

Reliability Academy

Reliability Engineering Training Courses

Accelerated Reliability Testing

Goal: The course enables the designers and test engineers to implement accelerated reliability tests (AST, ALT) in product design projects. Practical examples help students to understand the physical aspects of accelerated testing.

1. Intro: Traditional Life Testing and Reliability Testing Today

- Traditional reliability testing: Reliability determination tests and Reliability development tests (accelerated tests)
- Requirements on product testing due to business models

2. Design for Reliability, Role of Testing

- Product reliability management program
- Reliability methods supporting the tests: Risk Analysis and FMECA
- Timing of testing in product development

3. Methods of Accelerated Life Testing (ALT)

- Test time compression with elevated stresses
- Failure models and failure distributions, life time determination

4. Techniques of Accelerated Stress Testing (AST)

- Elevated stresses in revealing failure modes
- Failure mechanisms as sources of failure modes

5. Conditioning in AST

- Test cycle planning to reveal relevant failure modes
- Selecting the stresses, system vs. subsystem testing, functional tests

6. Implementation of AST

- Iterative approach to stress testing
- Failure analyses, failure database and Lessons Learned