SYLLABUS OF ASME B31.3 COURSE

Time allocations	:	3 Days (Offline – Morning Class)
Trainer (tentative)	:	TBA
Office Email	:	info@ladwer.com
Office phone (WA)	:	+62853-6547-0234

PARTICIPANTS QUALIFICATIONS

This course is applicable to all personnel working in the oil and gas, and petrochemical industry, and who are involved in the design, procurement, engineering, construction, fabrication and inspection of process piping systems.

COURSE DESCRIPTION

This course focuses on learning to become familiar with the layout and contents of the ASME B31.3 Standard.

The main emphasis of this program is on promoting safety and maintaining optimal performance using participants specialized in process piping systems. It provides the oil and gas, and petrochemical industry with the assurance that process piping training participants trained and competent under this internationally recognized program have the required knowledge and experience for the job in the field.

ASME B31.3 Training will cover most of general sections (i.e. Chapter I to VI) with relevant figures & Appendices tables. Even when taken together, these are not sufficient to specify fully a methodology for ASME B31.3 Standard learning.

COURSE PURPOSE

Generally, this course is essential for process piping training participant. The main aim of this course is to provide the participants to obtain the technical requirements of ASME B 31.3 Standard.

COURSE LEARNING OUTCOMES

No	Course Materials	Learning Outcomes
1	ASME B31.3	By the end of learning this topic, the participant should be able to understand the content and application of ASME B31.3 that describes the Standard for fabrication of Process Piping. Introduction: Participants should understand: a) Latest ASME B31.3 Standard requirements b) Scope and definitions used in ASME B31.3 c) Designs requirements d) Materials used in the system e) Piping components f) Fabrication, assembly and erection requirements g) Inspection, examination and testing Chapter I, Scope and Definitions This chapter discusses about the responsibilities of process piping stake holders i.e. owner, designer, manufacturer or fabricator and Owner Inspector.

	ASME B31.3	The chapter also discusses what are included and excluded from the Standard and units of measure whether using SI (metric) or US Customary (imperial). Some definitions and terminology used throughout the Standard such as type of heat treatments, welding processes and fluid service categories. Fluid service categories which are discussed in the Standard i.e. • Category D Fluid Service • Category M Fluid Service (Chapter VIII), not discussed in this training • Elevated Temperature Fluid Service • High Pressure Fluid Service (Chapter IX), not discussed in this training • High Purity Fluid Service (Chapter X), not discussed in this training • Normal Fluid Service <u>Chapter II, Design</u> This chapter discusses only the formula of getting the thickness minimum of straight pipe and formula for MAWP and test pressure. This also includes the use of allowable stress values in appendix A (Table A-1) and joint efficiency factor of Table A-1B. <u>Chapter III, Materials</u> This chapter discusses about: a) Listed and unlisted materials b) Low temperature toughness test c) Impact testing methods and acceptance criteria <u>Chapter IV, Standards for Piping Components</u> This chapter discusses about piping components included in the standard (listed and unlisted), also reference documents which are referring to the piping components. <u>Chapter V, Fabrication, Assembly and Erection</u> This chapter discusses about: a) Welding requirements, which includes welding qualification and performance, welding materials, preparation for welding and weld repair b) Preheating requirements, such as preheat temperatures for various materials (P numbers) c) Heat treatment requirements, such as PWHT holding temperature and time table, exemptions to mandatory PWHT d) Bending and forming requirements, which includes forming, hot bending and cold bending e) Assembly and erection requirements, such as alignment, bolt torquing and flanged and threaded connections <u>Chapter VI, Inspection, Examination and Testing</u> This chapter includes discussion on: a) Inspection responsibility b) Examination requirements, acceptance criteria and extent of examination c) Examination personnel including NDT technician

	ASME B31.3	d) Examination procedures such as visual, MT, PT, RT and UT e) In-process examination f) Testing requirements (Leak test) which includes hydrostatic leak test, pneumatic leak test, initial service leak test, sensitive leak test and alternative leak test g) Records management and control

COURSE REGULATIONS

1. All participants must know and understand the procedure of joining the course
2. All participants have to come at the latest 5 minutes before the class starts
3. All participants must bring the updated course material during the class
4. All participants must know the syllabus and time schedule as the study guidance
5. The participants have to join the class minimum 80% of total hour of the course
6. If the participants need assistance, or any information related to the course program, they should ask the staffs of Ladwer Institute
7. If the participants do not understand the course material, the participants may ask the instructor during the class or out the class
8. All participants have to finish the quiz/ exams to complete the Ladwer Institute's Certificate
9. All participants have to complete the participants' feedback form to give opinions, suggestions, and complaint to develop our course
10. The certificate will be given to participants maximum 7 days after the class finishes

COURSE FORMAT (Offline - Morning Class)

Day	08.00 AM – 10.00 AM	10.00 AM – 10.15 AM	10.15 AM – 12.00 PM	12.00 PM – 13.00 PM	13.00 PM – 15.30 PM	15.30 PM – 15.45 PM	15.45 PM – 17.00 PM	15.45 PM – 17.30 PM
1	Introduction, ASME B31.3		ASME B31.3		ASME B31.3		ASME B31.3	
2	ASME B31.3	**Coffee Break**	ASME B31.3	**Lunch Break**	ASME B31.3	**Coffee Break**	ASME B31.3	
3	ASME B31.3		ASME B31.3		ASME B31.3		ASME B31.3	

REFERENCES

1. American Society of Mechanical Engineers (ASME), B31.3, Pressure Piping Standard, 2023 Edition, Chapter I to VI.