

TRICEN TECHNOLOGIES



NDT Technical Training  
**2011 Course Catalog**



## Table of Contents

TRICEN'S TRAINING SERVICES .....	3
DELIVERING QUALITY TRAINING.....	4
EDDY CURRENT COURSES.....	5
ULTRASONIC COURSES.....	7
VISUAL INSPECTION COURSES .....	9
MAGNETIC PARTICLE COURSES.....	10
LIQUID PENETRANT COURSES.....	11
SPECIALTY COURSES.....	12
INNOVATIVE TRAINING SOLUTIONS.....	13



## TRICEN'S TRAINING SERVICES

Our vision and goals focus on fulfilling the training needs of each customer by providing world-class training instructors and facilities to ensure that the most accurate and current technical information is delivered to each of our students. We strive to quickly respond to training needs on time and as expected—all with the end goal of improving inspection integrity through state-of-the-art instruction.

Our promise is to continue to employ the most modern teaching methods using hands-on applications and instructions on theories and techniques while offering new and innovative digitized solutions to you – our customer.

Tricen employs only leading experts as instructors for delivering a content enriched training program. Each instructor possesses a unique set of skills and career experiences as to provide each student with tools to ensure a successful career path. All certification based courses are directed and taught by an ASNT NDT Level III in the applicable method. All instructors have received additional education in study of teaching and instruction.

## DELIVERING QUALITY TRAINING

Tricen's training services team is constantly studying changing trends and technologies and adapting our classes to best suit our customers' needs—your needs. Our team is committed to providing quality training to our customers to help improve inspection accuracy, increase performance and reduce system downtime. That's why we offer a complete curriculum of technical training courses. Our philosophy is simple: Better inspection practices reduce maintenance and engineering costs. So it's no surprise that our courses are designed to simulate the environment in which you work and the real-world problems you encounter

### Real-world facilities

Tricen's training facilities were designed with the student in mind. Each location offers the students a facility that caters to both classroom and lab environments. Hands-on-training plays a vital role in ensuring that each student comprehends and retains the materials being taught. Each of our training facilities provides tools, samples and technologies that further set the standard for education. These facilities are available to all students throughout the duration of the training course to provide a basis for continuing their education outside of the boundaries that is often set by business hours, instructor presence, etc. Our students also benefit from continued education support from our instructors long after the courses are completed. It is our goal and mission to provide the highest quality inspectors to industry. Through continued education and dynamic learning we can achieve these goals.

### Distance Education

Distance education allows customers to receive the academic portions of a traditional instructor-led class without the expense of traveling to one of our training centers or paying for an instructor to come to their site. Individual students can log into a standard online collaborative meeting format and call into the class.

### Web Based Training

Training delivered through the web allows our customers to receive specific training at the times and locations as convenient for the student. Individual students can log into a secure website that monitors the participation and progress of the student. Please note some courses are not available through web delivery due to regulatory restrictions of the course material.

### Computer Based Training

We offer several CBT courses at all of the training facilities. The courses are monitored by certified instructors to ensure complete integrity of the courses completion and examination.

### Field Training

Under this program, a certified instructor provides training and support beyond what is achievable in the classroom. This program is especially beneficial to customers introducing inspectors to a new technique or method as applied to their installed systems, as a Tricen expert can work with technicians at the customer's location, answering questions and providing education on issues as they occur.

### Remote Training

Most all of Tricen's training programs are portable and can be performed at our customer's location with ease and reduction of costs where travelling the instructor and materials is less of a burden than travelling a large number of students. Even at remote locations our customers still benefit from receiving quality training that surpasses the standards currently set within the industry.

### Training Materials

Each course offers a wide range of training materials that go beyond the typical text book. These materials are provided to each student without additional costs. Our instructors promote the use of self-study for inspectors to continue advancement throughout their career.



# EDDY CURRENT COURSES

*Harnessing the power of electromagnetism*

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**Course Title:** ET General Familiarization

**Course Code:** ET-INT/1

**NDT Level:** n/a

**Course Length:** 2 days (16 hours)

**Course Size:** 15 (max)

**Available Formats:** IBT, WBT, CBT

**Course Costs:** See attached for current pricing

**Course Description:**

This course is an academic training session designed for personnel who require a general knowledge of the basic inspection principles, current practices, test equipment principles and the various techniques within the Eddy Current testing method.

**Course Requirements and Prerequisites:**

None

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**Course Title:** ET Level I Theory & Fundamentals

**Course Code:** ET-LVL/1

**NDT Level:** I

**Course Length:** 5 days (40 hours)

**Course Size:** 15 (max)

**Available Formats:** IBT, WBT

**Course Costs:** See attached for current pricing

**Course Description:**

This course is an academic and practical training session designed for entry-level inspectors. This course consists of academic lecture in the basic theories of electromagnetism and Eddy Current testing. The hands-on portion of this course consists of operating test instrumentation as applied to several inspection techniques and the use of inspection procedures/manuals. This course meets the guidelines of ASNT and can be applied towards technical certification.

**Course Requirements and Prerequisites:**

None

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**Course Title:** ET Level II Theory & Fundamentals

**Course Code:** ET-LVL/2

**NDT Level:** II

**Course Length:** 5 days (40 hours)

**Course Size:** 10 (max)

**Available Formats:** IBT, WBT

**Course Costs:** See attached for current pricing

**Course Description:**

This course is an academic and practical training session designed for experienced inspectors. This course consists of academic lecture in the advanced theories of electromagnetism and Eddy Current testing. The hands-on portion of this course consists of operating test equipment on various specimens under the guidance of industry regulations, code, and/or guidelines. This course meets the guidelines of ASNT and can be applied towards technical certification.

**Course Requirements and Prerequisites:**

Eddy Current Level I training of 40 hours or equivalent.

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**Course Title:** ET Tubing Inspections

**Course Code:** ET-TBNG/1

**NDT Level:** n/a

**Course Length:** 2 days (16 hours)

**Course Size:** 6 (max)

**Available Formats:** IBT

**Course Costs:** See attached for current pricing

**Course Description:**

This course is a practical training session designed for inspectors of all experience levels. This course consists of hands-on training with emphasis on the tooling and techniques required to perform inspections on heat exchanger tubing. The course guides the student through complete evolution of the inspection process as to familiarize him/her with all steps involved. Proper methods of troubleshooting will also be discussed. The course content may vary with the customer's overall understanding of the Eddy Current inspection process.

**Course Requirements and Prerequisites:**

Eddy Current Level I training of 40 hours or equivalent.

## EDDY CURRENT COURSES Cont'd

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**Course Title:** ET Surface Inspections

**Course Code:** ET-SRFC/1

**NDT Level:** n/a

**Course Length:** 2 days (16 hours)

**Course Size:** 6 (max)

**Available Formats:** IBT

**Course Costs:** See attached for current pricing

### **Course Description:**

This course is a practical training session designed for inspectors of all experience levels. This course consists of hands-on training with emphasis on the tooling and techniques required to perform inspections on surface applications such as welds, piping, turbine blades, etc. The course guides the student through complete evolution of the inspection process as to familiarize him/her with all steps involved. This course content may vary with the customer's overall understanding of the Eddy Current inspection process.

### **Course Requirements and Prerequisites:**

Eddy Current Level I training of 40 hours or equivalent.

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**Course Title:** ET Data Analysis (non-ferromagnetic materials)

**Course Code:** ET-DAT/IIA

**NDT Level:** II

**Course Length:** 10 days (approx. 80 hours)

**Course Size:** 8 (max)

**Available Formats:** IBT

**Course Costs:** See attached for current pricing

### **Course Description:**

This course is an academic and practical training session designed for experienced inspectors. This course consists of academic lecture on Eddy Current theory as applied to the interpretation of ET signals generated from heat exchanger tubing examinations and the basic materials and processes as found in heat exchanger applications. The hands-on training consists of analyzing various tube materials and systems that contains a wide-range of damage mechanisms. This course follows industry standards as defined by organizations such as EPRI. Credit from this course can be applied to the IIA technical certification or endorsement.

### **Course Requirements and Prerequisites:**

Minimum of 80 hours training in ET Level II and experience in tubing examination processes. Basic knowledge of Windows PC systems.

[www.tricen.net](http://www.tricen.net)

**Course Title:** ET Data Analysis (EPRI-QDA)

**Course Code:** ET-DAT/QDA

**NDT Level:** II

**Course Length:** 10 days (approx. 80 hours)

**Course Size:** 8 (max)

**Available Formats:** IBT

**Course Costs:** See attached for current pricing

### **Course Description:**

This course is an academic and practical training session designed for experienced inspectors. This course consists of academic lecture on Eddy Current theory as applied to the interpretation of ET signals generated from nuclear steam generator tubing examinations and the basic materials and processes as found in these systems. The hands-on training consists of analyzing various damage mechanisms and probe technologies. This EPRI based course follows the standards set by the organization and the nuclear industry. Training credit from this course can be applied towards the QDA certification/endorsement.

### **Course Requirements and Prerequisites:**

Minimum of 80 hours training in ET Level II and experience in tubing examination processes. Basic knowledge of computer systems.

*Currently, this course is only offered in our Minnesota offices.*



In addition to the above listed courses Tricen also offers specialized training on inspection software/hardware that is manufactured and developed by Zetec and CoreStar. Additional ET training services also include Data Management and Level III refresher/qualification courses.

# ULTRASONIC COURSES

*A sound path through the structures of our society*

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**Course Title:** UT General Familiarization

**Course Code:** UT-INT/1

**NDT Level:** n/a

**Course Length:** 2 days (16 hours)

**Course Size:** 15 (max)

**Available Formats:** IBT, WBT, CBT

**Course Costs:** See attached for current pricing

**Course Description:**

This course is an academic training session designed for personnel who require a general knowledge of the basic inspection principles, current practices, test equipment principles and the various techniques within the Ultrasonic testing method.

**Course Requirements and Prerequisites:**

None

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**Course Title:** UT Level I Theory & Fundamentals

**Course Code:** UT-LVL/1

**NDT Level:** I

**Course Length:** 5 days (40 hours)

**Course Size:** 15 (max)

**Available Formats:** IBT

**Course Costs:** See attached for current pricing

**Course Description:**

This course is an academic and practical training session designed for entry-level inspectors. This course consists of academic lecture in the basic theories of ultrasound and UT testing. The hands-on portion of this course consists of operating test instrumentation as applied to several inspection techniques and the use of inspection procedures/manuals. This course meets the guidelines of ASNT and can be applied towards technical certification.

**Course Requirements and Prerequisites:**

None

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**Course Title:** UT Level II Theory & Fundamentals

**Course Code:** UT-LVL/2

**NDT Level:** II

**Course Length:** 5 days (40 hours)

**Course Size:** 10 (max)

**Available Formats:** IBT

**Course Costs:** See attached for current pricing

**Course Description:**

This course is an academic and practical training session designed for experienced inspectors. This course consists of academic lecture in the advanced theories of ultrasound and UT testing. The hands-on portion of this course consists of operating test equipment on various specimens under the guidance of industry regulations, code, and/or guidelines. This course meets the guidelines of ASNT and can be applied towards technical certification.

**Course Requirements and Prerequisites:**

Ultrasonic Level I training of 40 hours or equivalent.

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**Course Title:** UT Level I/II per ASME Section XI App. VII

**Course Code:** UT-ASM/2

**NDT Level:** I and II available

**Course Length:** 10 days (40 hours class / 40 hours lab)

**Course Size:** 10 (max)

**Available Formats:** IBT

**Course Costs:** See attached for current pricing

**Course Description:**

This course is an academic and practical training session designed for experienced inspectors. This course consists of academic lecture in the theories of ultrasound and UT testing. The hands-on portion of this course consists of operating test equipment on various specimens under the guidance of industry regulations, code, and/or guidelines. This course meets the regulations of ASME Section XI Appendices VII and can be applied towards technical certification.

**Course Requirements and Prerequisites:**

Ultrasonic Level I training of 80 hours or equivalent for the Level II course.

## ULTRASONIC COURSES Cont'd

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**Course Title:** UT Sizing & Detection

**Course Code:** UT-SZDT/2

**NDT Level:** II

**Course Length:** 5 days (40 hours)

**Course Size:** 6 (max)

**Available Formats:** IBT

**Course Costs:** See attached for current pricing

### **Course Description:**

This course is a practical training session designed for inspectors with prior UT training and experience. This course consists of hands-on training with emphasis on the tooling and techniques required to perform sizing and detection techniques of defects in specimens such as welds, piping, and plates. The course guides the student through complete evolution of the inspection process as to familiarize him/her with all steps involved. This course content may vary with the customer's overall understanding of the Ultrasonic inspection process.

### **Course Requirements and Prerequisites:**

Ultrasonic Level I training of 40 hours or equivalent.

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**Course Title:** UT Measurements for Flow Accelerated Corrosion

**Course Code:** UT-FAC/1

**NDT Level:** I

**Course Length:** 3 days (24 hours)

**Course Size:** 12 (max)

**Available Formats:** IBT

**Course Costs:** See attached for current pricing

### **Course Description:**

This course is a practical training session designed for inspectors of all experience levels. This course consists of hands-on training with emphasis on the tooling and techniques required to perform thickness measurements as related to flow accelerated corrosion. The course guides the student through complete evolution of the inspection process as to familiarize him/her with all steps involved. This course content may vary with the customer's overall understanding of the Ultrasonic inspection process.

### **Course Requirements and Prerequisites:**

None

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**Course Title:** UT Phased Array Fundamentals & Principles

**Course Code:** UT-PAUT/2

**NDT Level:** II

**Course Length:** 5 days (40 hours)

**Course Size:** 10 (max)

**Available Formats:** IBT

**Course Costs:** See attached for current pricing

### **Course Description:**

This course is an academic and practical training session designed for experienced inspectors. This course consists of academic lecture in the theories of ultrasound and UT testing in regards to Phased Array technologies. The hands-on portion of this course consists of operating test equipment on various specimens under the guidance of industry regulations, code, and/or guidelines.

### **Course Requirements and Prerequisites:**

Ultrasonic Level I training of 40 hours or equivalent.

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Most courses can be custom tailored to suit the needs of your students, customers and/or certifying regulations.

## VISUAL INSPECTION COURSES

*Visual inspections are the cornerstone to all successfully implemented NDT examinations.*

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**Course Title:** VT Level I Theory & Fundamentals

**Course Code:** VT-LVL/1

**NDT Level:** I

**Course Length:** 1 day (8 hours)

**Course Size:** 15 (max)

**Available Formats:** IBT, WBT, CBT

**Course Costs:** See attached for current pricing

**Course Description:**

This course is an academic training session designed for entry-level inspectors. This course consists of academic lecture in the basic theories of visual inspections. This course meets the guidelines of ASNT and can be applied towards technical certification.

**Course Requirements and Prerequisites:**

None

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**Course Title:** VT Level II Theory & Fundamentals

**Course Code:** VT-LVL/2

**NDT Level:** II

**Course Length:** 1 day (8 hours)

**Course Size:** 15 (max)

**Available Formats:** IBT, WBT, CBT

**Course Costs:** See attached for current pricing

**Course Description:**

This course is an academic training session designed for entry-level inspectors. This course consists of academic lecture in the basic theories of visual inspections. This course meets the guidelines of ASNT and can be applied towards technical certification.

**Course Requirements and Prerequisites:**

Level I VT training of 4 hours or equivalent

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# MAGNETIC PARTICLE COURSES

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**Course Title:** MT Level I Theory & Fundamentals

**Course Code:** MT-LVL/1

**NDT Level:** I

**Course Length:** 2 day (16 hours)

**Course Size:** 15 (max)

**Available Formats:** IBT

**Course Costs:** See attached for current pricing

**Course Description:**

This course is an academic and practical training session designed for entry-level inspectors. This course consists of academic lecture in the basic theories of magnetism and MT testing. The hands-on portion of this course consists of operating test instrumentation as applied to several inspection techniques and the use of inspection procedures/manuals. This course meets the guidelines of ASNT and can be applied towards technical certification.

**Course Requirements and Prerequisites:**

None

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**Course Title:** MT Level II Theory & Fundamentals

**Course Code:** MT-LVL/2

**NDT Level:** II

**Course Length:** 1 days (8 hours)

**Course Size:** 15 (max)

**Available Formats:** IBT

**Course Costs:** See attached for current pricing

**Course Description:**

This course is an academic and practical training session designed for experienced inspectors. This course consists of academic lecture in the advanced theories of magnetism and MT testing. The hands-on portion of this course consists of operating test equipment on various specimens under the guidance of industry regulations, code, and/or guidelines. This course meets the guidelines of ASNT and can be applied towards technical certification.

**Course Requirements and Prerequisites:**

MT Level I training of 40 hours or equivalent.



## LIQUID PENETRANT COURSES

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**Course Title:** PT Level I Theory & Fundamentals

**Course Code:** PT-LVL/1

**NDT Level:** I

**Course Length:** 2 day (16 hours)

**Course Size:** 15 (max)

**Available Formats:** IBT

**Course Costs:** See attached for current pricing

**Course Description:**

This course is an academic and practical training session designed for entry-level inspectors. This course consists of academic lecture in the basic theories of Liquid Penetrant testing. The hands-on portion of this course consists of operating test instrumentation as applied to several inspection techniques and the use of inspection procedures/manuals. This course meets the guidelines of ASNT and can be applied towards technical certification.

**Course Requirements and Prerequisites:**

None

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**Course Title:** PT Level II Theory & Fundamentals

**Course Code:** PT-LVL/2

**NDT Level:** II

**Course Length:** 1 days (8 hours)

**Course Size:** 15 (max)

**Available Formats:** IBT

**Course Costs:** See attached for current pricing

**Course Description:**

This course is an academic and practical training session designed for experienced inspectors. This course consists of academic lecture in the advanced theories of Liquid Penetrant testing. The hands-on portion of this course consists of operating test equipment on various specimens under the guidance of industry regulations, code, and/or guidelines. This course meets the guidelines of ASNT and can be applied towards technical certification.

**Course Requirements and Prerequisites:**

PT Level I training of 40 hours or equivalent.



## SPECIALTY COURSES

Tricen offers a range of courses that help develop each student into a better inspector and field manager.

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**Course Title:** Train-the Trainer Instructor Training

**Course Code:** INST/1

**NDT Level:** n/a

**Course Length:** 5 days (40 hours)

**Course Size:** 6 (max)

**Available Formats:** IBT, WBT, CBT

**Course Costs:** See attached for current pricing

### Course Description:

This course is an academic and practical training session designed for entry-level inspectors. This course consists of academic lecture in the basic theories of Liquid Penetrant testing. The hands-on portion of this course consists of operating test instrumentation as applied to several inspection techniques and the use of inspection procedures/manuals. This course meets the guidelines of ASNT and can be applied towards technical certification.

### Course Requirements and Prerequisites:

None

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**Course Title:** NQA-1 Auditor

**Course Code:** QA-ADT/1

**NDT Level:** n/a

**Course Length:** 5 days (40 hours)

**Course Size:** 10 (max)

**Available Formats:** IBT, WBT, CBT

**Course Costs:** See attached for current pricing

### Course Description:

This training course consists of academic lecture in the fundamentals and practices of auditing quality programs under 10CFR50 appendix B regulations.

### Course Requirements and Prerequisites:

None

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**Course Title:** Technical Reporting Fundamentals

**Course Code:** TREP/1

**NDT Level:** n/a

**Course Length:** 3 days (24 hours)

**Course Size:** 8 (max)

**Available Formats:** IBT, WBT

**Course Costs:** See attached for current pricing

### Course Description:

This training course consists of academic lecture in the fundamentals of creating and formatting technical reports. The course guides the student through general accepted practices and formats in the creation and delivery of technical reports. The course has primary focus on report creation through new digital technologies.

### Course Requirements and Prerequisites:

General knowledge and experience with Windows (XP, Vista, or 7) and experience using Microsoft Office products (Word, Excel, Access, etc).



# INNOVATIVE TRAINING SOLUTIONS

## Course Availability

Our courses are scheduled throughout the year at all of our Tricen locations in addition to customer locations. For the most current listing of available course please visit our training schedule on the web at:

<http://tricen.net/services/training/training-schedules>

Please contact us directly for scheduling training at your facilities.

Availability is on a first come-first serve basis. As some courses reach full capacity quickly we recommend that registration is completed within 45 days of the start date.

## Course Costs

See attached pricing sheet for current training rates. All prices are listed in U.S. dollars and is a per student cost.

Tricen accepts all major credit cards in addition to other common payment methods. All payments must be made in full prior to the course starting.

## Course Registration

Each student must complete a registration form prior to acceptance into the course. Registration forms can be downloaded from our website at: [www.tricen.net/services/training/registration.pdf](http://www.tricen.net/services/training/registration.pdf) or by contacting us directly.

## Quality Assurance

All of Tricen's courses adhere to a strict program regiment that ensures quality is being implemented consistently and accurately. Tricen's program meets or exceeds the regulations, requirements and/or guidelines set forth by ASNT, ASME, EPRI and the NRC. Our QA program platform is based on compliance with 10CFR50 Appendix B.

All training and instructor records are maintained by Tricen for a period of at least ten years and are available upon request.

Credit for course completion is only possible through the successful completion of examination at the end of the course.

## See Into the Future with Tricen



+1.866.620.9407 (within the U.S.)

+1.772.925.3076 (outside the U.S.)

web@tricen.net - www.tricen.net



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