

March, 2009

## **The Arizona Information Technology Skills Training Initiative (AITSTI):**

### **Preparing Arizona Workers for High Demand Jobs in Software Quality Testing and Assurance**

The Arizona Information Technology Skills Training Initiative was funded by a grant awarded under the President's High Growth Job Training Initiative, as implemented by the U.S. DOL's ETA.

**Mesa Community College** (MCC) is implementing a grant from the U.S. Department of Labor Employment and Training Administration to the State of Arizona Department of Commerce. The **objective** is to increase the skills of Arizona workers through the development of a new curriculum in Software Quality Assurance (SQA) that includes four comprehensive courses. The course content, provided by IBM, is being converted to online classes and curriculum that conform to community college criteria. Together they comprise a SQA emphasis as part of a Computer Information System (CIS) curriculum and provide for a proposed certification of completion after completing all four courses.

**The four courses** are (1) Software Quality, (2) Engineering Quality in Software Development, (3) Software Testing for Quality Assurance and (4) Testing Software using Rational Functional Tester (RFT).

**Software Quality** provides an overview of methods for managing and improving software quality. It offers a summary of quality trends and history in the software industry. It also provides hands-on practice in the Whole Plan Model, Orthogonal Problem and Defect Classification, as well as other types of quality measurements. It includes discussion of change management best practices and the tools that support those best practices. It includes practice in communication and leadership skills for the effective quality professional.

**Software Testing for Quality Assurance** provides an overview of the software lifecycle from a testing perspective, the role of testing in software development, testing concepts, and terminology. Hands-on practice in analyzing requirements as inputs to test cases, designing, documenting, implementing, and executing tests, and analyzing test results is included. An overview of test planning, risk analysis and test management practices is provided, as well as a discussion of effective use of metrics for reporting. Also included in the Software Testing class is discussion and application of IBM RUP software tools used by testers to execute a software test plan. It includes communication skills for the effective tester.

**Engineering Quality in Software Development** provides an overview of software development methodologies. It offers an in-depth look at software development phases and activities. It explores hands-on practice in techniques developers can use to improve software quality including: analyzing requirements, effective designs, unit test, static analysis, code inspections. It also gives an overview of development planning and risk analysis techniques and a discussion of effective use of metrics for reporting. It includes practice communication and leadership skills for the effective developer.

**Testing Software using Rational Functional Tester (RFT)** provides hands-on experience in the use of software testing tools. It offers practice in analyzing requirements as inputs to test cases, designing, documenting, implementing, executing tests, and analyzing test results. It provides opportunities to drill-down with automated GUI functional tests and to engage in performance test automation using Rational Performance Tester tools.

These courses are being offered as **3-Credit classes in a virtual online environment** within a custom delivery format. They are taught as synchronous online class with scheduled virtual lecture sessions. The class content is accessed by the student off-line at the student's convenience. Each class also includes teacher-led presentations and discussions. Students attend the discussion sessions and presentations via the Internet using collaborative software. **The delivery format can be modified to suit the needs of the customer.**

**Who will benefit from these classes?** Employed professionals in Software Engineering & Development who wish to improve their expertise in software testing as well as any student interested in Software Engineering and Software Quality Assurance careers.

**For more information and class registration details** contact

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Also see our new website for latest details at <http://aitsti.bii.maricopa.edu/homepage/>

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