

Knowledge Systems Institute

Graduate School of Computer & Information Sciences and Management Information Systems



KSI - Software Quality Assurance and Test Automation Certificate Program

Qualified software assurance and test engineers are in high demand in today's software and computer IT industry. The skills employers are seeking engineers who have software quality assurance knowledge on quality control processes and standards, software testing techniques with hands-on experience, software test automation tools and project experience, strong communication skills, team working ability, so that they have the capability to successfully conduct software test projects and carry out quality assurance tasks in software development projects.

The *Software Quality Assurance Test Automation Certificate Program* offers three courses in software quality assurance to emphasize learning by doing and practice with practical projects and problems, and utilize state-of-the-art tools and solutions with hands-on exercises and project experience. All instructors are experienced professionals with strong academic and professional experience in the field. Classes may be taken individually, or as part of a Software Testing & Quality Assurance certificate program. All class credits can be accounted toward to KSI degree program credits.

What is the program?

The Knowledge Systems Institute (KSI) offers this certificate program to meet the high demand of the current industry. The program consists of three certificated courses covering different subjects in software quality assurance and test automation. Each course provides one certificate. Completing this program, students will award three certificates below:

- ***Software Test Engineer (STE)*** by completing ***Software Testing Techniques***
- ***Software Quality Assurance Engineer (QAE)*** by completing ***Software Quality Assurance***
- ***Test Automation Engineer (TAE)*** by completing ***Software Test Automation***

They are designed for students to gain a comprehensive knowledge and skill sets as practical hands-on experience. The curriculum of this program was designed with the assistance of software testing industry professionals to best reflect the skills needed to succeed in today's workplace. All instructors have extensive experience on research and industry experience in this field.

Who should take this program?

This program is designed for graduate students or professionals (test engineers, test managers, and QA engineers) who want to obtain a comprehensive understanding of software quality assurance and test automation and related techniques, methods. This program is not only useful

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for graduate students, but also for professional engineers who currently work in the real world. The primary reason is that graduates from software engineering and computer science programs in university and graduate schools in the past years did not obtain a comprehensive knowledge and skill sets in software testing, quality assurance, and test automation. Completing this program definitely helps engineers to obtain a comprehensive training on the state-of-the-art theories, techniques, and technology in this field.

Career Outlook

- With the skill sets of this program, students should be able to perform as qualified software engineers, in particular as test engineers, quality assurance engineers, or test automation engineers in software businesses, computer and IT industry. These engineers are in high demand at many metropolitan areas (i.e. Silicon Valley CA), Framingham (MA), Durham (NC), Boulder (CO)), different states (such as CA, WA, MA, VA, and NJ), in US as well as in the International Market. Source: [U.S. Department of Labor](#)
- The median salary for software engineers varies based on the level of experience, geographic market, and company size. Highly experienced software engineers can earn salaries of \$100,000 or more.

Source: [Salary.com](#)

Program Course Descriptions and Highlights:

KSI-CIS566: Software Testing Techniques:

This course presents a comprehensive study of software testing and quality control concepts, principles, methodologies, management strategies and techniques. The emphasis here is on understanding software testing process, planning, strategy, criteria, and testing methods, as well as software quality assurance concepts & control process. It covers the various subjects, including test models, test design techniques (black box and white-box testing techniques), integration, regression, and system testing methods.

KSI-CIS567: Software Test Automation:

This course presents a comprehensive study of software test automation, including concepts, principles, methods, test automation scripting, and test tools. The course covers the major software test automation topics: test automation infrastructure, test generation, test scripting and execution, test tool development, auto-test regression, and automatic test coverage analysis. By providing different types of test automation tools (black-box and white-box test tools), this course covers several important test automation topics, such as automatic GUI testing solutions and tools, b) automatic component testing and testability, c) model-based test automation, d) performance testing and automation, e) web-based and SOA-based test automation.

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KSI-CIS568: Software Quality Assurance:

This course presents a comprehensive study of software quality assurance, including software quality control management, processes, systems, methods, standards, certification, and measurement. The emphasis here is on understanding how to select and define quality assurance standards and control processes, and how to establish a cost-effective quality control system with well-defined quality measurement metrics. The course covers various quality inspections and verification techniques, expose to popular quality audit and certification processes and systems, such as ISO 9000 and SEI SW-CMM.

Why Knowledge System Institute (KSI)?

- Affordable master degree programs and certificate programs.
- Interactive courses that emphasize hands-on labs and project experience.
- All instructors have strong research and industry experience in software engineering in the field.
- Program has been successfully training software engineers and testers for more than 10 years.
- Online courses, evening and weekend classes are tailored to both new students and working professionals.
- All courses are credited and transferrable to other public and private graduate schools in USA.

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