

Education-Based  
Software Test Certifications

Attention:

# Software Testing & Quality Assurance Professionals

Achieve the Prestigious Designations:

## Certified Software Test Professional



## Certified Test Manager



## The only education-based certifications for software test and quality professionals

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International Institute for Software Testing  
Promoting Disciplined Software Testing Practices

## Testing is a Disciplined, Controlled Process

Testing software systems to verify they perform reliably and as expected is a very critical quality control activity. Unfortunately, this critical activity is being performed on almost every software project in a very ad hoc, informal manner by developers, testers, and users. Informal surveys conducted by the International Institute for Software Testing during its seminars indicate that less than 1% of test professionals attending these seminars have used formal test design techniques to design their tests.

The testing phase in many software projects is rarely planned and test teams are unable to perform adequate testing. Software testers have been given very little training and guidance on how to perform effective testing.

## Education is the Only Way to Establish Testing as a Profession and Discipline

One of the most effective ways to establish a profession is education that covers all areas of study that can serve the profession. Developing a Body of Knowledge (BOK), which needs to be mastered by everyone who performs testing, is an essential first step to establishing software testing as a profession. Educating testers on curriculum based on that BOK is the next step. Education is the only way to establish testing as a discipline and to change the perception that it is an ad hoc activity that requires minimal training.

## Education-Based Certification

The complexity of software systems and the demand of customers and users are increasing every day. With the current state of practice and lack of educated test teams, testing professionals often are unable to perform adequate testing of software systems that control different aspects of our lives. In spite of all this, formal academic programs seldom provide even rudimentary coverage of software testing, let alone teaching it as a discipline.

To fill this gap, the International Institute of Software Testing (IIST) took the lead in education-based certifications by forming an Advisory Board of industry experts and practitioners to provide direction to the effort of developing education-based certifications. The IIST Advisory Board strongly believes that the value of any certification program lies in its ability to meet individuals' diverse needs and interests for both breadth and depth of content enabling them to improve the way they perform their job more effectively on a day to day basis.

To achieve this goal of education-based certifications, IIST now offers two certification programs that are based on well-defined Bodies of Knowledge approved by IIST's Advisory Board. To achieve a certification, a candidate must attend and pass an examination on each of ten (10) courses of the candidate's own choice, where each of the Body of Knowledge subject areas must be addressed by at least one course. The Advisory Board agreed that such a model is vastly superior to certifications which are based only on a prep class and passing a single one-size-fits-all examination.

## How to Evaluate the Value of Certification

When selecting a certification to pursue, ask the following essential question: Will the certification make me a better test professional? A number of factors about a certification scheme can help answer this question. These factors can also be used to evaluate the value of the certification. Some of these factors are:

- How comprehensive is the program? Does it truly cover a wide range of knowledge areas?
- What do I have to do to earn the certification, is it merely passing an exam or will I receive education on how to do my job better?
- Is the program based on providing substantial coverage of each of the areas of a Body of Knowledge?
- Can students choose from among a variety of instructors and courses satisfying each of the Body of Knowledge education requirements or is it one-size-fits-all?
- In addition to a proof of completing the certification, will I receive any evidence of completing the course of study?
- Has there been any history of the certification being awarded to individuals without qualifying them? This can adversely affect how the software community perceives the value of the certification.

## International Institute for Software Testing - Certifications

The International Institute for Software Testing (IIST) is an educational and professional development organization that was founded to promote formal education in software testing through education-based certifications.

### Certified Software Test Professional (CSTP)

Who should pursue CSTP Certification?

- Anyone new to the testing area.
- Individuals whose test experience is narrowly focused (does not have a life cycle view).
- Experienced testers using ad hoc methods.
- Anyone who wishes to become a better test professional or advance his/her professional standing in testing.

### Certified Test Manager (CTM)

Who should pursue CTM Certification?

- Any person who worked in software testing for at least 3 years.
- People with a management or leadership role in testing.
- Development managers and development leads who wish to move to a test management or lead position.
- Auditors, Inspectors, and others who must evaluate the work product of the testing process.

# Certified Software Test Professional (CSTP)

CSTP is an education-based certification that is based on a Body of Knowledge approved by the IIST Advisory Board.

## Objectives of CSTP Certification

- Help individuals develop their software testing skills through formal education
- Establish a common skill set for software testing professionals according to a well-defined Body of Knowledge
- Create a pool of qualified software test professionals
- Prepare candidates for a wider range of software testing assignments
- Complement company in-house and on-the-job training programs
- Provide professional recognition and career enhancement

## Benefits of CSTP Certification

- Demonstrate a level of competence in software testing methodologies and techniques
- Helps individuals develop their software testing skills through formal education
- Individuals develop common methodologies, practical approaches and skill sets based on a well-defined Body of Knowledge
- Establishes disciplined and repeatable processes for a company with a team of CSTP's
- Prepares candidates for a wider range of software testing assignments
- Provides professional recognition and helps gain greater acceptance of software testing as a profession
- CSTP's are better prepared to advance toward increased responsibility or management
- CSTP's are proven to be more marketable and respected in the field

## Who Should Pursue Certification?

- Anyone new to the testing area
- Experienced testers using ad hoc methods
- Individuals whose test experience is narrowly focused (does not have a life cycle view)
- Anyone who wishes to become a better test professional or advance his/her professional standing in testing

## Certification Requirements

Two requirements must be satisfied before the CSTP certification can be granted. These are:

1. Formal education requirement
2. Job experience requirement

Upon satisfying these two requirements, a candidate shall submit an application to the IIST Chairperson for the certification to be granted. Application forms, which detail required enclosures, can be obtained on our web site at <http://www.iist.org/certification.php>. The application must also be accompanied by payment of the \$120.00 non-refundable graduation fee.

## The Formal Education Requirement

Candidates must complete a course of study consisting of at least one day in each of seven areas of the Body of Knowledge listed below. A minimum of 10 days of education is required to complete the education requirement. The formal education requirement of the certification was designed to provide some flexibility for candidates in designing their own courses of study. Candidates may select any of the courses offered by IIST that are marked as (CSTP). However, the course of study must cover all seven areas below. Candidates are required to complete a written exam for each course and pass with a level of performance no less than 80%. There is only one second chance to re-take the exam. There is a \$100 fee for retakes. Please e-mail [sean@iist.org](mailto:sean@iist.org) to schedule a retake exam. The time limit on completing all ten days of training is 5 years.

Non-IIST delivered courses may be considered for a maximum of two days towards the certification upon approval of IIST's Chairperson. Candidates must submit evidence of successful completion from a recognized training institution along with detailed course material for evaluation and a certificate of completion. Materials must be accompanied by a fee of \$25.00 for each course to be evaluated.

## The CSTP Body of Knowledge

### 1. Principles of Software Testing

- |                                         |                                        |
|-----------------------------------------|----------------------------------------|
| ⊙ Levels of Testing                     | ⊙ Testing client/server applications   |
| ⊙ Testing Internet and web applications | ⊙ Testing object-oriented applications |
| ⊙ Testing embedded systems              | ⊙ The testing life cycle               |

### 2. Test Design

- |                                          |                                                 |
|------------------------------------------|-------------------------------------------------|
| ⊙ Code-based test case design techniques | ⊙ Requirement-based test case design techniques |
| ⊙ Test design specification              |                                                 |

### 3. Managing the Testing Process

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|-------------------|--------------------------------------------|
| ⊙ Planning        | ⊙ Scheduling                               |
| ⊙ Reporting       | ⊙ Resources                                |
| ⊙ Risk Management | ⊙ Measuring and improving the test process |

### 4. Test Executions and Defect Tracking

- |                   |             |
|-------------------|-------------|
| ⊙ Test scripting  | ⊙ Reporting |
| ⊙ Defect tracking |             |

### 5. Requirement Definitions, Refinement and Verification

- |                                 |                            |
|---------------------------------|----------------------------|
| ⊙ Writing testable requirements | ⊙ Exploring requirements   |
| ⊙ Refining requirements         | ⊙ Defining requirements    |
| ⊙ Requirement verification      | ⊙ Requirement traceability |

### 6. Test Automation

- |                                       |                                        |
|---------------------------------------|----------------------------------------|
| ⊙ Tool evaluation and selection       | ⊙ Architectures                        |
| ⊙ Automation standards and guidelines | ⊙ Planning the test automation process |
| ⊙ Automation team roles               |                                        |

### 7. Static Testing (Inspections, Reviews, and Walkthroughs)

- |                           |                                 |
|---------------------------|---------------------------------|
| ⊙ Types of static testing | ⊙ The process of static testing |
| ⊙ Defect data analysis    | ⊙ Improving the process         |

## The Job Experience Requirement

To satisfy this requirement, a candidate must demonstrate that he or she has been working in a software test related job for at least one year and have had the opportunity to apply the formal training to their job. This requirement shall be met by means of a letter of support signed by the candidate's supervisor describing the candidate's specific role and responsibilities over a period of one year or more.



# CSTP Re-certification

## Rationale

Based on the objectives of the CSTP Certification and in response to the demands imposed on test professionals to handle a wide range of responsibilities using different development environments and technologies, re-certification through continuous education has become necessary. This necessity has also been confirmed by CSTP graduates who continuously inquire about a mechanism by which they can further develop skills in more advanced and specialized areas of software testing. In response to this need, the IIST Advisory Board has approved the requirements for re-certification as outlined below.

## Educational Requirements

An applicant for the re-certification shall complete a total of 10 educational units as described in the table below.

<b>Category A:</b> Minimum 4 units and up to 10 units	<b>Category B:</b> Maximum 6 units with no minimum	<b>Category C:</b> Maximum 4 units with no minimum
<ul style="list-style-type: none"> <li>Classroom courses with written exams.</li> <li>On-line courses administered by IIST.</li> <li>Courses are at the discretion of the applicant, but must be relevant to the Test Professional role and are subject to approval by IIST.</li> <li>Each day counts as one unit.</li> <li>College level courses on software testing or quality topics taken for credits will count as one unit for each one quarter or semester credit hour.</li> <li>Applicants must submit evidence of successful completion of the course and passing the exam.</li> </ul>	<ul style="list-style-type: none"> <li>Classroom courses with no exam required.</li> <li>Courses are at the discretion of the applicant, but must be relevant to the Test Professional role and are subject to approval by IIST.</li> <li>Course topics are up to the applicant's choice, but must be in software testing or software engineering.</li> <li>Each day counts as one unit.</li> <li>Applicants must submit evidence of successful completion of the course</li> </ul>	Professional development activities that fall into one of the following activities: <ul style="list-style-type: none"> <li>Presentations at professional conferences; each presentation counts for 2 units</li> <li>Publications in professional journal, magazines, or electronic forums; each publication counts for 2 units</li> <li>Attending conferences; each day counts as 1/2 unit</li> <li>Web-based courses requiring an exam; each course regardless of length counts as 1/2 unit</li> </ul>

An applicant must complete at least 4 units from category A. The remaining units can be completed from categories B or C. However, the 10 units must not include more than 6 units from Category B or more than 4 units from category C. The following table shows some examples of number of units from each category to complete the re-certification requirements.

Activities that qualify for each of the categories are described above. In order to count towards re-certification units, activities must be performed during the re-certification period. Activities performed before the last course taken for certification will not count towards re-certification. Evaluation of all activities will be at the discretion of the IIST Chairman. None of the courses need to be delivered by IIST.

An applicant for re-certification may submit Non-IIST courses for pre-evaluation for credits. An applicant must submit evidence of successful completion from a recognized training institution along with detailed course material for evaluation. The fee for this evaluation is \$25 per course.

Category A:	Category B:	Category C:
4	2	4
6	2	2
5	5	0
4	6	0
10	0	0
8	0	2

## Experience Requirements

An applicant shall provide evidence that he or she has continued performing job responsibilities in software testing or related areas. This requirement may be satisfied through a letter from the applicant's manager describing the specific activities performed over the specified period of time.

## Application

An applicant for re-certification shall submit the CSTP Re-Certification Application to the Chairman of IIST accompanied by evidence of completing both the educational and experience requirements and \$180 processing fee no later than 60 days before the date the certification expires. The CSTP Re-Certification Application form can be downloaded from our web site at <http://www.iist.org/certification.php>.

<b>CSTP Courses (and CTM Elective Courses)</b>		<b>Course lengths vary from 1 - 3 days.</b>
<b>Body of Knowledge Area</b>	<b>On-Site and Public Courses Available</b>	
CSTP Area # 1 <i>(CTM Elective)</i> <b>Principles of Software Testing</b>	<ul style="list-style-type: none"> <li>• Principles of Software Testing</li> </ul>	
CSTP Areas # 1 and 2 <i>(CTM Elective)</i> <b>Principles of Software Testing and Test Design</b>	<ul style="list-style-type: none"> <li>• Software Test Planning and Design</li> </ul>	
CSTP Area # 2 <i>(CTM Elective)</i> <b>Test Design</b>	<ul style="list-style-type: none"> <li>• Developing Reusable Test Design</li> <li>• Effective Test Design</li> </ul>	
CSTP Area # 3 <i>(CTM Elective)</i> <b>Managing the Testing Process</b>	<ul style="list-style-type: none"> <li>• Effective Test Management</li> <li>• Risk-Based Test Management</li> <li>• Test Planning Workshop</li> <li>• Writing Test Plans</li> </ul>	
CSTP Area # 3 and 4 <i>(CTM Elective)</i> <b>Managing the Testing Process and Test Executions and Defect Tracking</b>	<ul style="list-style-type: none"> <li>• Managing and Planning the Software Testing Process</li> <li>• Managing the Testing Process/Test Execution and Defect Tracking</li> </ul>	
CSTP Area # 4	<ul style="list-style-type: none"> <li>• Identifying and Executing the Most Important Tests</li> <li>• Managing the Test Execution Process</li> </ul>	
CSTP Area # 5 <i>(CTM Elective)</i> <b>Requirement Definitions, Refinement and Verification</b>	<ul style="list-style-type: none"> <li>• Defining and Managing User Requirements</li> <li>• Discovering and Testing Requirements with Use Cases</li> <li>• Effective Requirements for Effective Testing</li> <li>• Evaluating Business Requirements</li> <li>• Exploring and Defining Software Requirements</li> <li>• Writing Testable Requirements and Requirements-Based Testing</li> </ul>	
CSTP Area # 6 <i>(CTM Elective)</i> <b>Test Automation</b>	<ul style="list-style-type: none"> <li>• Principles of Software Test Automation</li> <li>• Software Test Automation: Principles, Architectures, and Strategies</li> <li>• Test Automation Architectures and Advanced Techniques</li> </ul>	
CSTP Area # 7 <i>(CTM Elective)</i> <b>Static Testing (Inspections, Reviews, and Walkthroughs)</b>	<ul style="list-style-type: none"> <li>• Static Testing for Quality and Test Professionals</li> <li>• Software Inspections &amp; Reviews: A Process-Oriented Approach</li> <li>• Software Inspections and Reviews for QA Professionals</li> </ul>	



Body of Knowledge Area	On-Site and Public Courses Available
<p>CSTP and CTM Elective Courses</p>	<ul style="list-style-type: none"> <li>• Advanced Performance Testing and Tuning Techniques</li> <li>• Becoming an Effective Test Manager: An Interactive Workshop</li> <li>• Building a Quality Assurance Function Step by Step</li> <li>• Database Application Testing Fundamentals</li> <li>• Database Testing: Structured Query Language for Test Professionals</li> <li>• Essentials of Graphical User Interface Testing</li> <li>• Estimating and Controlling Testing Projects</li> <li>• Improving Software Testing with the Use of Metrics</li> <li>• Industry Best Practices in Software Quality Assurance and Testing</li> <li>• Managing the Test Execution Process</li> <li>• People &amp; Politics of the Software Testing Process</li> <li>• Performance Testing: Analysis and Planning</li> <li>• Performance Testing: Analysis and Planning Workshop</li> <li>• Performance Testing for Web and Client/Server Applications</li> <li>• Practical Techniques for Software Quality Assurance</li> <li>• Programming and Database Concepts for Testing and QA Professionals</li> <li>• Project Management for QA Professionals</li> <li>• Risk-Based Testing Analysis and Strategy Development</li> <li>• Risk-Driven Software Testing</li> <li>• Software Project Estimation for Test Professionals</li> <li>• System and Application Testing for Security Vulnerabilities</li> <li>• Testing Database Stored Procedures and Triggers</li> <li>• Testing in Incremental and Highly Iterative Software Projects</li> <li>• Testing in a Rapid Application Development Environment</li> <li>• Testing in Agile and Extreme Projects</li> <li>• Testing Object-Oriented Systems for QA Professionals</li> <li>• Testing Web and eBusiness Applications</li> <li>• Understanding User Acceptance Testing</li> <li>• Unit and Integration Testing for Developers</li> <li>• User Acceptance Testing</li> <li>• User Acceptance Testing for Business and IT Managers</li> <li>• Using Metrics in Life-cycle Software Quality Assurance</li> </ul>

## Certified Test Manager (CTM)

### Rationale and Background

The International Institute for Software Testing (IIST) has been offering the Certified Software Test Professional (CSTP) certification since 1999. Currently there are thousands of people at different stages in the CSTP program. Although CSTP has been serving the purpose of establishing a foundation of software testing and providing test professionals with the skill and knowledge necessary to perform different test activities, a gap still exists in the management skills required by test managers and test leads to effectively manage the test process, the test project and the test organization. The Certified Test Manager (CTM) certification has been created to fill this gap. CTM is based on the Test Management Body of Knowledge (TMBOK) developed by IIST through its Advisory Board.

### Who Should Pursue Certification?

- Any person who has worked in software testing for at least 3 years
- People with a management or leadership role in testing
- Development managers and development leads who wish to move to a test management or lead position
- Auditors, inspectors, and others who must evaluate the work product of the testing process

## Objectives of Certification

The CTM Certification was developed to fill the gap in the management skills required by test managers and test leads to effectively manage the test process, the test project and the test organization. Specifically, CTM aims at the following objectives:

- Help individuals develop their test management skills through formal education
- Establish a common skill set for software test managers and test leads based on a well-defined Test Management Body of Knowledge
- Create a pool of qualified software test managers
- Prepare test professionals, especially those who achieved the Certified Software Test Professional (CSTP) designation, for management and lead positions in software testing projects
- Provide professional recognition and career enhancement for those who manage test projects

## The Test Management Body of Knowledge (TMBOK)

The TMBOK was developed by the International Institute for Software Testing through its Advisory Board. The IIST Advisory Board consists of practitioners and experts in software testing and quality. For a list of the IIST Advisory Board members, visit [www.iist.org/advisory.php](http://www.iist.org/advisory.php).

### The CTM Body of Knowledge

#### 1. Test Process Management

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|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <ul style="list-style-type: none"> <li>⊙ Quality policies, processes, and standards</li> <li>⊙ Process definition</li> <li>⊙ Process documentation</li> <li>⊙ Relationship with service management infrastructure processes (incident management, problem management, configuration management, change management, release management, etc.)</li> </ul> | <ul style="list-style-type: none"> <li>⊙ Defining quality goals</li> <li>⊙ Process control</li> <li>⊙ Best practices, including use of both static and dynamic testing</li> <li>⊙ Test processes for different development models (XP, RAD, JAD, waterfall, etc.)</li> </ul> |
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#### 2. Test Project Management

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|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <ul style="list-style-type: none"> <li>⊙ Test planning</li> <li>⊙ Task identification</li> <li>⊙ Tracking</li> <li>⊙ Identification of roles and responsibilities</li> <li>⊙ Project controls</li> <li>⊙ Metric tracking and presentation</li> <li>⊙ Using automated project management tools</li> <li>⊙ Using MS Project/GANTT/PERT charts and other project management techniques</li> </ul> | <ul style="list-style-type: none"> <li>⊙ Effort estimation</li> <li>⊙ Scheduling</li> <li>⊙ Reporting</li> <li>⊙ Resource allocation (people, hardware, software, and facilities)</li> <li>⊙ Financial analysis and ROI</li> <li>⊙ Presentation skills</li> <li>⊙ Directing, supervising, and assessing individuals' performance</li> <li>⊙ Leadership</li> </ul> |
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#### 3. Test Process Measurement and Improvement

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|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <ul style="list-style-type: none"> <li>⊙ Test coverage analysis</li> <li>⊙ Defining and capturing test measurements</li> <li>⊙ Test maturity models</li> <li>⊙ Performing assessments and using surveys</li> <li>⊙ Alternative measurement goal-setting with the Basili goal/question/metric paradigm</li> <li>⊙ Overview of the applicable IEEE standards</li> </ul> | <ul style="list-style-type: none"> <li>⊙ Incident tracking and management</li> <li>⊙ Basic "best practices" development metrics</li> <li>⊙ Establishing process goals</li> <li>⊙ Benchmarking</li> <li>⊙ Overview of process improvement models such as CMM/CMMI, Six Sigma, TOM, ISO, etc.</li> </ul> |
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#### 4. Test Organization Management

- |                                                                                                                                                                                                    |                                                                                                                                                                                                                                                                                               |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <ul style="list-style-type: none"> <li>⊙ Resource management</li> <li>⊙ Politics</li> <li>⊙ Training and career development</li> <li>⊙ Team building and retention</li> <li>⊙ Budgeting</li> </ul> | <ul style="list-style-type: none"> <li>⊙ Staffing, hiring, contracting, and reviewing performance</li> <li>⊙ Equipment, facilities, hardware, and software resource management</li> <li>⊙ Ethics</li> <li>⊙ Compensation</li> <li>⊙ Presentation skills including data preparation</li> </ul> |
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<b>5. Risk Management</b> <ul style="list-style-type: none"> <li>⊙ Risk analysis methodologies</li> <li>⊙ Calculating costs and probability</li> <li>⊙ Monitoring and controlling risks</li> <li>⊙ Risk-based test planning and management: sizing and resource planning</li> </ul>		<ul style="list-style-type: none"> <li>⊙ Risk identification, classification, and prioritization</li> <li>⊙ Risk reporting</li> <li>⊙ Contingency planning and mitigation</li> </ul>
<b>6. Test Automation Strategies and Architectures</b> <ul style="list-style-type: none"> <li>⊙ Defining a test automation strategy and plan</li> <li>⊙ Build it vs. Buy it: automation strategies/approaches</li> <li>⊙ Long term maintenance considerations</li> <li>⊙ Building a performance test team</li> <li>⊙ Calculating ROI of automation</li> <li>⊙ Process automation and metric analysis</li> </ul>		<ul style="list-style-type: none"> <li>⊙ Test tool evaluation and selection</li> <li>⊙ Developing skills and relevant test automation roles</li> <li>⊙ Selecting which tests to automate and converting from manual to automated</li> <li>⊙ Categories of automated tools that can be used to aid testing</li> <li>⊙ Test environments - test data, architecture, security, networks, etc.</li> </ul>
<b>7. Software Quality Assurance</b> <ul style="list-style-type: none"> <li>⊙ Quality Assurance vs. Quality Control</li> <li>⊙ Implementing Quality Assurance</li> <li>⊙ Inspections and review of artifacts other than code</li> <li>⊙ QA concepts, methods and approaches</li> <li>⊙ Independent Verification and Validation</li> <li>⊙ Prominent quality assurance models such as CMM/CMMI, Six Sigma, IEEE standards, TQM, and ISO</li> </ul>		<ul style="list-style-type: none"> <li>⊙ Defining processes</li> <li>⊙ Developing effective standards</li> <li>⊙ Development and Test lifecycles and methodologies</li> <li>⊙ ROI justification for Quality Assurance</li> <li>⊙ Quality Assurance according to W. Edwards Deming</li> <li>⊙ Quality Assurance for modern development methodologies: RAD, Agile and eXtreme</li> </ul>

## The CTM Certification Requirements

Two requirements must be satisfied before the CTM certification can be granted. These are:

1. Formal Education Requirement
2. Job Experience Requirement

Upon satisfying these two requirements, a candidate shall submit an application to the IIST Chairperson for the certification to be granted. Application forms can be obtained by contacting the IIST office. The application must be accompanied by payment of the \$120 non-refundable graduation fee. This fee covers the cost associated with record-keeping, grading exams, and certification plaque.

## CTM Formal Education Requirement

### **Course of Study:**

The total number of training days required is 10 days. All training must be completed in no more than 3 years. Credit for any training will expire 3 years after its completion.

A CTM Candidate must complete at least one day of training in each of the seven areas of the CTM Body of Knowledge. In addition, a CTM candidate must complete 3 days of “elective” training covering any testing or quality topics as fit within the candidate’s job responsibilities and interest.

### **CTM Training:**

Candidates may select any of the courses offered by IIST that are marked as (CTM) offered at the International Test Managers Weeks or any of the one-day tutorials offered in conjunction with PSQT that are marked as (CTM). However, the course of study must cover all seven areas of the BOK.

### **Written Exam:**

CTM candidates are required to complete a written exam for each course and pass with a level of performance no less than 80%. For courses conducted by IIST, a candidate is allowed to retake the exam for a second time without having to attend the course again. There is a \$100 fee for retakes. Please e-mail sean@iist.org to schedule a retake exam. If 80% performance is not achieved on a second attempt, the candidate must retake the course or another course.

**Transfer Credit:**

A CTM candidate may receive credit for attending courses by providers outside the CTM program for credit towards the CTM certification under any of the following conditions:

1. A CTM candidate who has been awarded the Certified Software Test Professional (CSTP) designation may receive a credit for THREE days as elective training towards the CTM certification.
2. A CTM candidate who has been awarded the Project Management Professional (PMP) certification may receive a credit for TWO days as elective training towards the CTM certification.
3. A CTM candidate may receive credit for courses attended by providers other than IIST for a maximum of TWO days as elective training towards the CTM certification. Candidates must submit evidence of successful completion from a recognized training institution along with detailed course material for evaluation and a certificate of completion. Materials must be accompanied by a fee of \$25.00 for each course to be evaluated.

Transfer credit is subject to the following rules:

1. A CTM candidate is allowed to transfer credit only based on one of the three conditions listed above.
2. The maximum number of training days transferable is three days
3. Transfer credits can be used only to satisfy elective training and may not be used to satisfy any Body of Knowledge area.

## CTM Job Experience Requirements

In order for the CTM certification to be granted, a candidate must have a total of at least three years working in test projects, including 1 year in a lead or management position in areas relevant to testing. This requirement must be completed by the time CTM is granted. This requirement shall be met by means of a letter of support describing the candidate’s specific role and responsibilities over a period of three years or more. The letter must be authored and signed by:

1. The candidate’s current or former supervisor/manager
2. The candidate’s client or customer (if self-employed)
3. A co-worker currently holding a CTM certification who has worked with the candidate on a testing project.

Multiple sources may be submitted to cover the three year period. Any variation from this requirement must be reviewed and approved by the IIST Chairperson.

<b>CTM Courses</b>	
<b>Body of Knowledge Area</b>	<b>On-Site and Public Courses Available</b>
CTM Area # 1 <b>Test Process Management</b>	<b>Test Process Management</b>
CTM Area # 2 <b>Test Project Management</b>	<b>Managing the Test Project</b>
CTM Area # 3 <b>Test Process Measurement and Improvement</b>	<b>Test Process Measurement and Improvement</b>
CTM Area # 4 <b>Test Organization Management</b>	<b>Managing the Software Test Organization Creating &amp; Leading the High Performance Test Organization</b>
CTM Area # 5 <b>Risk Management</b>	<b>Risk-Based Testing: Analysis and Strategy Development Risk Management: Methods and Metrics for Test Projects</b>
CTM Area # 6 <b>Test Automation Strategies and Architectures</b>	<b>Test Automation Strategies and Architectures</b>
CTM Area # 7 <b>Software Quality Assurance</b>	<b>Software Quality Assurance Methods and Techniques</b>

# CTM Re-certification

## Rationale

Based on the objectives of the CTM Certification and in response to the demands imposed on test professionals to handle a wide range of responsibilities using different development environments and technologies, re-certification through continuous education has become necessary. This necessity has also been confirmed by CTM graduates who continuously inquire about a mechanism by which they can further develop skills in more advanced and specialized areas of software testing. In response to this need, the IIST Advisory Board has approved the requirements for re-certification as outlined below.

## Requirements

CTM Certification will expire 3 years after it is granted. As a result, all CTMs must complete the re-certification requirements before that time.

## Educational Requirements

An applicant for the re-certification shall complete a total of 10 educational units as described in the table below.

Category A: Minimum 4 units and up to 10 units	Category B: Maximum 6 units with no minimum	Category C: Maximum 4 units with no minimum
<ul style="list-style-type: none"> <li>Classroom courses with written exams.</li> <li>On-line courses administered by IIST.</li> <li>Courses are at the discretion of the applicant but must be relevant to the Test Manager role and are subject to approval by IIST.</li> <li>Each day counts as one unit.</li> <li>College level courses on software testing or quality topics taken for credits will count as one unit for each one quarter or semester credit hour.</li> <li>Applicants must submit evidence of successful completion of the course and passing the exam.</li> </ul>	<ul style="list-style-type: none"> <li>Classroom courses with no exam required.</li> <li>Courses are at the discretion of the applicant, but must be relevant to the Test Manager role and are subject to approval by IIST.</li> <li>Course topics are up to the applicant's choice, but must be in software testing or software engineering.</li> <li>Each day counts as one unit.</li> <li>Applicants must submit evidence of successful completion of the course</li> </ul>	Professional development activities that fall into one of the following activities: <ul style="list-style-type: none"> <li>Presentations at professional conferences; each presentation counts for 2 units</li> <li>Publications in professional journal, magazines, or electronic forums; each publication counts for 2 units</li> <li>Attending conferences; each day counts as 1/2 unit</li> <li>Web-based courses requiring an exam; each course regardless of length counts as 1/2 unit</li> </ul>

An applicant must complete at least 4 units from category A. The remaining units can be completed from categories B or C. However, the 10 units must not include more than 6 units from Category B or more than 4 units from category C. The following table shows some examples of number of units from each category to complete the re-certification requirements.

Activities that qualify for each of the categories are described above. In order to count towards re-certification units, activities must be performed during the re-certification period. Activities performed before the last course taken for certification will not count towards re-certification. Evaluation of all activities will be at the discretion of the IIST Chairman. None of the courses need to be delivered by IIST.

An applicant for re-certification may submit Non-IIST courses for pre-evaluation for credits. An applicant must submit evidence of successful completion from a recognized training institution along with detailed course material for evaluation. The fee for this evaluation is \$25 per course.

Category A:	Category B:	Category C:
4	2	4
6	2	2
5	5	0
4	6	0
10	0	0
8	0	2

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