

APTE ACADEMY

TRAINERS IN BUILDING
ENGINEERING SERVICES

CHETAN ARVIND APTE
(DIRECTOR)

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INFORMATION BROCHURE – PLUMBING RELATED COURSES

NEED FOR SPECIALISED TRAINING IN PLUMBING ENGINEERING



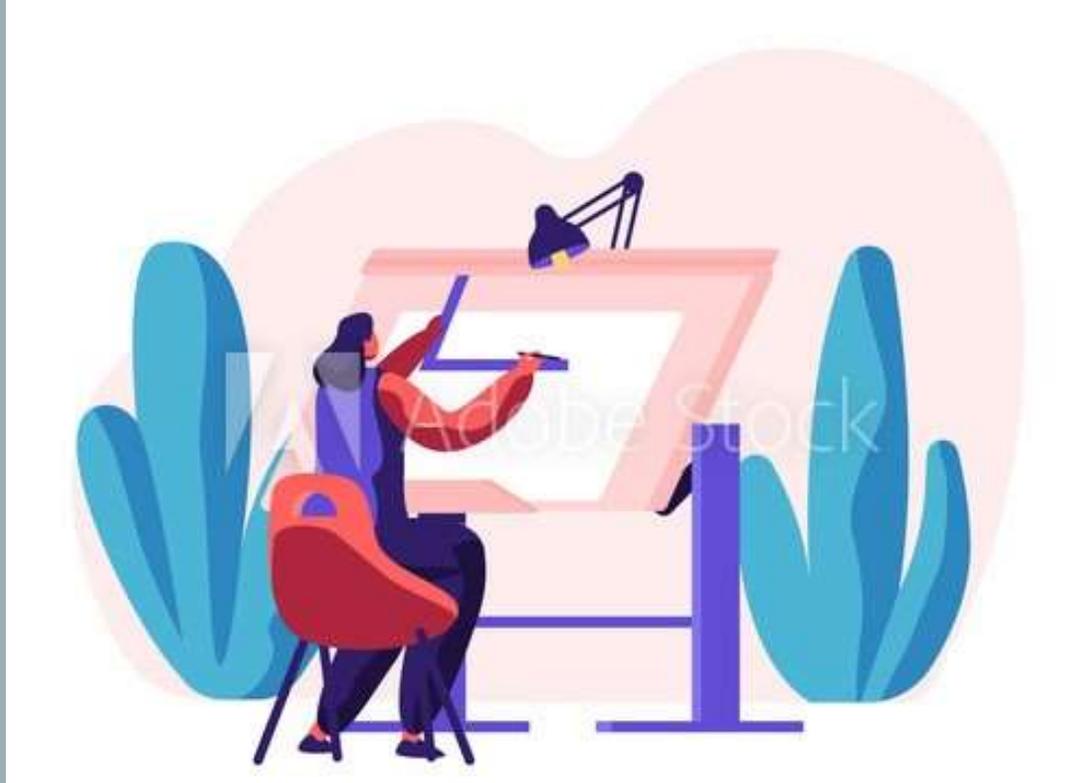
The Civil Engineering course teaches hydraulics and fluid mechanics but to best of our understanding, there is not subject on **building plumbing**.

Mechanical Electrical Plumbing (MEP) Consultancy is an ever-growing industry and lacks trained manpower. Requirement of trained engineers is very high as compared to their availability.

Formal training in plumbing design helps the engineer to anticipate and understand troubles at site which can be prevented.

Properly designed plumbing systems avoid unhealthy environmental conditions and that is role of a Public Health Engineer.

ELIGIBILITY CRITERIA FOR PLUMBING DESIGN COURSE



Freshers:

Students with diploma or degree in civil/mechanical engineering.

Students with degree in architecture.

Experienced professionals:

Minimum 6 months experience in building construction industry

At construction site.

At MEP consultant's or architect's office.

At builder's office.

WHY **APTE** ACADEMY?

MASTER TRAINER: CHETAN ARVIND APTE



Introduction:

Civil Engineering graduate with Post Graduate degree in Marketing management.

Owner and Director at **APTE** CONSULTANTS

30+ years of experience in the field of design and design management of Building Engineering Services for all types of building construction projects.

Certified as Master Trainer by India Plumbing Sector Skill Council (IPSSC).

More than seven years experience in conducting training in the domain of plumbing (classroom as well as online).

Large bandwidth of experience as plumbing and fire fighting consultant working on all types of building construction projects and plumbing laboratories.

PLUMBING CONSULTANCY EXPERIENCE OF MASTER TRAINER

Types of Projects:

Residential, commercial, institutional and mix used buildings.

Highrise buildings upto 300 m tall.

Hotels and hospitals.

Airport terminal.

Convention and exhibition centres.

Large townships.

Factories and warehouses.

Individual bungalows.

Plumbing laboratories.

TRAINING PROVIDED IN PLUMBING

1. Ten batches of plumbing design as online class.
2. Six batches of plumbing design conducted for Dimensional Academy, Mumbai.
3. Four batches of Training of Trainers for plumbing for IPSSC.
4. On site training for plumbing supervisor for B U Bhandari Landmarks, Pune.
5. Internal Training of Trainers for DIFPT.



Classroom Training of Plumbing Supervisor at Vaastu Viva site of B U Bhandari Landmarks

OUTLINE OF PLUMBING DESIGN COURSE – PAGE 01

No	Module Title	Description	Learning Outcome
1	Introduction to Plumbing	Evolution of word Plumbing. Historical references. Concept of Public Health Engineering.	Understanding the need of designing plumbing systems for buildings
2	Project Brief	Types of project as per use and as per structure type. Plot area and building area. Contours and levels.	Understand project and its surroundings. Select design criteria/considerations. Understand design challenges if any.
3	Design Considerations	Selection of systems for water supply, sewage and storm water disposal. Method of rain water harvesting. Requirements of STP and WTP. Requirement of sewage pumping.	Location of underground and overhead tanks, pump rooms. Type of sanitary down take method. Type of water supply method. Connections of water supply, sewage and rain water disposal available.
4	Plumbing Drawings	Understanding plumbing drawings for toilets, kitchens and other wet areas. Plumbing in shafts abutting to wet areas, and on terrace/roof. Transfer of plumbing services in parking floors. Plumbing infrastructure.	Understanding architect's drawing. Create plumbing drawings. Identifying plumbing shafts and need to transfer services. Coordination with other services. Requirement of penetrations in structural elements.

OUTLINE OF PLUMBING DESIGN COURSE – PAGE 02

No	Module Title	Description	Learning Outcome
5	Design Standards	National Building Code of India. Other relevant Indian and International Standards.	Use of design standards for selection of water supply and drainage systems, perform design calculations
6	Design Calculations	Calculate water requirement and sewage generation. Establish capacities of water tanks and sewage treatment plants. Calculations of pipe sizes for various purposes such as water supply, sewage and storm water disposal.	Concept of Fixture Unit and its use in calculations of flow. Various formulae for design calculations. Concept of ground level, invert level, bottom of sleeve, bottom of pipe. Levels of services crossing each other.
7	Plumbing Materials	Pipes for different purposes and their materials. Concept of Water Seal and Traps. Types of Traps. Valves for various purposes. Sanitary fittings and fixtures.	Selection of material as per project brief. Concept of SWR pipes. Pressure ratings of different pipes and valves. Selection of valves and accessories.

OUTLINE OF PLUMBING DESIGN COURSE– PAGE 03

No	Module Title	Description	Learning Outcome
8	Pumps	Definition, types and requirement of pump. Calculations for capacity of pumps. Selection of pump and pumping systems for water supply, sewage lifting and dewatering.	Concept of suction and delivery head. Calculations for head, discharge and electrical power requirement. Concept of positive and negative suction. Special considerations for sewage lifting and dewatering pumps. Concept of working and stand by pumps. Layout of pump room.
9	Overview of Sewage and Water Treatment Plants	WHO standards for quality of water. Physical and chemical analysis of water and type of treatment based on it. Types of sewage treatment methods. Commercially used treatment methods	Requirement of treating water, sewage and other effluents. Schematic design and process diagrams. Use of recycled water and dealing with excess treated water.
10	Tender Documents	Work specifications and procedures of execution. Methods of testing and measurements. Bill of quantities. Budgetary estimates.	Significance of these documents. Writing work specifications. Importance of description of work item. Actual measurement of quantities and preparing BOQ. Preparing cost estimates.

BENEFITS OF PLUMBING DESIGN COURSE

For candidates:

- Becoming industry ready.

- Higher chances of employment.

- Macro level understanding of plumbing consultancy work.

For employers i.e. plumbing consultants, plumbing contractors, civil contractors, cost consultants, builders and developers:

Candidate knows approach to design plumbing systems for different types of projects hence

- Lesser induction time.

- Lesser expenses for on job training.

- Selected employee can immediately working on assigned project.

SALIENT FEATURES OF PLUMBING DESIGN COURSE

Course covers the important aspects of plumbing design such as

- Type of project and understanding project requirements.

- Understand conditions of surroundings which affect design of plumbing systems

- Materials of plumbing.

- Selection of design criteria based on applicable design standards.

- Understanding architect's drawings and making plumbing drawings.

- Design calculations for plumbing systems.

- Importance of interaction with client/owner, architects and other consultants during the progress of design.

- Exercise at the end of each module.

- Field visit to get feel of plumbing work at construction site.

ELIGIBILITY CRITERIA FOR PLUMBING ORIENTATION COURSE



Experienced plumbers

Existing plumbing supervisors

Existing site supervisors for civil works

Site engineers and project managers

Basic experience in plumbing required but not mandatory.

OUTLINE OF PLUMBING ORIENTATION COURSE – PAGE 01

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2	Plumbing Materials	Pipes for different purposes and their materials. Concept of Water Seal and Traps. Types of Traps. Valves for various purposes. Sanitary fittings and fixtures.	Selection of material as per project brief. Concept of SWR pipes. Pressure ratings of different pipes and valves. Selection of valves and accessories.
3	Pipe Joining	Chasing in walls for concealing pipes. Joining methods of different types of pipes based on their material. Recommended procedure of testing joints/	Importance of leaving mold for pipe chase in RCC walls. Precautions to be taken while joining different types of pipes.
4	Building Plumbing	Critical places requiring attention	Avoiding some small to near fatal mistakes.

OUTLINE OF PLUMBING ORIENTATION COURSE – PAGE 02

No	Module Title	Description	Learning Outcome
5	Underground Services	Critical places requiring attention. Layout of services with respect to each other.	Avoiding some small to near fatal mistakes. Coordination of plumbing services with other engineering services.
6	Reading Drawings	Definition of plumbing drawings. Contents and details of plumbing drawings.	Understand consultant's design intent and hence expected behavior of the plumbing systems. Working at site as per drawing.
7	Reading Tender Documents	Importance and contents of tender documents.	Understanding correlation among drawings, BOQ and specifications.
8	Pumps	Definition, types and requirement of pump. Calculations for capacity of pumps. Selection of pump and pumping systems for water supply, sewage lifting and dewatering.	Concept of suction and delivery head. Calculations for head, discharge and electrical power requirement. Concept of positive and negative suction. Special considerations for sewage lifting and dewatering pumps. Concept of working and stand by pumps. Layout of pump room.

OUTLINE OF PLUMBING ORIENTATION COURSE – PAGE 03

No	Module Title	Description	Learning Outcome
9	Overview of Sewage and Water Treatment Plants	WHO standards for quality of water. Physical and chemical analysis of water and type of treatment based on it. Types of sewage treatment methods. Commercially used treatment methods	Requirement of treating water, sewage and other effluents. Schematic design and process diagrams. Use of recycled water and dealing with excess treated water.
10	Design Considerations	Selection of systems for water supply, sewage and storm water disposal. Method of rain water harvesting. Requirements of STP and WTP. Requirement of sewage pumping.	Location of underground and overhead tanks, pump rooms. Type of sanitary down take method. Type of water supply method. Connections of water supply, sewage and rain water disposal available.

BENEFITS OF PLUMBING ORIENTATION COURSE

For candidates:

- Better understanding of plumbing systems.

- Trips and tricks for joining pipes.

- Do's and Don'ts plumbing installations.

- Understand important technical aspects of building plumbing.

- Insight of plumbing infrastructure.

- Reading plumbing drawings and tender documents.

- Identify materials required and their quantities.

For employers i.e., builders and contractors

- Candidate knows approach to understand the design and install plumbing systems accordingly.

- Reduction in wastage of plumbing materials.

- Lesser induction time.

- Lesser expenses for on job training.

ADDITIONAL BENEFITS TO CANDIDATES

Better understanding of plumbing systems.

Enhanced communication skills of the candidates.

Up-skilling of existing plumbers and plumbing supervisors.

Preparation of task list for the day/week.

Understand reporting structure at site and communicate accordingly.

CONTACT INFORMATION:

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