Course

Instrumentation & Control engineering drawings design and metric computation™

Dates: by agreement
Location: by agreement.
Length: 2 Days (8:00 AM – 4:00 PM).
Certificate: Certificate issue upon completion.
Fee: by agreement.

This course includes a useful handbook containing actual engineering drawings of typical projects, and according to international standards. The handbook could be used by participants in their projects that they will have to face.

Description: This course will present the methodology to design and develop the whole drawings required for instrumentation and control systems throughout each phase of a project, and its relationship with other engineering disciplines such as civil, process, mechanical and electrical. Also, it will be do practical exercises using deliverables of projects built by the same specialist who will give the course.

Designed for: engineers, designers, technicians, and university students linked to the sectors of oil & gas, iron and steel, electric power, sugar refinery, paper factories, manufacturing companies, consulting engineering companies, food and beverage, among others.

You will learn, but are not limited to, the following:

- Reinforce the reading and interpretation of all the diagrams, schematics and drawings generated by Instrumentation and Control design engineers.
- Become familiar with the drawings that will be generated by the process such as PFD's, PID's, and others.
- To know activities and all drawings that an Instrumentation and Control engineer should to develop in a typical multi-disciplinary project.
- To learn the type of information in each drawing and the sequence of elaboration of them in a typical project.
- Design the necessary drawings of a project, using and applying the national and international standards such as PDVSA, PIP, API, ISA, ANSI, NFPA, CEN, IEEE, among others.
- Prepare lists of instruments, metric computation (construction works items). scope and payment.

General Content:

- Introduction and fundamentals of engineering drawings.
- Process Flow Diagram, (PFD's). Review.
- Piping and Instrument drawings (P&IDs) design. International Symbology, ISA Standards.
- Design of location drawings and electrical & pneumatic routes.
- Interconnection signals diagram design and junction boxes, schematics and loops.
- Fundamentals of Hazardous Area Classifications
- Application of international standards: ISA, ANSI, NFPA, CEN, IEEE, among others.
- Preparation of list of mechanical and electrical equipment, instruments and materials.
- Description of Item (construction items), Scope and Payment of metric computations.
- Metric Computation.

Methodology and exercises:

- By setting up an actual project, participants shall design and develop: P&IDs, location plans, electrical routes, interconnection drawings, loop diagrams, installation details.

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INSTRUCTOR: Mr. Argenis Garcia, **Senior Instrumentation & Control Engineer**, and Project Manager, with a specialization in project management (UCAB, VE), is an electrical engineer (CU-Denver, USA), with over 25 years of experience, in up/mid/downstream on land&offshore oil&gas projects, in all its stages: visualization, conceptualization, EPC, pr-commissioning, commissioning, start-up, operations, risk management, and technical training. Able to coordinate multi-disciplinary work teams together with area leaders and manage the resources required for the project. Carry out critical risk management, improvement opportunities, and project optimization. In charge of the design and construction of oil&gas pipelines, and cluster wells for heavy oil. Worked at flow and discharge stations, pump stations, transfer pumps, multi-phase stations, tank farms, oil dehydration plants, gas compressor plants, gas sweetening plants, cryogenics plants, fuel storage and distribution system, refineries, petrochemicals, and Orimulsion plants. Duties included coordination, supervision, and execution hands-on of the whole documentation of engineering & construction specifications, selection of instruments, procurement, drawing design, assurance, and quality control of engineering, QAQC, HAZOP. Developed and reviewed the PDVSA Engineering, and Design Manual Standard, Instrumentation Vol.9, I&II. Successfully has been in PDVSA&ISVCA/GPRON: Project Manager, Production Senior Advisor, technical manager, chairman of production committee district, I&C specialist, and Technical Instructor in I&C. The IEEE CU-Denver, Student Branch´s Officer, 1983. He has trained over 2000 people including engineers, technicians, and operators.https://ve.linkedin.com/in/argenis-garcia-36890678.

For your registration, please fill out the attached application form and send it to:isvcaproyectos@gmail.com, info@gprons.com