thermometer. Bimetallic thermometer, Thermos-electric thermometer, Platinum resistance thermometer pyrometers.
5. Expansion of solids thermal stresses; specific heat and heat capacity and concept of thermal time lag in buildings; laws of thermodynamics; Principles of heat engines and refrigeration and air conditioning systems; Humidity and its control.
6. Acoustics of buildings and simple calculation of reverberation times: principles of acoustics modeling, sources of sound. -
7. Light as waves, solar energy, solar cells and green house effects: color' primary colors, color mixing Radiant light flux, luminary intensity illumination light efficiencies, Standards of illumination.
8. Electromagnetic waves infrared and ultraviolet rays, Coated-glasses and their characteristics.

9. Electrical nature of matter; molecular forces - cohesive and adhesive <W> application to water proofing and wetting.

Part B Applied Chemistry:

1. Raw materials and admixtures used in (he manufacture of copper, alumni iron and steel Manufacturing processes to be deal! in brief with flow diagram
2. Properties and uses of copper. aluminum, iron, and steel.
Corrosion Meaning of corrosion, prevention of corrosion by various method.
3. Plastics Review of saturated and unsaturated hydrocarbons (method) ethane. Ethylene -Acetylene and vinyl Chloride etc) condensation polymerization Thermosetting and thermo-plastic. Cold setting and hot set . However, emphasis should be given to name of common varieties of plastics and their uses, adhesives and epoxy resins.
4. Refractors Meaning of refractory material: General method of manufacture
(a) Acid refractories
(b) Basic refractories
5. Paints and varnishes Drying oil, pigment, drier, thinner.

AA - 130 SKETCHING, LETTERING AND PRINTING

L T P
Hours/week - - 9

RATIONALE

Free hand sketching, coloring, rendering, line-sketching, shades and shadows, lettering and printing form important components of Architecture discipline. This – course aims at imparting desired skills in the above areas. Teachers are expected to lay considerable emphasis on drawing work so that the students attain sufficient skills in sketching, lettering and printing.

DETAILED CONTENTS

Following detailed exercises are recommended for this course

1. Free hand Sketching Exercises
 - 1.1. Free hand sketching of simple geometrical surface (2 sheets)
 - 1.2. Free hand drawing of three dimensional geometrical objects (3 sheets: cube, cone, prism pyramid, cylinder, sphere)
 - 1.3. Free hand drawing of set of objects. (2 sheets)
 - 1.4. Free hand sketching of simple buildings and landscaping (3 sheets)
 - 1.5. Free hand sketching of monuments, buildings and trees, in different techniques and mediums such as, pencil, pen, ink, charcoal, colored inks, colors and crayons. (4 sheets).
2. Coloring and Rendering Exercises:
 - 2.1. Definition and perception of color and color materials.
 - 2.2. Hue, values and intensity value scale, intensity scale and color circle (2 sheets)
 - 2.3. Study of colors: Emotional effects of color, warm and cool colors, receding and advancing colors; effect of light in colors, color harmonies and contrasts
 - 2.4. Color in nature. Art and Architecture.
 - 2.5. Shades and Shadows. indication of surroundings, sky, clouds, trees, stylized human figures as used in architectural drawings, in pencil, ink, color and crayons (4 Sheets).
3. Preparation of Forms and Ability to Think in the Round
 - 3.1. Simple exercises on murals and mosaic (2 Sheets)
 - 3.2. Simple, abstract and symbolic sculptures (1Sheet)
4. Mural Design Exercises. (2 sheets)

5. Lettering Practice: (Spacing in letters and words)
 - 5.1 Ratio between height and width of letters and numerals, Capitals <w> for example 7: 4. and 5: 40. (2 Sheets)
 - 5.2 Free hand single line lettering in various styles and heights including (3 sheets)
 - 5.3 Broad pen lettering (1 Sheet)
 - 5.4 Stylized lettering (1 Sheet)
 - 5.5 Block lettering (1 sheet)
 - 5.6 Lettering with the help of Stencils (2 Sheets)
6. Printing Practice:
 - 6.1 Tracing of a simple-building drawings made in
 - Pencil (1 Sheet)
 - Ink (1 Sheet)
 - 6.2 Preparations of Ammonia Prints of drawings on tracings prepared purpose (2 Sheets <Prints>)
 - 6.3 Folding of the Prints into a standard file size (Refer fig, 5 Page 37 IS No. IS: 962 -1967)

NOTE. At least one drawing sheet of lettering should be prepared in Hindi

RATIONALE

Graphic presentation forms a core subject for preparing perspective drawing, scale drawings, three dimensional views, furniture drawings and layouts. There fore, this course aims at equipping the students with the skills of graphic presentation. Teachers are expected to lay considerable stress on practical work so that the student attain desired competencies for preparing good quality perceptiveness of interior and exterior of buildings in different medium. Teachers are also expected to stress upon appropriate line-work, properties, dimensioning. Lettering, printing, color rendering techniques; shades / shadows and sciography.

DETAILED CONTENTS

The students will carryout drawing exercises on the following:

1. Plain and Solid Geometry
 - 1.1 Drawing equipment and drafting standards
 - 1.2 Line drawing in pencil and ink (2 Sheets)
 - 1.3 Geometrical construction of polygons. ellipse. Parabola and Hyperbola (2 Sheets)
 - 1.4 Sub-divisions of lines, polygons (1 sheet)
 - 1.5 Definition of Solids
 - 1.6 Projection of point lines and plane figures (1 Sheet)
 - 1.7 Development of Solids (2 sheets)
 - 1.8 Projection of Solids and Simple position in 1st angle (5 Sheets)
 - 1.9 Projection of circle, cylinders and cones (1 sheet)
 - 1.10 Sections by horizontal and vertical planes and inclined plane (2 Sheets)
 - 1.11 True shape of sections. (Sheet)
2. Scale Drawing Exercises
 - 2.1 Plane Scales
 - 2.2 Dimensioning
 - 2.3 Orthographic projections of furniture (4 Sheets)
 - 2.4 Isometric Projections (1 sheet)
 - 2.5 Reduction and <w> of drawing (1 Sheet)

3. Perspective Exercises
 - 3.1 Fundamentals, dimension, fore shorting and converger.
 - 3.2 Reality and appearance.
 - 3.3 Basis of perspective cone of vision, central visual ray line of sight through the picture plane, height of spectator.
 - 3.4 Drawing perspective of simple objects (2 sheets).
 - 3.5 Principal aids of perspective, vanishing points, eye level.
 - 3.6 Study of cube, sphere, cylinder, prism etc.
 - 3.7 Graphical representation of different Building materials.

AA - 132 BUILDING MATERIALS – I

L T P
Hours/week 3 ...

RATIONALE

Diploma holder in Architectural Assistantship are supposed to prepare working drawings of buildings Knowledge of building materials are is very essential from the point of construction materials is well providing Detailed specifications in the detailed drawings Therefore the course in building materials includes imparting Basic knowledge in the proprieties and use of the important materials like stones bricks, lime.. Cement, paints, timber, exterior and interior finishes, glass plastics building hardware, roofing materials, additives and admixtures, adhesives etc Teachers are expected to show the samples of different materials, discuss their properties with ‘particular. reference to their use and appearance in particular situations depending upon climate and environmental conditions of the site where the materials are to be used. Students should be encouraged to collect samples of various materials and efforts should be made to maintain a good building materials museum.

DETAILED CONTENTS

1. Building Stones
 - 1.1. Utility of stones
 - 1.2. Classification of rocks
 - 1.3. Selection of stones for different building works
 - 1 4. Characteristics of good building stones
 - 1.5 Testing of Stones
 - 1.5.1 Water absorption test
 - 1.5.2 Compressive strength test
 - 1.5. 3 Durability test
 - 1.6 Natural bed of stones its correct placement for effective and correct placement in building
 - 1.7 Common building stones
 - 1.7.1 Granite. Basalt and Trap Sandstone, Lime-stone. Slate Marble
 - 1.7.2 Composition, properties, uses and their origin – its transportation and storage Techniques
2. Bricks
 - 2.1<L>
 - 2.2 < L >‘

- 2.3 Characteristics of good brick
- 2.4 Size and weight of a standard brick
- 2.5 Composition of brick earth
- 2.6 Test for burnt clay bricks
 - 2.6.1 Compressive strength test
 - 2.6.2 water absorption test and efflorescence test
- 2.7 Fire bricks, its properties, uses and availability
- 3 Lime
 - 3.1 Uses of lime, classification of lime
 - 3.2 Setting action of fat lime and hydraulic lime
 - 3.3 Field testing of lime
 - 3.4 Visual examination
 - 3.5 Storing of lime
 - 3.6 Artificial hydraulic lime
 - 3.7 Important technical terms
- 4. Cement
 - 4.1 Uses of cement
 - 4.2 Composition of Portland cement
 - 4.3 Setting and hardening of cement
 - 4.4 Types of cement their properties and uses
 - 4.4.1 Ordinary Portland Cement (O P C)
 - 4.4.2 Rapid Hardening Cement
 - 4.4.3 High Alumina Cement
 - 4.4.4 White Cement
 - 4.4.5 Colored Cement
 - 4.4.6 Pozzoland Portland Cement
 - 4.4.7 Sulphate Resisting Cement
 - 4.5 Storage of Cement
- 5 Mortar
 - 5.1 Function of Mortar
 - 5.2 Preparation of cement mortar <W> <W> and <W> <W> <W>W

- 5. 3. Proportion of mortar for different building works
- 5. 4. Different types of sand
- 5. 5. Bulking of Sand
- 6 Concrete
 - 6.1 Mixing, placing, aggregate and its grading uses of lime concrete and cement concrete
 - 6.2 Placing of concrete
 - 6.3 Compaction of concrete
 - 6.4 Curing of concrete
 - 6.5 Reinforced Cement concrete (RCC)
 - 6.5.1 Necessity of providing reinforcement
 - 6.5.2 Properties of RCC
- 7. Timber
 - 7.1 Characteristics and uses of common Indian timbers i. e. Sal, Deodar, Kail, Chir, Teak etc.
 - 7.2 Characteristics of hard wood and soft wood
 - 7.3 Defects in timber
 - 7.4 Characteristics of good timber
 - 7.5 Different methods of seasoning of timber

ES - 122 INTRODUCTION TO COMPUTERS

L T P

Hours/ week - - 6

RATIONALE

Computers have made great inroads into engineering design, personnel administration, project planning and monitoring, banking, transportation, automatic machine operation, and many areas of project endeavor. During the past decade, the use of computers has been growing at a fast rate. The time has now come when engineering technicians have to familiarize themselves with computers to enable them to cope with the inevitable computerization of a significant portion of their job. Therefore, this subject has been included. This is a practical course. Theory if any may be dealt in the practical session only.

DETAILED CONTENTS

1. Introduction to Computer:
 - 1.1 Block diagram of a computer and overview of its working
 - 1.2 Basic concepts in stored Programme execution
 - 1.3 Input, output and secondary storage devices
 - 1.4 Concept of RAM (Random Access Memory). ROM (Read Only Memory)
 - 1.5 Introduction to operating system
 - 1.6 Types of computers - Micro (PC, PC -XT, PC - AT), Mini, Main Frame and Super Computers - their capabilities
2. Familiarization with Computer and MS - DOS And Windows (current version).
 - 2.1 Identification of subsystems and terminology
 - 2.2 Interconnecting various external units including computer
 - 2.3 Introduction to files and folders
 - 2.4 Booting the system from floppy and hard disk...
 - 2.5 Opening "open dialog box, Selection of drive
 - 2.6 Organizing information on a disk
 - 2.7 Naming creating deleting working with directories folder
 - 2.8 File operation such as copying, renaming and deleting and sending
 - 2.9 Printing files
3. Word-processing Working on the computer to develop practice to use a word processing programme such as MS Word or Word Perfect etc.
 - 3.1 Opening a document

- 3.2 Preparing a document
- 3.3 Editing document
- 3.4 Formatting a document
- 3.5 Character word and line editing
- 3.6 Margin setting, paragraph alignment and setting
- 3.7 Block operation
- 3.8 Spell checker
- 3.9 Saving document
- 3.10 Applying Print control
- 4. Printing a document on a dot matrix printer or laser printer whichever
- 5. Familiarization with typing on the computer

CM-202 COMMUNICATION TECHNIQUES – II

L P T
Hours/week 3

RATIONALE

To communicate verbally and in written form is important. Further technical report writing is another essential requirement. This subject is added to develop necessary competence in written and oral communication.

DETAILED CONTENTS

1. Precise and Comprehension (20%)
Precise writing of simple passages from a pre-prescribed text- book. The passage selected should be from the text- book. The passage selected should be such as easily lends itself to summarizing. The passage should be of 100 to 150 words. In order test comprehension a few questions on the passage may be set.
2. Communication Techniques (60%)
 - 2.1 Importance of communication
 - 2.2 One way and two way communication
 - 2.3 Essentials of good communication
 - 2.4 Methods of communication oral, written, and non - verbal
 - 2.5 Barriers of communication
 - 2.6 Techniques of overcoming barriers
 - 2.7 Concept of effective communication
 - 2.8 All forms of written. communication notices, agenda notes. correspondences' (official and Business)
 - 2.9 preparation summaries and < L >grams, circulars. < L > < L >press < L > and advertisement.
 - 2.10 < L >
3. Technical Report writing <W> from a given outing A choice in < w > one of three questions to be given in the examination. The question paper shell provide the required outlines.
4. Practice of writing personal resume and writing application for a job/ employment 5%
5. <l>

BS 212 APPLIED MATHEMATICS II

Hrs/week L T P
 3 1 ..

RATIONALE

Applied Mathematics forms the backbone of engineering students. Basic elements of differential Calculus, integral calculus and solution of 1st order differential equation have been included in the curriculum as foundation course and to provide continuing education base to the students.

DETAILED CONTENTS

1. Differential Calculus
 - 1.1 Limit
 - 1.1.1 Concept of a function its value and limit
 - 1.1.2 Evaluation of limits. four standard limits only. Namely

$\lim_{x \rightarrow 0} \frac{\sin x}{x}$	$\lim_{x \rightarrow 0} \frac{e^x - 1}{x}$	$\lim_{x \rightarrow 0} \frac{\log(1+x)}{x}$	$\lim_{x \rightarrow 0} \frac{a^x - 1}{x}$
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 - 1.2 Differentiation
 - 1.2.1 Definition, its physical meaning as rate measure and its geometrical meaning
 - 1.2.2 Differentiation from first principle of x^n , c^x , $\log a^x$, $\sin x$, $\cos x$, $\tan x$ only
 - 1.2.3 Differentiation of $\cot x$, $\sec x$, $\operatorname{cosec} x$ and of inverse functions
 - 1.2.4 Differentiation of sum product and quotient of function
 - 1.2.5 Differentiation of function of a function
 - 1.2.6 Logarithmic differentiation
 - 1.3 Applications
 - 1.3.1 Rate $\langle W \rangle$
 - 1.3.2 Calculation $\langle W \rangle$
 - 1.3.3 Newton's method of solving equations
 - 1.3.4 $\langle W \rangle$ And Normal to a curve for explicit function $\langle W \rangle$
 - 1.3.5 Maxima and Minima
2. $\langle W \rangle$ $\langle W \rangle$ (40%)
 - 2.1 Indefinite integrals

- 2.2 Physical meaning of integration
- 2.3 Integration as inverse process of differentiation
- 2.4 Integration by substitution, by parts and by partial fractions
- 2.5 integration of rational and irrational quadratic expressions viz

$$\frac{ax^2 + bx + c}{dx} \quad \frac{ax^2 + bx + c}{dx} \quad \frac{ax^2 + bx + c}{dx} .dx$$

- 2.6 Definite Integrals
- 2.6.1 Evaluation of Definite Integrals
- 2.6.2 Simple problems of Integration

$$\frac{\sin^n x \, dx}{n}, \quad \frac{\cos^n x \, dx}{n}, \quad \frac{\sin^m x \cos x \, dx}{m}$$

(without proof)

- 2.6.3 Numerical integration by Simpson's Rule

2.7 Applications

Simple problems on the area bounded by a curve and axis and volume of a solid formed by revolution of an area.

3 Differential Equations (20%)

3.1 Definition

3.2 Formation of differential equation of first order and first degree

3.3 Solution of differential equation of first order and first degree

3.3.1 variable Separable

3.3.2 Homogeneous differential equations

3.3.3 Linear differential equations

AA-230 GRAPHIC PRESENTATION-II

L T P
Hours/ week - - x

RATIONALE

Graphic presentation forms a core subject for preparing perspective, scale, three dimensional views, furniture drawings. This course aims at equipping the students with the skills of graphic presentation. Teachers are expected to lay considerable stress on drawing work so that students attain desired competencies for preparing good quality perspectives of interior and exterior of buildings in different media.

DETAILED CONTENTS

Perspective Exercises on the following:

1. Fundamentals, dimension, fore shortening and convergence Reality and appearance
2. Basis of perspective, con' of vision, central visual ray, picture plane, line of sight through picture plane, spectator
3. Principal aids of perspective, vanishing points eye level (2 Sheets)
4. Study of cube in perspective.
5. Characteristics of perspective construction, determining vanishing Points
6. Two - point perspective of a simple building with and without overhead roof
7. Perspective division of an area into area of equal sizes
8. Two point perspective of a house, dividing point method, perspective Grid
9. Central perspective and grid, frontal perspective, interior perspective
10. Perspective drawing using shortcut methods and dividing are methods
11. Relationship between station point (spectator) picture plane and perspective Comparative study of perspective by changing position of station point from one side and in front of picture plane.
12. The limits of exactness in perspective, distortion, limit of field vision.14. Sciography on plan, elevation and perspective, as per standard conventions
13. Shadows of rounded bodies, shadow of a circular opening project-and cantilevers
14. Rendering of perspective in different medium, ink. color 'charcoal. Free hand perspective.
- 15.
- 16.

AA-231 BUILDING MATERIALS –II

L T P
Hours/week 3 -- --

RATIONALE

To prepare working drawings of buildings, knowledge of building materials is very essential from the point of construction materials as well as providing detailed specifications in the detailed drawings. Therefore, the course in building materials includes imparting basic knowledge in the properties and use of the materials like exterior and interior finishes, glass, plastics, building hardware.. ceiling and roofing materials, additives and admixtures, adhesives etc. Teachers are expected to demonstrate the samples of different materials, discuss their properties with particular reference to their use and appearance in particular situations depending upon climate and environmental conditions of the site where the materials are to be used. Students should be made to maintain a good building material museum.

DETAILED CONTENTS

1. Floor Finishes: Laying, sizes, availability, popular brand names polish and uses
 - 1.1. Terrazzo Tiles and flooring
 - 1.2. Glazed terracotta and ceramic tiles
 - 1.3. Cement concrete tiles
 - 1.4. Marble, Kota stone, slate, red sand stone - their tiles and slab-
 - 1.5. Parquet (Wooden) Flooring
 - 1.6. Linoleum floors
 - 1.7. Rubber. PVC flooring
 - 1.8. Cast iron grit and heavy duty flooring for industrial buildings
2. Wall Finishes
 - 2.1. Different Types of Wall boards and their trade names
 - 2.2. Laminated fibers and their trade names
 - 2.3. Polystyrene wail tiles
 - 2.4. Plastic wall tiles and their trade names
 - 2.5. Wall papers
 - 2.6. Cork sheets and tiles
 - 2.7. Thermocole as. a building material
 - 2.8. Foam rubber tiles and roils
3. Ceiling materials (Size quality their availability, types of finishes and then use with their trade names)
 - 3.1 <w>
 - 3.2 <w>

- 3.3. Plain a. c. sheets
- 3.4. Plywood
- 3.5. Hard board
- 3.6. Cellotex and other trade name as amaterial
- 3.7. Fiber boards
- 3.8. Glass
- 3.9. Asbestos tiles
- 3.10. Thermocole
- 3.11. Bison board

4. Building hardware (Sizes, Applications)

Note: Teacher may show these items to the students in material library maintained by the department

- 4.1. Tower bolts
- 4.2. Hinges
- 4.3. Door Handles
- 4.4. Fan-light catches
- 4.5. Door springs
- 4.6. Latches
- 4.7. Floor door stopper
- 4.8. Fan light pivots
- 4.9. Mortise lock
- 4.10. Door closer
- 4.11. Ventilator chains
- 4.12. Wire gauze

5. Glass its uses and sizes

- 5.1. Sheet glass
- 5.2. Wired glass
- 5.3. Laminated safely glass
- 5.4. Plate glass
- 5.5. Insulating glass
- 5.6. coloured glass
- 5.7. Tinted glass
- 5.8. Heat absorbing glass

- 5.9. Glass blocks
- 5.10. Glazing putty
- 5.11. Painted glass
- 6. Roofing materials their standard sizes and uses
 - 6.1 Asbestos sheets
 - 6.2 GI sheet;
 - 6.3 Fiber glass sheets
- 7. Additives and Admixtures, their availability and uses
 - 7.1. Water repellants
 - 7.2. Accelerators
 - 7.3. Air entrapping agents
 - 7.4. Hardness
 - 7.5. Workability increasing agents
 - 7.6. Fly ash
- 8. Adhesives, their trade names such as synthetic resins and their uses
- 9. Aluminum sections for doors and windows and their applications
- 10. Market survey of various materials and collection of data with reference of their properties, sizes, costs etc.
 - 10.1. Kitchen fittings and fixtures, their popular brand names, shapes and sizes
 - 10.2. Fittings and fixtures of toilet, their popular brand names, shapes and sizes
 - 10.3. Specifications and approximate cost the following; WC (European and Indian) washbasins. Urinals. Shower trays, Bath tubs flushing stems Tans and shower systems Jacuzzi, cooking ranges. LPG cylinder and stove
- 11. Paints their covering capacity, trade names, uses and availability
 - 11.1. Water based paints
 - 11.2. Distempers
 - 11.3. Oil based paints and emulsions
 - 11.4. Cement paints
 - 11.5. Acrylic emulsions
 - 11.6. Melamine finishes
 - 11.7. Vanishes
 - 11.8. Spint polish, Wax polish
 - 11.9. Lacquers
 - 11.10. <L>
 - 11.11 <L>

ME-235 Workshop Practice

L P T
Hours/week -- -- 3

RATIONALE

The course aims at developing basic manual skills in carpentry, painting, polishing and masonry for creating necessary appreciation of the technology involved. Manual and machining skills of carpentry will also be helpful in making scaled models of buildings by using different materials.

DETAILED CONTENTS

- A. Carpentry Shop.
 - 1) Introduction to carpentry tools, machines and their application
 - 2) Marking and sawing practice by using hand saw
 - 3) Planing practice by using hand tools and wood planer
 - 4) Chiseling practice by using hand tools
 - 5) Exercises in preparation of joints i. e. lap joint, mortise and tenon joint, dovetail and glued joint
 - 6) Exercises in development and preparation of simple models of simple shapes in card board
- B. Painting and Polishing Shop
 - 1) Exercises in preparation of surfaces before painting
 - 2) Exercises in application of primer coat
 - 3) Exercises in polishing wood items
 - 4) Exercises in painting wooden and steel items
- C. Masonry
 - 1) Exercises on handling of bricks cement, sand and aggregate
 - 2) Exercises on preparation of mortar
 - 3) Exercises on laying of bricks in various bonds Exercises on pointing and finishing

AA- 232 BUILDING CONSTRUCTION I

L P T
Hours/week 2 -- 6

RATIONALE

Students are supposed to prepare and working drawings and detailed drawings of various components of buildings. Also they are expected to design small residential buildings. For this, purpose it is essential that they are taught various components of building construction comprising of foundations, super structure, openings, roofs, stairs, floorings and finishing and other allied building components. Therefore, the subject of building construction is very important. Teachers while imparting instructions are expected to show various components of buildings under construction, make use of models or other audio-visual media to clarify the concepts. Teachers should lay considerable stress on specification writing, lighting, ventilation and orientation of buildings. Students should be asked to maintain a sketch-book for recording the observations from site visits. While conducting viva, teachers should point out specific mistakes done by students in the preparation of drawings.

DETAILED CONTENTS

	Theory		Practical
1.	Brick work and stone work		
1.1	Different sizes and types of bricks	1	Drawing of different shapes and sizes of bricks
1.2	Wall thickness. T-junctions cross junction and bonds	2	Drawings of different bonds in different wall thickness. T-junctions cross junctions
1.3	Brick jalis and Reinforcement	3	Reinforced brick work and jalis
1.4	Different stone facing and claddings and classification of masonry		Sketches of different type of stone facing
2	Openings in walls		
2.1	Classification of arches as per finish, shape and material	4	Drawings of lintels and arches of <W> <W>
2.2	Classification of <W> <W> different materials <W> <W> <W><W>		

3.	Damp Proof Course (DPC)		
3.1	Explanation of DPC reasons for its use	5	Showing of Damp proof course in a horizontal and vertical brick wall
3.2	Sources of dampness and effects of dampness		
3.2	Classification as per hardness or rigidity of material		
3.4	BIS stipulations of damp proofing		
3.5	Treatment of building components for effective damp proofing		
4.	Foundations		
4.1	Different types of foundations with reference of advantage of one over the other	6	Drawing of spread foundation and application of DPC on spread foundation and basements
4.2	Brief knowledge of different types of foundations in basements		

NOTE : Field visits should be organized to clarify concepts

AA - 233 THEORY OF DESIGN AND ARCHITECTURAL DESIGN L

L T P
Hours/week 2 -- 9

RATIONALE

Students are supposed to understand basic principles of theory of design while designing buildings like form function, balance light and shadow, shape, plane volume, line, proportions Rythm texture emphasis contrast colour and other related elements Therefore, the subject of theory design forms the basis design Teachers may make use of models and audio-visual aids to clarify the concepts Group discussion and seminars may-also be organized to discuss vanous concepts and principles involved in the design It is recommended that teachers may organize visits to work sites to clarify the concepts and principles involved.

DETAILED CONTENTS

Part a of syllabus is theory and part b is drawing work

A Theory of Design.

Definitions, examples and applications of the following :

1. Primary elements of design

1.1. Point

1.2. Line

1.3. Figure

1.4. Plane

1.5. Volume

2. Design elements

2.1 Composition

2.1.1 Shape

2.1.2 Size

2.1.3 Form.

2.1.4 Function

2.1.5. Layout

2.2. Balance

2.2.1 <L>

2.2.2 <L>

2.3 <W>

2.3.1 <L>

2.3.2 <L>

- 2.4. Pattern
- 2.5. Contrast
 - 2.5.1 Light and shade
 - 2.5.2 Nature and man made
- 2.6. Rhythm and. movement
 - 2.6.1 Rhythm in nature
 - 2.6.2. Man made rhythm
- 2.7. Proportion
- 2 8. Scale
 - 2.8.1 Monumental scale
 - 2.8.2 Human scale
 - 2.8.3 Intimate scale
- 2.9. Emphasis
- 2.10. Colour
 - 2.10.1. Effect of colour on building
 - 2.10.2 Colour chart
 - 2.10.3 Colour variations (contrasting colours)

B DRAWING WORK

- 1 Circulation and its relation with design in a building.
- 2 Furniture arrangement in different types of rooms in a house such as kitchen toilet bedroom living room etc. Arrangement of furniture in a small public buildings for example Small public library Dispensary, community centers Furniture arrangement can be drawn on an existing building Furniture arrangement should be shown only on plan with dimentions.

Note : Students should be given drawings of the plans on which they will draw the details of the furniture.

3. Requirement of parking a building Space required is <w> <w> <w>cycles etc.

AA - 330 HISTORY OF ARCHITECTURE

L P T
Hours/week 3 -- --

RATIONALE

The course on History of Architecture develops appreciation regarding past and current trends in the field of architecture. This knowledge will help them to understand how new materials influence the general trend in architecture and also the effect of society on architecture. The course covers important civilizations (Indian, Egyptian, Greek and Roman). Temple architecture in India, Buddhist Architecture, Islamic Architecture, Renaissance and modern Architecture in Europe and India. The teacher should try to create interest among the students by organizing site visits to the local monuments. Use of audio - visual aids can also be made to explain various architectural developments. Imparting should be laid on materials, construction methods, structural system and design concepts involved.

DETAILED CONTENTS

1. Evolution Of Civilization with special reference to the-following
 - 1.1 Man and his needs with reference to shelter
 - 1.2 Man and culture
 - 1.3 Society and culture.
 - 1.4 Effects of changing environments - Geographical and Biological
 - 1.5 Social groups societies and civilizations
 - 1.6 Culture and its development in religion, societies economic, political, intellectual, military.
 - 1.7 Causes of rise and fail of civilizations
2. Buddhist Architecture in India
 - 2.1 Historical, economical social and geographical background
 - 2.2 Emphasis on sitting, concept, plans elevations and sections, material and construction methods
 - 2.3 Building types - Chaitya - hall, Stupa. Stambh. Torans and Viharas
 - 2.4 Large scale drawings of details used in Buddhist Architecture
3. Temple Architecture in India
 - 3.1 Dravidal Style
 - 3.1.1 Emphasis on evolution sitting concept plans, Elevations sections materials and construction method
 - 3.1.2 Area of studies pallavas. Cholas Pandyas, Vijaynagar. Madurai

- 3.2 Indo-Aryan Style or North Indian Style
 - 3.2.1 Emphasis on evolution, .sitting layout concepts and elevations and sections, materials and construction method
 - 3.2.2 Areas of study, Khajuraho, Orrissa
- 3.3 Jain Temples
 - 3.3.1 Emphasis on evolution, concept of sitting, layout plans, El and sections materials and construction method
 - 3.3.2 Areas of study mount Abu, Girnar
- 3. Greek Period, Roman Period and early Christian Period

PRACTICAL

1. Detailed sketch drawings of local old monuments (measured drawing) elevation, sections and various related details
2. Preparation of large scale drawings of the various important details, use temples of different periods. Such as details of columns, comics, <w> chajjas etc.

AA - 331 ARCHITECTURAL DESIGN – I

Hours/week L T P
... .. 12

RATIONALE

Large percentage of diploma holders find employment with private architects and some of them go for self-employment. Therefore, they are required to design small residential and public buildings. The course aims at providing practical exercises in designing so as to develop appropriate knowledge and skills in building design. Teachers are expected to show various types of designs of small to medium residential buildings to develop an appreciation of different designs. Teachers should “also motivate students to maintain their sketch-book in which they draw line sketches of different architectural styles.

DETAILED CONTENTS

1. Composition of sheet
2. Problem on composition of lines (one exercise)
3. Problem on composition of various geometrical figures (Square, Triangle, Circle, Rectangle, Pentagon etc.) in different tone and texture (two exercises)
4. Preparation of plan and elevation from the models of various forms (Composition of prisms, cubes, cylinders etc.) - (one exercise)
5. Study of spaces required for different human activities (one Sheet)
6. Design studies in relation to furniture layout. Only in plan.
 - 6.1 Living Area
 - 6.2 Dining Area
 - 6.3 Sleeping Area
 - 6.4 Study Area
7. Design studies of combination of above areas under fixed Roofs:
 - 7.1 Living, Dining and Kitchen
 - 7.2 Study bedroom and toilet All studies to be made through plans
8. Design of a single bed room house on ground floor a garage
 - 8.1 Circulation analysis
 - 8.2 Presentation Drawings
 - 8.3 <W>

AA-332 BUILDING CONSTRUCTION II

L T P

Hours/week 2 - 6

RATIONALE

Students are supposed to prepare working drawings and detailed drawings of various component of buildings 'therefore, it is essential that students are thought various components of building construction comprising of foundations, super structure, openings, roofs staircases flooring and finishing and other allied building components The subject of building construction is very important Teachers while imparting instructions are expected to show various components of buildings under construction, make use of models or other visual media to clarify the concepts Considerable stress should be laid on dimensioning, specification writing and printing. Students should be asked to maintain a sketch- book for recording the observations from site visits.

DETAILED CONTENTS

	Theory		Practical
1	Wooden doors and windows	1	Drawing of different types of doors (panel, flush, and glazed) showing joints and fixtures. Single and double rebate frame. Drawing joints used in frames Fixing of door frames in masonry wall
1.1	Definitions functions sizes, location and classification	2	Drawing of different types of wooden windows.
1.2	Joints	3	Drawings of details of doors and windows
2	Floorings	4	Drawing of marble slab and cast – in Situ flooring, terrazzo flooring plan Cement flooring, pre cast tile flooring
2.1	Types of flooring for ground and upper floors		Drawing of timber floor over concrete base. Drawing of under floor of wooden joints
2.2	Timber floors	5	Drawings showing details of <W>
2.3	Floor finishes	6	<W>

3	Staircases and Ramps		
3.1	Definition and types of Staircases as per nomenclature	6	Drawing of a RCC stair case with Details of fixing of steel railing
3.2	Staircases of different materials	7	Dog legged wooden staircases joints Between tred and riser, railing and hand rail
	Theory		Practical
3.3	Relation between different components	8	Drawing of steel spiral staircases
3.4	Definitions, purpose, slopes, Types of ramps and moving walks		
4.	Roof and Roof Coverings		
4.1	Pitch roof and terms related to roof	9	Drawing details of fixing of AC GI Sheets, over steel trusses and wooden trusses. Covering with slates, tiles over wooden sloping roofs Drawing of king post, queen post roof
4.2	Types of timber roof trusses	10	
4.3	Single lean roof		
4.4	Double collar roof		

AA-333 SURVEYING

L T P
Hours/week 3 2 7

RATIONALE

Students are expected to manage the site That involves taking measurements. surveying and inspection. They are also expected to align the columns and give levels and slope for flooring Therefore basic knowledge and skills of surveying including chain surveying compass surveying, plane tabling, leveling contouring to very essential Teachers while imparting institutions are expected to explain various concepts and principles by showing various equipment and demonstration thereof Considerable stress should be given on the use of survey equipment.

DETAILED CONTENTS

1. Surveying
 - 1.1 Definition objects and its types
2. Chain Surveying
 - 2.1. Definition tools and equipment such as chain, tools, pegs, ranging rods offset rods, cross-staff, measuring tape etc.
 - 2.2. Testing a chain principle of chain surveying survey reconnaissance, base line, main station, tie station, tie lines and their selections
 - 2.3. Well conditioned and ill conditioned triangles un-keep of a field book overcoming obstacles Ranging a line direct and reciprocal.
 - 2.4. Problems of finding correct lengths and areas measured with incorrect chain advantages and disadvantages of chain surveying
3. Compass Surveying
 - 3.1 Prismatic compass Surveyors compass. Bearings of lines angle measurements. magnetic and true bearing local attraction its detection and examination methods of plotting compass survey traverse; their merits and demerits, adjustment of closing errors by graphical methods
 - 3.2 Finding true north by Sun's shadow in compass survey and how to avoid its advantages and disadvantages of compass survey
4. Plane Tabling
 - 4.1 Equipment and accessories
 - 4.2 Setting of a plane table at a station point
 - 4.3 Methods of plane- tabling <W> <W> <W><W><W>
<L>

- 4.4 Finding the station point by two-point method
- 4.5 Three point problem and its solutions by
 - i. Triangle of Error Method
 - ii. Tracing Paper
 - iii Graphical method
- 4.6. Advantages and disadvantages of plane tabling
- 5. Leveling
 - 5.1. Definition of leveling and terms used in leveling
 - 5.2. Types of leveling
 - 5.3. Parts of a dumpy level
 - 5.4. Temporary adjustment of a dumpy level and setting up a level
 - 5.5 Reducing levels by use and fall method
 - 5.6. Reducing levels by height of collimation method
- 6. Contouring
 - 6.1. Explanation of terms in contouring
 - 6.2. Characteristics of contours
 - 6.3. Uses of contours
 - 6.4 Methods of contouring and their plotting
 - 6.5 Interpolation of contours
- 7 Introduction to theodolite and its uses

PRACTICAL

1 Chain - Surveying

Exercise -1

- i) Ranging a line
- ii) Chaining a-line and recording in the field <W>
- iii) Testing and adjustment of a chain
- iv) Taking offsets
 - a) Perpendicular
 - b) Oblique with a tape only
- v) Setting out right angle with a tape

Exercise - 2

- i) Chaining of a line involving reciprocal ranging
- ii) Testing and adjustment of an Indian optical square
- iii) Taking offsets an selling out right <W> with <L>

2. <w> <w>

Exercise 2

- i) To study <w> <w>
- ii) Setting the <w> <w> <w> observations
- iii) Measurement <w> <w> <w> lines meeting at a point

3. Levelling

Exercise – 4

- i) Study of dumpy level of and leveling staff
- ii) Temporary adjustment of a dumpy level
- iii) Taking staff readings of different stations from the single setting and finding difference of level between them.

Exercise - 5

- i) Study of I O P level
- ii) Temporary adjustment of I O P level
- iii) Taking staff readings on different stations from the single setting and finding difference of level between them.

Exercise – 6

Find the difference in levels between two distant points

4 Contouring

Exercise – 7

Preparing contour plan by radical line method by using the use of Tangent Clinomotor by taking.
Students to an <w>

Exercise – 8

Preparing a contour plane <w> <w> method of squares of an appropriate site

5. Plane Tabling

Exercise – 9

- i) To study plane table survey equipment
- ii) To set a plane range <w> station point
- iii) To make the <w>
- iv) Plotting a few <w> tradition method

Exercise -10

- i) <L>
- ii) <L>
- iii) <L>

AA-334 CLIMATOLOGY, ENVIRONMENT AND ECOLOGY

L T P
Hours/week 3 - -

RATIONALE

Understanding of the basic principles of climatology and environment are very important in Architectural Assistantship course. The knowledge of this subject will be very useful in the design of buildings.

DETAILED CONTENTS

1. General Introduction
 - 1.1 Form of earth and life
 - 1.2 Regional character of climate
 - 1.3 Movement of sun
 - 1.4 Wind direction
 - 1.5 Local climate
 - 1.6 Orientation of buildings which respect to climatic elements
2. Biological and Geographical Approach
 - 2.1 Different climate zones
 - 2.2 Macro - micro climatic effects
 - 2.3 Relation of climatic elements to comforts
 - 2.4 Sun chart (sun path)
 - 2.5 The effect of climate on man and shelter
 - 2.6 Climatic evaluation by reason
3. Interpretation to Architectural Principles
 - 3.1 Sun protection <W>
 - 3.1.1 Louvers (horizontal and vertical)
 - 3.1.2 Curtain walls
 - 3.2 Wind protection devices
 - 3.3 Criteria for site selection
 - 3.4. Solar passive design
4. Environment and Ecology
 - 4.1 Basic elements and principles of ecology
 - 4.2 Conservation of material from ecological effects
 - 4.3 Conservation of energy, land forms and vegetation

- 4.4 Basic knowledge of landscaping and species used for architect landscape
- 4.5 Elements of landscape and architecture
 - 4.5.1 Ecology its importance to urban and rural development
 - 4.5.2 Ecological balance and effects of ecological imbalances like air and noise pollution.
- 4.6 Sustainable development with respect to ecology cycles 2. Practical Work
 - The students should prepare a study report on the effect of climate and environ ancient and modern buildings. The study should emphasize on oriental courtyards, windows, jallies, chajjas, landscape and various other sun and control devices

NOTE: Audio visual media should be used for explaining various component climatology and environment

RATIONALE

Students are expected to prepare working drawings of various fittings, fixtures, water supply and sanitary installations. For this purpose, it is essential that the students be taught various aspects of building services like sanitary installations, house drainage, domestic water supply, fittings and fixtures and electrical fittings and layout. Therefore, the subject of building services is very important. While imparting instructions the teachers should show various fixtures and fittings, water supply and sanitary installations at work sites. They may make use of literature, models charts and other audio-visual aids so that the students are able to comprehend the hardware used. Teachers should especially point out problem areas and other environmental considerations while teaching this subject.

DETAILED CONTENTS

1. Sanitation
 - 1.1 Glossary of drainage terms
 - 1.2 Surface drainage
 - 1.3 Systems of drainage
 - 1.3.1 Combined and separate systems
 - 1.3.2 Open drains in small towns
 - 1.3.3 Shape of street drains.
 - 1.4 Size of sewers for different systems
 - 1.5 Storm overflow
 - 1.6 Self cleaning velocities
 - 1.7 Method of laying and construction of drains
- 2 House Drainage
 - 2.1 Trap - sizes, types, materials and functions
 - 2.2 Inspection chambers -sizes, spacing, verification and their construction
 - 2.3 Ventilations of house drains
 - 2.4 Intercepting traps, pulley traps, piece traps and their functions and sizes.
 - 2.5 Anti syphonage or vent pipes
 - 2.6 One and two pipe systems
 - 2.7 Function and working of sinks, baths, water closets, flushing cisterns, urinals lavatory basins

- 2.8. Postings drainage pipes for leakage, smoke lint, water test
- 2.9. All pipes for soil disposal and rain water drainage
- 3. Plumbing and Internal Fixtures
 - Joints for various types of pipes
 - Sanitary fitting standards for public conveniences
 - 3.3 Septic tanks and seepage pits, soak pits
- 4. Domestic water supply
 - 4.1 Consumption or demand of water for domestic purposes
 - 4.2 Leakage and wastage of water and its preventive measures
 - 4.3 Different methods of water distribution, boosting water,-gravity and pressure distribution by storage tanks of individual buildings
 - 4.4 Laying and jointing cast (torn water mains; different types of joints;
 - 4.5. Service connection from mains
 - 4.6. Preparing water supply layout for domestic buildings.
 - 4.7. Preparing layout plan for disposal of sewerage in domestic buildings up the connection with the public sewer.
- 5. Electrical layouts and Fittings for buildings
 - 5.1. Principles of Electrical layouts, selection and placement of fittings
 - 5.2. Quality of light of mercury lamps, electrical incandescent lamps, fluorescent tubes and lamps
 - 5.3. Natural light and ventilation
 - 5.4. Thumb rules for calculating illumination level
 - Various systems of wiring and their suitability
 - 5.6 Precautions to avoid electrical accidents
 - 5.7 Fire caused by electricity and the fighting arrangements
 - 5.8. Provisions of TV aerial and telephone lines
 - 5.9. Preparing electric layout plan for domestic building
- 6. Introduction to Air-conditioning and Ventilation
 - 6.1. Principles of air conditioning
 - 6.2. Air cooling
 - 6.3. Different system of ducting and distribution
 - 6.4. Window units (Package units)

AA-430 HISTORY OF ARCHITECTURE – II

L T P
Hours/week - - -

RATIONALE

Students must be well conversant with vocabulary in architecture. They students must have abroad exposure to communicate and understand the vocabulary and terminology in the field of architecture.'

DETAILED CONTENTS

1. Islamic architecture in India:
 - 1.1 Imperial Style
 - 1.2 Slave Dynasty
 - 1.3 Khilji Dynasty
 - 1.4 Tuglak Dynasty
 - 1.5 Building type to be studied
Historical, economical, social, political and geographical background, effect of local elements on invading forces with special reference to building activity.
NOTE: Students may be taken to different nearby monuments
 - 1.6 Provincial Architecture: Areas of study Gujrat . Bijapur, Maiwa, Mandu, Ahmedabad
 - 1.7 Mughal Architecture. Rule of Babar, Humayun, Akbar. Jahangir, Shahjahau. Aurangzeb.
 - 1.8 Building types Important tombs, mosques, palaces, gardens.
2. Renaissance in Europe. The factors-social, economic, political and scientific that brought about Renaissance - its influence on architecture.
3. Various modern movements in architecture caused by the works of pioneers. The Bauhaus, Corbusier. Wright. Mies Van der ohe, Walter Gropius.
4. Modern architecture in India covering the works of Indian architects

PRACTICAL

Critical analysis of a traditional modern building with respect to its planning, space concept, aesthetics, use of materials., constructional technology climalogical aspect etc it may be in the form of report supported by sketches and photographs.

AA-431 ARCHITECTURAL DESIGN-II

L T P
Hours/week -- -- <W>

RATIONALE

Large percentage of diploma holders find employment with private architects and also majority of them go for self employment Therefore, they are required to design small residential and public buildings. The course aims at providing practical exercises in designing so as to develop appropriate knowledge and skills in building design Teachers are expected to show various types of design of small to medium residential buildings to develop an appreciation of different designs. Teachers should also motivate students to maintain then sketch- book in which they draw line Sketches of different architectural styles.

DETAILED CONTENTS

1. <w>
 - 1.1. Study report on vernacular architecture along with ketches are to be prepared for a local building Including sketches
 - 1.2. social backgrounds
 - 1.3. Living pattern
 - 1.4. Planning and design study
 - 1.5. Building materials
 - 1.6. Construction methods
 - 1.7 Relevance to present time
2. Design of three bed- room house (with access to terrace), small public building like nursery school, neighborhood bank, small post office, dispensary (Name of the building is only meant to give idea about size and scope of design.)
 - 2.1 Study Report
 - 2.1.1. Case study of existing building types.
 - 2.1.2. Study of site
 - 2.1.3. <W> of functional space and activity in respective areas
 - 2.1.4. Circulation analysis
 - 2.2 Presentation Drawings
 - 2.2.1. Plans
 - 2.2.2. Elevations
 - 2.2.3. Sections
 - 2.2.4. Perspective View

AA-432 BUILDING CONSTRUCTION – III

L T P
Hours/week - 2 6

RATIONALE

Students are expected to design small residential buildings. For this purpose, it is essential that they are taught various components of building construction comprising of foundations, super structure, openings, roofs, staircases, flooring and finishing and other building components. Teachers while imparting instructions are expected to show various components of building under constructions. They may make use of models or other audio-visual media to clarify concepts. While preparing drawing-considerable stress should be laid on dimensioning, specification writing and printing. Students should be asked to maintain a sketch- book for recording the observations from site visits.

DETAILED CONTENTS

Theory	Practical
1 steel Doors and windows	
1.1 Using standard BSI steel sections	1 Drawing different types of doors and windows using different sections.
1.2 Using rolled sections as frames and wooden shutters	2. Preparing a drawing of roiled section and wooden shutter
1.3 Rolling and collapsible shutters	3 Preparing drawings of Rolling <i>and</i> collapsible shutters
1.4 Hinge details of different types	3.Drawing a sheet showing different types of hinges for wooden, steel and aluminum sections.
1.5 Fly shutters	4.Drawings of fly shutters in windows
2 Roof covering AC, GI sheets	5. Drawings of roof covering with AC sheets and GI sheets on stool and wooden strusses
3. Finishes	.
3.1 Plastering and pointing, various types of external finish, like plain plaster, sand faced plaster grit wash finish	
3.2. Stone cladding and tile <W>	6. Prepare drawing of details showing joints, fixing method of stone with the wall

<p>3.3 Paneling and fibrous board finishes.</p> <p>4. Form work in wood and steel</p> <p>4.1 Definitions of form work. Shuttering.</p> <p>5. Compound wall.</p> <p>6. Parapet and roof details.</p>	<p>7. Prepare details of paneling with various types of covering</p> <p>8. Drawing details of shuttering of columns, Beams and slabs</p> <p>9. Drawing details of compound wall showing name plate and steel gate and its fixing.</p> <p>10. Drawing of flat RCC roof, its finishing waterproofing and joints with the parapet wall.</p>
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AA-433 . WORKING DRAWING AND DETAILING – I

L T P
Hours/week - 9

RATIONALE

Preparation of drawing and detailing forms an important activity of diploma Holders Students are expected to develop mastery of <W> in preparing working drawing of building and their detailing Therefore the course in working drawing and detailing is very important Teachers while imparting instructions are expected to <W> considerable stress on dimensioning specifications writing. and lettering.

DETAILED CONTENTS

Complete set of drawings of a house project done by the students in earlier semester
The set of working drawing will consist of the following

- 1 Site plan
- 2 Foundation plan with sectional details
- 3 Ground floor plan
- 4 Terrace floor plan
- 5 Sections —cross section and longitudinal section
- 6 Elevations - All for elevations
- 7 Doors and windows detail and their schedule

AA-434 THEORY OF STRUCTURES

L T P
Hours/week 3

RATIONALE

This is a fundamental course covering broad elements of Applied Mechanics and Strength of Materials, which are prerequisite to structural design. This subject also develops analytical abilities and continued learning skills in the students. The course covers force system, center of gravity, moment of inertia, shear force and bending moments, simple stress and strain and theory of simple bending. Teachers while imparting instructions should stress on concepts and principles and provide considerable practice in problem solving.

DETAIL CONTENTS

1. Resultant of force System and equilibrium
 - 1.1. Force Definition. SI units, types, system of <W> graphical representation by Bow's notation
 - 1.2. Resultant of concurrent forces law of parallelogram, triangle law of forces. polygonal law of forces, resolution and addition of force
 - 1.3. Moment of force Statement of Varignon's theorem, resultant of non concurrent forces parallel and non parallel forces. Problems on resultant of force system.
 - 1.4. Equilibrium Concepts of equilibrium, equilibrium of two and more forces conditions of equilibrium body constraints type of reaction provided by each constraint Free body diagram, <W>
2. Center of gravity
 - 2.1. Center of gravity by geometrical consideration for rectangular triangle semicircle.
 - 2.2. Center of <W> <W> <W> solids cubes <W> semi spheres, right circular cones
 - 2.3. Center of gravity by the method of moments of area mass on volume of regular figures composite figures and regular <W>
3. Moment of <W>
 - 3.1. Meaning of the <W> second moment of area section modulus and radius of gyration of a section
 - 3.2. <L> proof)

3.3 Second moment of regular figures – rectangle, triangle, circle and annular Sections (formulae only)

3.4 <l>

4. <l>

4.1 <w> <w> <w> <w> of S F and B.M calculations of reactions

4.2 SF and BM diagrams for simply supported overhanging cantilever<w> subjected to concentrated or uniformly distributed loads on entire Or part <w>

4.3 Calculation of position and magnitude of maximum shear force and <l>

5. Simple <w>

5.1 <l>

5.2 <w> <w> <w> test on mild steel, working stress and factor of <w> <w> <w> <w> simple bars. Poisson's Ratio. Young's Rigidity

<l>

6. <l>

6.1 <l>

6.2 <l>

6.3 <l>

6.4 <l>

6.5 <l>

7. <P>

AA-435 BUILDING BYE - LAWS AND MUNICIPAL DRAWINGS

L T P
Hours/week 1 ... 3

RATIONALE

In architectural organizations, diploma, holders are expected prepare municipal drawings for getting it sanctioned from the local development body. For this purpose, they must have the knowledge of set of norms, rules and regulations and building bye - laws of the local body. Therefore, this course is important. Teachers should refer to local bye - laws/ building bye- -laws while teaching this subject.

DETAILED CONTENTS

1. Preparation of one set of municipal plans up to submission to Corporation
 - 1.1 Study of building bye - laws (IS : 1256 provisions and definition)
 - 1.2 Special emphasis to be given to minimum size of various rooms.
toilets, kitchens, court- yard, balcony projections.
 - 1.3 Calculation of permissible covered area of-various sizes of plots:
residential, commercial and industrial Calculation of FAR and ground coverage
 - 1.3.1 Calculating plot area and covered area permissible/ floor.
 - 1.3.2 Preparing plans of different floors to respective scales
 - 1.3.3 Preparing elevations on scale
 - Front elevation1
 - Rear elevation
 - Slide elevation if plot is three side open
 - 1.3.4 Preparing sections on scale
 - section through staircase and mezzanine if any
 - section through kitchen, toilet and basement if any
 - 1.3.5 Preparing site plans on scale
 - Site plan showing covered area open area service <W>front road
Main features of <W> areas, layout of<W> pipes, sewer lines
setback of building as <W> Master Plan/ bye-laws.
 - Part layout plans at surroundings plots in question
 - 1.3.6 Preparing Details
 - Foundation details

- Section of RCC Column if any
- Schedule of doors and windows
- Area chart

1.3.7 Miscellaneous

- Address of plot, as per sale deed
- Signature and address of applicant (s)
- Name address, registration number of <w>
- Name and address of plumber
- Scale on which drawing is prepared and north points

1.3.8 Prints and Submission

- Five sets of prints of drawing prepared
- One set of prints cloth mounted
- All sets to be coloured as per BBL
- Obtain Signatures of owner, architect and plumber
- Folding of prints per file cover size.

1.4 Following documents and forms to be enclosed with prints

- Notice to erect a building
- General Specifications
- Ownership and undertaking requirements under U (1976)
- Attested copy of a receipt for payment of building stacking charges
- Affidavit and undertaking requirements under Acts.
- NOC from competent authority regarding land use master/zonal plan.
- Approval from chief inspector of. Factories (for building only)
- Indemnity bonds in case of construction of basement
- Supervision certificate of architect

2. Building Bye - Laws Necessity of framing bye -- laws' for Urban device principles involved in framing by laws Study of <W> <W> bye - laws zoning plans as applied <W> <W><W><W> <W> <W> Architects Act - 1972 and land <W> <W> <W> <W> provision only)

AA – 436 FIELD PRACTICE BASED MINOR PROJECT WORK

Hours/week L T P
 - - 2

Objective

1. To inculcate self motivation among the students
- 2 To give meaningful site- exposure

Methodology

- The student shall buy a scrap- book (10”X8”) of about 100 pages
- The student shall identify a simple and small residential building
- under construction near his/her house for the purpose of the study.
- The student shall be in constant touch with the faculty /guide, owner of
- the residence and the contractors working on the site.
- The student shall make regular ongoing recordings about the following and get them countersigned weekly
 1. All the stages of construction
 2. All about the building materials and their rates
 3. Sketches shall be free - hand but to scale
 4. Discussion with the contractors owner and the mistries

Content

- a) Statement of functional conceptual aspect of the house
- b) Construction to be studied under the following Head
 1. Foundation
 2. Masonry work with mortar mixes
 3. Plasters and finishes
 4. Flooring
 5. Doors and windows
 6. Water supply, sanitary, plumbing and electrical work
 7. Roof terracing
 8. RCC work
 9. Any other aspect

The assignment /project shall start at the beginning of second semester and end at the end of fourth semester. It will be marked internally and externally as part of portfolio and viva.

AA -530 ARCHITECTURAL DESIGN –III

L T P
Hours/week - - 12

RATIONALE

A large percentage of Architectural Assistants get employment with private Architects and also many go for self-- employment Therefore, diploma holders are required to design small residential and public buildings. The course aims at providing practical exercises in designing so as to develop appropriate knowledge and skills in building design. Teachers are expected to show various types of designs of small to medium residential buildings to develop an appreciation of different designs. Teachers should also motivate students to maintain their sketch-book in which they draw line sketches of different architectural styles.

DETAILED CONTENTS

1. Study report on parking (3 weeks)
 - 1.1 size of various vehicles
 - 1.2 Turning radius of various vehicles
 - 1.3 Road width
 - 1.4 Different practical layouts
 - 1.5 Working out parking areas
2. Design of building involving two or more floors, split levels etc. The building can be like Nursing Home / School/ Public Library, Cultural center(Name of the building is only meant to give idea about size and scope of design project)
 - 2.1 Study report (3 weeks)
 - 2.1.1 Case study of existing building types
 - 2.1.2 Study of site
 - 2.1.3 Analysis of requirement and respective areas
 - 2.1.4 Circulation Analysis
 - 2.2 Presentation drawing (6 weeks)
 - <L>
 - <L>
 - <L>
 - <L>
3. Two days <W> <W> sketch designs of any public building. (1 week)
4. <P>

AA - 531 BUILDINGS CONSTRUCTION –IV

L T P
Hours/week 2 - - 9

RATIONALE

Students are supposed to prepare working drawings of buildings. Also they are expected to design small residential buildings. Therefore it is to teach various components of building construction. Teachers while imparting instruction's are expected to show various components of buildings under construction, make use of the models or other audio-visual media to clarify the concepts. While preparing drawing, teachers should lay considerable stress on dimensioning, specification writing, lighting, ventilation and orientation of buildings. Students should be asked to maintain a sketch-book for recording the observations from site visits.

DETAILS CONTENTS

Theory	Practical
1. Doors and Windows	
1.1 Using different aluminum section	1. Drawing of aluminum door and window showing fixing beading hardware use of floor spring etc.
1.2 Anodizing of aluminum sections	2 Drawing of sliding, sliding folding end revolving doors
1.3 Beading in conjunction with aluminum	
2. Interiors of Building	
2.1 False ceilings and partitions	3. Drawing and detailing of false ceiling of plywood, POP and readymade aluminum sections
2.2 Different counters as per usage	4. Drawing of counter such as Bank counters, showroom display counter reception counter computer work station
2.3 Paneling	5. Drawing of paneling details
2.4 Wooden Partitions	6. Partitions with side ply wood, partly Glazed partitions sound proof partitions Room dividers
3 Side boards and wardrobes	7. Side boards of wardrobes,
4 Kitchen details	8. Full does section of marble counter
5. Exteriors of Buildings	with <w> below and above
6. Expansion points	9. Design and detail of <w> <w> and notes. Details with name plate and Letter box

AA-532 WORKING DRAWING AND DETAILING –II

L T P
Hours/week - - 9

RATIONALE

Preparation of working drawing and detailing forms the most important activity of diploma holders. Students are expected to develop mastery of skills in preparing working drawing of different building components and their detailing. Teachers, while imparting instructions are expected to show various components of buildings under construction by organizing field visits or use model and other audio-visual media to clarify the concepts involved in preparing working drawing. Teachers are expected to lay considerable stress on dimensioning, specification writing, lettering and composition of drawing work.

DETAILED CONTENTS

To prepare a working drawing of design project dealt in AA-434 subject:

1	Site plan	sheet
2	Foundation plan and details	sheets
3	Ground floor plan	sheet
4	Upper floor plans, one for each floor .	One sheet each
5	Terrace plan with rain water drainage details	sheet
6	Sections cross section through staircase and through kitchen	sheets
7	Elevations all sides	sheets
8	Details	sheet
8.1	Toilet (including plan elevation and section)	1 sheet
8.2	Kitchen (including plan elevation and section)	1 sheet
9	Doors and windows details	sheet
10	Staircases details (including plan and section)	1 sheet
11	Cupboard drawing and details	1 sheet

AA - 533 STRUCTURAL DESIGNS

L T P
Hours/week 3 1 1

RATIONALE

The students are expected to have knowledge of structural members of a building it helps in preparation of various drawings. Teachers should take students to the site to explain the position of the reinforcement.

DETAILED CONTENTS

1. RCC Structural Elements
 - 1.1 Reinforced concrete materials and properties, grades of concrete working stresses
 - 1.2 Reinforcing materials
 - 1.2.1 Suitability of steel as a reinforcing material
 - 1.2.2 Different types of reinforcing materials including cold twisted deforms bars
 - 1.2.3 Loads as per IS - 875
 - 1.3 Theory of RCC beams
 - 1.3.1 Assumptions in theory of simple bending in RCC beams
 - 1.3.2 Flexural strength of reinforced concrete beams
 - 1.3.3 Flexural Members Neutral axis, critical neutral axis, balanced under reinforced, over reinforced sections, lever<W> resisting moments of sections.
 - 1.3.4 Shear in beams
 - Effects of shear stresses, permissible shear stress as
 - Diagonal tensions measured as shear stress
 - Vertical stirrups and inclined bars as reinforcement for shear and diagonal tension as per IS provision
 - Length of embodiment and anchorage
 - And <W> value of <W> and hooks
 - 1.4 <L>
 - 1.4.1 Calculation of moment of resistance of a simply supported beam for a given data as load span and properties of <W> used
 - 1.4.2 Design of singly reinforced rectangular simply supported beam as per IS from the given data. as per span and properties of material used with structural drawing.
 - 1.4.3 Design of cantilever beams and its drawings
 - 1.4.4 Design of lintel with or without sunshade

1.4.5 T-beam (singly reinforced only). Position of NA, depth of beam, width of flange, design of T beams as per IS 45 Drawing of T- beams
1.4.6 “Limit state theory”. A comparison with “Working stress theory”

1.5 Slabs

1.5.1 Design of one way simply supported slab with drawing

1.5.2 Design of two-way slab with the help of IS: 456 Design coefficients (continuous) with drawings

1.5.3 Structural behavior of continuous beams/slab in one direction showing position of main reinforcement in the drawing, using coefficients given in IS: 456 :

1.6 Columns

1.6.1 Concepts of long and short columns as per IS- 456 Provision Effective length of Column

1.6.2 Design of axially loaded long and short columns as per IS 456 provision

1.6.3 Drawing of reinforcement for a column

1.6.4 Drawing of isolated footing for column

2. Steel structural elements

2.1 Structural steel and steel sections, study of steel tables and reading of data for steel sections. Knowledge of IS: 800

2.2 Structural connections

2.2.1 Riveted connections, type of rivets, forces in rivets, types of riveted joints with sketches

2.2.2 Welded connections, types of welds, forces in welds, types of welded connections with sketches

2.2.3 Design of Butt and Fillet welds

2.3. Reams - Design of laterally restrained beams with single RS section as per IS: 800 and handbook for span and loads

2.4 Design of axially loaded compression members. Design of axially loaded struts. Design of axially loaded ties,

2.4.1 Drawing of beam to column connection

2.4.2 Drawing of steel column with slab base and concrete

CM-504 ARCHITECTURAL PROFESSIONAL PRACTICE

Hours/week L T P
2 - -

RATIONALE

The knowledge of this subject is required for all architects who wish to choose industry/ field as their career This course is designed to develop understanding of various functions of management, role of workers and architects and providing skills with respects to marketing industrial safety communication and entrepreneurship etc. Which are essential attributes for a successful technician.

DETAILED CONTENTS

1. Tenders. Tenders essential characteristics of a tender notice, type of tender, tender documents.
2. Contract
 - 2.1. General principles of contract
 - 2.2. Types of contract
 - 2.3. Architect duties and liabilities under the contract
 - 2.4. Duties and liabilities from contract documents
 - 2.5. Contractor's duties and liability
 - 2.6. Architects liability to the contractor
 - 2.7. Employers duties and liabilities
3. Architect and his work
 - 3.1 Structure of an architect's office
 - 3.2 Office and management
 - 3.3 Architect duties to his employees under the labour welfare provision welfare provision.
4. Code composition and fees Architectural competitions, professional conduct, conditions of engagement and scale of professional fees and charges
5. Architect Act. 1972
6. Human Relations
 - 6.1 Human relations and performance in organization
 - 6.2. Understand self and others for effective behavior
 - 6.3. Behaviour modification techniques
 64. Industrial relations

6.5. Relations with subordinates, equals and supervisors. Characteristics of group behavior

7. Entrepreneur-ship
 - 7.1 Concepts of entrepreneur-ship
 - 7.2 Need of entrepreneur-ship in the context of prevailing employment and economic conditions of the country.
 - 7.3. Successful entrepreneur-ship
 - 7.4. Training for entrepreneur-ship development
 - 7.5. Basic resources
 - 7.5.1. Financial
 - 7.5.2 Technology
 - 7.5.3. Human and
 - 7.5.4 Informational resources

REFERENCE

Professional Practice by Roshan Namavati

AA-540 MODEL MAKING

L T P
Hours/week - - 3

RATIONALE

Architectural Assistants are expected to assist in preparation of architectural models of various kinds in their professional career. This skill can also form a basis of self-employment Architectural models as three-dimensional representation are made in different mediums. The students should be aquatinted with all of these mediums.

DETAILED CONTENTS

1. Block Models of
 - 1.1 Wood
 - 1.2 Thermocole
 - 1.3 Cork
 - 1.4 Plaster of Paris

2. Detailed Models in
 - 2.1 Paper sheets of various kinds
 - 2.2 Mount board
 - 2.3 Balsam wood
 - 2.4 Acrylic sheets

3. Site presentation
 - 3.1 Ground surfaces
 - 3.2 Human vegetation vehicles

4. Models of Details
 - 4.1 Jalli details
 - 4.2 Grill details
 - 4.3 Gale details
 - 4.4 Railing details

Exercises must be given from each section

ELECTIVE – I

AA-542 LANDSCAPING

Hours/week L T P
 - - 2

DETAILED CONTENTS

1. Functional Elements
 - 1.1 Parking for different building types
 - 1.2 Outdoor functional spaces with respect to different building types
 - 1.3 Use of landscape features with respect to architecture functions
 - 1.4 Layout and orientation of buildings

2. Aesthetics of Site Features:
 - 2.1 Effectiveness of built-up mass on surroundings
 - 2.2 Use of landscape elements
 - 2.3 Outdoor lighting fixtures
 - 2.4 Street furniture

ELECTIVE – I

AA - 541 ARCHITECTURAL GRAPHICS

L T P
Hours/week - - 2

RATIONALE

Students graduating from the diploma courses are expected to assist in the preparation of presentation drawings for different purposes in different mediums. This subject would cover all the aspects concerned with the preparation and rendering of drawing and perspective views.

DETAILED CONTENTS

1. Rendering of Basic Drawings in Ink and Pencil Separately
 - 1.1 Drawing human figures, vehicles and trees
 - 1.2 Sciography rendering techniques
 - 1.3 Site rendering techniques
 - 1.4 Elevation rendering.

2. Drawing and rendering of Views
 - 2.1 Drawing practice of one point and two-point perspective.
 - 2.2 Rendering of perspective in black and white and colour.

AA-630 WORKING DRAWING AND DETAILING – III

L T P
Hours/week - - 9

RATIONALE

Preparation of working drawings and detailing forms the most important activity of this course Students are expected to develop mastery of skills in preparing working drawings of different building components and their detailing.

DETAILED CONTENTS

To prepare a complete set of working drawings for a design project dealt in earlier semester <W> prints will be taken out of all the drawings and folded.

NO	Detail of drawings.	Number of sheets to be prepared
1.	Site plan showing the building and of demarcation for getting out the excavation marking	1 sheet
2.	Foundation plans and details including excavation plans	2 sheets
3.	All upper floors plans as per design	1 sheet each
4.	Ground floors plan with surface and soil waste drainage services	Drawing as per requirement
5.	Terrace floor plan showing rain water drainage and disposal	1 sheet
6.	Elevation all elevations to explain the scheme	Drawings as per requirement
7.	Sections As many sections as required to explain the complete scheme.	Drawings as per requirement
8.	Doors and windows details	Drawings as per requirement
9.	Staircase details	Drawings as per requirement
10.	Internal sectional elevations	1 sheet
11.	Built in furniture	1 sheet
12.	Kitchen details including plan and internal sectional elevation	Drawing as per requirement
13.	Completer toilet details	1 sheet
14.	Entrance gate Boundary wall and railings details	Drawing as per requirement
15.	Partition details	Drawing as per requirement
16.	Electrical layout plans	Drawing as per requirement
17.		Drawing as per requirement
		Any other drawings necessary to <w> the scheme

AA - 631 ESTIMATING AND SPECIFICATIONS WRITING

L T P
Hours/week 3 –

RATIONALE

Diploma holders find employment with private architects and also some of them start their own enterprise. Therefore, the profession demands the development of basic knowledge and skills of estimating and specification writing. This course covers different methods of taking out quantities of materials and preparation of cost estimates and elements of specification writing. Teachers are expected to lay considerable emphasis on estimating and costing exercises from given drawings. Practice of writing broad specifications should also be dealt with.

DETAILED CONTENTS

1. Introduction to estimating - Types of estimates
2. Different methods of taking out quantities - center line, in - to -in, out, to out
3. Various proformas used in estimates - measurement from, abstract of cost and material statement form.
4. Units of measurement and units of payment of different items of work including building services
5. Preparation of a <W> cost estimate, detailed estimates complete with detailed reports specifications. Abstract of cost and material and statement for small residential building with a flat roof
6. Calculation of materials and analysis of rates for plain cement concrete of different proportions Brick and stone cement and lime mortar, plastering and pointing with cement <W> in different proportions, white washing. Thumb rule methods of calculating steel in RCC
7. Types of contract mode of measurement, only in introductory obligations and lights of architect, contractor, employed conditions of contract
8. Specifications <W> Principles of specifications writing <W> <W> <W> specifications of items with special reference in two storey building
9. exercises involving choosing of relevant specifications
10. Accounts <W> <W> <W> <W> <W> <W> work <W> <W> <W> <W> <W> <L>

AA -632 COMPUTER GRAPHICS

L T P
Hours/week - - 6

RATIONALE

Computer as an aid has become ' inherent feature of an architectural office. Computers are being used for the purpose of preparing basic, working and presentation drawings Students well versed in using a graphic package would be positive asset in any architectural organization.

DETAILED CONTENTS

1. Preparation of drawings through the use of a graphic package such as ACAD It is recommended that the students be made to practice on the latest release of the graphic package.
 - 1.1. Site plan
 - 1.2. Floor plans
 - 1.3. Sections
 - 1.4. Elevations
2. Working Drawings
 - 2.1. Dimensioning
 - 2.2. detailing
3. Presentation drawings
 - 3.1. Site plan
 - 3.2. Floor plans
 - 3.3. Sections
 - 3.4. Elevations
4. 3-d Drawings
 - 4.1. Preparing views horn different angles
 - 4.2. Redening <W>

ELECTIVE-II

AA-640

INTERIOR DESIGN

L T P

Hours/week 3 –

RATIONALE

Students are expected to know, design and execution of building interiors Therefore, the basic knowledge of building construction and detailed knowledge of building materials is required. The students then can help in handling interior projects from the concept stage to the project implementation stage. Also this exercise is necessary since the interiors are becoming more integral part of architecture and considerable stress is being laid in interior design. Teachers while imparting instructions are expected to explain concepts and principles introducing various building finishing materials. The course would be supplemented with literature and sample of materials.

DETAILED CONTENTS

1. Theory of interior design
2. Importance of interior design in buildings and color schemes
3. Psychology and applications of coloring form and texture in interiors
4. Materials used for interior design
5. Introduction to interior design
 - 5.1 Living room
 - 5.2 Bed rooms
 - 5.3. Dining room
 - 5.4. Kitchen
6. Practical exercises and site visits of small buildings such as library, drawn studio, display center shops, residences and the like.

RATIONALE

Some students get employed in state housing boards or urban development authorities Hence the' subject.

DETAILED CONTENTS

1. Introduction to Housing
 - 1.1 Housing Policy, objectives and strategies
 - 1.2 Planned and organic growth development
 - 1.3 Rural and Urban housing
 - 1.4 Traditional housing and its relevance to mass housing
 - 1.5 Housing density and related terms
2. Planning
 - 2.1 Objectives of planning housing area
 - 2.2 Impact of high and low density
 - 2.3 Housing need and demand
3. Slum
 - 3.1 Basic factors contributing to slum conditions
 - 3.2 Slum improvement
 - 3.3 Planning of neighborhood units (self sufficient units)
4. Types of Housing
 - 4.1 Types based on social, economic mixing. Their merits and demerits
 - 4.2 Mass housing (group housing of various income groups- their advantages and disadvantages)
 - 4.3 Plotted development schemes
5. Physical layout
 - 5.1 Linear cluster (row housing)
 - 5.2 Chowk cluster
 - 5.3 Open court cluster
6. Site organization
7. Housing <W><W><W> building codes)
8. <L>

ELECTIVE -II

AA-642 SITE PLANNING

L T P

Hours/week <w>

RATIONALE

Some of the students find employment in departments of town and country planning, housing boards and urban development authorities. They are expected to prepare master plans and layout of housing schemes, road, parking etc. Therefore, this subject would equip the students with appropriate knowledge to perform the above said functions.

DETAILED CONTENTS

1. Introduction to Town Planning
 - 1.1 Regional and urban context of physical planning
 - 1.2 Physical, social and economic aspect of town planning
 - 1.3 Principles of town planning
2. Planning Process
 - 2.1 Land procurement systems and revenue records
 - 2.2 Site planning
 - 2.3 Regional planning
 - 2.4 Traffic and transportation Planning
 - 2.5 Commercial planning
 - 2.6 Industrial planning
 - 2.7 Recreational [planning](#)
3. The Process of Urbanization
 - 3.1 Urban and rural definition
 - 3.2 In - migration and out - migration
4. City development plan
 - 4.1 Master plan, of the city
 - 4.2 Principles of land-use planning
 - 4.3 Neighborhood unit, housing group
 - 4.4 traffic and transportation, Industrial and infrastructure planning
2. Zoning - use zoning, height zoning, density zone. density - net and gross spot zoning etc.
3. Civil services and their maintenance (organization responsible for civil services maintenance)

AA-634 ARCHITECTURAL DESIGN IV

L T P
Hours/week -- -- 12

RATIONALE

A large percentage of Architectural Assistants get employment with private Architects and also many go for self-employment. Therefore, they are required to design residential and public buildings. The course aims at providing practical exercises in designing so as to develop appropriate knowledge and skills in building design. Teachers are expected to show various types of designs of small to medium residential buildings to develop an appreciation of different designs.

DETAILED CONTENTS

5. Study report of a small public building including its parking (3 weeks)
 - 5.1 Preparing a design brief
 - 5.2 Sizes of rooms with placement of furniture
 - 5.3 Sitting of the building
 - 5.4 Orientation
 - 5.5 Circulation
 - 5.6 Parking requirements

6. Design of buildings involving two or more floors, split level etc. The building can be like Hostel, Club, Motel/ small hotel, small college, small shopping center (Name of the building is only meant to give idea about size and scope of design project). At least one project should be done on moderately sloping ground, and only one building to be picked up for design project and presentation drawings.
 - 6.1 Study report (3 weeks)
 - 6.1.1 Case study of existing building types
 - 6.1.2 Study of site
 - 6.1.3 Analysis of requirement and respective areas
 - 6.1.4 Calculation Analysis
 - 6.2 Presentation Drawing (6 weeks)
 - 6.2.1 Plans
 - 6.2.2 Elevations
 - 6.2.3 Sections
 - 6.2.4 Perspective View
 - 6.2.5 Model

7. Two days trine limit sketch design of any small-public building (1 week)
8. Design of small public buildings as mentioned above. (6 weeks)

AA - 633 FIELD/ PRACTICE BASED MAJOR PROJECT WORK

Hours/week L T P
 -- -- 6

Objective

- SITE EXPERIENCE
- SELF MOTIVATION

Methodology

- This exercise is in addition to the regular construction classes Faculty's involvement in this case shall be indirect.
- All the sketches/ recordings measured drawing shall be in free hand, but to a appropriate scale Sketches shall be done on a separate scrape book (10"XB")
- Students shall keep visiting the construction sites regularly in the evenings and on week- ends and keep the records of the visits.
- Complete assignment shall be marked at the end of fifth semester by the teacher in-charge.
- Students shall collect samples and rate list of the materials studied.

CONTENTS

1. Design of railings, compound walls, and signage (name plate etc.)
2. Three interesting entrance doors
3. Spiral staircases
4. Steel doors and windows
5. Complete wardrobe of a residential house
6. External finishes
7. Paints and varnishes