

WHY BECOME A CERTIFIED SOFTWARE QUALITY ENGINEER?

Delivering quality is a powerful differentiator in a marketplace where high-quality software is now the exception rather than the rule. **As an ASQ Certified Software Quality Engineer (CSQE)** you will stand out as a professional who has mastered a comprehensive understanding of software quality development and implementation; have a thorough understanding of software inspection, testing, verification, and validation; and be able to implement software development and maintenance processes and methods that add value for end users of products.

What Are the Core Competencies of a CSQE?

- Enhanced fundamental understanding of quality philosophies, principles, methods, tools, standards, organizational and team dynamics, interpersonal relationships, professional ethics, and legal and regulatory requirements.
- Thorough understanding of systems architecture and how to implement software development and maintenance processes to reduce the risks associated with various software development methodologies.
- Define, select, and apply product and process metrics and analytical techniques, and have a sound understanding of measurement theory and how to communicate results.
- In-depth understanding of verification and validation processes, including early software defect detection and removal, inspection, and testing methods.
- Advanced knowledge of configuration management processes, including planning, configuration identification, configuration control, change management, status accounting, auditing, and reporting.

What Is the Value to Your Company?

CSQEs who improve software quality drive real business benefits. Investing in this area—for better tools, better training, or better processes—can yield significant returns. Some of these returns are financial—your organization can avoid losses due to quality problems. Others are harder to quantify but no less important, such as avoiding the brand damage caused by quality problems.

- Possess advanced skills that enable them to prevent low-quality software performance while troubleshooting problems and evaluating potential solutions within development teams.
- Ensure that new products work before they are released to the customer and that the software adheres to the standards set by the development company.

What Is the Value to You?

- Improved skill set qualifies you for more positions within business environments where you can enhance your creative and technical expertise to carry out innovative ideas.
- CSQEs with three to five years of experience make an average salary of \$105k per year; compared to those without who make approximately \$88k (national average).*

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



Qualifications and Requirements for CSQE Certification

Candidates must have eight years of on-the-job experience in one or more of the areas of the CSQE Body of Knowledge. A minimum of three years of this experience must be in a decision-making position.

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:

- 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

Software Quality Engineering Learning Resources and Certification Preparation

- Software Quality Training (on-site and online learning)
- *The Certified Software Quality Engineer Handbook, Second Edition*
- Software 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

Auditor/Inspector
Computer Systems Analyst
Consultant
Director
Project/Program Manager
Quality Analyst
Quality Manager
Software Development Engineer
Software Quality Engineer
Software Test Engineer

COMMON INDUSTRIES

Energy
Financial
Government
Healthcare
Manufacturing
Medical Devices/Pharmaceutical
Military
Pharmaceutical
Telecommunications
Transportation

Key Market Trends

- The global engineering software market is expected to reach \$50 billion by 2022.
- Increasing demand for automation across different end-use sectors such as automotive, energy and utility, IT and telecom, media and entertainment, and geology and science is encouraging the adoption of engineering software worldwide.
- The U.S. Bureau of Labor Statistics projects a 19-percent employment growth for software developers between 2014 and 2024, which is much faster than average for all occupations. In that period, an estimated 135,300 jobs will open up.