

# **Overview of Reliability Engineering Concepts and Applications One Day (8.0 PDH) Version**

**A Live Course on Applying Reliability Engineering for a System**

**Credit: 8.0 PDH's (1-Day)**

**Lead Instructor:** Anthony Darmiento, PE

## **Course description**

This seminar or course provides a foundation on applying reliability engineering within the life cycle of a system (i.e., facility, etc.), from design to operation. It covers common principles of reliability in a simple and practical way, as well as how to incorporate reliability engineering concepts. Upon attending this course, participants will be able to perform straightforward and common reliability calculations such as facility availability and failure rate. The course will present quantitative and non-quantitative methods on reliability prediction, reliability design, and analysis with practical examples. Best practices and methods of reliability engineering, in industrial, commercial and institutional environments are covered such as risk assessment, cost versus benefit, physics of failure, and root cause analysis. This course is for engineers, professional engineers, energy professionals, engineering managers, technical professionals, facilities managers and other professionals who are not intimately familiar or current on reliability engineering principles and practices and are interested in applying reliability principles within the design or operation of a system.

## **Learning Objectives & Take-Aways**

1. **After attending this course**, you will know the principles and concepts associated with reliability engineering. This understanding can be used to apply reliability concepts throughout the life cycle of a facility and plant. This includes quantitative or mathematical methods, as well as qualitative methods.
2. **You will understand** the different ways reliability can be addressed throughout the life of a facility or plant. This includes, but not limited to, techniques on how to assign reliability requirements to subsystems, improve a systems' reliability, and identify hidden defects via accelerated testing.
3. **You will be able to** apply reliability concepts such as calculating availability, performing root cause analysis, and failure mode and effect analysis (FMEA) to manage the reliability of a facility or plant. The focus will be on mechanical and electrical systems within a facility and plant.



**Why you shouldn't miss this course** – How this course can benefit you, your organizations, and what is unique about this course:

1. Have you ever wanted to **apply reliability engineering within your job duties** as a designer or operator of a facility like a process plant? If so, then this course or seminar will teach you the reliability tools and concepts to incorporate reliability within your design work.
2. Do you, as an engineer, manager, or technician, **feel that your knowledge and understanding of reliability principles** is inadequate or insufficient, then you must not miss this seminar
3. As an engineer, or manager **have you ever thought that application of reliability engineering would be advantageous, but it was too abstract of a concept?** Then, this seminar will present an excellent opportunity to help you learn the fundamental concepts of reliability engineering and to realize the benefits (i.e., improve equipment availability) of applying them.
4. Some workshops and seminars end up being monotonous monologues from the presenter to the audience. Not this one. **In this seminar, you will get an opportunity to learn practical applications of Reliability Engineering and engage the instructor in discussions.**
5. **Last, but not least** – If you are **not** a licensed Professional Engineer, but aspire to be one, and if you are interested in applying Reliability Engineering concepts and principles within your engineering specialty, then this one (1) day course could serve as a **“warm-up”** on preparing you to become more of an authority on Reliability Engineering principles, concepts and applications.

**Who should attend:**

- **Licensed Professional Engineers**, who need to meet the annual or biennial license renewal PDH (Professional Development Hour) or CEU (Continuing Education Units) requirements.
- **Engineers and Architects** who do not possess current working knowledge of reliability engineering.
- **Facility Managers, Engineering Managers, Program/Project Managers and other executives** or leaders who feel a lack of adequate reliability engineering knowledge to hold meaningful discussions and to make informed decisions on improving the reliability of their plant or facility
- **Non-engineers**, including **technical writers** responsible for developing operations and maintenance manuals for equipment
- **Maintenance Engineers and Maintenance Managers**
- **Other professionals whose annual PLP, Performance and Learning Program**, includes engineering/technical courses/seminars/workshops.