

# Registration Form

(Please complete all information)

To register on-line for the "Technical Assessor Training–Assessing Inorganic Chemistry (Non-metals)".  
Course offered in **Austin, Texas** on **August 21 to 22, 2014**. **PLEASE SIGN UP BY:** July 15, 2014.

Registration information: [www.nelac-institute.org](http://www.nelac-institute.org)  
 Register on-line: <https://www.regonline.com/asiinorgtexas14>  
 For Questions email: [mmoore@advancedsys.com](mailto:mmoore@advancedsys.com)  
 This Course will be held: TCEQ Campus, Building B, Room 201A  
 12100 Park 35 Circle, Austin, Texas 78753



## Please enroll me in the following Course

**AUGUST 21 TO 22, 2014**

2 day course "Technical Assessor Training – Assessing Inorganic Chemistry (Non-metals)"

**\$550 per person for Federal, State and Local Governments**

**\$750 per person for all others**

**\$50.00 discount if you bring your own copy of the printed 2009 TNI Environmental Laboratory Standard Volume 1 and 2, Checklist, and other materials provided prior to the course**

**TNI Volume 1 with ISO language and TNI Volume 2 without ISO language hardcopy required for exam.**

**SPECIAL REFRESHER FEE: \$450 per person for attendees not taking the exam - refresher training**

**\$50.00 discount if you bring your own copy of the printed Course book, exercises and other materials provided prior to the course**

**Prerequisite:** Students must read the 2009 TNI EL Standard before coming to class. It is recommended that students complete basic assessor training prior to taking this course.

**The following information is requested to sign up for this class using the TNI website.**

Name: \_\_\_\_\_

Title: \_\_\_\_\_

Company/Organization: \_\_\_\_\_

Address: \_\_\_\_\_

City: \_\_\_\_\_ State: \_\_\_\_\_ Zip: \_\_\_\_\_

Phone: \_\_\_\_\_ Email: \_\_\_\_\_

## Payment:

Payment must be received prior to the beginning of the course.  
No refunds for cancellations made two weeks prior to the course offering.



**DO NOT FAX OR EMAIL REGISTRATION: GOTO: [www.nelac-institute.org](http://www.nelac-institute.org)**

**Administrative Support:** Payment made to The NELAC Institute at [www.nelac-institute.org](http://www.nelac-institute.org). The NELAC Institute (TNI) is a 501(c)(3) non-profit organization whose mission is to foster the generation of environmental data of known and documented quality through an open, inclusive, and transparent process that is responsive to the needs of the community. a 501c3 not for profit organization

**Course Offered by:** Advanced Systems conducts training for environmental sampling, quality control, laboratory operations and field operations and designs Management Systems based on ISO/IEC Management System Standards and ISO/IEC 17025, TNI, DoD and other Environmental Technical Competence Standards.

## OBJECTIVES OF COURSE

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This course provides examples of the assessment process for inorganic non-metals laboratory technologies, based on The NELAC Institute (TNI) Environmental Laboratory standard. The principles for assessing specific technical disciplines within the laboratory operations are presented. The following are included course is sample preparation,

The course presents the fundamentals of how to assess technical operations for the following technologies:

Spectrophotometric	Infrared
Colorimetric	Titrimetric
Ion Chromatography	TOC/TOX
Gravimetric (e.g.; Residue/Solids)	Potentiometric
Chemical Oxygen Demand / Biochemical Oxygen Demand	

The rationale for assessing is based on proven quality principals that allow the determination of adherence to the defined system for the technical operations. The system standards used during this course are the 2009 TNI Environmental Laboratory (EL) standard. Personnel with a basic science background in this technical area assess operations by conducting an assessment of a laboratory system and technical operations to assure conformance to the stated management system and where applicable the mandated methods.

Personnel successfully completing the course will acquire the following:

- Knowledge sufficient to assess the implementation of the technology by the laboratory.
- An understanding of the key elements of data packages, and raw data to review and check effectively.
- How to write non-conformances and track corrective actions, evaluate root cause analysis and evaluate the effectiveness of the implementation.

### Final Exam

Students should prepare for the final exam prior to attending the class and in the evening of day 1. *Students must read TNI EL Volumes 1 and 2. Students are expected to be thoroughly familiar with the technology and standard before arrival at the course. You must obtain a 70% score to “successfully complete” the course. (NELAP assessors: You are required to have successfully completed technical assessor-training.)*

All students receive a certificate of course attendance if attending both days of class and not successfully completing the test. Students with test scores of greater than 70% receive a certificate of course completion.

## COURSE BACKGROUND

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Accreditation of laboratories is based on a single set of standards developed by The NELAC Institute (TNI). Members represent federal agencies, state programs and the private sector. This single standard is a uniform standard for all laboratories.

The standard developed by TNI incorporates current state program requirements and the International Standards Organization (ISO) standard ISO/IEC 17025:2005, "General Requirements for the Competence of Calibration and Testing Laboratories." The standard includes all quality assurance (QA) policies and quality control (QC) procedures that must be presented in either a QA Manual or laboratory procedures to help ensure and document the quality of the data produced.

Laboratories seeking accreditation under NELAP must assure implementation of all QA policies and the essential applicable QC procedures specified in Volume 1 of the TNI standard. The QA policies are applicable to environmental laboratories regardless of the size and complexity.

This course has been revised and materials updated to meet the requirements of the 2009 TNI Environmental Laboratory Standard for technical assessor training.

The NELAC standards may be downloaded from the web at [www.nelac-institute.org](http://www.nelac-institute.org). Click on "Standards", "Standards Home" to find the 2009 TNI Standards. The standard is purchased from TNI with the full version of the 2009 TNI standard including the ISO/IEC 17025 language.

Specific link to the 2009 TNI Environmental Laboratory (EL) Standard

[http://www.nelac-institute.org/standards.php?pab=1\\_5#pab1\\_5](http://www.nelac-institute.org/standards.php?pab=1_5#pab1_5)

The TNI Checklist: (2009 TNI Version in Excel), 2009 TNI EL Standard Volume 1 with ISO language and Volume 2 without ISO language are used throughout this course. The hardcopy of these materials is required for the final examination.

## COURSE AGENDA

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### August 21, 2014

08:00 AM Introductions & Logistics

08:15 AM Chapter 1: TNI Standards, PTs, Theory

- Review standard requirements, V1M1, V1M2, V1M4
- Review theory for inorganic analysis
- Professional conducts and ethics refresher
- Interviewing techniques to gather objective evidence

**10:00 AM Break**

10:15 AM Chapter 2: Basic Principles

- Review technology including instrumentation and software
 

Spectrophotometric	Infrared
Colorimetric	Titrimetric
Ion Chromatography	TOC/TOX
Gravimetric (e.g.; Residue/Solids)	Potentiometric
Chemical Oxygen Demand / Biochemical Oxygen Deman	
- SOP review and assessment

**12:00 Lunch (1.0 hour on your own)**

01:00 PM Chapter 3: Quality Control and criteria

- Essential QC V1M2 5.9 and V1M4
- Writing non-conformances

**03:00 PM Break**

03:15 PM Measurement Uncertainty

- Major sources of error, and how to assess them

05:00 PM Course Ends for Day

**COURSE AGENDA**

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**August 22, 2014**

08:00 AM Review and Questions from Day 1

08:30 AM Chapter 4: Assessment Process and Data Review

- ◆ Managing the assessment – Sampling and thoroughness site visit
- ◆ Record keeping review
- ◆ Assessment report writing
- ◆ Corrective Action/root cause review and evaluation of corrective actions

**10:00 AM Break**

10:15 AM Chapter 5: Summary and Questions

- Data Exercise including ways to detect improper practices
- Answer questions related to technologies

**12:00 Lunch (1.0 hour on your own)**

01:00 PM Chapter 5: Continued -

**Class Ends at 2 PM for students not taking Exam**

02:00 PM Chapter 6: Final Examination

- ◆ Scoring

**03:30 PM Break**

03:45 PM Chapter 7: Wrap-up

- ◆ Review Examination Answers
- ◆ Evaluation Forms

04:30 PM Course End

## COURSE NOTES

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Course starts promptly each day at 8:00 a.m.

Lunch is scheduled for 1 hour at noon each day. More or less will be allowed depending on availability of lunch locations.

*Lunch is on your own.*

Class ends each day at 5:00 p.m.

*Students must stay until the end to complete the course.*

Day 1 students should prepare for the final exam each evening.

*At the end of Day 1, students should prepare for the final exam by reading and reviewing the course materials.*

### Final Exam

*You must obtain a 70% score to “successfully complete” the course. (NELAP assessors: You are required to have successfully completed a basic assessor-training course.)*

All students receive a certificate of course attendance if not successful in completing the examination.

Students with test scores of greater than 70% receive a certificate of course completion.

*This course is not approved by TNI, NELAC or NELAP. It is up to the accreditation body to approve a technical assessor-training course in order to qualify its assessors*

*State accreditation body assessors have attended this class. Accreditation bodies have accepted this course for meeting the technical assessor training requirements of its assessors.*

This course was prepared in accordance with the TNI standard and the relevant parts of the TNI training guidance document.

**BRING TO CLASS:** Hard copy of the 2009 TNI Laboratory Standard Volume 1 with ISO language and Volume 2 without ISO language and Checklist and other class materials emailed to you prior to the start of the class will be provided to each student not requesting the discounted fee. The discounted fee is for students printing and bringing their own copies of the standard, checklist, and other materials to class. **Computer use during the exams is not allowed.**

Students should come to class knowing the contents of the TNI standard in order to successfully complete the course.

**LOGISTICS**

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**Dates:** August 21 to 22, 2014

**Instructor:** Marlene O. Moore, President, Advanced Systems, Inc.

**Location:** TCEQ Campus, Building B, Room B-201A  
12100 Park 35 Circle, Austin, Texas 78753

Local Contact: Frank Jamison, TCEQ, Email: [frank.jamison@tceq.texas.gov](mailto:frank.jamison@tceq.texas.gov)  
Phone number: 512-239-3754

**Parking:** No additional fee

**Hotels:** Several Hotels are available in the area

**Hours:** 8:00 AM to 5 PM

**Lunch is on your own**

Coffee, soda, water and break foods provided.