LDI TRAINING
"Leading Edge Courses for Professionals" ™

An LDI Training Course

INSTRUMENTATION ENGINEERING and CONTROL SYSTEM

by

Prof. Dr.-Ing. Ir. Yul Yunazwin Nazaruddin, MSc., DIC., IPM

COURSE DESCRIPTION

This training is intended to provide knowledge and understanding of instrumentation and control systems in an industry.

The discussion regarding instrumentation will be carried out in a comprehensive manner according to the unit or element of a control system, from measurement units, transmitters, transducers, to the final control unit (final control element or control valve).

Meanwhile, the discussion of control systems will start from the control system concept, elements, to how to tune and control system strategies in industry. Control systems to ensure work safety will also be discussed in this training.

The training will be carried out using presentation methods, as well as discussions and case studies, to suit the needs of participants in the field.

In general, after attending this training, participants are expected to gain a comprehensive understanding of the instrumentation and control systems used in industry, especially the oil and gas industry.

COURSE OVERVIEW

- **Introduction to Course**
- **Concepts of Instrumentation & Control System** (Process Control Elements/Units, controlled variable, disturbance, command signal, manipulated variable, etc).
- **Characteristics of Instrumentation** (static characteristics, dynamic characteristic, zero, span, range, accuracy, precision, hysteresis, repeatability, etc)
- **Controlled Process Dynamic Characteristics** (zero, 1st, 2nd order controlled system, dead time, *transportation lag, integrator, etc)*

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- **Temperature Instrumentation** (thermocouple, RTD (resistance temperature detector), thermowell, bimetal, etc)
- **Pressure Instrumentation** (absolute, gauge & differential pressure, pressure gauge, bourdon tube, piezo-resistive, etc)
- **Flow Instrumentation** (Orifice meter, Venturi meter, Turbine meter, Coriolis meter, USM, Diaphragm flowmeter, Magnetic meter, Annubar, etc)
- **Liquid Level Instrumentation** (float method, displacement method, bubbler system, ATG (automatic tank gauging), radar gauge, etc)
- **Control Node and Tuning, and Advance Strategies** (on-off, PID, proportional gain, integrative time, derivative time, Ziegler-Nichols, Cohen-Coon, etc)
- **Transmitter, Transducer & Signal Conditioning** (electric & pneumatic signal, analog transmitter, i/p, p/I, fieldbus, etc)
- **Final Control Element / Control Valve** (valve body: linier & rotary, valve actuator, valve characteristics, cavitation, flashing, etc)
- **Instrumentation & Control System for Safety** (layer of protection, BPCS, Alarm system, SIS, PSV, PRV, etc)
- **Discussion, Case Study, and Film**

WHO SHOULD ATTEND

Project Engineers, Maintenance Engineers, Operation Engineers, Mechanical Engineers, Process Engineer, Electrical and Instrument Engineers, QA/QC Engineers, Construction Engineers, and other related Engineers, Technologists, Plant Supervisors, and Plant Operators wanting to broaden their understanding of Basic Process Engineering Design

YOUR COURSE LEADER

Prof. Dr.-Ing. Yul Y. Nazaruddin is a faculty member of the Engineering Physics Department, Institut Teknologi Bandung (ITB) and a lecturer for undergraduate and graduate courses in engineering physics and in Instrumentation, Control and Automation related subjects. He obtained his Doktor Ingenieur (Dr.-Ing) degree from Ruhr University, Germany in 1994. He also obtained *Insinyur Profesional Madya (IPM)* certification as professional engineer in 1999, 2016 from Indonesian Institute of Engineers (Persatuan Insinyur Indonesia/PII).

He is currently the Chair of the Instrumentation and Control Research Group in the Faculty of Industrial Technology at Institut Teknologi Bandung, Indonesia. Since

1985, he has been a coordinator for various industrial training program at Control and Instrumentation Research Group, Engineering Physics Department, ITB, which activities include conducting surveys, developing courses and providing consultancies to various industries related to specific training needs in instrumentation and control subjects.

He is also a team leader / instructor / trainer for various industrial training/courses (including course notes writter) in various courses related to instrumentation and control subjects,

Prof. Nazaruddin has also been active as consultants for several companies (including Oil and Gas) and professional team leader / member at engineering companies.

COURSE DELIVERY

- This offline (face to face) course is conducted in Bahasa Indonesia
- Training hours are from 08:00 to 16:00 WIB
- Participants will receive course materials
- Participants will receive a certificate after completing the training

TRAINING CONFIRMATION

LDI Training will provide a Confirmation Letter after we receive registration according to the required quota .

This course is presented by LDITraining.

For information about LDI Training please visit www.lditraining.com
If you have any question about our courses, please email your enquiry to lditrain@indo.net.id or contact to: 021- 6326911 / 0811 812857

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