

## 4.1 HISTORY OF ARCHITECTURE - III

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### RATIONALE

The course on History of Architecture develops appreciation regarding past and current trends in the field of architecture. The knowledge of this course will help the students to understand how political, physical, social, economical and technological change affect the architecture, materials and construction techniques. The course covers broad topics like: Islamic Architecture in India, Industrial Revolution, Modern Architecture in Europe and America, Contemporary/post Independence Architecture in India.

The teacher should try to create interest among the students for this course by organizing site visits to the local old monuments. Audio-visual aids should also be used to explain various architectural developments. While imparting instructions, teacher should stress upon the context of form and space, construction methods structural systems and materials. The teacher should motivate the students to take general reference for form, drawings structural solutions and materials from the history, while designing their project.

### DETAILED CONTENTS

1. Islamic Architecture in India (14 hrs)
  - 1.1 Introduction of Islam in India, new building types, structural system and ornamentation (Qutab Complex)
  - 1.2 Development of Indo-Islamic architectural style, the sultanate period of Lodhi's & Tughlaqs.- General architectural vocabulary and construction methods/materials of Lodhi Tomb & Tomb of Ghiya-ud-din Tughlag.
  - 1.3 Provincial Styles- Jaunpur and Bijapur (Jama Masjid and Gol Gumbaz)
  - 1.4 Mughal Architecture-General architectural characteristics to understand architectural vocabulary & construction methods in (Humayun Tomb, Fatehpur Sikri, Red Fort, Taj Mahal at Agra and Jama Masjid at Delhi).
2. Industrial revolution. (06 hrs)
  - 2.1 Industrial revolution and its impact on architecture.
  - 2.2 Influence of new construction materials and functional needs on building types and architectural form, bridges, exhibition halls.

3. Modern Architecture in Europe and America. (16 hrs)
- 3.1 Emergence of modern architecture in Europe. Social, technological and aesthetic concerns of modern movement. New building materials (concrete, steel and glass) and their architectural expression.
- 3.2 Philosophy and key works of Louis Sullivan, Walter Gropius, Frank Lloyd Wright, Mies Van De Rohe, Le Corbusier.
4. Contemporary/post Independence Architecture in India (12 hrs)
- Work of Le Corbusier in India, Louis Kahn, Charles Correa, B.V. Doshi, Joseph Allen Stein and Raj Rewal.
- (Minimum two buildings of each architect to be studied)

### INSTRUCTIONAL STRATEGY

The subject may be taught through audiovisual aids, slides, PowerPoint presentations so as to explain salient architectural features and techniques. Emphasis must be laid on freehand drawing and each student should maintain a sketchbook.

### RECOMMENDED BOOKS

1. Urban Pattern: Arthur B. Gallion. Publisher, Van Nostrand Reinhold, 1993, New York
2. History Builds the Town – Arthur Kohn. Khanna Book Publishing Co. (P) Ltd., New Delhi.
3. World Architecture : An Illustrated History From Earliest Times by Trewin Copplestone, Publisher, Crescent Books, New York
4. Architecture of Towns and Cities – Paul D. Spreinegen, publishing by Rainbow Book Co. New Delhi
5. Space, Time and Architecture – Sigfried B. Giedeon Publisher, Harvard University Press, UK
6. The New Landscape – Charles Correa Publisher: Bombay : Book Society of India, Bombay
7. Charles Correa – William Curtis, Publisher: Mapin Publishing, UK

### SUGGESTED DISTRIBUTION OF MARKS

Topic No.	Time Allotted (Hrs)	Marks Allotted (%)
1	14	28
2	06	12
3	16	34
4	12	26
<b>Total</b>	<b>48</b>	<b>100</b>

## 4.2 STRUCTURE MECHANICS

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### RATIONALE

This is a fundamental course. Which covers principles of Applied Mechanics and Strength of Materials. The course covers force systems, Centroid and Moment of Inertia, Stress and Strain, Shear force and Bending moment calculations/diagrams and Bending Stresses. After going through this course the student shall be able to appreciate the behavior of different structural elements.

### DETAILED CONTENTS

1. Force system and Equilibrium (12 hrs)
  - 1.1 Force: Definition, effect, characteristics, representation and types of forces
  - 1.2 Force Systems: Coplanar and Non coplanar force systems
  - 1.3 Types of coplanar Forces: Collinear, Concurrent, Parallel, Non concurrent and Non parallel.
  - 1.4 Resultant force and components of a force
  - 1.5 Laws of forces: Parallelogram, Triangle and polygon Laws of forces
  - 1.6 Free Body Diagram, Lamis theorem (No proof)
  - 1.7 Calculation of resultant of coplanar force systems
  - 1.8 Concept of Moment, Characteristics of moment, resultant moment, Varignon's theorem (No proof)
  - 1.9 Concept of couple, moment of a couple
  - 1.10 Equilibrium of rigid bodies
  
2. Centroid and Moment of Inertia (14 hrs)
  - 2.1 Definition of centre of Gravity and Centroid
  - 2.2 Centroid by method of moments of areas for square, rectangular, triangular, L-shape, T-shape and I shape cross- sections.
  - 2.3 Moments of Inertia by methods of moments and Radius of Gyration.
  - 2.4 Parallel axis theorem (no derivation)
  - 2.5 Moment of Inertia of rectangular section.

- 2.6 Moment of inertia of a Triangular section (no derivation)
  - 2.7 Moment of Inertia of a Circular section.
  - 2.8 Perpendicular Axis Theorem (no derivation)
  - 2.9 Numerical on moment of inertia of Rectangular, Triangular and Circular laminas only.
3. Stress and Strain (06 hrs)
- 3.1 Elasticity, Elastic limit
  - 3.2 Definition of stress and strain
  - 3.3 Types of stress and strain
  - 3.4 Stress strain curve for mild steel
  - 3.5 Hook's Law (Numerical)
4. Shear Force and Bending Moment (26 hrs)
- 4.1 Types of loads- Dead load, Live load, snow, wind and seismic loads as per IS: 875
  - 4.2 Types of loading: Point load, Uniformly distributed load and uniformly varying load.
  - 4.3 Types of Supports: Hinged, fixed supports, types of reactions provided by each type of support.
  - 4.4 Types of Beams: Simply supported, cantilever, overhanging and continuous beams (description only)
  - 4.5 Concept of bending moment and shear force.
  - 4.6 Bending moment and shear force diagrams for simply supported, cantilever and over hanging beams subjected to point loads and uniformly distributed loads only
  - 4.7 Calculation of location and magnitude of Max Bending moment and point of contraflexure
5. Bending stresses in Beams (14 hrs)
- 5.1 Introduction: Tension, compression
  - 5.2 Simple Bending and assumption of Simple Bending Theory.

- 5.3 Position of Neutral Axis.
  - 5.4 Section Modulus. Moment of Resistance. Application of flexure equation ( $M/I = f/y = E/R$ ) (no derivation)
  - 5.5 Maximum and permissible bending stresses.
6. Analysis of Perfect Frames (8 hrs)
- 6.1 Types of pin jointed frames. Assumptions in computing the forces in members of a perfect frame. Analysis of perfect frames by method of joints.

### **INSTRUCTIONAL STRATEGY**

This subject is introduced so that diploma holder in Architectural Assistantship may appreciate the concepts and principles of structural design of various elements of building and are able to apply the knowledge gained through the subject for the design of simple and small components. Teacher should give simple exercises involving the applications of various concepts and principles being taught in the subject. Efforts should be made to prepare tutorial sheets on various topics and students should be encouraged/guided to solve the tutorial problems independently. Teacher may conduct weekly small quiz sessions to know the students' level of understanding and if need be teacher may reinforce the concepts and principles related to structural behaviour of elements/members of building components.

### **RECOMMENDED BOOKS**

1. Structure Mechanics for Architects – Prof. Harbhajan Singh, Pub. Abhishek Publications, Chandigarh
2. Mechanics of Solids- DK Singh-Galgotia Publications Pvt. Ltd., New Delhi.
3. Fundamentals of Applied Mechanics- AS Sarao Victor Gambhir Gaurav Agrawal. By Satya Prakashan New Delhi.
4. Structural Mechanics-VS Prasad-Golgotia Publication Pvt. Ltd., New Delhi.
5. Engineering Mechanics and strength of Materials-Dr RK Bansal –Laxmi Publications Pvt. Ltd., New Delhi.
6. A text book of Engineering Mechanics- RK Rajput-Dhanpat Rai Publications Pvt. Ltd., New Delhi
7. Introduction to structural Mechanics- PS Smith-Macmillan Press Ltd., (UK).
8. Applied strength of Materials-Alfred Jensen and Harry Mcgraw- Hill Book Company London.
9. Theory of Structures by Rajeev Kumar; Satya Prakashan, New Delhi.
10. Structural Analysis (Vo. 1 & 2) by SS Bhavikatti; Vikas Publishing House Pvt. Ltd., New Delhi – 110 014
11. Computational structured Machines by S. Rajasekran & G.Sankar Subramanian; Prentice Hall of India (P) Ltd., New Delhi – 110 001

### SUGGESTED DISTRIBUTION OF MARKS

<b>Topic No.</b>	<b>Time Allotted (Hrs)</b>	<b>Marks Allotted (%)</b>
1	12	16
2	14	18
3	06	08
4	26	30
5	14	18
6	08	10
<b>Total</b>	<b>80</b>	<b>100</b>

### 4.3 BUILDING BYE-LAWS

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#### RATIONALE

In any architectural organization, diploma holders are expected to prepare the municipal drawings to get it sanctioned from the local development body. For this purpose, diploma holders in Architectural Assistantship must have the knowledge of the set of norms, rules and regulations and building bye-laws of the local body. Therefore, this course is essential to be taught to diploma holders.

Teachers should refer to local bye-laws/building bye-laws while teaching this subject.

#### DETAILED CONTENTS

1. Need of building byelaws for urban development. (03 hrs)
2. Basic Terminology (06 hrs)
3. Factors affecting planning of byelaws: (06 hrs)
  - Light and ventilation
  - Mass
  - Volume
  - Open space
  - Skyline
  - Setbacks.
  - Parking and Fire Safety
  - Floor Area Ratio & Floor space index
4. Bye laws (06 hrs)
  - Study Building Bye-laws of local development authorities
  - Introduction to National Building Code.
5. Zoning (06 hrs)
  - Concept of zoning
  - Objectives of zoning
  - Types of zoning
6. Case Study of existing residential and commercial building with respect to implementation of local Bye laws (04 hrs)
7. Study of various Performas to be used (03 hrs)
8. BIS and CPWD By-laws/standards for removing Architectural barriers for persons with disabilities (PWDs) (04 hrs)

9. Introduction to earthquake resistant regulations, Code provisions (IS-1893), seismic zoning (04 hrs)
10. Preparation of one set of municipal drawing of a residential building already designed in A.D. showing all services along with performas. (06 hrs)

### **INSTRUCTIONAL STRATEGY**

This is a practical oriented subject. The teacher should make efforts to procure local bye-laws/building bye-laws and refer them to the students while imparting instructions in the class room. The relevant theory/instructions should be dovetailed with the design/drawing exercises. Experts working in the Municipal Corporations/Municipal Committees/ State Public Works Department/Consultants/Professional Architects may be invited to present case studies to the students. Students may be taken to some typical sites where the municipal drawings are maintained to demonstrate to them the real life applicability and importance of the subject. Some real life municipal drawings may also be presented to the students in the classroom. The students should maintain portfolio of the work done by them throughout the session. The teachers may conduct viva voce on completion of each assignment. The students may be given group and independent assignments.

### **RECOMMENDED BOOKS**

1. Architect's Hand Book by Charanjit Shah; S Shah Publisher: New Delhi
2. PUDA Bye Laws; Publisher Mc Graw Hill Book, New Delhi
3. N.B.C.; Publisher. Frank J Catanzaro Publishing
4. Local Bodies Legislation; Allied Publishers, New Delhi
5. Chandigarh Bye laws; Charotar Publishing House Pvt. Ltd., New Delhi

### **SUGGESTED DISTRIBUTION OF MARKS**

<b>Topic No.</b>	<b>Time Allotted (Hrs)</b>	<b>Marks Allotted (%)</b>
1	03	06
2	06	12
3	06	14
4	06	14
5	06	12
6	04	08
7	03	06
8	04	08
9	04	08
10	06	12
<b>Total</b>	<b>48</b>	<b>100</b>



## 4.4 WORKING DRAWING - I

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### RATIONALE

Preparation of working drawings and detailing forms the most important activities of diploma holders in Architectural Assistantship. Students are expected to develop mastery of skills in preparing working drawings of different building components and their detailing.

Teachers while imparting instructions are expected to show various components of building under construction by organizing field visits or use models and other audio-visual media to clarify the concepts involved in preparing working drawings. Teachers are expected to lay considerable stress on proportioning, dimensioning, specification writing, lettering and composition of drawing work whilst supervising students. Teachers should also take into consideration environmental aspects while teaching preparation of working drawings.

### DETAILED CONTENTS

1. Preparation of working drawings for a simple single storeyed residential building:
  - 1.1 Site Plan  
Preparing site plan on a suitable scale with complete dimensioning showing plot area, covered/built-up portion within the site, Approach road, side roads, adjoining buildings/features, boundary wall with gates layout of sewage pipes, water supply pipes, rain-water pipes. (01 sheet)
  - 1.2 Preparation of foundation layout plan with benchmark, section details of foundations for brick external wall, brick internal wall, brick partition wall, brick toe wall, brick boundary wall and R.C.C Column. (02 sheet)
  - 1.3 Ground Floor Plan  
Preparation of Ground Floor plan with dimensions and specifications of various building components, schedule of joinery i.e. doors, window ventilators etc. along with showing the layout of sewage pipes, water supply pipes, Rain water pipe. (01 sheet)
  - 1.4 Terrace Plan:  
Preparation of terrace plan with the rain water disposal details and overhead water tank (Tile Terrace/Gola/Coba etc) (01 sheet)
  - 1.5 Section:  
Cross and longitudinal sections representing relationship with plans and elevation showing all heights, specifications, cill/lintel details etc.

1.6	Elevations: Front and rear elevations showing all the levels on faced to relate it to plan and section	(01 sheet) (01 sheet)
1.7	Details of: -Toilet (Plan, Elevations and Sections as required) with specifications and details	(02 sheets)
	- Kitchen (Plan, Elevations of Sections as required) with specifications and details	(02 sheets)

Total No. of Sheets: 11

### **INSTRUCTIONAL STRATEGY**

This subject forms the basis for making the students ready to work in the field and is highly practical oriented. Teachers, while imparting instructions in the class room, should lay emphasis on proportioning, dimensioning, specification writing, lettering and composition of the drawing work of the students. Field visits may be arranged to .the construction sites of residential, commercial and public buildings to demonstrate various components/stages of buildings under construction. Students should be exposed to: the system of preservation and maintenance of working drawings at the site during the field visits. Teachers may procure some working drawings of existing/live buildings and present the same to the students. The students should be encouraged to maintain portfolio ,)f the work done by them throughout the session and give seminar. Teachers may conduct viva voce on completion of each assignment. Experts from the design organizations may be invited to present case studies, to motivate the students. Repetitive exercises should be given to the students, till they develop confidence and attain proficiency. Relevant BIS codes and conventions may be referred/followed, while imparting instructions. Teachers may introduce the topics by giving simple set of instructions before giving any assignment to the students

### **RECOMMENDED BOOKS**

1. Construction Details by DK Ching, Standard Publishers, New Delhi
2. Building Drawing by MG Shah, CM Kale, SY Patki; Tata McGraw Hill Publisher, New Delhi

## 4.5 COMPUTER APPLICATIONS IN ARCHITECTURE - I

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### RATIONALE

In the present times an architectural assistant should be capable of drafting drawings on the computer. Due to increasing need for computerized drawings by most architects for their ease of drafting, editing, managing and presentation at the end of the course the students should be able to make 2-D architectural drawings for presentation and construction purposes. The student should get familiar with the latest AutoCAD versions.

### DETAILED CONTENTS

Note: Relevant theory may be taught along with practical exercises in each topic.

#### 1. Introduction to AutoCAD (Latest version or AutoCAD2007) (02 hrs)

- Input devices
- Graphics
- Starting AutoCAD
- Inside the drawing editor
- Commands in the menus (Tool bars)
- Accessing Commands
- Entity selection
- Entering coordinates
- Folders for organizing drawings and files

Exercise: Creating folders and sub folders

#### 2. Creating and Saving a new Drawing (02 hrs)

- Commands and options to create new drawings
- Units
- Limits
- Snap
- Grid
- Ortho
- Layer
- Application of layers
- Open a new, existing drawing
- Save, save as, quit, close, exit
- Customization of tool bars

Exercise: Setting up a new drawing with units, limits etc

3. Drawing Commands (12 hrs)

- Line
- Poly line/Double line.
- Arc
- Ellipse
- Polygon
- Rectangle
- SP line
- Circle
- Sketch.
- Hatch
- Donuts

Exercise: Making a composition of different geometrical shapes using various drawing commands

4. Viewing an Existing Drawing (04 hrs)

- Zoom
- Pan
- Redraw and Regen all
- Regen Auto
- View

Exercise: Viewing, zooming of existing drawing made in section 3.

5. Modifying an Existing Drawing (16 hrs)

- Undo Redo/Oops
- Trim
- Move
- Offset
- Rotate
- Array
- Stretch
- Divide
- Champher
- Erase
- Break
- Copy, multiple copy
- Mirror (Mirror test)
- Change (change properties)
- Extend

- Explode
- Blip mode
- Scale
- Fillet

Exercise: a) Modifying composition made in section 3  
 b) Making plan, elevation and section of simple building

6 Making and Inserting Blocks (12 hrs)

- Blocks
- Insert block
- Base
- Using library for blocks
- W-block
- X-ref
- Explode

Exercise: Inserting furniture, fixtures, trees etc. in the plans, sections and elevations made in section 5.

7. Dimensioning and Text (08 hrs)

- Dimension type, style, units
- Dimension utilities
- Dimension variables
- Dimensioning of different elements like (Horizontal, vertical, inclined). Arc. Circle Radius, diameter), continuous dimensioning etc.
- Editing dimension text and updating (adding new text and editing existing text)
- Text style – font types, height, width factor etc. as per plotting paper size.

Exercise: Dimensioning and editing text in composition made in Sections 5 and 6.

8. Plotting Drawings (08 hrs)

- Plot command
- Selecting area for plotting
- Scale of plot, scale to fit
- Selecting plotting device
- Selecting paper size and type
- Selecting black and white or colored plots
- Selecting appropriate print speed, quality
- Print preview
- Working in Paper space and plotting

## **INSTRUCTIONAL STRATEGY**

This is a highly practical oriented subject. Efforts should be made by the teachers to procure relevant softwares and give practical exercises to individual students, so that they develop proficiency in operating computer softwares as applied to the profession of architecture. The theoretical instructions should be dovetailed with practical work. Towards the end of the session each student should be given independent computer based project assignment. Experts from practicing architectural field may be invited to deliver talks and for presentation of live case studies on computers to motivate the students and increase their level of awareness. Special efforts should be made by the teachers to develop well defined small tutorial exercises on each topic and supervise the exercises being performed by the student throughout the session. If need be some basic operational fundamental exercises may be repeated in the beginning of the session. Special emphasis may be laid on training the students through availing help from the user friendly architectural softwares so that they develop confidence and are able to work independently.

**Note :- The Board will set the Question Paper for exercises for external examination**

## 4.6 BUILDING CONSTRUCTION - III

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### RATIONALE

Students of architectural Assistantship at diploma level are supposed to prepare structural drawings, working drawings and detailed drawings of various components of buildings. Also students are expected to design small residential building. For this purpose, it is essential that students are taught various components of building construction comprising of foundation, super structure, openings, roofs, staircases, flooring and finishing and other allied building components.

Therefore, the subject of building construction is very important for students undergoing diploma course in architectural assistantship.

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. While preparing drawings, teachers should lay considerable stress on proportioning, dimensioning, specification writing and printing and composition of drawing work.

Students should be asked to maintain a sketchbook for recording mistakes done by students in the preparation of drawings.

### DETAILED CONTENTS

- |   |  |
|---|--|
| 1. Finishes   | Stone cladding and Tile lining (2sheets)   |
| • Plastering and pointing   |  |
| • Stone cladding and tile lining  |  |
| • Gravel and wash marble finish   |  |
| • Panellings and fibrous board finishes   |  |
| 2.  | Drawing of false ceiling details (1 sheet)   |
| • Interiors of Buildings  | Drawing of counter (1 sheet)   |
| • False ceiling and partitions  | Panelling (1 sheet)  |
| • Different counters as per usage   |  |
| • Paneling and fibrone board finishes   |  |
| 3. Doors and Windows  | Drawing of aluminum door and window showing fixing, beading, hardware's etc. Drawing of sliding, and revolving doors (3sheets) |
| • Using different aluminum sections   |  |
| • Anodizing of aluminum sections  |  |
| • Beadings in conjunction with aluminum section   |  |
| 4. Earthquake resistant building configuration (Principles of earthquake resistance, effect of building form on seismic behaviour, building configuration for improved earthquake resistance) | (2 sheets showing Architecture and Structural details/sketches)  |

Total Number of Drawings: 10

### **INSTRUCTIONAL STRATEGY**

This subject is of practical in nature. While imparting instruction for preparation of various drawings of different types of buildings and their components, the teacher should organize demonstration and field/site visits to show various stages, sizes and scales of operations involved in building construction. The teacher should involve the theoretical aspects of the instructions to the students before drawings are attempted by the students. Students may prepare the port-folio of the work done by them throughout the session. Teacher may also organize viva-voce after each drawing assignment so as to test the level of understanding of the students about unlying concepts, principles, and procedures.

### **RECOMMENDED BOOKS**

1. Building Construction by WB Mackay; Khanna Publisher, New Delhi
2. Building Construction by SP Bindra and SP Arora; Publisher Dhanpat Rai & Co. New Delhi
3. Building Construction by BC Punmia; Publisher Laxmi Publication, New Delhi
4. Building Construction by Sushil Kumar; Standard Publisher, New Delhi
5. Construction of Buildings (Vol I and II) by Barry
6. Building Construction by VB Sikka; Publisher Tata McGraw Hill Publisher, New Delhi
7. Building Construction by Rangwala; Publisher Charotar Publishing House Pvt. Ltd., New Delhi



## 4.7 ARCHITECTURAL DESIGN - III

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### RATIONALE

To develop an understanding of the inter-relationship of the various components of a small public building upto 2 storey.

### DETAILED CONTENTS

Three exercises on architectural design spanning to 3-4 weeks duration to be done individually. The public building to be designed may be a small health-centre, nursery school, local neighbourhood shopping market or the like. The activity requirements should be laid down by the subject teacher. While the areas required for each activity should be worked out by the student on his learning from the anthropometric studies carried out earlier. The building must not exceed two storeys. Emphasis to be laid on space analysis and technical aspects of the design.

- Note:
1. The emphasis must be on site visits and case studies
  2. The final submission should be in the form of rendered drawings to explain the scheme and block/ detailed model must be included for each project.
  3. Each Design project must include the following drawings: Site plan, Detailed floor plans showing furniture layout, Sections, Elevations, Freehand 3-D views, Perspectives.

### INSTRUCTIONAL STRATEGY

This is one of the most important practical oriented subject for diploma in architectural assistantship. While imparting instruction, special visits may be arranged to demonstrate and explain important architectural features of different types of residential, commercial and public buildings. Practicing architects may be invited from time to time to present case studies and to deliver expert lectures on important elements like form, function, balance, light of shadow, shape, plane, volume, line, rythem, proportions, textures and other such element appropriate to various designs. Teacher may present some of the already completed design works of practicing architects to the students and explain the important features and elements. Audio-visual material available in this field may be procured and presented to the students from time to time. Students should be encouraged to visit relevant web-sites and teachers should develop the design problems/assignments which can be taken up by the students using relevant and appropriate software. Students should be given group and independent design/drawing assignments and they should also maintain sketch book/portfolio of all the assignments given to them throughout the session. Teachers may conduct viva-voce on completion of each assignment. Students may present seminars towards the end of the session.

## **RECOMMENDED BOOKS**

1. Time Saver Standards for Building Types by Joseph De Chiara and John Callendera
2. Architects Data by Neufert; Publisher Blackwell Publishing Ltd. 9600 Garsington Road, Oxford, OX4 2DQ, UK
3. Space, Time and Order by DK Ching; Publisher: John Wiley & Sons, New Delhi
4. Architectural Aesthetics by Sangeet Sharma, Abhishek Publication, Chandigarh

## **INDUSTRIAL TRAINING OF STUDENTS** (during summer vacation after IV Semester)

It is needless to emphasize further the importance of Industrial Training of students during their 3 years of studies at Polytechnics. It is industrial training, which provides an opportunity to students to experience the environment and culture of industrial production units and commercial activities undertaken in field organizations. It prepares student for their future role as diploma engineers in the world of work and enables them to integrate theory with practice. Polytechnics have been arranging industrial training of students of various durations to meet the above objectives.

This document includes guided and supervised industrial training of a minimum of 6 weeks duration to be organised during the semester break starting after second year i.e. after IV Semester examinations. The concerned HODs along with other teachers will guide and help students in arranging appropriate training places relevant to their specific branch. It is suggested that a training schedule may be drawn for each student before starting of the training in consultation with the training providers. Students should also be briefed in advance about the organizational setup, product range, manufacturing process, important machines and materials used in the training organization.

Equally important with the guidance is supervision of students training in the industry/organization by the teachers. A minimum of one visit per week by the teacher is recommended. Students should be encouraged to write daily report in their diary to enable them to write final report and its presentation later on.

An internal assessment of 50 and external assessment of 50 marks have been provided in the study and evaluation scheme of V Semester. Evaluation of professional industrial training report through viva-voce/presentation aims at assessing students understanding of materials, industrial process, practices in industry/field organization and their ability to engage in activities related to problem solving in industrial setup as well as understanding of application of knowledge and skills learnt in real life situations. The formative and summative evaluation may comprise of weightage to performance in testing, general behaviour, quality of report and presentation during viva-voce examination. It is recommended that such evaluations may be carried out by a team comprising of concerned HOD, teachers and representative from industry.

Teachers and students are requested to see the footnote below the study and evaluation scheme of IV Semester for further details.