

COURSE:

## **Documentation for Instrumentation and Control Engineering in Multi-disciplinary Projects™**

**Dates:** by agreement

**Location:** by agreement.

**Length:** 2 days (8:00 AM – 4:00 PM)

**Certificate:** Certificate issue upon completion.

**Fee:** by agreement.

The seminar includes a useful handbook containing actual engineering guides, specifications forms and 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 seminar will present the methodology to design and develop the whole deliverables (written documents and 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 seminar.

**Designed for:** engineers, technicians, and university students linked to the sectors of oil & gas, Refineries, and Petrochemicals, 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:**

- To know activities and all documentation that an Instrumentation and Control engineer should to develop in a typical multi-disciplinary project.
- To identify the document key, what for and its use to develop the others.
- To apply strategies to develop all documentation in such a way faster and that will very useful in fast track projects.
- To design and develop the whole "Deliverables" required in a typical project in all stages of projects.
- To interpret the use and application of international standards: ISA, API, PIP, ANSI, NFPA, CEN, IEEE, among others.
- To start the process to become a project engineer, as a design engineer of Instrumentation and Control.

**General Content:**

- **Project stages:** Concepts | Definitions | Instrumentation & Control Engineer duties.
- **Conceptual engineering:** Activities | Deliverables | Issuance of key documents.
- **Basic and Detail engineering:** Deliverables | Sequence of development| engineering standards | Purpose | Use | Content | Reading & Interpretation | Symbology: ISA Standards | Engineers in Charge | Design and Developing of each one as follows: General specifications for instruments and Construction, data sheet, instrument index, signal lists, metric computation, procurement for instruments and materials, scope, measurement, and payment form, metric computations. **P&FDs, P&IDs**, Location plans, electrical & pneumatic routes, Drawing interconnections, Control schematics, Loop Diagrams, Installation Details, Basic knowledge of hazardous area classification, Quality Assurance and Control Engineering, QAQC|ISO 9000.
- **Best practices, lessons learned and implementation strategies.**
- **Exercises.**

## Methodology and exercises:

Conceptual engineering methodology by presenting the paper of engineer Argenis Garcia: "Design and Construction of Latest Generation Cluster (LGC) wells for heavy oil, using cutting-edge technology and best practices in project implementation (I & II), Edmonton, Canada, WHOC 2011 (<http://www.gbv.de/dms/tib-ub-hannover/682504270.pdf>), Vol 1, Pag.62 and ISA Automation Conference and Exhibition 2015, Europe - Middle East - Africa. 26<sup>th</sup> – 27<sup>th</sup> May2015, St. Regis Saadiyat Island, Abu Dhabi, UAE.

✚ Basic/Detail Engineering Methodology by presenting the paper of engineer Argenis Garcia: "Specification of Instruments in hazardous areas, Third Conference on Petroleum Industry Automation, JAIP/Bogotá, Colombia, 2.012." [https://drive.google.com/file/d/1RqNaD0lcfEu5vNHfHv-9SDi9HdReeZ\\_5/view?usp=sharing](https://drive.google.com/file/d/1RqNaD0lcfEu5vNHfHv-9SDi9HdReeZ_5/view?usp=sharing)

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

**INSTRUCTOR:** Mr. Argenis Garcia, **Senior Instrumentation & Control Engineer**, and PM, 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:**  
[info@gprons.com](mailto:info@gprons.com); [gpronsusa@gmail.com](mailto:gpronsusa@gmail.com)