

WHY BECOME A CERTIFIED RELIABILITY ENGINEER?

As a Certified Reliability Engineer (CRE) you will understand how to use the principles of performance evaluation and prediction to improve product/system safety, reliability, and maintainability. CREs use engineering, probability, statistics, and other tools to ensure that their products and systems are more efficient and reliable.

What Are the Core Competencies of a CRE?

- A broad overview of reliability fundamentals including predictive modeling, root cause analysis, mean time to failure (MTTF), corrective and preventive action (CAPA), and more.
- Identification, analysis, and mitigation of risk using techniques such as fault tree analysis (FTA), failure mode and effect analysis (FMEA), hazard analysis, and need for design change.
- Analysis, management of data, and insights using probability statistics for reliability.
- Application of reliability planning, testing (accelerated life, stress screening, etc.), and modeling (reliability block diagrams, failure models, etc.) to inform design choices.
- A focus on life-cycle reliability through design techniques such as stress-strength analysis, design of experiments (DOE), design for reliability (DfR), and maintainability strategies.

What Is the Value to Your Company?

Optimal reliability engineering can:

- Increase the useful lifetime of products, reduce the time to market, and improve service.
- Reduce equipment downtime, life-cycle cost, and the costs of failure and warranty.
- Determine and correct the causes of failures before failures occur.
- Increase customer satisfaction through fewer unit failures.
- Improve safety through risk reduction.
- Maintain reliability during the rapid evolution of new material, methods, and complex systems.

What Is the Value to You?

- An improved skill set qualifies you for more positions within the modern business environment.
- CREs make \$7,423 more on average than those who do not have a certification.*

*Please see the current Quality Progress Salary Survey at: asq.org/qualityprogress/.



Qualifications and Requirements for CRE Certification

Candidates must have eight years of on-the-job experience in one or more of the areas of the Certified Reliability Engineer Body of Knowledge.

Education

Candidates who have completed a degree from a college, university, or technical school can waive some part of the eight-year experience requirement as follows (only one of these waivers may be claimed):

- Diploma from a technical or trade school— one year waived
- Associate's degree—two years waived
- Bachelor's degree—four years waived
- Master's or doctorate degree—five years waived

Reliability Engineer Professional Learning Resources and Certification Preparation

- CRE Certification Preparation Training (online learning)
- *The Certified Reliability Engineer Handbook*
- Reliability Engineer Division—an ASQ professional network

Recertification Required?

Yes, every three years.

How to Enroll for Certification

Visit asq.org/cert

MARKETPLACE INFORMATION

COMMON JOB FUNCTIONS

Commodity Risk Assessment Engineer
Principal Scientist
Product Development Engineer
Quality Engineer
Reliability Engineer
Risk and Reliability Analyst
Safety Engineer
Statistician
Systems Engineer
Test Engineer
Validation Engineer

COMMON INDUSTRIES

Aerospace
Automotive
Biomedical
Electronics
Government
Manufacturing
Medical Devices
Oil/Gas/Energy
Service
Telecommunications
Transportation

Key Market Trends

- There is a demand for Certified Reliability Engineers due to the increase of warranted products across markets.
- More industries are requiring compliance to reliability and safety standards.