

**CERTIFICATION COURSE IN
OIL AND GASPIPING
ENGINEERING DESIGN &
ANALYSIS**



20 YEARS

OF EXCELLENCE

5 KEY TAKE AWAYS

1. Discover the knowledge and gain the confidence you need to enter Oil & Gas, Process Engineering Industry with Valid Certifications.
2. Identify Specific opportunity to increase the strategic value offered by ASTS Global Education Courses to your Professional Profile.
3. Learn to apply most modern Design and Analytic technics from the Industry Experts.
4. Provide competitor differentiation in the market and Get a world class stand through ASTS Global Education.
5. Learn how to leverage your Intelligence and Expertise to Oil & Gas corporate sector for making Best in class Results.



WHO SHOULD ATTEND?

- BE/B-Tech/Diploma / ITI/ITC, Mechanical / Chemical / Production/ Petroleum Engineering Graduates or Students
- Working executives / Professionals from the similar Industry
- Corporates

ADMISSION PROCEDURES

- Admissions Strictly basis of Online Registration
- Online Registration is available in www.astsglobal.com website.
- Admissions will be confirmed only after verification of the details submitted
- Fees Payments are available after the successful submission of the application

BENEFITS OF ATTENDING

Oil & Gas Piping Engineering Design & Analysis course is the Benchmark of competency in the Oil & Gas, Process engineering Industry and is recognized as the leading credential in corporate treasury worldwide. Whether participants are looking to safeguard their careers or seeking a professional career, promotion, earning this program can open a variety of doors.

Professional Competency : Earn up to 20 % more than your non- certified peers

Improve Marketability : Stand out against other applicants in a tough job market

Boost Relevancy : Stay current in the profession with continuing education requirement

Increasing Job Security : Validates your competency in liquidity, capital and risk management functions

Better career Flexibility : Prepares you for greater on-the-job responsibilities

COURSE OVERVIEW

Piping Engineering Training Program offering to fresher and experienced Mechanical Engineers who's Start/ Shift their career as a Piping Engineer, Piping Designer or Piping Project Engineer in Oil & Gas / Petrochemicals/ Refineries/ Chemicals/ Energy & Power Sectors.

ASTS GLOBAL EDUCATION offers ONLINE Piping Engineering Design Training to Mechanical, Chemical, Production engineers. This Training program is based upon latest technologies of Piping Engineering design and analysis methods with the help of Online platform.

Piping Engineering program is 100% Job oriented. After completion of training candidate can start/shift their career as Piping Project Engineer, Piping Engineer or Piping Designer, Piping Stress engineering, Process engineer etc...



PRE COURSE ASSIGNED READING

ASTS GLOBAL EDUCATION will provide pre-reading on-line study materials

POST COURSE READING

- » Exam Preparation
- » At least 50 hours of personal study recommended from our Online Portal
- » Student is responsible for his/her own study time
- » ASTS GLOBAL EDUCATION will post practice exams
- » There will be other resources online as well.



PROGRAM MODE & TIMINGS

Course Mode	: 100% Online
Timings	: 5 to 7 Hours/week
Duration	: As per the programme

PROGRAM CERTIFICATION

ASTS GLOBAL EDUCATION will provide Certification for PG Diploma in Oil & Gas Piping Engineering Design & Analysis Course in Association with NACTET (Govt of India Autonomous Body for Technical Education) . All Software Certification and Internship certification from the related company/Industry.

HIGH-IMPACT, ONLINE LEARNING EXPERIENCE

ASTS GLOBAL ONLINE TRAINING PROGRAM:

Develop your Technical Mindset helps you reach your potential as a Design Engineer by combining theory with software knowledge and flexibility with academic rigor to help you develop as a well-rounded engineer.

WHO IS IT FOR?

Whether you want to advance in your current industry, shift roles, or build a new business, ASTS Global Education Online Program: Develop your Engineering Mindset can help you achieve your goals.



THIS PROGRAM IS RIGHT FOR YOU:

LEARNING EXPERIENCE

ASTS Global Education follows a unique online model. This model has ensured that nearly 90 percent of our learners complete their course.



RECORDED VIDEO LECTURES

The recorded video lectures are by faculty from the collaborating ASTS Global Education.



ORIENTATION

The first week is orientation week. During this week you will be introduced all the systems to use online platform.



LIVE WEBINARS

Every few weeks, there are live webinars conducted by ASTS Global Education course leaders. Course leaders are highly-experienced industry practitioners who contextualize the video lectures and assist with questions you may have regarding your assignments.



CLARIFYING DOUBTS

In addition to the live webinars, for some courses, the course leaders conduct Office Hours, which are webinar sessions that are open to all learners. During Office Hours, learners ask questions and course leaders respond.



FOLLOW-UP

The ASTS Global Education Program Support team members will follow up and assist over chat, email and via phone calls.



CONTINUED COURSE ACCESS

You will continue to have access to the course videos and learning material for up to 6 months from the course start date.





ASSIGNMENTS/APPLICATION PROJECTS

Assignments are given on the basis of the lectures or tutorials provided. They need to be completed and submitted as per the deadline for grading purposes. Extensions may be provided based on a request sent to the support team.



CASE STUDIES

These are real world scenario-based assignments involving an up-close, in-depth, and detailed examination of a subject of study, as well as its related contextual conditions.



REAL WORLD APPLICATIONS

These are real world situations/data-sets given to derive the desired result using the available information.



DISCUSSION BOARDS

It is an open forum where participants pin their opinions or thoughts regarding the topic under discussion.



CAPSTONE PROJECTS

Capstone Projects are given out at the end of the course to apply all the strategies taught during the course.



DEVICE SUPPORT

You can access Emeritus courses on tablets, phones and laptops. You will require a high-speed internet connection.



ASTS GLOBAL EDUCATION PROGRAM SUPPORT TEAM

If at any point in the course you need tech, content or academic support, you can email program support and you will typically receive a response within 24 working hours or less.



CASE STUDIES

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ASTS GLOBAL EDUCATION NETWORK

On completing the course you join a global community of 5000+ learners on the ASTS Global Education Network. The Network allows you to connect with Emeritus past participants across the world.



BLOCK CHAIN POWERED CERTIFICATES

Our Course certificates are Digitaly & secured by Block Chain Technology. Its provided immutability as a service by pprotecting the integrity of the Certificates

ADMISSION

ORIENTATION

Program Introduction

MODULE 1

Module Exam

MODULE 2

Module Exam

MODULE 3

Module Exam

MODULE 4

Module Exam

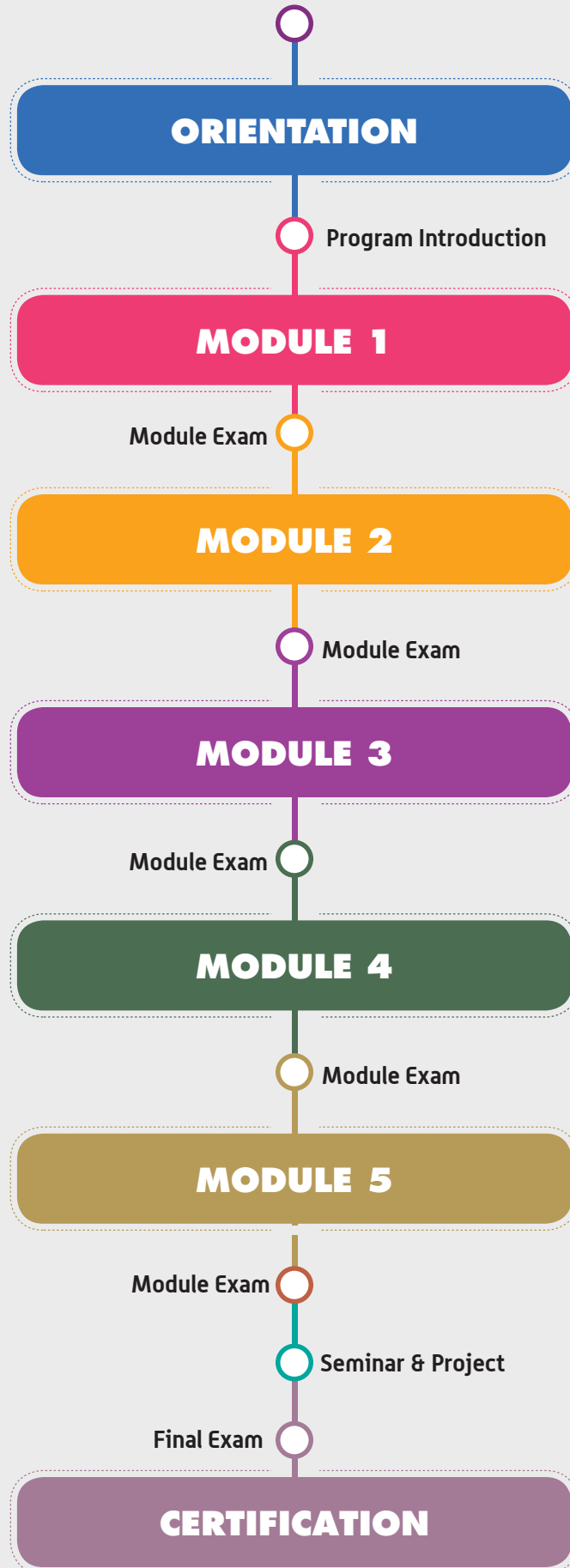
MODULE 5

Module Exam

Seminar & Project

Final Exam

CERTIFICATION



CERTIFICATION COURSE IN OIL AND GAS PIPING ENGINEERING DESIGN & ANALYSIS

THEORY ONLY - 2MONTHS

FUNDAMENTALS OF PIPING ENGINEERING

- Definition
- Applications
- Scope of piping systems in oil & gas industry
- Pipe manufacturing methods
- Pipe fabrication methods & Pipe designations
- Pipe classifications
- Roles and responsibilities of piping engineer and piping designer
- Interaction with other departments

PIPING CODES AND STANDARDS (ASME B31.3)

- ASME process piping codes (B31.3)
- ASME Boiler and Pressure vessel codes
- ASME Pressure Piping Design Codes
- API Codes
- Other codes & Standards

PIPING MATERIAL SPECIFICATIONS AND PIPE COMPONENTS

- Ferrous material specifications
- Non Ferrous material specifications
- Types of fittings
- Branches
- Connections
- Join Details
- Fabricated Branch connections.
- Types of flanges
- Types of Valves and their codes
- Testing and Presentation methods

PROCESS MECHANICAL EQUIPMENT

- Process mechanical equipment's
- Horizontal vessel
- Vertical vessel
- Static equipments

- Storage tanks
- Heat exchangers
- Heaters and boilers
- Towers and columns
- Separators and strainers
- Air vents (Also called a vent stack or plumbing air vent)
- Rotary equipments
- Pumps
- Compressors
- Turbines and engines
- Agitator
- Fans & Blowers
- Steam & Gas turbines

FLOW DIAGRAMS

- Process flow diagram- PFD
- Piping & instrumentation diagram – P&ID
- Utility flow diagram
- Line numbering
- P&ID Requirements
- Flow Diagram Exercises
- Symbols & Abbreviations, etc.

PIPING ISOMETRIC, PIPING AND EQUIPMENT LAYOUT AND FABRICATION & ERECTION DRAWINGS

- Definition
- Drawing Piping Isometrics
- Isometric Dimensions
- Notes & Callouts
- Isometric offsets
- Exercises on Creation of Isometrics from piping plants
- Plot plan development & Requirement sections.
- Equipment layout terminology
- Control point & Battery limits
- Preparation of equipment layout
- Piping GA Drawing Requirements and Layout procedures

- Pump GA Drawing and Layout consideration
- Tank & Vessel layout consideration
- Pipe fabrication - (Fabrication materials for piping systems, fabrication drawings, fabrication activities)
- Pipe cladding - (Corrosion Allowance)

PIPE SUPPORTS

- Types and functions of support
- Anchors
- Pipe guides
- Limit stops
- Pipe shoe
- Dummy leg/ Trunion
- Field support/ Base support
- Rigid hangers
- Pipe Rack and Yard piping Design
- Flexible & Resilient support
- Variable & Constant load

DESIGN OF PROCESS PIPING REQUIREMENTS AS PER ASME B31.3

- Scope of ASME B31.3, B31.1
- Design pressure & Design Temperature for piping systems
- Rating of flanges
- Reinforcement of Branch connection

HYDRAULIC DESIGN OF PIPING SYSTEMS

- Fluid flow sizing
- Pipe sizing
- Reynolds number
- Types of flow in piping
- Pressure drop due to friction/ Viscosity
- Friction factor
- Moody diagram
- Minor losses in piping – Equivalent length method & Loss coefficient method
- Recommended velocities for Water and Steam piping

PIPE DESIGN CALCULATIONS, MATERIALS, SIZE & WALL THICKNESS

- Design pressure & design temperature for piping systems
- Concept of pressure integrity
- Design pressure integrity, pipe size calculation
- Pipe wall thickness calculations

- Pressure design of miter bends
- Single & multiple miters
- Pressure design of blanks
- Branch reinforcement calculations
- Continuity Equation (Law of conservation of mass)
- Bernoulli's Equation (STEADY SINGLE PHASE INCOMPRESSIBLE FLOW)

PROTECTION OF PIPE AND INSULATIONS

- Abrasion
- Corrosion and its classification
- Freezing
- Lining
- Coating
- Wrapping
- Insulation
- Tracing
- Jacketing
- Cladding
- Electric heating
- Protection against corrosion
- Hot insulation and Cold Insulation
- Acoustic insulation
- Insulation materials
- Insulation types for oil and Gas piping as per ASME

WELDING & NDT

- Types of welding and welding terminology
- Welding joints
- Methods of welding
- Welding geometry
- Welding symbols
- NDT Methods

QA/QC & HSE/QHSE

- Quality Control and Quality assurance
- Health Safety and Quality Environment trainings



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