

COURSE SCHEDULE

Topic	Time *hrs.)	Speaker
Module 1 – Foundations Introduction to Piping Engineering; EPC Roles & Career Paths; PFD & P&ID Basics; Line List & Equipment List Basics	8	Mr.Ravideep Singh Chawla
Module 2 – Piping Engineering Basics Pipe Materials & Ratings; Piping Components; Valve Types & Symbols; Isometrics & GA Drawings; Basics of Supports & Stress; Insulation & Heat Tracing	8	
Module 3 – Rotating Equipment Piping Pump Types & Components; Pump Curves & NPSH; Compressor Types; Turbines, Blowers & Fans	8	
Module 4 – Static Equipment Piping Pressure Vessel; Heat Exchangers; Columns & Reactors; Storage Tanks; Filters & Strainers	8	
Module 5 – Layout, Construction & Safety Plot Plan & Equipment Layout; Nozzle Orientation & Access; Hazardous Area Classification; Welding, Fabrication & NDT; Hydrotest & Commissioning; Relief Devices & Firefighting	8	
Module 6 – Introduction to Software & Placement Prep Introduction to SmartPlant / E3D / AutoCAD; EPC Interview Prep; Equipment & Stress Case Studies; Mini P&ID & Layout Exercise allotment	10	
Evaluation	1	
Valedictory function	1	

***NOTE* : This course will be for a duration of 3 months, conducted every Saturday at Thadomal Shahani Engineering College. Participants may attend this course in online mode as well**

COURSE SCOPE

Piping design is an interdisciplinary field which needs engineers from chemical, mechanical, civil engineering disciplines.

THIS IS PROJECT AND PROBLEM BASED COURSE.

This certificate course will help participants to:

1. Learn basics of piping components and their applications.
2. Get practically acquainted with process drawings (Block Diagram, Process Flow Diagram, Piping and Instrumentation Diagram, Piping Material Specification, Line List, Utility Distribution Diagram).
3. Carry out stress analysis in piping
4. Carry out piping design for various static and dynamic equipments
5. Prepare pipe drawings
6. After completing the course, participants will be:
 - Able to identify and select piping components.
 - Prepare process and piping diagrams.
 - Carry out piping design for equipment
 - Work as piping design engineers in corporations and offer innovative solutions to industrial problems.



CERTIFICATE COURSE IN INNOVATIONS IN PIPING DESIGN

Convenor

Dr.G.T.Thampi

Principal

**Thadomal Shahani
Engineering College**

Co-Convenor

Dr. Nita Mehta

Head of Department

Coordinators

Prof. Ravindra Joshi

Prof. Prasad Parulekar

Dr. Ramesh Bhande

External Expert

Mr. Ravideep Singh Chawla

Organized By

**Chemical Engineering Department
in collaboration with IQAC**

Thadomal Shahani Engineering College

1. Established in 1983, Thadomal Shahani Engineering College (TSEC), founded by Hyderabad (Sind) National Collegiate Board, is recognised by the Government of Maharashtra, approved by All India Council for Technical Education (AICTE) and Affiliated to University of Mumbai. It offers a 4-year Bachelor of Engineering (B.E.) Degree program in Artificial Intelligence and Data Science, Information Technology, Computer Engineering, Electronics & Telecommunication and Chemical Engineering.
2. The Chemical Engineering Department is well-equipped with state-of-the-art infrastructure and laboratories as per the Mumbai University Syllabi. The department has highly qualified core faculty with an incredible professional profile to meet the emerging trends and challenges in the field of chemical engineering and allied areas on a global platform. The department is accredited by the National Board of Accreditation for a period of three years until June 2025.
3. The Chemical Engineering Department strives to impart high-quality technical education with a delicately struck balance of fundamental knowledge, practical exposure and novel concepts.
4. The department facilitates various training programmes in collaboration with industries, tailor-made internships to cater to the unique interests of students, regular lecture series by experts from various fields of chemical engineering and intentional honing of talents and skills of students to aid in achieving their future career objectives.

COURSE CONTENT

Course Structure: 6 Modules (50 hours)

About the Course – The Certificate

Course on

“Innovations in Piping Design” will help students gain practical knowledge in piping.

Module 1: Foundation of piping (8 hrs.)

Module 2: Piping Engineering Basics (8 hrs.)

Module 3: Rotating Equipment Piping (8 hrs.)

Module 4: Static Equipment Piping (8 hrs.)

Module 5: Layout, Construction and Safety (8 hrs.)

Module 6: Introduction to Software and Placement Preps (10 hrs.)

Organising committee:

Prof. Ravindra Joshi


Prof. Prasad Parulekar

Dr. Ramesh Bhande

Internal Expert:

Dr. Trupti Dharmarao

COURSE DETAILS

Duration	50 hours Certificate Course
Eligibility	T.E./B.E. Chemical /Mechanical Engg students
Criterion	Final year Chemical/Mechanical students and interested faculty
Seats/Capacity	40 participants per batch
Admission	First-come first-served basis
Registration link	https://docs.google.com/forms/d/e/1FAIpQLSdG9dTB1q-4ET9YmP2ZGibLW4uQKzeoRn9cYI_VARyl_q/viewform?usp=header
Course Launch Date	24 January 2026
Course Fees	Rs. 5000/- (For the entire course) by GPay. Fees do not include food or travel expenses.
QR code of The Hyderabad (Sind) National Collegiate Board	 HYDERABAD SIND NATIONAL, MUMBAI AID - 037325016210062 TID - 40977367 ME Helpdesk: 1860 233 2332 / 022 40426060

How to apply/Last Date for Receipt of Applications:

Click on the registration link provided.

Last date of submission of fees and acceptance of forms is **23 January 2026**.

You can pay at the venue also.

Selected candidates will be informed by email.

Course Coordinator:

Prof. Ravindra Joshi

Mobile No: 9604138858

Email id: ravindra.joshi@thadomal.org

RAVIDEEP SINGH CHAWLA

Chief Engineer - Piping Design and Construction



PROFILE

More than 29 years' of experience in Piping Design and Detailed Engineering in Chemical, Petrochemical & Refinery projects. Major areas of expertise include: Basic & Detailed Engineering activities which include the development of Plot Plans, Equipment Layouts, Piping Design & General Arrangements, MTO, Pipe Materials & Specifications, Preparation of Piping Bulk Material & Specialty Item data sheets, requisitions, TBA, recommendations, Isometric preparation and checking, pipe supports, etc. Has also been involved in site coordination and supervision during construction, project management functions, and liaison with clients, vendors, process licensors, etc. Have worked as a Piping Lead on several projects

EXPERIENCE

1. ThyssenKrupp Pune

- **Checking & reviewing** piping models & Isometrics for release for the construction phase including coordination of all other necessary piping works.
- **NRI (Nuzvid Refinery Limited):** Refinery Expansion
- **PolyMol project:** Hydrogen Peroxide Project
- **Paripat Refinery:** Expansion of cracking, manufacturing of C2, C3, C4, etc gases generating facilities.

2. Jacobs Engineering India Pvt. Ltd. - Chief Engineer (PMC)

Completed Assignment to Deputation with TAKREER Ruwais Refinery Expansion (RRE) as PMC (Project Management Services) as Sr. Piping Engineer through JACOBS India Pvt. Ltd.

- **Work responsibility:** 3D Piping Model review & Control.
- **Reviewing** TBE (Technical Bid Evaluation) & MR (Material Requisition).
- **Monitoring & Control** the Contractor's activities at the Site. (4 years).
- **Planning and supervising** the significant functions of the construction which includes the responsibility for the planning and coordination of manpower and equipment, materials supplies, and sub-contracted services, towards the proper completion of the work on schedule with approved drawings, specifications, cost, and quality limitations.
- **Monitors Subcontractors at each stage** to ensure proper compliance with all technical aspects of the contract through individual contacts and coordination meetings.
- **EPC Package 1** covers the Crude Distillation Unit and Associated Downstream Units. In total, the package has sixteen (16) Process Units. In addition to the Crude Complex are a Hydrotreater Complex, Hydrocracker Unit, Benzene Recovery Unit, Amine Regeneration Complex, Sulphur Complex, and Hydrogen Manufacturing Unit.

EXPERIENCE

- **Lamson - Lynas Advanced Materials Project:** Worked on this project as a Piping Engineering Lead with the UGL office in Perth, Australia. This was an Advanced Materials Project (Rare Earth Mining) on a 3D PDS platform. Activities included piping design, layout, and related activities during detailed engineering, supervision, coordination, etc. This project had about 1200 lines, 3000 Isos and 120 Piping GAs to be issued IFC.

3. Salpen India Projects, Chennai - Chief Engineer

- **Work Responsibility - Design / 3D Piping Group Leader:** To ensure the technical quality of the projects/bids, guiding and help people, review and checking technically the projects & solving technical problems. To ensure the appropriate implementation of the Technical Instruction in the projects. To develop the competence and experience of the group, to be ready for EPC projects, by preparing the training plans, and ensuring the EVA process on projects.
- **Worked on proposals for Qatar Petroleum** for SRU Upgrade & Acid gas recovery unit expansion for the piping requirement.
- **Worked as a Lead Engineer - Piping** for coordinating the various areas in the upcoming Bandar Abbas Gas Condensate upgrading refinery. The initial detail engineering is for the Condensate Distillation Unit (CDU), followed by many other units.

4. Jacobs Engineering India Pvt. Ltd. - Principal Engineer

Snamprogetti (Eni) Milan Italy: **Lead Engineer (Principal)**, for the SAMIR-UPGRADE PROJECT Mohammeda - Morocco & the Isocracker project-Sannaz zaro De burgundy. The areas handled are Distillate Hydrotreating Process, Vacuum Distillation unit & Isocracker unit. Basic & detailed piping engineering for critical & complicated equipment such as Compressors, Reformers, Towers, Reboilers, Air Coolers, Heaters, Exchangers, Pumps, and other high-temperature equipment. Involved in preparing study sketches & reviews for the stress analysis for the high-temperature critical line & acoustical analysis for the reciprocating compressors. Involved in layout review in Design Review of PDS checking with the PSD- process requirement & taking care of Client's standards. Involved in Review & comment marking for the Vendor Equipment drawings. Final review & release for IFC status for Isometrics was done.

5. Petrofac International Ltd., Sharjah - Lead CAD Coordinator.

Studying, developing & checking piping layouts/isometrics for the following projects: Crescent Oil Company Sharjah: Sulphur Recovery Unit & Amine Recovery Unit.
Kuwait Oil Company (KOC): Facility upgradation and relocation of underground process piping for Gathering Stations. Addition of New facilities like Desalters, Separators, and Condensate Recovery Unit (CRU). Tank Vapour Flare line modification. Involved in Material Take Off & study drawings for the following Proposal jobs; Monitoring Early Production Facilities.
ENOC REFINERY, DUBAI: Upgradation & Expansion.

6. Technip India Chennai For A Saudi Aramco Company's - Area Lead Engineer

The areas handled are Amine Recovery Unit (ARU), Hydrogen Production Unit (HPU) & Diesel Hydrotreater Unit (DHT). **Basic & detailed piping engineering** for critical & complicated types of equipment such as Compressors, Reformers, Towers, Reboilers, Air Coolers, Heaters, Exchangers, Pumps, and other high-temperature equipment. Involved in preparing study sketches & review for the stress analysis for the high-temperature critical line & acoustical analysis for the reciprocating compressors (not involved in stress analysis). Involved in layout review in Design Review of PDS checking with the PSD- process requirement & taking care of Client's standards. Involved in Review & comment marking for the Vendor Equipment drawings. Final review & release for IFC status for Isometrics was done.

7. M/s Aarvi Encon Pvt. Ltd. - Sr. Piping Engineer

- **Reliance Industries Ltd, Hazira India:** Polyfibs Ltd Barabanki Lucknow U.P. Expansion on a freelance basis for different projects.
- The job consisted of coordination, checking & handling the manpower, drawing layout & Materials Take Off.

EXPERIENCE

Toyo Engineering India Ltd. - Senior Piping Engineer (Saudi Arabia Methanol Project)

Job Responsibility: Coordination & checking of the drawings.

- **Al-Raia Upgrading Project - Upgrading of gas lifting project.**
- **GASCO, Al-Raia, Abu-Dhabi, Senior Piping Engineer.**
- **Project Consultant:** Technip Geoproduction, Abu Dhabi, UAE.
- **Naphtha/Condensate Storage - Offsite Improvement Project.**
- **ENOC Refinery (120,000 BPD), Dubai - Senior Piping Engineer**
- **Study & Checking** piping layouts, Isometrics, Material Take-Off, spring supports, etc.
- **LPG Storage Expansion(Offsite Improvement Project): Study & Checking** of piping layouts, Isometrics, Materials Take Off, and pipe supports)
- **Project Consultant:** Technipetrol Italy.
- **Loading / Unloading Berth - 1 & Berth - 3 Expansion** at EPLC, Dubai - **Senior Piping Engineer** (Study & Checking of piping layouts, Isometrics, materials take off, pipe supports,...)
- **EPC Contractor:** Petrofac International Ltd. Sharjah, UAE.
- **Water Pipeline Expansion Project** at Dubai - **Senior Piping Engineer**
- **EPC Contractors:** Petrofac International Ltd. Sharjah, UAE.
- **Study Piping** for Sulphur Recovery Unit, Indian Oil Corporation, India - **Piping Engineer**
- **EPC Contractors:** Petrofac International Ltd. Sharjah, UAE.
- **Water Lift Station Expansion Project** at AFPC, Syria - **Piping Engineer**
- **EPC Contractors:** Petrofac International Ltd. Sharjah, UAE.
- **Petrochemical - Methanol Area ARPC, Iran - Lead Piping Co-ordinator**
- **Project Consultants:** Davy Mackee London, Davy Powergas India.
- **Petrochemical, Merox and Compressor Area, MRPL, India - Job Co-ordinator**
- **Project Consultants:** Davy Powergas India, Japan.
- **Hydrogen Generation Plant - Bombay India - Job Co-ordinator**
- **Project Consultants:** Davy Powergas India
- **Polyester Plant Expansion, JCT Punjab, India - Job Co-ordinator**
- **Project Consultants:** Davy Powergas India, Zimmer Germany.
- **Polyester Plant PSF and Polymerisation - Melbourne, Australia - Job Co-ordinator**
- **Project Consultants:** Davy Powergas India, Zimmer Germany.
- **Polyester Plant PSF and Polymerisation Area Moti Gujarat, India - Job Co-ordinator**
- **Project consultants:** Davy Powergas India, Zimmer Germany.
- **Rajshree Polyester - Polyester Plant, PSF and Polymerisation Area - Job Co-ordinator**
- **Project consultant:** Davy Powergas India, Zimmer Germany.
- **Petrochemical-Methanol Project Caribbean Methanol Co., Trinidad, West Indies - Lead Piping Engineer / Co-ordinator - Study & Checking** of piping layouts, Isometrics, Materials Take Off, pipe supports- manpower work distribution of manual & cad designer & draftsman, reviews & discussions with clients/consultants.
- **Project consultants:** Davy Mackee London, Davy Powergas India.
- **Vikram Ispat Limited - Bombay Sponge Iron Project - Piping Engineer**
- **Project consultants:** Davy Powergas India.
- **Parag Bosini Synthetics Ltd, India PSY, POY & Polymerisation area - Piping Engineer**
- **Project consultants:** Tata Consulting Engineers, India. Inventa Germany.
- **DCL Polyester Ltd, Nagpur, India. PSY, POY & Polymerisation area - Piping Engineer**
- **Project consultants:** Tata Consulting Engineers, India. Inventa Germany.
- **Hindustan Photofilms Mfg. Co. Ooty India - Piping Engineer**
- **Project consultants:** Tata Consulting Engineers, India. Inventa Germany.

EDUCATION

Mechanical Engineering, Batch of 1990

TRAININGS

- Departmental Induction
- Quality / SOPs / LWIs
- HSE - Click Safety on Computer
- Presentation Skills
- Leadership & Customer Satisfaction Change Management

TECHNICAL SKILLS

- Lead Engineer
- Model Review and Layout Checking
- Proposals and Feed Engineering
- Process Critical, Stress Critical and Fabrication Isometrics
- Piping Specification and Material Take Off
- Every aspect related to Process and Piping Engineering (Plot Plans, Equipment Layouts, Piping Layouts, etc)

SOFT SKILLS

- Leadership and Communication
- Motivated and Detail Oriented
- Time management
- Adaptability & Problem Solving
- Team work and Conflict Resolution
- Delegation and Decision Making

LANGUAGES KNOWN

English, Hindi, Marathi, Punjabi