

texvyn
Strive for Excellence
Institute of Continuous Learning

PROCESS DESIGN & DETAILED ENGINEERING

Process Plant Design Program

Program Duration: 120 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!!!

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Course Category: Process & General Industry

Certification: Intermediate

Course: Process Design & Detailed Engineering

SYNOPSIS

Key Learning Module

- Detailed Engineering
- Process Simulation
- Thermal Design - HE
- AutoCAD - SLM

Program Highlights

Duration: 120 Hrs.

Software: HYSYS + HTRI + 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

Chemical Process plants such as refineries, pharmaceutical and petrochemical plants are very complex plants in term of equipment, pipeline, electrical, instrumentation, electronics, control and power systems. Multidisciplinary engineering team play vital roles to design and construct such complex chemical plants. Team of Process and piping designers play major roles to make safe, economical and well functional designs.

The main objective of this program is to educate candidates about the various job options available in the market matching their qualification & skills. Under this program Texvyn will provide a platform & opportunity to interact with industry exerts where they can have face to face interaction or on call guidance related to their career prospect & area of interest. Its first of its kind program which is built for fresher & working engineering professionals. The program aims to prepare candidates for a lifetime of career possibilities. This program will support students at all stages of the career development process.

Program Agenda

M01	**Process Design Engineering - An Introduction**
01	Role of Process Engineer
02	Work flow chart in EPC & Process Design Deliverables
03	Introduction to Basic Engineering Package & Front End Engineering Design.
04	Engineering, Procurement & Commissioning [EPC Activities]
05	Oil & Gas Industry - Upstream | Mid Stream | Down Stream
M02	**Process Engineering Design Basis**
01	Process Engineering Design Basis | Part-A
02	Process Engineering Design Basis | Part-B
03	Material Selection for Process Conditions
M03	**Process Simulations, Heat & Material Balance, Process Flow Diagram**
01	Various Simulators for Process Design
02	Components of a Process Simulator
03	Selection of Thermo-Physical Property Packages
04	Example of a Distillation Column Simulation
M04	**Hydraulic Calculations**
01	Part-1: Line Sizing for (Liquid/Gas/ Two Phase)
02	Part-2: Pumps & Control Valves
2.1	Pump Performance Curves
2.2	Pump Minimum Circulation Flow
2.3	Control Valves Sizing
03	Part-3: Hydraulic Calculations for Pumping System
04	Actual Problem Discussion

M05	Process Control & Process Safeguarding
01	Layers of Protection- Process Control and Emergency Shutdown
02	Types of Signals- Digital & Analogue Signals, Hardwired v/s Softlink
03	Process Control- On-Off Control, PID Control, DCS Control System
04	Interlocks, Cause & Effects, Logic Diagrams, Emergency Shutdown System
05	Safety Studies- HAZID, HAZOP, Safety Integrity Levels, Dispersion, QRA
M06	**Piping & Instrumentation Diagram**
01	Process Flow Diagram to Piping & Instrumentation Diagram [PFD to P&ID]
02	Legend Sheet: Symbology
03	Details of Piping on the P&ID
04	Instrumentation, Control & Emergency Shut-down
05	Smart Plant P&IDs
06	Actual example P&ID
M07	**Pressure Safety Valve**
01	Part-1: Safety Valves Terminologies and Design Considerations
02	Part-2: Safety Valves Design
03	Part-3: Safety Relief System Design
M08	**Vessel Sizing**
01	Single Phase Vessel
02	Two Phase Separator Sizing
03	Three Phase Separator Sizing
04	Preparation of Calculation Excel Sheet
05	Preparation of Datasheets
06	Practice Examples

M09	Heat Exchanger Design
01	Types of Heat Exchangers
02	TEMA Configurations
03	Design Parameters for Shell & Tube Heat Exchangers:
3.1	Exchanger Orientation
3.2	Approach Temperatures
3.3	Fouling Factors
3.4	Fluid Allocation
3.5	Baffle Orientation, Baffle Cut, Baffle Spacing
3.6	LMTD Correction factor, Shells in Series
04	Design example of a Heat Exchanger
M10	**Distillation Column Design**
01	Part-1: Distillation Column Process Design
1.1	Mc-Cabe Thiele method
1.2	Determination of Minimum no. of Stages, Minimum Reflux, Concept of Optimum Reflux
1.3	Determination of actual no. of Stages at Optimum Reflux
1.4	Optimum Feed Tray Location, Reboiler & Condenser Duties
1.5	Tray Efficiencies- Overall/ Murphree/ Point Efficiencies
1.6	Tray Column v/s Packed Column
02	Part-2: Distillation Column Hydraulic Design
2.1	Tray Column Terminologies in Hydraulic Calculations
2.2	Operating/Design Envelope for a Tray Column: Jet Flood, Downcomer Flood, Weeping, Entrainment
2.3	KG Tower Software for Hydraulic Calculations, Hydraulic Design Limits

M11	Compressors
01	Types & Selection of Compressors
02	Centrifugal Compressor Performance Curves- Surge & Stone Wall operation
03	Anti-Surge Control System
04	Compressor Capacity Control Methods
05	Settle-out Pressure Calculations
06	Typical Compressor P&ID Scheme
07	Multi-Stage Refrigeration System & Inter-coolers in Multi-stage compressors
M12	**Final Revision & Closing**
01	Doubts Clarifications
02	Typical Questions in a Process Engineering Interviews
03	Mock Interview Preparation

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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 chemical background and willing to work as Process Design Engineer.

Qualification Eligibility for Process Design Engineering

- B.TECH / BE in Chemical Engineering [Students pursuing Final Year BE are also eligible]
- Diploma in Chemical Engineering
- Master in Chemical Engineering

PROGRAM OUTCOME

- Overview of Industry and role of a Process Engineer in various fields.
- Basic design requirements based on the types of Plants / Projects.
- Overview of Basic Engineering Package.
- Introduction to PFD, P&ID and PDS of Equipment's.
- Relevant Codes and Standards used in industry.
- Development of PFD & P&ID for Process & Utility, Line Sizing & Pressure Drop Calculations.
- Mass and Energy Balance.
- Design Basis, Sample Calculations and Utility Sizing Interlocks.
- Control Philosophy, Valves Selection & Sizing.
- Safety Valve Sizing.
- Pump Selection & Sizing.
- Heat Exchanger Design (Thermal Design).
- Distillation Column Design.

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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

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