

COURSE DESCRIPTION

This is an introductory course, which aims to give a reasonable understanding about the Safety Instrumented Systems and Introduction to IEC 61508 international standard, which is commonly used in Safety Applications. Participants would understand the origin and concepts of safety life cycle, the fundamental principles of SIS, the design considerations of SIS, and the steps of SIS implementation and its benefits. The aim of this course is to bring the participants to the basic awareness level. The course provides skills, knowledge and understanding of principles and practices of Safety Instrumented Systems. The use of SIS is the mandatory requirement in process industries including that of Oil and Gas industry. It has to meet the requirements as per international standards. On successful completion of the course, the participants would be able to understand, analyze, specify, and implement Safety Instrumented System.

COURSE OBJECTIVES

- To familiarize participants with basic concepts of Safety Life Cycle and Safety Instrumented Systems
- To introduce participants with international standards viz. IEC 61508, IEC 61511
- To imbibe participants the concepts of reliability and availability, risk analysis, fault tolerance
- To provide participants the knowledge on SIS applications, specifications, and implementation practice
- To explain participants various architectures of SIS and configuration examples

WHO SHOULD ATTEND

Instrumentation, Electrical and Process Engineers, Project Engineers, Plant Managers interested to acquire the knowledge in the field of Safety Instrumented Systems. The course will be also beneficial for the maintenance and other department people concerned with the plant safety. It could be also useful for the procurement and quality personnel.

Training Methodology

Training will be delivered mainly through lectures with emphasis on practical examples and case studies. Case study sessions would be provided when and wherever possible.

THE INSTRUCTOR

The faculty for this course has total professional experience spanning around 23 years. He has worked in the field of Automation and Process Control with Indian as well as with the Middle East Company. He has shouldered responsibilities including that of project planning, integration, quality assurance, project performance measurement and reporting, sales and marketing technical support, engineering, design and implementation of instrumentation systems etc. He is well versed with the engineering practices followed as per IEC61508, and other standards.

He has conducted various training programmes in instrumentation and project engineering, safety systems and Leadership Development Programme etc.

He has commissioned control and data acquisition systems and associated field instruments for power plants, burner management system and has hands on experience of extensive logic trouble shooting and arranging maintenance activities. He has a good experience of design, engineering and commissioning of such systems.

COURSE OUTLINE

Module 1

Legislation and standardization
IEC 61508 introduction
IEC 61511 introduction
Comparison between IEC61511 and IEC61508

Module 2

Functional Safety Management
Risk analysis and SIL classification
Reliability analysis Introduction

Module 3

Voting & RBD presentation
SIS and Applications
Fire & Gas Systems
ESDV Systems
BMS Systems

Module 4

Review of SIS architectures
SIS design concepts
Reliability concepts
Application Case Studies

Module 5

SIS Specifications
Configurations
Assignments
Feedback Examination
Concluding Session