In today’s working environment, continuous learning and professional development are required to stay competitive and abreast of new developments. This is especially so in the field of corrosion, an industry that is based around technology and innovation. Continued education through NACE is an investment in your career that offers many tangible benefits.

A NACE course can launch a new career, broaden your area of expertise or be used as a refresher for any one element of your work. It can demonstrate your commitment to your profession, show continued mastery of your field, and offer greater recognition and credibility from your peers, within your company or in today’s competitive job market.

NACE is your place to turn to in achieving your career goals. Our courses are designed for continued, career-long professional development and may be taken as stand-alone training, or as part of the path toward achieving certification. NACE credentials are the ultimate proof of competence in the corrosion industry and we look forward to seeing you in a career-building class this year.

**TRAINING PROGRAMS INCLUDE:**

**General Corrosion Program (pg. 4-7)** — Gateway courses for individuals new to the corrosion industry and skill enhancement opportunities for experienced professionals.

**Coating Inspector Program (pg. 9-16)** — Trains coating professionals to properly inspect the surface preparation and application of a protective coating system on a variety of structures in any industry.

**General Coatings Program (pg. 18-20)** — A variety of training courses that provide the technical proficiency for coatings and linings application.

**Cathodic Protection Program (pg. 22-30)** — Designed to build an in-depth understanding of testing, evaluating, and designing both galvanic and impressed current cathodic protection systems.

**Pipeline Industry Program (pg. 32-38)** — Addresses internal corrosion, remediation technology and field techniques for carrying out integrity assessments, implementation, and management of integrity management programs.

**Online Training (pg. 40-42)** — A valuable and cost-effective method for continuous education and overall productivity enhancement that provides students with an easy to use and convenient way to learn industry and technology specific corrosion solutions.

**Did You Know...**

Corrosion affects **every industry**, costing over **$500 billion*** annually in the U.S. **NACE is on a mission to change that. You can help.**

*based on direct costs presented in 2002 Cost of Corrosion Study
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For certification information, visit [naceinstitute.org](http://naceinstitute.org)
Basic Corrosion—Revised!

This course covers a basic but thorough review of causes of corrosion and the methods by which corrosion is identified, monitored, and controlled. Active participation is encouraged through hands-on experiments, case studies, and open discussion format. A written exam is given at the end of the course.

<table>
<thead>
<tr>
<th>5-Day Classroom Course</th>
<th>3.6 CEUs</th>
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</thead>
<tbody>
<tr>
<td>Days 1–4: 8 a.m. to 5 p.m.</td>
<td></td>
</tr>
<tr>
<td>Day 5: 8 a.m. to 2 p.m., unless otherwise noted</td>
<td></td>
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</tbody>
</table>

For current pricing information or to register for this course, please visit nace.org/education

Who Should Attend

Anyone who needs the ability to recognize corrosion and understand its devastating potential, especially as it relates to his or her area of responsibility.

This includes:    • Technicians    • Salespersons    • Inspectors    • Managers    • Engineers

Prerequisites

Previous training in corrosion control is not required to take this course. However, a basic understanding of science and chemistry is recommended to gain the most value from this course.

Learning Objectives—The goal is to prepare students to:

- Define corrosion and recognize each form of corrosion
- Describe the economic, environmental, and safety significance of corrosion
- Recognize terms and definitions of basic electrochemistry
- Understand electrochemical processes and concepts
- Identify the different types of corrosive environments that affect corrosion
- Recognize the properties and classify types of metals, non-metals, composites, concrete, and ceramics
- Understand principal corrosion control methods
- Control corrosion by design, materials selection, modification of environment, protective coatings, and cathodic and anodic protection
- Differentiate between inspection and monitoring
- Recognize the principles of common techniques for inspection, monitoring, and testing

Reference Materials Included

- Basic Corrosion Manual
- Corrosion and Its Control: An Introduction to the Subject, Second Edition by Atkinson and Van Droffelaar

Certification* Options

- Corrosion Technician
- Corrosion Technologist
- Senior Corrosion Technologist
- Protective Coating Technology

Welcome to the
NACE Online Training Center
Class Starts When You Are Ready.

Basic Corrosion e-course

Basic corrosion is now available in a new online training format.

See page 40 for details.

nace.org

* All certifications are administered by the NACE International Institute, the independent certification affiliate of NACE International. Certifications are subject to periodic reviews and revisions, please refer to www.naceinstitute.org for the most current certification information.
Corrosion Control in the Refining Industry

This course provides methods of corrosion control through material selection and designing a systematic method for applying the technology of corrosion prevention to the design process. Classroom instruction is comprised of lectures and open discussions.

5-Day Classroom Course
Days 1–4: 8 a.m. to 5 p.m.
Day 5: 8 a.m. to 2 p.m., unless otherwise noted

Who Should Attend
Anyone who needs the ability to recognize corrosion and understand its devastating potential, especially as it relates to his or her area of responsibility.
This includes: Technicians, Salespersons, Inspectors, Managers, Engineers

Prerequisites
No prior training is required, but 1-2 years of work experience is recommended.

Learning Objectives—The goal is to prepare students to:

- Identify the various forms of corrosion and the specific mechanisms that result in each form
- Understand electrochemical processes and concepts
- Recognize the different types of corrosive environments that affect corrosion
- Control corrosion by selection of design and engineering materials, modification of environment, cathodic and anodic protection, and protective coatings
- Monitor corrosion using testing, inspection, specimen exposure, electrochemical methods, water chemistry and analysis of deposits

Reference Materials Included
- Corrosion Control in the Refining Industry Manual
- Corrosion Control in the Refining Industry Manual on CD
- REFIN*COR software and online subscription
### Designing for Corrosion Control

This course covers the principles of corrosion and corrosion control and provides a systematic method for applying the technology of corrosion prevention to the design process. An overview of the steps involved in materials selection common to many industries is also provided. Corrosion control in system design and the financial principles used in evaluating alternative materials and designs are also covered. Classroom instruction is comprised of lectures and open discussions and concludes with a written exam.

<table>
<thead>
<tr>
<th>5-Day Classroom Course</th>
<th>3.4 CEUs</th>
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<tr>
<td>Days 1–4: 8 a.m. to 5 p.m.</td>
<td></td>
</tr>
<tr>
<td>Day 5: 8 a.m. to noon, unless otherwise noted</td>
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</tbody>
</table>

**Who Should Attend**

Anyone who has a technical corrosion background but is new to design including:

- Civil engineers
- Mechanical engineers
- Design engineers
- Process engineers
- Consultants
- Contractors
- Architects

**Prerequisites**

No prior training is required. However, for those with a limited corrosion background, the NACE Basic Corrosion course (page 4) is recommended prior to taking this course.

**Learning Objectives**—The goal is to prepare students to:

- Effectively integrate corrosion control into the design process
- Match materials performance to service environments
- Understand the processes, methodologies and factors influencing materials selection
- Recognize the affects of corrosion and design on materials
- Properly select the methods to deliver design optimization
- Use various methods of economic analysis to find direct and indirect costs

**Reference Materials Included**

- Designing for Corrosion Control Manual
- Fundamentals of Designing for Corrosion Control: A Corrosion Aid for the Designer By R.J. Landrum

**Certification* Options**

- Senior Corrosion Technologist

A photo ID is required at the time of the certification exam.

**ON-SITE TRAINING**

Interested in hosting this course at your own facility? Visit nace.org/hostacourse to see details on how NACE can come to you!
GENERAL CORROSION PROGRAM

Offshore Corrosion Assessment Training (O-CAT)

This course addresses the elements of in-service inspection and maintenance planning for fixed offshore structures. Also covered in this course are the Bureau for Safety and Environmental Enforcement (BSEE) A-B-C facility evaluation grading system requirements for Level 1 Inspection Reporting. A written and practical exam is given at the end of the course.

<table>
<thead>
<tr>
<th>5-Day Classroom Course</th>
<th>3.8 CEUs</th>
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</thead>
<tbody>
<tr>
<td>Days 1–5: 8 a.m. to 5 p.m., unless otherwise noted</td>
<td>For current pricing information or to register for this course, please visit nace.org/education</td>
</tr>
</tbody>
</table>

Who Should Attend

Anyone involved in corrosion control and integrity management of fixed offshore structures. The curriculum benefits varied levels of personnel, from those with management and planning responsibilities to the field inspectors conducting in-service inspections of the facility. The program is also valuable for offshore platform operations personnel to better understand corrosion prevention systems utilized on offshore structures and their successful implementation.

Prerequisites

Previous training in corrosion control is not required to take this course. However, a basic understanding of science and chemistry is recommended to gain the most value from this course.

Learning Objectives—The goal is to prepare students to:

- Define corrosion and recognize the importance of corrosion control
- Consistently assess the condition of the corrosion protective systems in the offshore environment
- Recognize the various types of oil platforms/rigs and equipment
- Ensure the offshore structure is protected from corrosion and in accordance with regulations
- Provide safe and dependable structures and facilities through usage of corrosion prevention maintenance programs
- Identify and define the primary corrosion protection systems used in offshore
  - Protective Coatings
  - Splash Zone Systems
  - Cathodic Protection
- Recognize the various condition grading systems
- Break down a wellhead platform into a manageable system for condition assessment and data collection
- Perform a visual assessment and physical inspection of the corrosion prevention systems of a four-pile wellhead platform
- Be in accordance with assessment standards
- Deliver and maintain safety
- Understand the Bureau of Safety & Environmental Enforcement (BSEE) A-B-C facility evaluation grading system requirements for Level I inspection reporting

Reference Materials Included

- O-CAT Offshore Platform Photo Assessment Guide

Certification® Options

- O-CAT Technician
  A photo ID is required at the time of the certification exam.

For certification information, visit naceinstitute.org
Now Accepting Registrations!

NACE International Training Center - Dubai

Register Today

Located in the Dubai International Academic City (DIAC) Campus

DIAC is located on an 18 million sq. ft. campus dedicated to Higher Education. This state-of-the-art campus offers a full range of facilities including restaurants, news agents, bookstores, retail shops, and a student recreational center.

New Training Center Features:

- **4,000 sq. ft.** of training space
- Entire suite of NACE courses are being offered
- 2 dedicated training & exam rooms

To learn more, visit [www.nace.org/traindubai](http://www.nace.org/traindubai)

* All certifications are administered by the NACE International Institute, the independent certification affiliate of NACE International. Certifications are subject to periodic reviews and revisions, please refer to www.naceinstitute.org for the most current certification information.*
CIP Level 1

This course offers over 60 hours of instruction on the technical and practical fundamentals of coating inspection work for structural steel projects. This course provides students with knowledge of coating materials and techniques for surface preparation and application that prepares the student to perform basic coating inspections using non-destructive techniques and inspection instrumentation.

Classroom instruction is comprised of lectures, discussions, group exercises and hands-on practical labs that teach the student how to perform basic inspection tests. A written exam, practical exam, and inspector log book evaluation are given at the end of the course.

<table>
<thead>
<tr>
<th>6-Day Classroom Course</th>
<th>5.6 CEUs</th>
<th>For current pricing information or to register for this course, please visit nace.org/education</th>
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</thead>
<tbody>
<tr>
<td>Day 1: 10 a.m. to 7:30 p.m.</td>
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<tr>
<td>Days 2-5: 8 a.m. to 7:30 p.m.</td>
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</tr>
<tr>
<td>Day 6: 8 a.m. to 5 p.m. , unless otherwise noted</td>
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</table>

Who Should Attend

Although specifically designed for coating inspector trainees, this course benefits anyone interested in gaining a better understanding of coatings application and inspection including project engineers, quality assurance managers, contractors, technical sales representatives, blasters, paint applicators, and maintenance personnel.

Prerequisites

There are no prerequisites for this course.

Learning Objectives—The goal is to prepare students to:

- Recognize coating types and curing mechanisms
- Understand coating specifications including service environments and coating life cycle
- Understand surface preparation equipment, methods and standards for abrasive blasting, solvent cleaning and power and manual tool cleaning
- Apply coating by brush, roller, mitt, and conventional and airless spray
- Perform inspection procedures and the role of the inspector including safety, ethics, and conflict prevention and decision making
- Test for environmental or ambient conditions and nonvisible contaminants
- Utilize non-destructive test instruments such as wet-film and dry-film thickness gauges and low and high voltage holiday detectors
- Measure surface profile using replica tape and anvil micrometers, surface profile comparators, and digital surface profile gauges
- Identify quality control issues, recognizing design and fabrication defects and coating failure modes
- Use Material Safety Data Sheets (MSDS) and product technical data sheets
- Log and document data

Reference Materials Included

- CIP Level 1 Manual
- CIP Level 1 Manual on CD

Certification® Options

- NACE Coating Inspector Level 1—Certified
- NACE Coating Inspector Level 1—Certified with Marine Endorsement
- NACE Coating Inspector Level 1—Certified with Bridge Endorsement
- NACE Coating Inspector Level 1—Certified with Nuclear Endorsement
- Corrosion Technologist
- Senior Corrosion Technologist

A photo ID is required at the time of the certification exam.

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COATING INSPECTOR PROGRAM

CIP Level 2

This course focuses on advanced inspection techniques and specialized application methods for both steel and non-steel substrates, including concrete using both nondestructive and destructive techniques. Surface preparation, coating types, inspection criteria, lab testing, and failure modes for various coatings, including specialized coatings and linings are also covered.

Classroom instruction is comprised of lectures, discussions, group exercises, and hands-on labs using destructive and nondestructive instruments and test methods. Students will also participate in case studies based on real-life situations and practices of a coatings inspector. The course concludes with both written and practical exams.

6-Day Classroom Course
Day 1: 10 a.m. to 7:30 p.m.
Days 2-5: 8 a.m. to 7:30 p.m.
Day 6: 8 a.m. to 5 p.m., unless otherwise noted

5.6 CEUs

Who Should Attend

Anyone interested in becoming NACE Coating Inspector Level 2—Certified or increasing his or her coating inspection knowledge should attend this course.

Prerequisites

Successful completion of CIP Level 1 classroom training or CIP Exam Course 1 with a current CIP Level 1 certification is required to register.

Learning Objectives—The goal is to prepare students to:

- Understand the advanced corrosion theory
- Understand environmental controls and advanced environmental testing
- Identify centrifugal blast cleaning and water jetting equipment, standards, methods of use, and inspection concerns
- Recognize the importance of surface preparation, application and inspection of liquid-applied and thick barrier linings
- Use specialized application equipment including plural-component, electrostatic and centrifugal, and hot spray systems
- Understand concrete coatings
- Identify specialized coating techniques and application of non-liquid coatings
- Distinguish coating survey techniques and procedures and common coating failure modes

Reference Materials Included

- CIP Level 2 Manual
- CIP Level 2 Manual on CD
- Corrosion Prevention by Protective Coatings, Second Edition by C.G. Munger, revision Author L.D. Vincent
- User’s Guide to Hot Dip Galvanizing for Corrosion Protection in Atmospheric Service, TPC 9

Certification" Options

- NACE Coating Inspector Level 2—Certified
- NACE Coating Inspector Level 2—Certified with Marine Endorsement
- NACE Coating Inspector Level 2—Certified with Bridge Endorsement
- NACE Coating Inspector Level 2—Certified with Nuclear Endorsement
- Corrosion Technologist
- Senior Corrosion Technologist

A photo ID is required at the time of the certification exam.

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For training information, visit nace.org
COATING INSPECTOR PROGRAM

CIP Level 3 Peer Review

Peer review examinations are conducted by contemporaries of the coating inspection industry and are experts in their field of work. There is no corresponding coursework, only an oral assessment.

Candidates must demonstrate that they can apply the practical and theoretical knowledge of coatings they have learned throughout the CIP Level 1 and Level 2 courses and from experiences faced on the job in real-life situations. The exam questions are selected from a random draw of topics ranging from (but not limited to) standards, procedures, ethics, coatings use, inspection instruments, and specific practical questions that require applicants to use their experience to solve the problem.

2-Hour Oral Examination given in front of a three-member review board

Who Should Attend

Anyone interested in completing his or her CIP training to receive recognition as a NACE Certified Coating Inspector—Level 3.

Prerequisites

These requirements must be met before registering:

- Successfully completed CIP Level 1 and CIP Level 2
- Hold active CIP Level 2 Certification
- 5 years of verifiable coatings-related work experience (forms must be submitted at least 60 days prior to the start date). These forms are located in the CIP Student Manuals or may be downloaded from the NACE Institute Web site at www.naceinstitute.org. Submit your completed applications via fax to +1 281-228-6344, or e-mail to carol.steele@nace.org.

A photo ID will be required when attending the Peer Review.

Certification* Options

- NACE Certified Coating Inspector—Level 3
- NACE Certified Coating Inspector—Level 3 with Marine Endorsement
- NACE Certified Coating Inspector—Level 3 with Bridge Endorsement
- NACE Certified Coating Inspector—Level 3 with Nuclear Endorsement

A photo ID is required at the time of the certification exam.

Become a NACE INSTRUCTOR

Visit nace.org/naceinstructor to find out how to join our team today!

* All certifications are administered by the NACE International Institute, the independent certification affiliate of NACE International. Certifications are subject to periodic reviews and revisions, please refer to naceinstitute.org for the most current certification information.
## CIP Exam Course 1

Consists of both the CIP DVD Set 1 and the 3-Day Classroom Course. The course concludes with both written and practical exams. Successful completion of both the DVD set, and 3-day classroom course and examinations are required to achieve certification.

### CIP DVD Set 1

Presents the technical content from the NACE CIP Level 1 classroom course in an easy-to-use, self-study format. Course material is presented in PDF format with embedded videos that correspond to each chapter. Students can learn at their own pace while at home, in the office, or traveling.

**System Requirements**

- Windows XP/2000
- Adobe Acrobat Reader v9.4 or higher
- Pentium 4 Processor, 200Mhz Speed
- DVD Drive
- Speakers

**3-Day Classroom Course**

This option completes CIP Level 1 training contained in the CIP DVD Set 1. This three-day short course includes a practical lab at an offsite coatings facility, hands-on training necessary to perform coating inspection work, and team exercises. A written exam, and inspector log book evaluation are given at the end of this course.

A photo ID is required at the time of the certification exam.

### Prerequisites

All material contained in the DVD must be studied prior to course attendance.

**Reference Materials Included**

- CIP Exam Course Level 1 Manual on DVD

**3-Day Classroom Course**

| Days 1-2: 8 a.m. to 7:30 p.m. | 5.6 CEUs |
| Day 3: 8 a.m. to 5 p.m., unless otherwise noted | |

### CIP Exam Course 2

Consists of both the CIP DVD Set 2 and the 3-Day Classroom Course. The course concludes with both written and practical exams. Successful completion of both the DVD set, and 3-day classroom course and examinations are required to achieve certification.

### CIP DVD Set 2

Presents the technical content from the NACE CIP Level 2 classroom course in an easy-to-use, self-study format. Course material is presented in PDF format with embedded videos that correspond to each chapter. Students can learn at their own pace while at home, in the office, or traveling.

**System Requirements**

- Windows XP/2000
- Adobe Acrobat Reader v9.4 or higher
- Pentium 4 Processor, 200Mhz Speed
- DVD Drive
- Speakers

**3-Day Classroom Course**

This option completes CIP Level 2 training contained in the CIP DVD Set 2. This three-day short course includes hands-on training necessary to perform coating inspection work, and team exercises. Written and practical exams are given at the end of the course. A photo ID is required at the time of the certification exam.

### Prerequisites

Current CIP Level 1 certification is required to register for this course. All material contained in the DVD must be studied prior to course attendance.

**Reference Materials Included**

- CIP Exam Course Level 2 Manual on DVD
- Corrosion Prevention by Protective Coatings, Second Edition by C.G. Munger, Revision Author Louis D. Vincent, Ph.D.
- TPC-9 Users Guide to Hot Dip Galvanizing for Corrosion Protection in Atmospheric Service

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*All certifications are administered by the NACE International Institute, the independent certification affiliate of NACE International. Certifications are subject to periodic reviews and revisions, please refer to naceinstitute.org for the most current certification information.*

For training information, visit nace.org
Nuclear Power Plant Training for Coating Inspectors

This course is designed specifically to train coating inspectors to conduct inspections in nuclear power plants (NPPs), as well as to familiarize non-CIP-certified personnel with NPP coating requirements. The training focuses on the unique challenges presented by a nuclear facility's restrictive and safety-critical environment, as well as the verbatim compliance demanded in NPPs. The course also delves deeply into government, industry, and plant-specific regulations, technical specifications, and procedures. Classroom instruction is comprised of lectures and discussions but does not include inspection tools or equipment. A written examination is given at the end of the course.

5-Day Classroom Course
Days 1-5: 8 a.m. to 5 p.m., unless otherwise noted

Who Should Attend

- NPP quality assurance managers
- Qualified coating inspectors
- Inspection firms—qualified inspectors and managers
- Coating manufacturers sales and technical representatives
- Coating inspection and evaluation personnel at architectural engineering firms
- Coating contractors
- Coating evaluation personnel from the Nuclear Regulatory Commission (U.S.)
- Paint supervisors at nuclear power plants

Prerequisites

No prior training is required, but CIP Level 1 certification is strongly recommended.

Learning Objectives—The goal is to prepare students to:

- Understand NPP operations, work procedures, and industry terms
- Recognize all industry regulatory organizations worldwide including the U.S. Nuclear Regulatory Commission (NRC)
- Perform inspections in various areas of a NPP
- Recognize the purpose, criteria, and types of qualified NPP Coatings
- Develop and manage a safety-related coatings program
- Ensure surface preparation and coating application of different Coating Service Level (CSL) areas match coating system type and DBA qualification requirements
- Determine and apply required qualifications to meet industry and plant-specific ANSI and ASTM standards

Reference Materials Included

- ASTM Standards
- ASTM Annual Book of Standards, Vols. 06.01 and 06.02; D 5144-08; C177-04; D 92-05a; E 1461-07; E 1530-06; E 337-02 (07); and E 94-09
- ANSI Standards N 101.2-1972; N 101.4-1972; N 5.12-1974; N 45.2.6-1978

Certification* Options

- NACE Coating Inspector Level 1—Certified with Nuclear Endorsement
- NACE Coating Inspector Level 2—Certified with Nuclear Endorsement
- NACE Certified Coating Inspector—Level 3 with Nuclear Endorsement

A certificate of completion is administered after successful completion of this course to students who are not CIP-certified. Those who are CIP certified must submit the required NFCS work experience forms to receive the endorsement on their CIP certification.

A photo ID is required at the time of the certification exam.

For current pricing information or to register for this course, please visit nace.org/education

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COATING INSPECTOR PROGRAM

CIP One-Day Bridge

This course provides specialized training related to coating inspection of bridges that meets the training requirements specified by the U.S. Department of Transportation. The course focuses on coating application of bridges and the role of the inspector in the quality control process, and guides the inspector through a detailed project from start to finish.

Classroom instruction is comprised of lectures and open discussions and concludes with a written exam.

<table>
<thead>
<tr>
<th>1-Day Classroom Course</th>
<th>0.8 CEUs</th>
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<tr>
<td>8 a.m. to 5 p.m., unless otherwise noted</td>
<td>For current pricing information or to register for this course, please visit nace.org/education</td>
</tr>
</tbody>
</table>

Who Should Attend

- CIP participants seeking to expand their knowledge of bridge coating application and inspection
- Quality assurance and control inspectors and contractors
- DOT bridge engineers
- Asset maintenance managers
- Coatings contractors
- Inspection companies
- Surface preparers
- Applicators

Prerequisites

Active CIP Level 1 Certification or higher is required for attendance.

Learning Objectives—The goal is to prepare students to:

- Understand bridge nomenclature, bridge member identification numbering system, and industry specific terminology
- Recognize bridge types and components for steel, concrete, and wood bridges including superstructure, substructure, decks, and bearings
- Understand hazardous materials and waste containment, environmental protection and monitoring, and safety concerns
- Define surface preparation including pre-inspection, fabrication defects, blast cleaning, waterjetting, atmospheric environmental exposure, chemical contamination of corroded steel, and inspection for nonvisible contaminants
- Recognize coating materials for steel, concrete bridges, and wood bridges and ambient surface and materials condition requirements
- Identify sample specification encompassing construction methods for overcoating or removing coatings from a substrate, including surface pre-cleaning, preparation, and postcleaning requirements for overcoating and full removal

Reference Materials Included

- CIP One-Day Bridge Manual
- CIP One-Day Bridge Manual on CD

Certification® Options

- NACE Coating Inspector Level 1—Certified with Bridge Endorsement
- NACE Coating Inspector Level 2—Certified with Bridge Endorsement
- NACE Certified Coating Inspector—Level 3 with Bridge Endorsement

NACE Coating Inspectors with active CIP cards who successfully complete this course will receive a certificate of completion and an updated CIP wallet card with the bridge stamp. A photo ID is required at the time of the certification exam.

* All certifications are administered by the NACE International Institute, the independent certification affiliate of NACE International. Certifications are subject to periodic reviews and revisions, please refer to naceinstitute.org for the most current certification information.
**Marine Coating Technology**

This course covers the fundamental issues that are specific to coatings in the marine industry. After a description of the most common types of ships, the course describes the corrosion types affecting the ships' areas, the types of coatings and linings that are effective in the marine environment, the shipbuilding process, the surface preparation, application and inspection techniques, the IMO PSPC for Ballast Tanks, Cargo Tanks and Voids, as well as in-service survey and inspection, inspection records and procedures. This course was prepared by a team of experts with more than 20 years of experience in marine coating industry developed with both shipowners and shipyards. Classroom instruction is comprised of lectures and discussions but does not include inspection tools or equipment. A written examination is given at the end of the course.

**4-Day Classroom Course**

| Days 1-4: 8 a.m. to 5 p.m., unless otherwise noted | 3.1 CEUs |

*For current pricing information or to register for this course, please visit naceinstitute.org/

**Who Should Attend**

Although specifically designed for coating inspector trainees, this course benefits anyone interested in gaining a better understanding of coatings application and inspection including project engineers, quality assurance managers, contractors, technical sales representatives, blasters, paint applicators, and maintenance personnel.

**Prerequisites**

Content written and delivered with the assumption that students have completed CIP level 1. CIP Level 2 is highly recommended.

**Learning Objectives—The goal is to prepare students to:**

- Possess thorough knowledge of surface preparation and associated quality control
- Have intermediate knowledge of protective coatings, their uses on vessels, their application, and associated quality control
- Recognize salient safety issues associated with performing inspection in marine industry
- Identify and use instruments mainly used in marine coating inspection
- Understand various IMO Resolutions related to protective coatings (PSPC for ballast tanks, cargo tanks and voids, antifouling, etc.)

**Reference Materials Included**

- Marine Coating Technology Manual
- Marine Coating Technology Manual on CD

**Certification® Options**

- NACE Coating Inspector Level 1—Certified with Marine Endorsement
- NACE Coating Inspector Level 2—Certified with Marine Endorsement
- NACE Certified Coating Inspector—Level 3 with Marine Endorsement

A certificate of completion is administered after successful completion of this course to students who are not CIP-certified.

A photo ID is required at the time of the certification exam.

**ON-SITE TRAINING**

Interested in hosting this course at your own facility?

Visit [nace.org/hostacourse](http://nace.org/hostacourse) to see details on how NACE can come to you!
Pipeline Coating Applicator Training

Hands-on Field Training
This course covers the proper coating application procedures including understanding specifications, surface preparation, application techniques, dealing with changing ambient conditions, and quality control measures, for the most common coating materials to which contractors and inspectors are exposed to on pipeline projects.

Through the use of in-class presentations and videos, followed immediately by hands-on demonstrations in field conditions, students will learn, develop and practice the skills required to properly apply the specified field applied coatings under expected pipeline construction conditions. The course concludes with a written and hands-on examination.

Courses are currently offered in Edmonton, AB Canada

<table>
<thead>
<tr>
<th>5-Day Classroom Course</th>
<th>3.8 CEUs</th>
</tr>
</thead>
<tbody>
<tr>
<td>Days 1-5: 8 a.m. to 5 p.m., unless otherwise noted</td>
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</tr>
</tbody>
</table>

Who Should Attend
Targeted to pipeline coating applicators but will also benefit pipeline inspectors, foremen and supervisors, engineers-in-charge, manufacturer reps, and even experienced coatings personnel.

Prerequisites
- High School Diploma or GED
- Ability to lift 40 pounds
- Ability to perform basic math calculations (simple algebra, fractions, conversions)

Learning Objectives—The goal is to prepare students to:
- Understand pipelines types, what they deliver, and how they are constructed
- Recognize the impact of pipeline corrosion and the consequences of failure
- Efficiently pre-job plan to perform the work safely and in compliance with the project coating specification
- Implement methods to avoid or control contamination environmental factors that can affect coating application
- Introduce inspection equipment typically used during coating application
- Perform a proper preheating of the substrate
- 2 and 3 layer heat shrink sleeves
- Two part epoxy
- Pre-insulated pipe coatings
- Cold applied tapes
- Hot applied tapes
- Petrolatum/Wax brand tapes
- Understand repair methods and products for 2LPE, 3LPE, FBE and pre-insulated pipe coatings

Reference Materials Included
- Pipeline Coating Applicator Training Manual

Certificate of Completion
A certificate of completion is administered after successful completion of this course.

* All certifications are administered by the NACE International Institute, the independent certification affiliate of NACE International. Certifications are subject to periodic reviews and revisions, please refer to naceinstitute.org for the most current certification information.
Marine Coating Technology

Learn how to properly inspect the surface preparation, coatings and linings, and application techniques, on various marine structures.

LEARNING OBJECTIVES

The goal is to prepare students to:

- Possess thorough knowledge of surface preparation and associated quality control
- Have intermediate knowledge of protective coatings, their uses on vessels, their application, and associated quality control
- Recognize salient safety issues associated with performing inspection in marine industry
- Identify and use instruments mainly used in marine coating inspection
- Understand various IMO Resolutions related to protective coatings (PSPC for ballast tanks, cargo tanks and voids, antifouling, etc.)

CERTIFICATION/RECOGNITION

Students receive a Marine Coatings Specialty Endorsement on their Coating Inspector Program (CIP) certification card or a certificate of completion.

To register or for more information, visit nace.org/cip

*All certifications are administered by the NACE International Institute, the independent certification affiliate of NACE International
Shipboard Corrosion Assessment Training (S-CAT)

The Shipboard Corrosion Assessment Training course provides a foundation of coatings, corrosion, and corrosion control knowledge for assessing the condition of tanks and other military ship structures, while determining the required actions necessary to effectively maintain fully operational status. The course equips the naval assessor with practical guidelines for surveying and evaluating the condition of the protective coating system on specific areas of U.S. Navy vessels. The course concludes with a written and practical exam.

<table>
<thead>
<tr>
<th>S-Day Classroom Course</th>
<th>3.8 CEUs</th>
<th>For current pricing information or to register for this course, please visit nace.org/education</th>
</tr>
</thead>
<tbody>
<tr>
<td>Days 1-5: 8 a.m. to 5 p.m., unless otherwise noted</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Who Should Attend

- Coating Inspectors
- Shipyard Planners
- Design Engineers
- Type Commander Representatives
- Port Engineers

Prerequisites

It is highly recommended that students possess a High School Diploma or GED and have a minimum of three months work experience in the evaluation of corrosion or coatings breakdown on marine vessels.

Learning Objectives—The goal is to prepare students to:

- Perform visual assessments for all ship areas
- Determine corrosion control methods:
  - Design
  - Inhibitors
  - Protective Coatings
  - Cathodic Protection
  - Corrosion Resistant Materials
  - Alteration of Environment
- Utilize evaluation tools and equipment such as a tooke gauge and precision groove grinder
- Accurately evaluate a corrosion protection system
- Plan maintenance and manage inspection results in a Corrosion Control Information Management System (CCIMS)
- Properly conduct a tank inspection using the Corrosion Control Assessment Maintenance Manual (CCAM)
- Perform total tank scoring
- Perform adhesion testing

Reference Materials Included

- S-CAT Manual

Certification* Options

- S-CAT Technician
  A photo ID is required at the time of the certification exam.

* All certifications are administered by the NACE International Institute, the independent certification affiliate of NACE International. Certifications are subject to periodic reviews and revisions, please refer to naceinstitute.org for the most current certification information.
PCS 1 Basic Principles

This course introduces both the theoretical and practical aspects of using coatings to control corrosion and the economic benefits of managing them. Common corrosion control coatings are defined and when, how, and where they should be used.

Classroom instruction is comprised of lectures and open discussions and concludes with a written exam.

3-Day Classroom Course
Days 1-3: 8 a.m. to 5 p.m., unless otherwise noted

2.3 CEUs

For current pricing information or to register for this course, please visit nace.org/education

Who Should Attend
- Planning, engineering and supervisory level personnel responsible for industrial coatings and linings who are new to the field or position
- Specifiers, maintenance and project engineers in all industries
- Marketing Representatives of coatings materials or equipment
- Unit Managers involved in corrosion

Note: Students who hold a NACE CIP Level 1 certification or similar certification from SSPC or Frosio should plan on treating this course as a complete review of previously covered material.

Prerequisites
No prior training is required.

Learning Objectives—The goal is to prepare students to:
- Control corrosion and the purpose of coatings and linings
- Identify the types of coating systems and select the appropriate one based on factoring considerations
- Recognize the purpose of surface preparation and identify errors/omissions
- Understand the types of methods of application and associated standards
- Ensure desired results by understanding the importance of coating specification and pre-job conference
- Conduct inspection and quality control and understand the instruments and tools required
- Utilize instruments and tests to conduct inspection and quality control
- Accurately provide documentation and report data, recognize the importance of it and how it assists with maintenance planning

Reference Materials Included
- PCS 1 Basic Principles Manual
- PCS 1 Basic Principles Manual on CD
- Corrosion Prevention by Protective Coatings, Second Edition by C.G. Munger, Revision Author Louis D. Vincent, Ph.D.

Certification* Options
- Protective Coating Technologist
- Corrosion Technologist
- Senior Corrosion Technologist

A photo ID is required at the time of the certification exam.
PCS 2 Advanced

This course provides advanced level technology topics related to protective coatings. Highlights include an in-depth discussion of coatings, their basic chemical properties, and any unique considerations for their surface preparation, application and inspection. Testing coating properties and performance, common coating defects, substrates, selecting coating systems, the specification, and surveys and maintenance planning are also covered.

Classroom instruction is comprised of lectures and open discussions and concludes with a written exam.

<table>
<thead>
<tr>
<th>3-Day Classroom Course</th>
<th>2.3 CEUs</th>
</tr>
</thead>
<tbody>
<tr>
<td>Days 1-3: 8 a.m. to 5 p.m., unless otherwise noted</td>
<td>For current pricing information or to register for this course, please visit nace.org/education</td>
</tr>
</tbody>
</table>

Who Should Attend

This course is suitable for planning, engineering, supervisory level or technical personnel who work with protective coatings on a regular basis. The student should be able to learn basic chemistry concepts as they pertain to coatings and corrosion.

Prerequisites

No prior training is required, but completion of PCS 1 Basic Principles course is recommended.

Learning Objectives—The goal is to prepare students to:

- Recognize uses of coatings and linings, best practices and external factors that influence their use
- Understand the difference between organic and inorganic coatings
- Recognize the uses and benefits of convertible coatings
- Understand specialty coating types, advantages/disadvantages, and standards that govern them
- Discuss coating characteristics including the basic chemistry and unique characteristics that affect surface preparation and application needs
- Perform common test and qualification methods for liquid-applied coatings
- Recognize the chemistry of non-liquid and liquid applied coatings
- Understand the various types of tests performed on coatings and identify coating defects
- Understand substrate surface preparation issues and industry standards, configuration types, and factors affecting their coating application
- Develop a complete and unambiguous coating specification.
- Set coating system selection goals, objectives, performance requirements, design engineered properties and trade-offs
- Select an appropriate test to determine the condition of the substrate
- Select an appropriate test to determine the condition of the existing protective coating system

Reference Materials Included

- PCS 2 Advanced Manual
- PCS 2 Advanced Manual on CD
- Corrosion Prevention by Protective Coatings, Second Edition by C.G. Munger, Revision Author Louis D. Vincent, Ph.D.
- TPC-9 Users Guide to Hot Dip Galvanizing for Corrosion Protection in Atmospheric Service

Certification* Options

- Protective Coating Specialist
- Corrosion Technologist
- Senior Corrosion Technologist

A photo ID is required at the time of the certification exam.

* All certifications are administered by the NACE International Institute, the independent certification affiliate of NACE International. Certifications are subject to periodic reviews and revisions, please refer to naceinstitute.org for the most current certification information.
How Can You Increase Your Protective Coating Knowledge?

Enroll in the NACE Protective Coating Specialist (PCS) Program

NACE’s Protective Coating Specialist Program consists of courses tailored for individuals of all levels of experience in protective coatings and linings—from the beginner to those looking to expand their roles in management or achieve certification*. The PCS 3 Management Course is coming soon and will complete the PCS Certification Program.

To register or for more information, visit nace.org/pcs

*All certifications are administered by the NACE International Institute, an independent affiliate of NACE International.
## CP 1—Cathodic Protection Tester

This course provides theoretical knowledge and practical fundamentals for testing on both galvanic and impressed current CP systems. Classroom instruction is comprised of lectures and hands-on training at an outdoor facility, using equipment and instruments for CP testing. An open book written exam and a closed book practical exam is given at the end of the course.

### 6-Day Classroom Course

| Day 1: 1 p.m. to 6:30 p.m. | Days 2-5: 8 a.m. to 6:30 p.m. | Day 6: 8 a.m. to 3 p.m., unless otherwise noted | 4.8 CEUs | For current pricing information or to register for this course, please visit nace.org/education |

### Who Should Attend

This program benefits anyone responsible for supervising CP systems, measuring the effectiveness of CP systems, and/or recording this data, including CP field personnel and technicians.

### Prerequisites

The following prerequisites are highly recommended, but not required:
- High School Diploma or GED
- Six months of CP work experience
- Ability to perform basic math calculations (simple algebra, fractions, and conversions)

If you are not sure if you possess the basic knowledge to pass CP 1, you may walk through the short primer on Ohm's Law and Math Assessment online at nace.org/cp.

### Learning Objectives—The goal is to prepare students to:

- Understand the basics of electricity, electrical laws, electrochemistry, corrosion, and CP theory
- Understand how polarity is related to current flow and metal corrosion activity
- Conduct tests to identify shorts and continuity tests in CP systems
- Use test instruments to perform a variety of field tests such as structure-to-soil potentials, voltage and current measurements, soil resistivity, pipe/cable locating, and rectifier readings
- Understand CP components including impressed current systems, galvanic anodes and test stations
- Read shunts and understand their use in rectifiers, bonds, and anodes
- Perform periodic surveys to confirm the effectiveness of a CP system
- Gain knowledge of reference cells, their maintenance, use, and precautions
- Learn basic location mapping, report preparation, and recordkeeping
- Review safety issues specific to CP
- Understand code requirements related to CP

### Reference Materials Included

- CP 1—CP Tester Manual
- CP 1—CP Tester Manual on CD
- Peabody’s Control of Pipeline Corrosion, Second Edition by A.W. Peabody

### Certification* Options

- CP 1—Cathodic Protection Tester

A photo ID is required at the time of the certification exam.

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*All certifications are administered by the NACE International Institute, the independent certification affiliate of NACE International. Certifications are subject to periodic reviews and revisions, please refer to naceinstitute.org for the most current certification information.
CP 2—Cathodic Protection Technician

This course provides both theoretical knowledge and practical techniques for testing and evaluating data to determine the effectiveness of both galvanic and impressed current CP systems and to gather design data.

Classroom instruction is comprised of lectures and hands-on training at an outdoor facility, using equipment and instruments for CP testing. An open book written exam and a closed book practical exam is given at the end of the course.

<table>
<thead>
<tr>
<th>6-Day Classroom Course</th>
<th>4.8 CEUs</th>
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</thead>
<tbody>
<tr>
<td>Day 1: 1 p.m. to 6:30 p.m.</td>
<td></td>
</tr>
<tr>
<td>Days 2-5: 8 a.m. to 6:30 p.m.</td>
<td></td>
</tr>
<tr>
<td>Day 6: 8 a.m. to 3 p.m., unless otherwise noted</td>
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</tbody>
</table>

Who Should Attend

This program benefits anyone responsible for supervising CP systems, measuring the effectiveness of CP systems, and/or recording this data, including CP field personnel and technicians.

Prerequisites

The following prerequisites are recommended.

- In-depth high school chemistry and mathematics course
- The NACE Basic Corrosion course
- CP 1—Cathodic Protection Tester or equivalent

Learning Objectives—The goal is to prepare students to:

- Perform advanced field tests (including current requirement test, shorted casing test, IR drop test, soil resistivity, and interference tests) and evaluate the results
- Perform tests to verify the presence of stray current interference and recommend method(s) to mitigate the interference
- Conduct and understand the importance of periodic surveys, including IR-Free readings, polarization decay tests, and current measurements
- Maintain documentation and records, including data plotting and analysis
- Understand AC voltage and its mitigation
- Test and troubleshoot rectifier component parts
- Understand corrosion coupon test stations
- Understand code requirements related to CP

Reference Materials Included

- CP 2—CP Technician Manual
- CP 2—CP Technician Manual on CD
- Cathodic Protection Survey Procedures, by W. Brian Holtsbaum

Certification* Options

- CP 2—Cathodic Protection Technician
- Corrosion Technologist
- Senior Corrosion Technologist

A photo ID is required at the time of the certification exam.
**CATHODIC PROTECTION PROGRAM**

**CP 3 — Cathodic Protection Technologist**

The CP3 course builds on the technology presented in the CP2 course with a strong focus on interpretation of CP Data, trouble shooting and migration of problems that arise in both galvanic and impressed current systems, including design calculations for these systems.

Classroom instruction is comprised of lectures and hands-on training at an outdoor facility, using equipment and instruments for CP testing. An open book written and problem solving exam is given at the end of the course.

**IMPORTANT NOTE:** The CP Technologist certification is a challenging exam. A direct progression from CP2—Cathodic Protection Technician to CP3—Cathodic Protection Technologist does not exist. Participating only in the CP3—Cathodic Protection Technologist course does not ensure success on the Cathodic Protection Technologist examination. Attendance at the CP2—Cathodic Protection Technician course along with adequate field testing and data interpretation experience as well as fundamental theoretical understanding of cathodic protection concepts is highly recommended.

<table>
<thead>
<tr>
<th>6-Day Classroom Course</th>
<th>5.1 CEUs</th>
</tr>
</thead>
<tbody>
<tr>
<td>Day 1: 10 a.m. to 6:30 p.m.</td>
<td></td>
</tr>
<tr>
<td>Days 2-5: 8 a.m. to 6:30 p.m.</td>
<td></td>
</tr>
<tr>
<td>Day 6: 8 a.m. to 5 p.m., unless otherwise noted</td>
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</tbody>
</table>

For current pricing information or to register for this course, please visit nace.org/education

**Who Should Attend**

Individuals with extensive CP field experience and a strong technical background in cathodic protection.

**Prerequisites**

A strong algebra background, with thorough understanding of units conversions and scientific notation, is required as a minimum mathematics prerequisite. A basic understanding of trigonometry and geometry is also recommended.

**Learning Objectives—The goal is to prepare students to:**

- Understand activation, concentration, and resistance polarization, and the mathematical expressions of these concepts
- Understand the factors that affect polarization (area, temperature, relative movement, ion concentration, oxygen concentration)
- Apply the NACE criteria for CP and make necessary adjustments
- Identify errors in data collection/CP measurements including contact resistance errors, voltage drop errors, and reference electrode errors where the technologist is employed
- Determine ideal current distribution for a CP system taking into account the factors affecting current distribution
- Perform advanced cathodic protection testing using correct measurement techniques to monitor CP system performance, and accurately interpret the data collected to ensure optimum CP system performance.
- Identify and implement a method of control that will mitigate the effects of the stray current
- Conduct and document interference tests to determine if interference exists and identify the source of the interference

**Reference Materials Included**

- CP 3—CP Technologist Manual
- CP 3—CP Technologist Manual on CD

**Certification* Options**

- CP 3—Cathodic Protection Technologist
- Corrosion Technologist
- Senior Corrosion Technologist

*A photo ID is required at the time of the certification exam.

*All certifications are administered by the NACE International Institute, the independent certification affiliate of NACE International. Certifications are subject to periodic reviews and revisions, please refer to naceinstitute.org for the most current certification information.
CATHODIC PROTECTION PROGRAM

CP 4—Cathodic Protection Specialist

This course focuses on the principles and procedures for CP design on a variety of structures for both galvanic and impressed current systems. The course discusses theoretical design concepts, considerations that influence the design (environment, structure type/materials of construction, coatings), design factors, and calculations (including attenuation).

Classroom instruction is comprised of lecture, in-class discussion, and practice with design calculations on various structures (i.e., pipelines, tanks and well casings, offshore applications, and steel reinforcing in concrete structures). The course concludes with a written and a problem solving examination. The examination is open book and students are welcome to bring any printed reference material they would like to the examination.

IMPORTANT NOTE: The CP Specialist certification is a challenging exam. A direct progression from Cathodic Protection Technologist (CP 3) to Cathodic Protection Specialist (CP 4) does not exist. Participating only in the CP 4—Cathodic Protection Specialist course does not ensure success on the Cathodic Protection Specialist examination. Substantial experience involving all aspects of cathodic protection, including design and formal education in math/science/engineering, is critical to students' success in the course and examination. Attendance at the Cathodic Protection Technologist and CP Interference courses are highly recommended before taking the CP 4—Cathodic Protection Specialist course or exam-only option.

6-Day Classroom Course
Day 1: 1 p.m. to 7:30 p.m.
Days 2-5: 8 a.m. to 7:30 p.m.
Day 6: 8 a.m. to 5 p.m., unless otherwise noted

Who Should Attend

Individuals with experience in the design, installation, and maintenance of CP systems.

Prerequisites

Students must have completed college or university-level courses in algebra, geometry, and trigonometry, and must have significant amounts of practical experience in CP Design.

Learning Objectives—The goal is to prepare students to:

- Understand activation, concentration, and resistance polarization, and the mathematical expressions of these concepts
- Understand the factors that affect polarization (area, temperature, relative movement, ion concentration, oxygen concentration)
- Apply the NACE criteria for CP and make necessary adjustments
- Identify errors in data collection/CP measurements including contact resistance errors, voltage drop errors, and reference electrode errors where the technologist is employed
- Determine ideal current distribution for a CP system taking into account the factors affecting current distribution
- Perform advanced cathodic protection testing using correct measurement techniques to monitor CP system performance, and accurately interpret the data collected to ensure optimum CP system performance.
- Identify and implement a method of control that will mitigate the effects of the stray current
- Conduct and document interference tests to determine if interference exists and identify the source of the interference

Reference Materials Included

- CP 4—Cathodic Protection Specialist Manual
- CP 4—Cathodic Protection Specialist Manual on CD

Certification® Options

- CP 4—Cathodic Protection Specialist
- Corrosion Technologist
- Senior Corrosion Technologist

A photo ID is required at the time of the certification exam.
## CATHODIC PROTECTION PROGRAM

### CP 1—Cathodic Protection Tester Exam-Only

Students seeking CP 1—Cathodic Protection Tester certification and do not want to take the CP 1—Cathodic Protection Tester course may earn certification through an Exam-Only option.

Exam is offered on last day of the regularly scheduled CP 1 course (candidates may only attend the course on day of the exam)

A photo ID is required at the time of the certification exam.

<table>
<thead>
<tr>
<th>4.5-Hour Examination</th>
<th>2.5-hour written examination (open book)</th>
<th>2-hour practical examination (closed book)</th>
</tr>
</thead>
</table>

### Prerequisites—Highly recommended, but not required

- High School Diploma or GED
- 6 months CP work experience
- Ability to perform basic math calculations (simple algebra, fractions, & conversions)

### Reference Materials Included

- CP 1—CP Tester Manual (by mail after registering for exam)

For current pricing information or to register for this exam, please contact FirstService at +1 281-228-6223 or firstservice@nace.org.

### CP 2—Cathodic Protection Technician Exam-Only

Students seeking CP 2—Cathodic Protection Technician certification and do not want to take the CP 2—Cathodic Protection Technician course may earn certification through an Exam-Only option.

Exam is offered on last day of the regularly scheduled CP 2 course (candidates may only attend the course on day of the exam)

A photo ID is required at the time of the certification exam.

<table>
<thead>
<tr>
<th>4.5-Hour Examination</th>
<th>2.5-hour written examination (open book)</th>
<th>2-hour practical examination (closed book)</th>
</tr>
</thead>
</table>

### Prerequisites

- In-depth high school chemistry and mathematics course
- The NACE Basic Corrosion course
- CP 1—Cathodic Protection Tester or equivalent

### Reference Materials Included

- CP 2—CP Technician Manual (by mail after registering for exam)

For current pricing information or to register for this exam, please contact FirstService at +1 281-228-6223 or firstservice@nace.org.

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# CATHODIC PROTECTION PROGRAM

## CP 3—Cathodic Protection Technologist Exam-Only

Students seeking CP 3—Cathodic Protection Technologist certification and do not want to take the CP 3—Cathodic Protection Technologist course may earn certification through an Exam-Only option.

* A photo ID is required at the time of the certification exam.

### Examination

Exam is offered on last day of the regularly scheduled CP 3 course (candidates may only attend the course on day of the exam).

| 7.5-Hour Examination | 5-hour written examination (open book) | 2.5-hour problem solving examination (open book) |

### Prerequisites

A strong algebra background, with thorough understanding of units conversions and scientific notation, is required as a minimum mathematics prerequisite. A basic understanding of trigonometry and geometry is also recommended.

### Reference Materials Included

- CP 3—CP Technologist Manual (by mail after registering for exam)

For current pricing information or to register for this exam, please contact FirstService at +1 281-228-6223 or firstservice@nace.org.

## CP 4—Cathodic Protection Specialist Exam-Only

Students seeking CP 4—Cathodic Protection Specialist certification and do not want to take the CP 4—Cathodic Protection Specialist course may earn certification through an Exam-Only option.

* A photo ID is required at the time of the certification exam.

### Examination

Exam is offered on last day of the regularly scheduled CP 4 course (candidates may only attend the course on day of the exam).

| 7.5-Hour Examination | 5-hour written examination (open book) | 2.5-hour problem solving examination (open book) |

### Prerequisites

Students must have completed college or university-level courses in algebra, geometry, and trigonometry, and must have significant amounts of practical experience in CP Design.

### Reference Materials Included

- CP 4—CP Specialist Manual (by mail after registering for exam)

For current pricing information or to register for this exam, please contact FirstService at +1 281-228-6223 or firstservice@nace.org.
CATHODIC PROTECTION PROGRAM

CP 2—Cathodic Protection Technician—Maritime

Developed for NAVSEA (part of the U.S. Navy), this intensive course presents both theoretical knowledge and practical techniques for testing and evaluating data to determine the effectiveness of both galvanic and impressed current CP systems pertaining to shipboard cathodic protection.

Classroom instruction is comprised of lectures and hands-on training at an outdoor facility, using equipment and instruments for CP testing. An open book written exam and a closed book practical exam is given at the end of the course.

6-Day Classroom Course
Day 1: 1 p.m. to 6:30 p.m.
Days 2-5: 8 a.m. to 6:30 p.m.
Day 6: 8 a.m. to 3 p.m., unless otherwise noted

4.8 CEUs

For current pricing information or to register for this course, please visit nace.org/education

Who Should Attend

Individuals who work in the maritime industry, have a working knowledge of shipboard cathodic protection, or have extensive years of CP field experience with a technical background.

Prerequisites

It is strongly recommended that student possesses CP Tester Certification or equivalent training. Knowledge of the following subjects are necessary for understanding the material in this course: in-depth high school chemistry and mathematics courses (algebra, balancing equations, conversions of units, logarithms, and graphs); the NACE Basic Corrosion course, CP 1—CP Tester course, and comprehensive knowledge of electrochemistry, electricity, electrical laws and series and parallel circuits, meter operation, and CP fundamentals.

Learning Objectives—The goal is to prepare students to:

- Perform advanced field tests (including current requirement test, shorted casing test, IR drop test, soil resistivity, and interference tests) and evaluate the results
- Perform tests to verify the presence of stray current interference and recommend method(s) to mitigate the interference
- Conduct and understand the importance of periodic surveys, including IR-Free readings, polarization decay tests, and current measurements
- Maintenance of documentation and records, including data plotting and analysis
- Understand AC voltage and its mitigation
- Test and troubleshoot rectifier component parts
- Understand corrosion coupon test stations
- Understand code requirements related to CP

Reference Materials Included

- CP 2—CP Technician—Maritime Manual
- CP 2—CP Technician—Maritime Manual on CD
- Pipeline Corrosion and Cathodic Protection, Third Edition by M.E. Parker and E.G. Peattie

Certification* Options

- CP 2—CP Technician—Maritime
  A photo ID is required at the time of the certification exam.

* All certifications are administered by the NACE International Institute, the independent certification affiliate of NACE International. Certifications are subject to periodic reviews and revisions, please refer to naceinstitute.org for the most current certification information.
## Coatings in Conjunction with Cathodic Protection

This course focuses on the control of metallic corrosion by protective coatings and cathodic protection, with coatings as the primary method of control supplemented by cathodic protection. A clear understanding of the synergistic relationship as well as the principles of the two technologies when used together is crucial to understanding the risks involved when either component fails to perform as engineered. The course will cover the selection, specification, application, testing and inspection of coatings when used with CP. CCCP provides students with the skills and knowledge to implement and monitor a corrosion control program that utilizes both methods.

Classroom instruction is comprised of lectures and open discussions and concludes with a written exam.

### 6-Day Classroom Course

<table>
<thead>
<tr>
<th>Day</th>
<th>Time</th>
</tr>
</thead>
<tbody>
<tr>
<td>Day 1</td>
<td>1 p.m. to 5:30 p.m.</td>
</tr>
<tr>
<td>Days 2-5</td>
<td>8 a.m. to 5 p.m.</td>
</tr>
<tr>
<td>Day 6</td>
<td>8 a.m. to noon, unless otherwise noted</td>
</tr>
</tbody>
</table>

### 3.8 CEUs

For current pricing information or to register for this course, please visit nace.org/education

### Who Should Attend

Designed for personal who design, test, inspect, apply and monitor various structures that are both coated and cathodically protected. Those responsible for making risk management and integrity decisions (managers and engineers) as well as field personnel and technicians will also benefit from the material in this course.

### Prerequisites

It is strongly recommended that student possesses CP Tester Certification or equivalent training. Knowledge of the following subjects are necessary for understanding the material in this course: in-depth high school chemistry and mathematics courses (algebra, balancing equations, conversions of units, logarithms, and graphs); the NACE Basic Corrosion course, CP 1—CP Tester course, and comprehensive knowledge of electrochemistry, electricity, electrical laws and series and parallel circuits, meter operation, and CP fundamentals.

### Learning Objectives—The goal is to prepare students to:

- Understand basic corrosion theory and CP fundamentals
- Identify types of structures protected by coatings and CP
- Understand the synergistic relationship of coatings used in conjunction with CP
- Determine the advantages and disadvantages of coating types used with CP
- Perform selection criteria, application, inspection and testing of various coatings
- Identify the failure modes of the various coatings in relationship to CP
- Recognize failure modes of the various coatings in relationship to CP
- Identify disbonded coatings as related to external corrosion and stress corrosion cracking
- Define CP shielding and non-shielding coatings
- Properly examine and evaluate in-service coatings used with CP

### Reference Materials Included

- Coatings in Conjunction with Cathodic Protection Course Manual
- Coatings in Conjunction with Cathodic Protection Course Manual on CD

### Certification* Options

- Senior Corrosion Technologist
  
  A photo ID is required at the time of the certification exam.

---

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# CP Interference

This course focuses on AC, DC, and telluric interference. The course provides in-depth coverage of both theoretical concepts and practical applications of identifying interference and interference mitigation techniques. Students will learn to identify the causes and effects of interference, conduct tests to determine if an interference condition exists, and perform calculations required to predict AC interference.

Classroom instruction is comprised of lecture and discussion, in-class experiments, case studies, and group exercises. The course concludes with a written exam.

<table>
<thead>
<tr>
<th>6-Day Classroom Course</th>
<th>4.8 CEUs</th>
</tr>
</thead>
<tbody>
<tr>
<td>Day 1: 1 p.m. to 6:30 p.m.</td>
<td></td>
</tr>
<tr>
<td>Days 2-5: 8 a.m. to 6:30 p.m.</td>
<td></td>
</tr>
<tr>
<td>Day 6: 8 a.m. to 3 p.m., unless otherwise noted</td>
<td></td>
</tr>
</tbody>
</table>

For current pricing information or to register for this course, please visit nace.org/education

## Who Should Attend

Designed for individuals with extensive CP field experience, a strong background in mathematics, and a strong technical background in cathodic protection.

## Prerequisites

- CP 3—Cathodic Protection Technologist certification is recommended
- Minimum of 3 years CP work experience
- Thorough understanding of:
  - Units conversions
  - Scientific notation
  - Advanced algebra
  - DC circuits
- Previous exposure to:
  - Basic AC circuits
  - Complex numbers (i.e., imaginary numbers)
  - Interference testing

## Learning Objectives—The goal is to prepare students to:

- Understand the effects of stray current, AC voltage, and telluric currents on metallic structures
- Detect stray current, AC interference, and telluric current
- Recognize deleterious effects of AC and DC interference
- Mitigate and monitor AC and DC interference
- Predict AC interference

## Reference Materials Included

- CP Interference Manual
- CP Interference Manual on CD

## Certificate of Completion

A certificate of completion is administered after successful completion of this course.

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* All certifications are administered by the NACE International Institute, the independent certification affiliate of NACE International. Certifications are subject to periodic reviews and revisions, please refer to naceinstitute.org for the most current certification information.
Learn How to Extend the Operating Life and Integrity of Your Pipeline

with the NACE Cathodic Protection (CP) Program

The most specified and recognized CP training and certification* in the world.

NACE’s CP Program provides students with the theoretical and practical fundamentals for testing, evaluating, and designing both galvanic and impressed current cathodic protection systems. This program is geared for a wide range of professionals from field personnel to engineers in management, regardless of the individual’s experience.

To register or for more information, visit nace.org/cp

*All certifications are administered by the NACE International Institute, the independent certification affiliate of NACE International.
Internal Corrosion for Pipelines—Basic Principles

This course introduces the fundamentals of implementing, monitoring, and maintaining an internal corrosion control program as part of an overall Pipeline Integrity Management program. It is an introductory level course focusing on internal corrosion of liquid and natural gas pipelines used for transmissions, storage, and gathering systems. Classroom instruction consists of lecture, group exercises, cases studies and hands-on field testing using different instruments and techniques utilized to identify and monitor internal corrosion. The course concludes with both a written and practical examination.

5-Day Classroom Course
Days 1-5: 8 a.m. to 5 p.m., unless otherwise noted 3.8 CEUs

Who Should Attend
Geared toward individuals at the technologist level who have some background in corrosion and are familiar with pipeline operations.

Prerequisites
- High School Diploma
- 4 years internal corrosion work
- Successful completion of Basic Corrosion Course (pg. 4) is highly recommended

Learning Objectives—The goal is to prepare students to:

- Identify the types of corrosion, influencing key environmental variables, and methods to control corrosion
- Monitor corrosion through devices and tests including analysis of gas, liquid and sludge/solid samples, coupons and electrical probes
- Examine exposed surfaces and be able to determine the root cause of corrosion
- Proper selection of mitigation methods such as:
  - Chemical treatment by biocides and corrosion inhibitors
  - Facilities maintenance including use of pigs, clearing drips and clearing valves
  - Internal coatings
  - Cathodic protection only for internal protection of tanks
  - Facility design considerations
- Perform integrity assessment methods including internal corrosion direct assessment, in-line inspection, and hydrostatic testing

Reference Materials Included
- Internal Corrosion for Pipelines—Basic Principles Manual
- Internal Corrosion for Pipelines—Basic Principles Manual on CD
- Field Guide for Investigating Internal Corrosion of Pipelines by Richard Eckert

Certification* Options
- Internal Corrosion Technologist
- Senior Corrosion Technologist
- PCIM Technician

A photo ID is required at the time of the certification exam.

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**Internal Corrosion for Pipelines—Advanced**

This course focuses on the monitoring techniques and mitigation strategies required to assess internal corrosion and develop and manage internal corrosion control programs. Data interpretation, analysis and integration, as well as criteria for determining corrective action for high-level internal corrosion problems within a pipeline system, will be covered in detail.

Classroom instruction consists of lecture, group exercises, cases studies, and concludes with a written examination.

<table>
<thead>
<tr>
<th>5-Day Classroom Course</th>
<th>3.4 CEUs</th>
<th><strong>For current pricing information or to register for this course, please visit nace.org/education</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>Days 1-4: 8 a.m. to 5 p.m.</td>
<td></td>
<td><strong>Who Should Attend</strong></td>
</tr>
<tr>
<td>Day 5: 8 a.m. to noon, unless otherwise noted</td>
<td></td>
<td>Individuals responsible for implementation, maintenance, engineering, and/or management of internal corrosion control program for pipeline system.</td>
</tr>
</tbody>
</table>

**Prerequisite — Highly recommended, but not required**

Four years work experience in internal corrosion in a pipeline environment is recommended.

**Learning Objectives — The goal is to prepare students to:**

- Determine if internal corrosion exists by evaluating a set of criteria to identify and apply monitoring techniques such as:
  - Corrosion coupons
  - Electrical field mapping
  - Ultrasonic testing
  - Linear polarization and electrical resistance probes
  - Hydrogen and microbiological monitoring

- Minimize internal corrosion during the design stage through modification of equipment, system configuration, and operating parameters

- Properly select inspection techniques including:
  - Visual Inspection
  - Automated Ultrasonic Testing (AUT)
  - Magnetic Flux Leakage
  - Guided Wave Ultrasonic Testing (GWUT)
  - Manual Ultrasonic Testing
  - Eddy Current (EC)
  - Ultrasonic Testing (UT)
  - Radiographic Testing (RT)

- Decide when mitigation is required and the appropriate mitigation methods to utilize including maintenance pigging, physical design changes, and operational modifications

**Reference Materials Included**

- Internal Corrosion for Pipelines—Advanced Manual
- Internal Corrosion for Pipelines—Advanced Manual on CD

**Certification**

- Senior Internal Corrosion Technologist

* A photo ID is required at the time of the certification exam.

---

**Become a NACE INSTRUCTOR**

Visit nace.org/naceinstructor to find out how to join our team today!
Internal Corrosion for Pipelines—Basic Principles Exam-Only
Students seeking certification for Internal Corrosion Technologist and are not enrolled in the Internal Corrosion for Pipelines—Basic Principles course will take the same written and practical examinations offered in the classroom course. Examinations will be offered on the last day of the regularly scheduled Internal Corrosion for Pipelines—Basic Principles Course offerings.

<table>
<thead>
<tr>
<th>4.5-Hour Examination</th>
<th>2.5-hour written examination (open book)</th>
<th>2-hour practical examination (closed book)</th>
</tr>
</thead>
</table>

**Prerequisites**
- High School Diploma or GED
- 4 years corrosion work
- Successful completion of Basic Corrosion course (pg 4) is highly recommended

**Reference Materials Included**
- Internal Corrosion for Pipelines—Basic Principles Manual (by mail after registering for exam)

**Certification* Options**
- Senior Internal Corrosion Technologist

* A photo ID is required at the time of the certification exam.

Internal Corrosion for Pipelines—Advanced Exam-Only
Students seeking certification for Senior Internal Corrosion Technologist and are not enrolled in the Internal Corrosion for Pipelines—Advanced course will take the same written examination offered in the classroom course. Examinations will be offered on the last day of the regularly scheduled Internal Corrosion for Pipelines—Advanced Course offerings.

<table>
<thead>
<tr>
<th>4.5-Hour Examination</th>
<th>2.5-hour written examination (open book)</th>
<th>2-hour practical examination (closed book)</th>
</tr>
</thead>
</table>

**Prerequisites**
- High School Diploma or GED
- 4 years corrosion work
- Successful completion of Basic Corrosion course (pg 4) is highly recommended

**Reference Materials Included**
- Internal Corrosion for Pipelines—Advanced Manual (by mail after registering for exam)

**Certification* Options**
- Senior Internal Corrosion Technologist

* A photo ID is required at the time of the certification exam.
Pipeline Corrosion Assessment Field Techniques (P-CAFT)

This course covers corrosion basic principles and theory, field techniques, direct assessment, in-line inspection and hydro testing techniques, indirect inspections, direct examination, safety and data documentation.

The course is presented in a format of lecture, discussion, group exercises, and concludes with a written examination. No hands-on training will be provided in this course.

<table>
<thead>
<tr>
<th>5-Day Classroom Course</th>
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<tbody>
<tr>
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<td></td>
<td></td>
</tr>
<tr>
<td>Day 5: 8 a.m. to noon., unless otherwise noted</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Who Should Attend

Designed for maintenance, service, technical or field personnel responsible for the implementation and reporting of pipeline inspection activities.

Prerequisites

It is strongly recommended that students take the CP Tester course as well as the Coatings in Conjunction with Cathodic Protection course or a CIP Level 2 course prior to registering for the P-CAFT course. Students should also review the corrosion cell before attending.

Learning Objectives—The goal is to prepare students to:

- Accurately collect data for used for the evaluation and monitoring of a pipeline corrosion integrity plan
- Recognize pipeline anomalies
- Make recommendations for resolving technical issues “in the ditch”
- Evaluate a pipeline in-service using ECDA and ICDA methods and techniques
- Recognize problems “in the ditch” and be able to collect the data necessary for further engineering evaluation

Reference Materials Included

- Pipeline Corrosion Assessment Field Techniques Manual
- Pipeline Corrosion Assessment Field Techniques Manual on CD
- Cathodic Protection Survey Procedures, Second Edition by Brian Holtsbaum

Certification* Options

- PCIM Technician
  
  A photo ID is required at the time of the certification exam.

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In-Line Inspection (ILI)

This course covers the benefits of utilizing In-Line Inspection, selection of technologies related to operational parameters, operational issues and evaluating data relevant to assessing fitness for service.

The course is presented in a format of lecture, discussion and group exercises. The course concludes with a written examination.

<table>
<thead>
<tr>
<th>5-Day Classroom Course</th>
<th>3.4 CEUs</th>
</tr>
</thead>
<tbody>
<tr>
<td>Days 1-4: 8 a.m. to 5 p.m.</td>
<td></td>
</tr>
<tr>
<td>Day 5: 8 a.m. to noon, unless otherwise noted</td>
<td></td>
</tr>
</tbody>
</table>

Who Should Attend

Individuals responsible for implementation and/or management of an integrity program for a pipeline system with an emphasis on integrity verification and maintenance optimization.

Prerequisites

No prior training required, but 8 years work experience -or- 4 years work experience -and- 4-year degree in Physical Science or Engineering is recommended.

Learning Objectives—The goal is to prepare students to:

- Describe ILI and its relationship to overall integrity assessment
- Recognize the benefits and limitations of utilizing ILI
- Recall industry standards, regulations and best practices
- Defend the ILI process
- Differentiate between the various types of ILI tools
- Detect types of anomalies or threats
- Identify risks of ILI
- Understand responsibilities of the Operator and/or service provider
- Prepare the pipeline
- Recognize pipeline operational issues
- Plan and schedule
- Track

Reference Materials Included

- In-Line Inspection Manual
- In-Line Inspection Manual on CD

Certification* Options

- PCIM Technologist
  
  A photo ID is required at the time of the certification exam.

For current pricing information or to register for this course, please visit nace.org/education.

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## Direct Assessment (DA)

This course concentrates on internal, external and stress corrosion cracking direct assessment along with pre and post assessment, quality assurance, data analysis and integration, and remediation and mitigation activities. The course will also cover the benefits and limitations of Direct Assessment, its relationship to an overall integrity assessment program and industry standards, regulations and best practices. The course is presented in a format of lecture, discussion and group exercises. The course concludes with a written examination.

### 5-Day Classroom Course
- **Days 1-4:** 8 a.m. to 5 p.m.
- **Day 5:** 8 a.m. to noon, unless otherwise noted

| 3.4 CEUs | For current pricing information or to register for this course, please visit nace.org/education |

### Who Should Attend

Individuals responsible for implementation and/or management of an integrity program for a pipeline system with an emphasis on integrity verification and maintenance optimization.

### Prerequisites

No prior training required, but 8 years work experience -or- 4 years work experience -and- 4-year degree in Physical Science or Engineering is recommended.

### Learning Objectives—The goal is to prepare students to:

- Describe DA and the relationship to an overall pipeline corrosion integrity management program
- Recognize the benefits and limitations of DA
- Recall standards related to DA
- Differentiate DA from other pipeline integrity methods
- Perform quality assurance
- Establish corrosion rates
- Explain responsibilities of the Operator and/or service provider
- Categorize the DA Phases:
  - Pre-Assessment
  - Indirect Inspections
  - Direct Examinations
  - Post-Assessment
- Recognize the different types of DA:
  - External Corrosion Direct Assessment (ECDA)
  - Internal Corrosion Direct Assessment (ICDA)
  - Stress Corrosion Cracking Direct Assessment (SCCDA)
  - Confirmatory Direct Assessment (DA)

### Reference Materials Included

- Direct Assessment Manual
- Direct Assessment Manual on CD

### Certification* Options

- PCIM Technologist
  A photo ID is required at the time of the certification exam.

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Pipeline Corrosion Integrity Management (PCIM)

This course serves as the key training track for the PCIM professional who is expected to focus on the implementation and management of an integrity program for a pipeline system. The course provides a comprehensive up-to-date coverage of the various aspects of time-dependent deterioration threats to liquid and gas pipeline systems and will focus on interpreting integrity related data, performing an overall integrity assessment on a pipeline system, calculating and quantifying risk, and making recommendations to company management on risk management issues.

Classroom instruction is comprised of lectures and discussions. The course concludes with a written exam.

5-Day Classroom Course
Days 1-5: 8 a.m. to 5 p.m., unless otherwise noted

<table>
<thead>
<tr>
<th>CEUs</th>
<th>For current pricing information or to register for this course, please visit nace.org/education</th>
</tr>
</thead>
<tbody>
<tr>
<td>3.4</td>
<td></td>
</tr>
</tbody>
</table>

Who Should Attend

Individuals responsible for implementation and/or management of an integrity program for a pipeline system with an emphasis on integrity verification and maintenance optimization.

Prerequisites

No prior training required, but 8 years work experience -or- 4 years work experience -and- 4-year degree in Physical Science or Engineering is recommended. Students should be familiar with the following standards: The Code of Federal Regulations, ASME B31.8.S API 1160.

Learning Objectives—The goal is to prepare students to:

- Interpret integrity related data
- Select and perform an overall integrity assessment on a pipeline system
- Understand remediation activity and repair methods
- Perform threat identification and assessment
- Understand CFR 49 and integrity requirements
- Perform post integrity assessment risk analysis
- Calculate and quantify risk
- Make recommendations to company management on risk management issues
- Perform integrity management planning

Reference Materials Included

- Pipeline Corrosion Integrity Management Course Manual
- Pipeline Corrosion Integrity Management Course Manual on CD

Certification* Options

- PCIM Technologist
  A photo ID is required at the time of the certification exam.

ON-SITE TRAINING

Interested in hosting this course at your own facility?

Visit nace.org/hostacourse to see details on how NACE can come to you!

* All certifications are administered by the NACE International Institute, the independent certification affiliate of NACE International. Certifications are subject to periodic reviews and revisions, please refer to naceinstitute.org for the most current certification information.
Prevent Pipeline Failures from the Inside Out

Internal Corrosion for Pipelines Program

NACE’s Internal Corrosion Program arms industry personnel with the information they need to monitor, maintain and implement an internal corrosion control program as part of an overall pipeline integrity management program. This program consists of two courses—basic and advanced.

To register or for more information, visit nace.org/internalcorrosion

*All certifications are administered by the NACE International Institute, an independent affiliate of NACE International.
### Basic Corrosion e-Course—*New!*

The Basic Corrosion e-Course contains the same technical content as the classroom course and is presented in a user-friendly, self-study format. The course focuses on corrosion and the potential problems caused by corrosion. It covers a basic but thorough review of causes of corrosion and the methods by which corrosion is identified, monitored, and controlled.

<table>
<thead>
<tr>
<th>Fees</th>
<th>NACE Member</th>
<th>Non-member</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>$1,185 USD</td>
<td>$1,390 USD</td>
</tr>
</tbody>
</table>

### Prerequisites

No prior training is required

### Who Should Attend

Anyone who needs the ability to recognize corrosion and understand its devastating potential, especially as it relates to his or her area of responsibility. This includes:
- Technicians
- Salespersons
- Inspectors
- Managers
- Engineers

### Course Information

<table>
<thead>
<tr>
<th>Chapter</th>
<th>Topic</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Introduction to Basic Corrosion</td>
<td>Learn the definition of corrosion and understand the economic, environmental and safety impact of corrosion.</td>
</tr>
<tr>
<td>2</td>
<td>Basics of Corrosion Electrochemistry</td>
<td>In this chapter learn the terms and definitions used in corrosion, as well as the processes and concepts of electrochemistry, oxidation and reduction reactions, thermodynamics, kinetics and passivity.</td>
</tr>
<tr>
<td>3</td>
<td>Corrosive Environments</td>
<td>Identify the characteristics of commonly-encountered corrosive environments such as atmospheric, water and other electrolytes, soil and high temperature environments.</td>
</tr>
<tr>
<td>4</td>
<td>Materials</td>
<td>Understand engineering materials such as metals, non-metals, composites, concrete and ceramics and their relationship to corrosion control.</td>
</tr>
<tr>
<td>5</td>
<td>Forms of Corrosion</td>
<td>Understand the various forms of corrosion, how to recognize each form, materials subject to each form, environments that promote each form and how to control each form.</td>
</tr>
<tr>
<td>6</td>
<td>Designing for Corrosion Control</td>
<td>This chapter will examine how corrosion can be controlled during the design process through construction and process parameters, drainage, dissimilar metals, crevices, and corrosion allowance.</td>
</tr>
<tr>
<td>7</td>
<td>Corrosion Control Methods</td>
<td>The focus of this chapter is corrosion control methods by material selection, modification of environment, protective coatings, cathodic and anodic protection.</td>
</tr>
<tr>
<td>8</td>
<td>Inspection, Monitoring and Testing</td>
<td>Learn the difference between inspection and monitoring and identify the common testing techniques for each.</td>
</tr>
</tbody>
</table>

Visit [nace.org](http://nace.org)
**Corrosion in the Water and Wastewater Industry v2—New!**

This online, self-paced course consists of 15, 1-hour modules that introduce the fundamentals of corrosion in the water and wastewater industry. Key areas of coverage include current design, construction, and operation and maintenance practices for key water and wastewater infrastructure components.

Students may either choose to complete the modules in sequential order or those with more experience or with specific interests may select the modules that would most benefit them in their career. Students will earn a certificate of completion upon successful completion of each module.

<table>
<thead>
<tr>
<th>Complete Package</th>
<th>Per Module</th>
</tr>
</thead>
<tbody>
<tr>
<td>$699 USD</td>
<td>$75 USD</td>
</tr>
</tbody>
</table>

**Students receive 15 PDHs upon completion of all modules**

**Who Should Attend**

Anyone who needs the ability to recognize and understand corrosion in the water and wastewater industry.

**Prerequisites**

No prior training or experience is required.

**Module Objectives**

<table>
<thead>
<tr>
<th>Module</th>
<th>Module Title</th>
<th>Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>Module 1</td>
<td>Corrosion in the United States</td>
<td>Review the findings, results and suggested actions of the 2002 Corrosion Report. Understand the range and cost of corrosion in the United States with an emphasis on the Water and Wastewater Industry.</td>
</tr>
<tr>
<td>Module 2</td>
<td>Chemistry and Corrosion</td>
<td>Learn the fundamentals of corrosion including the basic principles of chemistry and physics, to explain the science behind the corrosion cell. Understand electrochemical process and concepts to measure the corrosion process.</td>
</tr>
<tr>
<td>Module 3</td>
<td>Corrosive Environments</td>
<td>Corrosion rates vary depending on the material and environments. Examine the corrosive conditions expected and how materials interact with atmospheric, subterranean, and aqueous environments.</td>
</tr>
<tr>
<td>Module 4</td>
<td>Engineering Materials</td>
<td>Engineering materials covers the importance of how material selection affect engineering projects, specifically, the importance of material selection for engineering projects. The module discusses applications, characteristics and vulnerabilities for building materials such as metals, non-metals, ceramics, concrete and composites.</td>
</tr>
<tr>
<td>Module 5</td>
<td>Forms of Corrosion</td>
<td>General corrosion, localized, pitting, crevice, and intergranular corrosion are a few of the corrosion types discussed. Galvanic, erosion, de-alloying, stress, fatigue, temperature-based corrosion is also covered; as are the effects, causes and solutions to the various forms of corrosion.</td>
</tr>
<tr>
<td>Module 6</td>
<td>Methods of Corrosion Control</td>
<td>Methods for slowing or preventing corrosion entirely are introduced in this module. Corrosion mitigation techniques discussed include how to approach corrosion mitigation, material selection, environment modification, coating application, and cathodic protection.</td>
</tr>
<tr>
<td>Module 7</td>
<td>Economics of Corrosion</td>
<td>This module discusses the economics of corrosion for the water and waste water industry, the cost of corrosion control methods and how to perform a cost analysis to select the most cost-effective corrosion control option.</td>
</tr>
<tr>
<td>Module 8</td>
<td>Corrosion in the Drinking Water System</td>
<td>Upon completion of this module, you will have an understanding of the structure and organization of drinking water infrastructure, the importance of each individual component of the drinking water system to the system's overall functionality and efficiency, and the corrosion-related issues that can adversely affect the functionality and service-life of drinking water systems.</td>
</tr>
<tr>
<td>Module 9</td>
<td>Corrosion Prevention in the Drinking Water System—Part I</td>
<td>This module will cover how to improve corrosion management in the drinking water industry, how to develop a site-specific corrosion management strategy, and specific corrosion control techniques for source water infrastructure, aqueducts and transmission pipelines, and water treatment facilities.</td>
</tr>
<tr>
<td>Module 10</td>
<td>Corrosion Prevention in the Drinking Water System—Part II</td>
<td>Specific corrosion control techniques to extend service-life and improve reliability for distribution piping and storage facilities will be examined.</td>
</tr>
<tr>
<td>Module 11</td>
<td>Economics in the Drinking Water System</td>
<td>The economics of corrosion specific to the drinking water industry will be covered, in addition to the cost of corrosion control methods, and how to perform a cost analysis to select for the most cost-effective corrosion control option.</td>
</tr>
<tr>
<td>Module 12</td>
<td>Corrosion in the Wastewater System</td>
<td>Understand the structure and organization of waste water infrastructure, and how to identify corrosion-related issues that can adversely affect the functionality and service-life. Different corrosive environments and their effects on waste water systems will also be covered along with trenchless technologies for pipe rehabilitation, microbiologically influenced corrosion (MIC) and H2S corrosion.</td>
</tr>
<tr>
<td>Module 13</td>
<td>Corrosion Prevention in the Wastewater System—Part I</td>
<td>The different facets of corrosion prevention in waste water systems will be examined, including collection and transmission as well as treatment facilities. Learn the general issues regarding wastewater treatment, material selection for corrosion prevention, corrosion control in each treatment process and sulfate corrosion control.</td>
</tr>
<tr>
<td>Module 14</td>
<td>Corrosion Prevention in the Wastewater System—Part II</td>
<td>Gain a better understanding of inspection technologies for sewer system, prevention and rehabilitation considerations and considerations of maintaining and repairing a compromised system.</td>
</tr>
<tr>
<td>Module 15</td>
<td>Economics of Corrosion in the Wastewater System</td>
<td>The economics of corrosion specific to the wastewater industry will be covered in addition to the cost of corrosion control methods, and how to perform a cost analysis to select for the most cost-effective corrosion control option.</td>
</tr>
</tbody>
</table>
### I.C.I. Online-Intro to Coating Inspection

This online, self-paced course consists of eight, 30-minute modules that introduce the fundamentals of coatings as well as the purpose and role of a coating inspector on a coatings project. Students may either choose to complete the modules in sequential order or those with more experience or with specific interests may select the modules that would most benefit them in their career. Students will earn a certificate of completion upon successful achievement of each module.

<table>
<thead>
<tr>
<th>Fees</th>
<th>4 PDHs upon completion of all eight modules</th>
</tr>
</thead>
<tbody>
<tr>
<td>Complete Package</td>
<td>Per Module</td>
</tr>
<tr>
<td>$450</td>
<td>$75</td>
</tr>
</tbody>
</table>

#### System Requirements

- Flash Player (cannot be viewed on an iPad)

#### Prerequisites

No prior training or experience is required.

#### Who Should Attend

This course is geared for those new to the protective coating and coating inspection industry or those looking to learn more about coating inspection.

#### Module Objectives

<table>
<thead>
<tr>
<th>Module</th>
<th>Role of the Inspector</th>
<th>Test Instrumentation</th>
<th>Coating Specification</th>
<th>Coating Fundamentals</th>
<th>Surface Preparation and Standards</th>
<th>Application Procedures</th>
<th>Coating Defects</th>
<th>Pre-Job Conference</th>
</tr>
</thead>
<tbody>
<tr>
<td>Module 1</td>
<td>What does an inspector do and what value do they bring to a coatings project? This module will provide answers to that question by looking at the roles and responsibilities of a coatings inspector.</td>
<td>Testing plays a vital role to ensure that coatings are installed as specified. This module will describe some of the basic instruments used to monitor environmental conditions, evaluate the level of surface preparation, and measure the thickness of the installed coating film.</td>
<td>The Coating Specification provides the “roadmap” for installation of the coating. Some basic information needs to be included in the specification to make sure that the coatings inspector has the tools to ensure that the coatings are installed as specified.</td>
<td>It’s important to understand the basic fundamentals of coatings material to appreciate the inspector’s role in their application. This module will explore the components of a typical coating and the methods that coatings cure.</td>
<td>The inspector performs critical testing during this phase to ensure the coatings to be installed have the best chance to reach their designed life-cycle. This module will explore the various methods of surface preparation and some of the critical aspects required for a successful coating project.</td>
<td>Coatings may be applied using equipment ranging from a brush and roller, conventional airspray, and airless spray to sophisticated plural component systems. This module will describe the various processes and equipment for coatings application.</td>
<td>Unfortunately defects may occur when the specification is not followed or other problems occurred during the coatings installation. This module describes some of those defects and how to identify them.</td>
<td>The purpose of the Pre-Job Conference is to take a proactive approach to the coatings project. The Pre-Job Conference is an opportunity for all parties to ensure complete understanding of the project requirements by addressing any vagueness or ambiguities before the project starts. This module will explore a Pre-Job Conference and its project benefits.</td>
</tr>
</tbody>
</table>
The launch of the new Internal Corrosion Specialist Certification exam completes the NACE Institute Internal Corrosion certification program. Professionals seeking the Internal Corrosion Specialist certification should possess the skills and knowledge to successfully design, implement, evaluate and manage an internal corrosion integrity management program, regardless of industry.

**Exam Prerequisites**

Candidates must meet the education and work experience requirements from one of the two prerequisite paths listed on page 48, before registering for the NACE Internal Corrosion Specialist Exam.

**Knowledge and Task Requirements**

Candidates should possess the following skill and knowledge factors:

- Possess the skills and knowledge to perform the tasks of individuals certified at the Senior Internal Corrosion Technologist level

- Have a thorough understanding of electrochemical and corrosion principles, field testing, laboratory analysis, monitoring techniques, mitigation strategies, and inspection methods

- Capable of designing and implementing an internal corrosion integrity management program that complies with applicable regulations and standards for various industries but with emphasis on oil and gas

- Capable of evaluating and managing maintenance and monitoring plans specific to the environment in which they are working (e.g., pipeline, cooling water systems, potable water systems, water treatment plants, processing plants and steam boilers) and determining standard operating procedures for maintenance and monitoring internal corrosion.

Visit [naceinstitute.org](http://naceinstitute.org) to learn more about the Internal Corrosion Specialist Exam.
Coating Inspector Program (CIP)

Students must successfully complete each course and its corresponding exam before moving on to the next level of the program. All NACE Institute certifications require a High School Diploma, GED, International equivalent, or higher. In addition, students must meet the requirements listed below. All required certifications must have active status. Effective January 1, 2016: The CIP Level 2 certification will require 2 years verifiable coating inspection work experience and CIP Level 3 certification will require 5 years verifiable coating inspection work experience. In addition, a NACE International Institute Certification Application will be required for both certifications.

**NACE Coating Inspector Level 1—Certified**

**COURSE:**
CIP Level 1

**NACE Coating Inspector Level 2—Certified**

**CERTIFICATION:**
NACE Coating Inspector Level 1—Certified

**COURSE:**
CIP Level 2

**NACE Certified Coating Inspector—Level 3**

**CERTIFICATION:**
NACE Coating Inspector Level 2—Certified

**EXAM:**
CIP Level 3 Peer Review

**WORK EXPERIENCE:**
2 years in coatings

**NACE Coating Inspector Bridge Endorsement**

**CERTIFICATION:**
NACE Coating Inspector Level 1—Certified

**COURSE:**
CIP One-Day Bridge

**NACE Coating Inspector Marine Endorsement**

**CERTIFICATION:**
NACE Coating Inspector Level 1—Certified

**COURSE:**
Marine Coating Technology

**NACE Coating Inspector—Nuclear Facilities Certification Supplement (NFCS) Endorsement**

**CERTIFICATION:**
NACE Coating Inspector Level 1—Certified – OR – Higher

**WORK EXPERIENCE:**
160 hours of work with coatings focused projects for a nuclear power plant

**COURSE:**
Nuclear Power Plant Training for Coating Inspectors

*All certifications are administered by the NACE International Institute, the independent certification affiliate of NACE International. Certifications are subject to periodic reviews and revisions, please refer to naceinstitute.org for the most current certification information.*
Cathodic Protection (CP) Program

Students may choose to take the CP courses in succession or those with more experience and who meet the prerequisites may choose which course would benefit them in their career. Successful completion of the course and its corresponding exam or exam-only option is required to be eligible for the related certification. All NACE Institute certifications require a High School Diploma, GED, International equivalent, or higher. Applications must be completed and submitted to the NACE International Institute prior to taking the exam. In addition, students must meet the work experience and education requirements listed below.

**CP 1—Cathodic Protection Tester**
- **COURSE / EXAM:** CP 1—Cathodic Protection Tester -OR- Exam only

**CP 2—Cathodic Protection Technician**
- **COURSE / EXAM:** CP 2—Cathodic Protection Technician -OR- Exam only

**CP 3—Cathodic Protection Technologist**
- **COURSE / EXAM:** CP 3—Cathodic Protection Technologist -OR- Exam only

**CP 4—Cathodic Protection Specialist**
- **COURSE / EXAM:** CP 4—Cathodic Protection Specialist -OR- Exam only

All required certifications must have active status.

*Requires submission of a completed application and a minimum of 2 professional references to NACE.*

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**Certification Requirements**
- **CP 1—Cathodic Protection Tester**
  - Certification: CP 1—Cathodic Protection Tester -OR- equivalent training
  - Course / Exam: CP 2—Cathodic Protection Technician -OR- Exam only
  - Work Experience: 3 years in Cathodic Protection

- **CP 2—Cathodic Protection Technician**
  - Certification: CP 1—Cathodic Protection Tester -OR- equivalent training
  - Course / Exam: CP 2—Cathodic Protection Technician -OR- Exam only
  - Work Experience: 1 year in Cathodic Protection
  - Education: 4-year Physical Science or Engineering Degree

- **CP 3—Cathodic Protection Technologist**
  - Certification: CP 2—Cathodic Protection Technician -OR- equivalent training
  - Course / Exam: CP 3—Cathodic Protection Technologist -OR- Exam only
  - Work Experience: 3 years in Cathodic Protection
  - Education: 4-year Physical Science or Engineering Degree

- **CP 4—Cathodic Protection Specialist**
  - Certification: CP 3—Cathodic Protection Technologist -OR- equivalent training
  - Course / Exam: CP 4—Cathodic Protection Specialist -OR- Exam only
  - Work Experience: 4 years ADVANCED Cathodic Protection in responsible charge
  - Education: 4-year Physical Science or Engineering Degree & an ADVANCED Physical Science or Engineering Degree that required a qualification exam

**Education Requirements**
- **CP 1—Cathodic Protection Tester**
  - Education: Algebra and Logarithm training

- **CP 2—Cathodic Protection Technician**
  - Education: Mathematics or Science Technical/Trade School

- **CP 3—Cathodic Protection Technologist**
  - Education: 4-year Physical Science or Engineering Degree

- **CP 4—Cathodic Protection Specialist**
  - Education: 4-year Physical Science or Engineering Degree

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NACE INSTITUTE CERTIFICATION

For certification information, visit naceinstitute.org for the most current certification information.

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# General Corrosion Program

All NACE Institute certifications require a High School Diploma, GED, International equivalent, or higher. Generalist Certifications can be obtained in one of two ways, through Parallel Path or Traditional Path. The Parallel Path allows you to achieve certification through taking courses, passing the exams, and then submitting the corresponding application for one of the certifications listed below. With the Traditional Path, you obtain certification by meeting work experience and/or education requirements, submitting the corresponding application prior to taking the exam, then passing the appropriate exam.

## Corrosion Technician

<table>
<thead>
<tr>
<th>Parallel Path (through course work)</th>
<th>Traditional Path (through certification exams)</th>
</tr>
</thead>
<tbody>
<tr>
<td>COURSE: Basic Corrosion</td>
<td>EXAM: Corrosion Technician Exam</td>
</tr>
<tr>
<td>WORK EXPERIENCE: 2 years in corrosion</td>
<td>WORK EXPERIENCE: 2 years in corrosion</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Parallel Path 1 (through course work)</th>
<th>Parallel Path 2 (through course work)</th>
<th>Parallel Path 3 (through course work)</th>
<th>Traditional Path 1 (through certification exams)</th>
<th>Traditional Path 2 (through certification exams)</th>
</tr>
</thead>
<tbody>
<tr>
<td>COURSE: Basic Corrosion</td>
<td>COURSE: Basic Corrosion</td>
<td>COURSE: Basic Corrosion</td>
<td>EXAM: Senior Corrosion Technologist Exam</td>
<td>EXAM: Senior Corrosion Technologist Exam</td>
</tr>
<tr>
<td>COURSE: Designing for Corrosion Control</td>
<td>COURSE: Designing for Corrosion Control</td>
<td>COURSE: Designing for Corrosion Control</td>
<td>WORK EXPERIENCE: 8 years in corrosion, including 4 years in responsible charge</td>
<td>WORK EXPERIENCE: 8 years in corrosion, including 4 years in responsible charge</td>
</tr>
<tr>
<td>COURSE: One from Menu A</td>
<td>COURSE: One from Menu A</td>
<td>COURSE: One from Menu A</td>
<td>CERTIFICATION: Corrosion Technician</td>
<td>CERTIFICATION: Corrosion Technician</td>
</tr>
<tr>
<td>COURSE: One from Menu B</td>
<td>COURSE: One from Menu B</td>
<td>COURSE: One from Menu B</td>
<td>-OR- Corrosion Technologist</td>
<td>-OR- Corrosion Technologist</td>
</tr>
<tr>
<td>COURSE: One additional from Menu A, B, or C</td>
<td>COURSE: One additional from Menu A, B, or C</td>
<td>COURSE: One additional from Menu A, B, or C</td>
<td>CIP Level 1</td>
<td>CIP Level 1</td>
</tr>
<tr>
<td>COURSE EXAM: Internal Corrosion for Pipelines — Basic -OR- Chemical Treatment Specialist Exam</td>
<td>COURSE EXAM: Internal Corrosion for Pipelines — Basic -OR- Chemical Treatment Specialist Exam</td>
<td>COURSE EXAM: Internal Corrosion for Pipelines — Basic -OR- Chemical Treatment Specialist Exam</td>
<td>Internal Corrosion for Pipelines — Basic -OR- Chemical Treatment Specialist Exam</td>
<td>Internal Corrosion for Pipelines — Basic -OR- Chemical Treatment Specialist Exam</td>
</tr>
<tr>
<td>WORK EXPERIENCE: 8 years in corrosion, including 4 years in responsible charge</td>
<td>WORK EXPERIENCE: 4 years in responsible charge</td>
<td>WORK EXPERIENCE: 4 years in responsible charge</td>
<td>WORK EXPERIENCE: 4 years in responsible charge</td>
<td>WORK EXPERIENCE: 4 years in responsible charge</td>
</tr>
<tr>
<td>EDUCATION: 4-year Physical Science or Engineering Degree</td>
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</tr>
</tbody>
</table>

## Refining Corrosion Technologist

<table>
<thead>
<tr>
<th>Path 1</th>
<th>Path 2</th>
<th>Path 3</th>
<th>Path 4</th>
</tr>
</thead>
</table>

When course(s) are required, students must take course and pass exam. All required certifications must have active status.

* Requires submission of a completed application and a minimum of 2 professional references to NACE. Students that choose the Traditional Path must submit prior to taking certification exam.

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# General Coatings Program

All NACE Institute certifications require a High School Diploma, GED, International equivalent, or higher. Applications must be completed and submitted to the NACE International Institute prior to taking the exam. In addition, students must meet the work experience and education requirements listed below.

## Protective Coating Technician

<table>
<thead>
<tr>
<th>Parallel Path 1</th>
<th>Parallel Path 2</th>
<th>Traditional Path 1</th>
<th>Traditional Path 2</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>COURSE:</strong> PCS 1 Basic Principles</td>
<td><strong>COURSE:</strong> PCS 1 Basic Principles</td>
<td><strong>EXAM:</strong> Protective Coating Technician Exam</td>
<td><strong>EXAM:</strong> Protective Coating Technician Exam</td>
</tr>
<tr>
<td><strong>WORK EXPERIENCE:</strong> 6 years in Protective Coatings</td>
<td><strong>WORK EXPERIENCE:</strong> 3 years in Protective Coatings</td>
<td><strong>WORK EXPERIENCE:</strong> 6 years in Protective Coatings</td>
<td><strong>WORK EXPERIENCE:</strong> 3 years in Protective Coatings</td>
</tr>
<tr>
<td><strong>EDUCATION:</strong> 4-year Physical Science or Engineering Degree</td>
<td><strong>TRAINING:</strong> Equivalent to that contained in PCS 1 Basic Principles course</td>
<td><strong>EDUCATION:</strong> 4-year Physical Science or Engineering Degree</td>
<td><strong>EDUCATION:</strong> 4-year Physical Science or Engineering Degree</td>
</tr>
</tbody>
</table>

## Protective Coating Specialist

<table>
<thead>
<tr>
<th>Parallel Path 1</th>
<th>Parallel Path 2</th>
<th>Parallel Path 3</th>
<th>Traditional Path 1</th>
<th>Traditional Path 2</th>
<th>Traditional Path 3</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>COURSE:</strong> PCS 2 Advanced</td>
<td><strong>COURSE:</strong> PCS 2 Advanced</td>
<td><strong>COURSE:</strong> PCS 2 Advanced</td>
<td><strong>COURSE:</strong> PCS 2 Advanced</td>
<td><strong>COURSE:</strong> PCS 2 Advanced</td>
<td><strong>COURSE:</strong> PCS 2 Advanced</td>
</tr>
<tr>
<td><strong>COURSE:</strong> PCS 3 Advanced</td>
<td><strong>COURSE:</strong> PCS 3 Advanced</td>
<td><strong>COURSE:</strong> PCS 3 Advanced</td>
<td><strong>COURSE:</strong> PCS 3 Advanced</td>
<td><strong>COURSE:</strong> PCS 3 Advanced</td>
<td><strong>COURSE:</strong> PCS 3 Advanced</td>
</tr>
<tr>
<td><strong>WORK EXPERIENCE:</strong> 4 years in Protective Coatings</td>
<td><strong>WORK EXPERIENCE:</strong> 4 years in Protective Coatings</td>
<td><strong>WORK EXPERIENCE:</strong> 4 years in Protective Coatings</td>
<td><strong>WORK EXPERIENCE:</strong> 4 years in Protective Coatings</td>
<td><strong>WORK EXPERIENCE:</strong> 4 years in Protective Coatings</td>
<td><strong>WORK EXPERIENCE:</strong> 4 years in Protective Coatings</td>
</tr>
<tr>
<td><strong>EDUCATION:</strong> 4-year Physical Science or Engineering Degree</td>
<td><strong>EDUCATION:</strong> 4-year Physical Science or Engineering Degree</td>
<td><strong>CERTIFICATION:</strong> NACE Protective Coating Technician -OR- NACE Certified Coating Inspector—Level 3 -OR- Frosio Coating Inspector Level III -OR- SSPE Protective Coatings Specialist</td>
<td><strong>CERTIFICATION:</strong> NACE Protective Coating Technician -OR- NACE Certified Coating Inspector—Level 3 -OR- Frosio Coating Inspector Level III -OR- SSPE Protective Coatings Specialist</td>
<td><strong>CERTIFICATION:</strong> NACE Protective Coating Technician -OR- NACE Certified Coating Inspector—Level 3 -OR- Frosio Coating Inspector Level III -OR- SSPE Protective Coatings Specialist</td>
<td><strong>CERTIFICATION:</strong> NACE Protective Coating Technician -OR- NACE Certified Coating Inspector—Level 3 -OR- Frosio Coating Inspector Level III -OR- SSPE Protective Coatings Specialist</td>
</tr>
<tr>
<td><strong>EXAM:</strong> Protective Coating Specialist Exam</td>
<td><strong>EXAM:</strong> Protective Coating Specialist Exam</td>
<td><strong>EXAM:</strong> Protective Coating Specialist Exam</td>
<td><strong>EXAM:</strong> Protective Coating Specialist Exam</td>
<td><strong>EXAM:</strong> Protective Coating Specialist Exam</td>
<td><strong>EXAM:</strong> Protective Coating Specialist Exam</td>
</tr>
<tr>
<td><strong>WORK EXPERIENCE:</strong> 8 years in Protective Coatings</td>
<td><strong>WORK EXPERIENCE:</strong> 8 years in Protective Coatings</td>
<td><strong>WORK EXPERIENCE:</strong> 12 years in Protective Coatings</td>
<td><strong>WORK EXPERIENCE:</strong> 12 years in Protective Coatings</td>
<td><strong>WORK EXPERIENCE:</strong> 12 years in Protective Coatings</td>
<td><strong>WORK EXPERIENCE:</strong> 12 years in Protective Coatings</td>
</tr>
<tr>
<td><strong>EDUCATION:</strong> 4-year Physical Science or Engineering Degree</td>
<td><strong>EDUCATION:</strong> 4-year Physical Science or Engineering Degree</td>
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<td><strong>EDUCATION:</strong> 4-year Physical Science or Engineering Degree</td>
</tr>
</tbody>
</table>

When course(s) are required, students must take course and pass exam. All required certifications must have active status.

† Requires submission of a completed application and a minimum of 2 professional references to NACE. Students that choose the Traditional Path must submit prior to taking certification exam.

---

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For certification information, visit naceinstitute.org
## Pipeline Industry Program

All NACE Institute certifications require a High School Diploma, GED, International equivalent, or higher. Applications must be completed and submitted to the NACE Institute prior to taking the exam. In addition, students must meet the requirements listed below.

### Internal Corrosion Technologist

<table>
<thead>
<tr>
<th>Path 1</th>
<th>Path 2</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>COURSE / EXAM:</strong> Internal Corrosion for Pipelines—Basic  <strong>-OR-</strong> Exam only</td>
<td></td>
</tr>
<tr>
<td><strong>WORK EXPERIENCE:</strong> 4 years including some background in Corrosion and Pipeline Operations</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Path 1</th>
<th>Path 2</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>CERTIFICATION:</strong> Internal Corrosion Technologist</td>
<td></td>
</tr>
<tr>
<td><strong>EDUCATION:</strong> 4-year Chemistry, Biology, Microbiology, Chemical or Metallurgical Engineering Degree</td>
<td></td>
</tr>
</tbody>
</table>

### Senior Internal Corrosion Technologist

<table>
<thead>
<tr>
<th>Path 1</th>
<th>Path 2</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>CERTIFICATION:</strong> Internal Corrosion Technologist</td>
<td></td>
</tr>
<tr>
<td><strong>COURSE / EXAM:</strong> Internal Corrosion for Pipelines—Advanced  <strong>-OR-</strong> Exam only</td>
<td></td>
</tr>
<tr>
<td><strong>WORK EXPERIENCE:</strong> 4 years in Internal Corrosion in Pipeline Environment</td>
<td></td>
</tr>
</tbody>
</table>

### Internal Corrosion Specialist

<table>
<thead>
<tr>
<th>Path 1</th>
<th>Path 2</th>
<th>Path 3</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>CERTIFICATION:</strong> Senior Internal Corrosion Technologist</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>EXAM:</strong> Internal Corrosion Specialist Exam</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>WORK EXPERIENCE:</strong> 8 years in Internal Corrosion in Pipeline Environment</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>EDUCATION:</strong> 4-year Chemistry, Biology, Microbiology, Chemical or Metallurgical Engineering Degree</td>
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</tbody>
</table>

### PCIM Technician

<table>
<thead>
<tr>
<th>Path 1</th>
<th>Path 2</th>
<th>Path 3</th>
<th>Path 4</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>CERTIFICATION:</strong> PCIM Technician  <strong>-OR-</strong> Senior Corrosion Technologist</td>
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<td></td>
<td></td>
</tr>
<tr>
<td><strong>EXAM:</strong> Internal Corrosion Specialist Exam</td>
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<td></td>
<td></td>
</tr>
<tr>
<td><strong>WORK EXPERIENCE:</strong> 8 years in pipeline</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>EDUCATION:</strong> 4-year Physical Science or Engineering Degree</td>
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<td></td>
</tr>
</tbody>
</table>

### PCIM Technologist

<table>
<thead>
<tr>
<th>Path 1</th>
<th>Path 2</th>
<th>Path 3</th>
<th>Path 4</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>CERTIFICATION:</strong> Senior Internal Corrosion Technologist</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>COURSE:</strong> Direct Assessment</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>COURSE:</strong> In-Line Inspection</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>COURSE:</strong> Pipeline Corrosion Integrity Management (PCIM)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>WORK EXPERIENCE:</strong> 8 years in pipeline</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

When course(s) are required, students must take course and pass exam. All NACE Certifications require a minimum of a High School Diploma or GED. All required certifications must have active status.

1. Requires submission of a completed application and a minimum of 2 professional references to NACE. Students that choose the Traditional Path must submit prior to taking certification exam.

*All certifications are subject to periodic review and revision. Please refer to nace.org for the most current certification paths.*
Specialty Certifications

All NACE Institute certifications require a High School Diploma, GED, International equivalent, or higher. Applications must be completed and submitted to the NACE Institute prior to taking the exam. In addition, students must meet the requirements listed below.

### Corrosion Specialist

**CERTIFICATION:**
- Chemical Treatment Specialist - OR - Cathodic Protection Specialist - OR - Materials Selection/Design Specialist - OR - Protective Coating Specialist

**EXAM:**
- Corrosion Specialist Exam

### Chemical Treatment Specialist

<table>
<thead>
<tr>
<th>Path 1</th>
<th>Path 2</th>
<th>Path 3</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>CERTIFICATION:</strong></td>
<td><strong>Exam:</strong></td>
<td><strong>Exam:</strong></td>
</tr>
<tr>
<td>Senior Corrosion Technologist</td>
<td>Chemical Treatment Specialist Exam</td>
<td>Chemical Treatment Specialist Exam</td>
</tr>
<tr>
<td><strong>EXAM:</strong></td>
<td><strong>WORK EXPERIENCE:</strong></td>
<td><strong>WORK EXPERIENCE:</strong></td>
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<td>PE, P Engineer or equivalent - OR - EIT registration or equivalent</td>
<td>PE, P Engineer or equivalent - OR - EIT registration or equivalent</td>
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### Protective Coating Specialist

Please see page 18 for specific information on how to achieve this certification and parallel path options.

### CP 4—Cathodic Protection Specialist

Please see page 25 for specific information on how to achieve this certification.

### Internal Corrosion Specialist

Please see page 32 for specific information on how to achieve this certification.

### Materials Selection/Design Specialist

<table>
<thead>
<tr>
<th>Path 1</th>
<th>Path 2</th>
<th>Path 3</th>
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<td>PE, P Engineer or equivalent - OR - EIT registration or equivalent</td>
<td>PE, P Engineer or equivalent - OR - EIT registration or equivalent</td>
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</table>

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* All certifications are administered by the NACE International Institute, the independent certification affiliate of NACE International. Certifications are subject to periodic reviews and revisions, please refer to naceinstitute.org for the most current certification information.
To uphold the integrity of your NACE Institute Certification, you must renew your certification every three years. Renewal involves documentation of work experience and continuing professional development. The NACE Institute will contact you 90 days before your certification expires.

It is the responsibility of persons certified by the NACE Institute to apply for and complete the certification renewal process. Failure to receive a notice from the NACE Institute shall not be accepted as reason for failure to apply and/or complete the renewal process.

### Renewal Period

<table>
<thead>
<tr>
<th>Renewal Period</th>
<th>Renewal Fees</th>
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<tr>
<td>Every three (3) years</td>
<td>Members—$240 USD per three years</td>
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<tr>
<td></td>
<td>Nonmembers—$450 USD per three years for all certifications</td>
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### Professional Development Requirements

Professional development hours (PDHs) vary for certain levels of certification. The table below outlines the hours required for each certification type.

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<thead>
<tr>
<th>Certification Type</th>
<th>PDHs/year</th>
<th>Work Experience Required (years)</th>
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<tr>
<td><strong>Specialist Certifications</strong></td>
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<tr>
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<td>Materials Selection/Design Specialist</td>
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<td>Protective Coating Specialist</td>
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NACE INSTITUTE CERTIFICATION FAQS

Q: What action is required of me to renew my certification?
A: Please note that it is your responsibility to know your expiration date. The NACE Institute will notify you when it is time to renew based on the contact information we have on file for you. We will provide you with your access information to your profile page at www.naceinstitute.org where you can apply for certification renewal.

Q: What qualifies as professional development?
A: Professional development refers to educational activities that include, but are not limited to, attending corrosion related courses, seminars, meetings, technical papers, webinars, or presentations.

Q: Which NACE Institute Certifications offer a Parallel Path option?
A: Corrosion Technician, Corrosion Technologist, Senior Corrosion Technologist, Protective Coating Technician, and Protective Coating Specialist.

Q: If I choose the Parallel Path option, do I still need to meet the work requirements?
A: Yes, all work requirements must be met for each certification.

Q: How is work experience documented?
A: Special reference forms are included with your application.

Q: Can I use work documentation that I previously turned in?
A: Yes, if this documentation is used within one (1) year.

Q: What is the difference between “acceptable work experience” and “acceptable work experience in responsible charge?”
A: Acceptable work experience” and “acceptable work experience in responsible charge” both refer to documented work experience in the field of corrosion which includes: (a) the investigation of corrosion causes and mechanisms, (b) the investigation, design, and implementation of corrosion control procedures, or (c) the teaching of corrosion related science. However, “acceptable work experience in responsible charge” should be at a level of responsibility requiring initiative, technical ability, and independent judgment.

Q: Are there any alternatives to actual “work experience” or “work experience in responsible charge?”
A: There are no alternatives to “work experience” or “work experience in responsible charge.”

Q: Once I have successfully completed a course, how long do I have to apply it towards a certification?
A: You have five (5) years to apply a course towards certification.

Q: Are there any time constraints to completion of your certification by exam?
A: You have one (1) year from the time when your application is approved in which to take the examination.

Q: What is the NACE International Institute Attestation?
A: This is a document that attests to your knowledge that you understand the privileges and responsibilities which come along with the NACE International Institute Certification. By signing the Attestation, you agree to adhere to certain standards and abide by certain work ethics. Failure to comply could result in disciplinary action.

Q: Do I have to renew my certification?
A: Yes, all certifications renew every three (3) years. Go to the NACE Institute Web site to renew online at www.naceinstitute.org.

Q: Do I have to pay a fee to renew my certification?
A: Yes, every three (3) years you pay a fee to renew your certification—$240 USD for Members and $450 USD for Nonmembers. You no longer have to pay Annual Maintenance Fees for your certification.

Q: How long can my file remain open after I have submitted my application paperwork?
A: Files remain open for two years with no activity. Files older than two years with no activity will be closed.

Q: What happens if I do not renew my certification?
A: The NACE Institute allows a three month grace period (90 days) after your certification expiration date before your record is marked as “terminated.” You have up to five years to reinstate your certification and pay all fees in arrears. Any certification lapsed for more than five years will NOT be eligible for reinstatement and will require starting the program over from the beginning.
IMPORTANT INFORMATION

Class Registration
To qualify for Advanced Member or Advanced Nonmember fees, a completed registration form with payment must be received at NACE 35 days prior to the class date. After 35 days the regular registration rate will be charged. Class registration fees include student manuals, course materials, refreshment breaks, and reference books where indicated. Attendees are responsible for their own expenses, including, but not limited to, hotel, airfare, and meals. Participants are responsible for making their own accommodation arrangements. NACE regrets that it cannot be responsible for any loss or damage incurred as a result of cancellation of a course for any reason. This includes, but is not limited to, airfare penalties and/or hotel penalties. Please contact First Service to check the status of a course before making any nonrefundable travel arrangements.

Fee Payments**
All software license, class, and exam registration fees must be paid in U.S. dollars. For classes outside of North America, fees in local currencies may apply. Contact NACE Headquarters or the stated local contact before making final plans. For class or exam registrations, registration accompanied by full fee payment is required to guarantee a seat. Payment in full is due at the time of enrollment. NACE does not invoice for class registrations. A confirmation letter will be mailed when payment and registration is received. Registration fees are subject to change without advance notice.

Cancellation and Refund Policy
For classes in Canada and the U.S., paid or guaranteed registrations cancelled in writing at least 35 calendar days in advance of a class will receive a full refund, less a $60 USD service fee. Paid or guaranteed registrations cancelled in writing 34 to 3 days before a class will receive a refund of 50% of the registration fee. No refunds or credit will be issued on cancellation requests received less than 3 days before a class begins. Based upon availability, transfer to another class is permitted one time, with the following fees: 35 or more days in advance of the start date, the fee is $45 USD; 34 to 3 days before the start date, the fee is $115 USD. Transfers may not be made less than 3 days before a class begins. All requests for transfer or cancellation must be submitted in writing to firstservice@nace.org. Exam Only fees and Exam Only Retake Fees are nonrefundable.

Software Returns
The CIP DVD Sets 1 and 2, and the Basic Corrosion Course on CD are licensed as final sale items. No returns are accepted on these products with the exception of defective merchandise.

Software Shipping
Purchaser pays actual shipping costs in addition to the license fee. For faster processing of your order, use a credit card for payment, or contact NACE FirstService at +1 800-797-6223 for a shipping quote.

Equal Opportunity
It is the policy and practice of NACE to assure that no person will be discriminated against or be denied the benefits of any activity or program on the basis of the individual’s race, color, religious creed, sex, marital status, national origin, ancestry, sexual orientation, or disability.

Continuing Education Units (CEUs)
Course participants may receive CEUs. As an IACET Authorized Provider, NACE International offers CEUs for its programs that qualify under the ANSI/IACET Standard.

Membership
A one-year membership is included in the Nonmember course fee, regardless of your membership status at the time of course registration. If you are a member at the time of registration but pay the Nonmember Fee, your membership will be extended for one year. This membership offer is only valid at the time you register. Membership will be processed upon completion of the course, determination of eligibility, and once all payments have been processed. This $130 USD value includes a $12 USD subscription to Materials Performance magazine. If you do not wish to take advantage of the one-year membership and subscription to Materials Performance, then you must check the box marked “No” on the course registration form.

**NOTE: (1) NACE-approved courses held outside of the U.S. may have fees that vary from the fees listed in this guide, based upon regional economics and fees for similar technical courses in their respective regions. (2) Registration fees for Canadian courses have been adjusted to include GST/HST where applicable.

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Become a NACE Instructor

Being an instructor has its perks—peer industry recognition, travel, comradery, learning from co-instructors, and financial benefits. Join an elite group of professionals that are shaping the future of the industry by sharing their corrosion knowledge and experiences with the next generation of corrosion professionals.

Why should you become a NACE Instructor?

- Recognition as a leading expert in the field
- Financial compensation—supplement your current income
- International and domestic travel
- Network with industry peers
- Share your knowledge and expertise
- Be part of the an international organization that continually makes a difference
- Receive a 15% discount on branded items in the NACE Store

Instructors needed in the following programs:

- General Corrosion
- General Coating
- Coating Inspector
- Cathodic Protection
- Pipeline Industry

nace.org/naceinstructor
**NACE COURSE REGISTRATION FEES**

*Effective January 1, 2015*

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**COATING INSPECTOR PROGRAM (CIP)**

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**CIP EXAM COURSES**

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**CIP SPECIALTY COURSES**

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**GENERAL COATINGS PROGRAM**

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**PROTECTIVE COATING SPECIALIST (PCS) PROGRAM**

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**CP SPECIALTY COURSES**

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### NACE COURSE REGISTRATION FEES

**Effective January 1, 2015**

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</tbody>
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Registration fees are subject to change without notice. For all courses held outside of the United States, please contact First Service at +1 281 228 6223 or firstservice.org.

To take advantage of the advance registration savings, registration form and payment must be received at NACE Headquarters 35 days prior to start date of course.

NACE-approved courses held outside of the U.S. may have fees that vary from the fees listed in this guide, based upon regional economics and fees for similar technical courses in their respective regions.
**TWO WAYS** to register for a **NACE COURSE**

1. Go Online to [nace.org/eduschedule](http://nace.org/eduschedule) and select the course you wish to take. Then choose your preferred course date and location and click on the **Register** link.

   **– OR –**

2. Contact the **NACE First Service Department** by calling toll free at **+1 800 797 6223** (U.S. and Canada) or worldwide at **+1 281 228 6223**.

**First Service Hours of Operation**

- Monday – Thursday: 7 a.m. to 6:30 p.m. CST
- Friday: 7 a.m. to 5 p.m. CST

**For courses designated as Partner, Licensee or Sponsored, please click on the link for Training Sponsor contact information. Please contact the Training Sponsor for pricing information. Additional fees may apply to the published pricing for courses held outside the United States.**

Payment is due in full at the time of registration. Please have your credit card number, expiration date, security code, and name as it appears on the card available to register over the telephone or on the NACE website at [nace.org](http://nace.org). Please note: A physical mailing address is required in order to ship training material in advance for certain NACE courses.

NACE regrets that it cannot be responsible for any loss or damage incurred as a result of cancellation of a course for any reason. This includes, but is not limited to, airfare penalties and/or hotel penalties. Please contact First Service to check the status of a course before making any nonrefundable travel arrangements.

Please note: course fees, dates and locations are subject to change without notice. For the most up to date course schedule and information, visit [nace.org/eduschedule](http://nace.org/eduschedule).
ON-SITE TRAINING

Why send your employees to another city for training when NACE can send the training to you!

On-Site Training offers you the opportunity to have your employees trained and certified* at your own facility while eliminating travel expenses and minimizing downtime. Customized to fit your needs, On-Site Training also gives you flexibility to choose the training that best fits the needs of your company with convenient scheduling options.

Benefits:

- **No Travel Costs**—The average cost, including travel, food and housing, to send an employee to another city for training is over $2,600 not including the actual cost of the training.

- **Reduced Course Prices**—Courses fees are reduced from the list price of a standard public course.

- **Option to choose date, location, and course**—Schedule a course when it is most convenient for your company. Courses can be scheduled with a minimum of 30 days notice and can be held at your facility.

Requirements:

- Provide a classroom large enough to accommodate seating and tables for students and instructors, audio and visual equipment, and instrumentation/equipment. Certain courses may require an additional room for examinations on the last day of class.

- Able to provide the required work stations, materials, tools and equipment for the Lab Day which provides important hands-on experience for our students.

- Meet a required minimum of 12 students in the U.S. and 15 outside the U.S.

*All certifications are administered by the NACE International Institute, the independent certification affiliate of NACE International.

Questions? Please contact:
U.S. Course Locations: Carmen Peebles, Manager, Domestic Education +281-228-6233 or carmen.peebles@nace.org
International Course Locations: Nalleli Cly, nalleli.cly@nace.org

nace.org/hostacourse
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