

COURSES MODULE For PROCESS DESIGN ENGINEERING



Course Outline

- ❖ Industry and role of a Process Engineer for various facilities.
- ❖ Basic design requirements based on the types of plants / projects.
- ❖ Basic Engineering Package.
- ❖ Development of BFD, PFD, P&ID and PDS of equipments.
- ❖ Relevant Codes and Standards used in industry.
- ❖ Development of PFD: Process & Utility.
- ❖ Mass and Energy balance - Design Basis, Sample Calculations and Utility Sizing.
- ❖ Interlocks, Control Philosophy, Valves Selection and sizing, Safety valves sizing.
- ❖ Development of P&ID: Process and Utility, Line Sizing & Pressure Drop calculations Pump Selection and sizing.
- ❖ Heat Exchanger Design (Thermal Design).
- ❖ Distillation Column Design.
- ❖ Available Software used in industry and their applications.

CERTIFICATION & PG DIPLOMA COURSES FOR **Oil & Gas / Chemicals / Energy & Power industries.**

Process Design & Detail Engineering

BASIC ENGINEERING DOCUMENTS

- DESIGN BASIS
- BLOCK DIAGRAM
- PROCESS FLOW DIAGRAM
- MATERIAL & ENERGY BALANCE
- UTILITIES CONSUMPTION SHEETS
- CHEMICAL CONSUMPTION & SPECIFICATION SHEETS
- P&I DIAGRAM
- PIPING MATERIAL SPECIFICATION
- VALVE MATERIAL SPECIFICATION
- EQUIPMENT LIST
- LINE LIST
- CONTROL PHILOSOPHY WITH INTERLOCKS
- EQUIPMENT PROCESS DATA SHEETS WITH RFQ DOCUMENTS
- ELECTRICAL
- OVER ALL LAYOUT
- EQUIPMENT LAYOUTS (AREA WISE)
- INSULATION SPECIFICATION
- COLOR CODING / PAINTING SPECIFICATION
- LINE SIZING REPORT (FOR MAJOR LINES)

Process Equipments Detail Design

- Heat Exchanger
- Pump
- Pressure Vessel
- Separation Column
- Control Valve
- Reactor Technology

DETAIL ENGINEERING ACTIVITIES

- EQUIPMENT PROCESS DATA SHEETS WITH RFQ DOCUMENTS
- EFFLUENT SCHEDULE
- INSTRUMENTATION PROCESS DATA SHEET
- VALVE LIST
- VALVE SUMMARY
- VALVE DATA SHEETS WITH RFQ DOCUMENT
- LABORATORY ITEMS SPECIFICATION WITH RFQ DOCUMENTS
- SAFTY ITEMS WITH RFQ DOCUMENT
- P&ID GRADATION (UPDATION)
- EQUIPMENT LIST(UPDATION)
- LINE LIST (UPDATION)
- CONTROL PHILOSOPHY WITH INTERLOCKS (UPDATION)
- UTILITIES CONSUMPTION SHEETS(UPDATION)
- OVER ALL LAYOUT
- EQUIPMENT LAYOUTS (AREA WISE)
- OPERATING & SAFETY MANUAL
- TECHNICAL APPROVAL OF VENDORS OFFERS/TBA (MAX THREE VENDOR CONSIDERD)
- PREPRATION TECHNICAL ORDER SPECIFICATION
- SQUAD CHECK FOR MDS CHECKING & NOZZLE ORIENTATION

SITE/CONSTRUCTION ACTIVITIES

PEDAS TECHNOLOGIES
Institute of Research & Design-LUCKNOW

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