

texvyn
Strive for Excellence
Institute of Continuous Learning

STATIC EQUIPMENT DESIGN & DETAILED ENGINEERING

Process Plant Design Program

Program Duration: 150 Hrs.

Communication Language: English

Highlights

STRUCTURED

Thoughtfully designed curriculum helps you to emerge confident & comfortable.

INDUSTRY-RELEVANT

Industry-tested curriculum to make you job ready

HANDS-ON

Projects and assignments to actually implement concepts

National Career Service
सही अवसर, सही समय
Right Opportunities, Right Time

Registered institute under NCS [Ministry of Labour & Employment

NCS ID: S15A79-2255176104765

EXPERIENCE

A structured, flexible & guided learning program!!!

CONTACT US:

WWW.TEXVYN.IN

+91-8779674727

INFO@TEXVYN.IN

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Course Category: Process & General Industry

Certification: Intermediate

Course: Static Equipment Design & Detailed Engineering

SYNOPSIS

Key Learning Module

- ASME Sec VIII Div 1 – 2025
- Pressure Vessels Design
- Heat Exchangers Design - TEMA
- Design of Process Columns
- PV Elite Software

Program Highlights

Duration: 150 Hrs.

Software: PV Elite + AutoCAD -SLM

Delivery Mode: Live & Interactive

TEXVYN TECHNOLOGIES

Texvyn's Institute of Continuous Learning [ICL] is the newest venture of Texvyn Technologies which aims to be a global talent-solutions company offering integrated practical knowledge to meet the growing demand for quality talent. Our focus is to create development solutions that offer a career launch pad for students, working professionals and a ready pool of employable talent for enterprises in the Oil & Gas, Power, Water Treatment, Chemical , Petro-chemical and Manufacturing sectors.

ICL introduces professional engineering courses which has been developed to equip graduates and practicing engineers with an in-depth understanding of the fundamentals of manufacturing & process plant systems and an excellent competency in the use of state-of-the-art approaches to deal with the major operational and design issues of the modern industries. The course provides up-to-date technical knowledge and skills required for achieving the best management, design, control and operation of efficient engineering plant systems. The course is suitable for diploma & engineering students who wish to embark on successful careers as engineering professionals. Learn with us and wherever you are in the world, we'll help you achieve the qualifications that will set you apart.

BENEFITS

Personalized

Topics, peers & pace of learning are optimized for your needs

Flexible Session Time

Decide your ideal class timing together with your classmates

Needs Time for Unplanned Activities

Pause your course and restart a month later with the next batch!

PROGRAM OVERVIEW

Static equipment's plays a major role in the Oil and Gas industry. Common static equipment's used in the Oil and Gas industries are; Pressure Vessels, Heat Exchangers, Storage Tanks & Distillation Columns. The Mechanical Design of Process Equipment program was developed to offer continuing education opportunities to Mechanical Engineers and technical professionals who want to build their career in Oil & Gas sector.

This course broadly covers design & construction including fabrication/ testing of Pressure Vessels & other Process Equipment's like Heat Exchangers, Reactors & Columns. The course is designed to give complete understanding of engineering codes & standards used in design of Pressure Vessels & other Process Equipment's.

Program Agenda

M01	**Process Equipments - An Introduction**
01	Introduction about Process Industry and EPC
02	List of Equipment's used in Industries, their Introduction & Applications
03	Relevant Codes & Standards used in Industry
M02	**General Concepts and Methods of Mechanical Design of Pressure Equipment's**
01	Pressure Equipment Design in Accordance with ASME and in Accordance with PED
02	Stress Strain Diagrams & Material Selection for Different Temperature & Service
03	Design Methods: DBF, DBA and Design by Experiment
04	Loads and Stresses: Elements of Stress Analysis, Stress Categorization
05	Load Conditions & Failure Modes
M03	**ASME Codes and its Relation to Pressure Vessel Design**
01	Introduction to Engineering Standards used in Design of Process Equipment's
02	ASME Sec. VIII Div.1 & 2 [Latest Issue], TEMA , API 650 etc
03	Conditions/Clauses Governing Pressure Vessel Design under ASME Sec VIII Div. 1
M04	**Mechanical Design of Pressure Vessels**
01	Design and Analysis of Pressure Vessels & Component (ASME Section VIII Division 1)
02	Design of Pressure Vessel for Internal & External Pressure
03	Design of Cylindrical Vessels & types of Dishend
04	Design of Jacketed Vessels, Limpet Coils, Horizontal Equipment's with saddle support
05	Various Types of Supports & Attachments [Leg, Skirt, Bracket Supports]
06	Lifting attachments, Design of Anchor Bolts, Safe Loads for Ropes and Chains
07	Nozzle Openings and Reinforcements [Nozzle Local Load Analysis]
08	Welded Joints, Butt Welded Joints of unequal Thicknesses & Welding Symbols

09	Role of MAP, MAWP, Design Pressure & Design Temperatures
10	Allowable Stresses, Corrosion Allowance and Loadings as per ASME in PV Design
11	Impact Testing, PWHT along with Heating Rates and Cooling Rates
12	Hydro Test Pressure & Stamping of Vessels
M05	**Pressure Vessel/Column/Reactor Design Calculation: (ASME SEC VIII, DIV.1)**
01	Maximum Allowable Stress Values (UG-23)
02	Shell Design for Internal Pressure (UG-16, UG-27,Appendix 1-2)
03	Dished End Design For Internal Pressure (UG-32)
04	Shell Design for External Pressure (UG-28, UG-29,UG-30)
05	Dished End Design For External Pressure (UG-33)
06	Hydro test Pressure/Pneumatic Test (UG-99,UG-100)
07	Wind Load (IS-875, Pt-3) & Seismic Load (IS-1893, Pt-1 & 4)
08	Combined Loading Effect
09	Conical & Tori-conical Section Analysis (UG-32,33, Appendix 1-5 & 1-8)
10	Weight Calculation
11	Opening (Nozzles) (UG-36 ~ UG-45)
12	Local Load (WRC 107 & 297)
13	MDMT & Impact Test Enigma (UCS-66)
14	Lifting & Tailing Lug Analysis
15	Support Analysis (Skirt, Leg, Saddle ,Lug) & Anchor Bolt Design
16	Joint Efficiency, MAWP, MAP, SR of DE for Forming Operation
17	PWHT (UCS-56)
18	Types of Gaskets, Gasket material selection, Role of gaskets in Pressure Vessel Design
19	Mechanical Design of Non Standard Flanges as per Appendix 2

M06	**Fabrication of Pressure Vessels**
01	Plate rolling, Plate Bending, Welding Methodologies (STAW, GTAW, GMAW, SMAW)
02	Fabrication Sequences , Fabrication Schedules, Plate Forming, Cutting etc.
03	Testing of Pressure Vessel, Painting and Coating for Corrosion Protection
M07	**Column & Tower Internals**
01	Types & Functions of Internals
02	Process aspect of these Internals
03	Specialized Manufacturers of Internals
04	Scope & Design of the Internals
M08	**Design & Analysis of Heat Exchangers**
01	Heat Exchanger types , Classifications & TEMA Standard
02	Design of Shell, Channel, Shell Bonnet, Channel Cover, Selection of Girth Flanges
03	Limitations in the use of Heat Exchangers
04	Components of Heat Exchangers
05	Design aspects of Heat Exchangers
06	Tube sheet Design: Fixed Tube sheet , Floating Tube sheet , U – Tube sheet
07	Design of Tube Sheet as per TEMA as per Bending and Shear Loading
08	Limiting Cases in the Design of Heat Exchangers
09	Testing of Heat Exchangers
10	Types of Heat Exchanger: Condensers | Evaporators | Reboilers | Plate Heat Exchangers
M09	**Detailed Engineering Aspects of Process Equipment's**
01	Understanding the Basic Engineering Package
02	Tender requirements of Clients & Engineering Design Basis
03	Preparation of Technical Specifications: Process Data Sheets and Mechanical Data Sheets

04	Data Exchange between Process and Mechanical to prepare the Technical Specification
05	Understanding the Scope of Supply between Mechanical, Civil & Process
06	Enquiry Stage Design , Drawings & Other Relevant Calculations
07	Preparation of GAD & Fabrication Drawings of Process Equipment's
08	Evaluation of Vendor Offers, Preparation of Technical Queries
09	Technical Bid Evaluation, Technical Recommendation to be given to the Client
M10	**PV Elite Design & Analysis**
01	Introduction to PV Elite software & user interface overview
02	Setting up a new project in PV Elite
03	Inputting vessel geometry and material properties
04	Calculation of horizontal vessels on saddles
05	Shell & Head Design
06	Designing cylindrical shells and various head types (elliptical, hemispherical, torispherical)
07	Nozzle placement, reinforcement, and stress analysis
08	Support Design & Analysis
09	Wind and seismic load analysis
10	Introduction to design data sheets
11	Inspection & Testing in Pressure Vessel
12	Shell & Tube Heat Exchanger Design
13	Introduction to design data sheets
14	Practice project and assignments

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"The way of Success is the way of continuous pursuit of knowledge"



ACCELERATE YOUR CAREER GROWTH & UPSKILL YOURSELF

Tried & tested curriculum, trusted by thousands of students

PROGRAM FORMAT

This program will be delivered in an interactive, practical, E-learning video format along with real life examples. Theory will be supported and illustrated through a combination of real-world examples. The USP of our courses is that these are developed by experts working on real life projects and hence the course content reflects the practical aspects and challenges faced by the professionals to kick start their career.

AUDIENCE PROFILE

This course is designed for fresher & experienced engineers from mechanical background and willing to work as Static Design Engineer.

Qualification Eligibility for Static Equipment Design

- B.TECH / BE in Mechanical Engineering [Students pursuing final year BE are also eligible]
- Diploma in Mechanical Engineering
- Master in Mechanical Engineering

PROGRAM OUTCOME

- Understand different types of Static Process Equipment's.
- Pressure Vessel Design, Supports & Attachments.
- Prepare and develop pressure vessel & process equipment datasheet,
- Sizing & design of process equipment's as per relevant codes.
- Prepare fabrication details and specifications, estimation and quality assurance during fabrication and assembly.
- Mechanical Design of Pressure Vessels, Heat Exchangers & Columns.
- The course also covers training on PVELITE software.
- Understand how to use ASME Codes related to Pressure Vessel Design, Materials, Fabrication & Pressure Testing.
- Detail Engineering Aspects of Process Equipment's.
- Preparation of G.A. / Fabrication Drawings of Process Equipment's

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Registration Process & Career Services

ENROLLMENT

Program Registration

Candidate can register for the program by using a link below -
https://forms.office.com/r/mnRRCw1Fzw

Payment Terms

- 100% payment to be made before commencement of course.
- Payment link will be shared post registration vide email & Whatsapp.

Document

- Passport Size Photo [1 No.]
- Photo ID Proof.
- Qualification Proof.
- Resume Copy

Refund / Admission Cancellation

- Online courses are completely non-refundable & non-transferrable under any circumstances.
- For further details get in touch with our support team on +91-8779674727

PROGRAM CERTIFICATION

Students will be awarded with certification on completion of course along with the given assignments. It has affiliation & recognition from National Career Services [Ministry of Labour & Employment].

CAREER SERVICES

Assured Interviews

Assured Interviews upon submission of projects and assignments. Get an opportunity to interviewed by leading engineering companies.

Profile Building

Get assistance in creating a world-class resume from our career services team and learn how to grab the attention of the hiring manager at the profile shortlisting stage.

Job Lens

Job Lens by Texvyn is the digital job board platform to publish the latest job openings & growth opportunities for engineers in India & Abroad.
Link: https://t.me/joblens

Texvyn - EVOLVE

A Community for Core Engineering Professionals to share ideas and seek help. Also get the latest information on Texvyn Events!
Link: https://t.me/texvynevolve

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Texvyn Advantage

We offer an unique range of services which allows every student to get an effective learning program with An advantage of technology centric platform to enhance their career & employability skills. Some of our key highlights are as mentioned below -

01 Affiliation

An Autonomous Institute registered with National Career Service [Govt. of India - Ministry of Labour & Employment].

02 Technology

In-depth learning on all latest industry leading tools in order to get an edge over throat cutting competition.

03 Support Services

Our dedicated team can address queries via calls, emails, and chats to provide the best-in-class support to our students.

04 Discussion Forum

This is where the industry expert engages with ICL students & initiate the discussion on various topics trending across industries in India & abroad.



TEXVYN SUPPORT CENTER

201-Raunak Arcade, Opposite THC Hospital, Gokhale Road, Naupada, Thane 400602

Mobile:
+91-8779674727

Email:
info@texvyn.in

Web:
www.texvyn.in