



International Association for Radio, Telecommunications and Electromagnetics, Inc.
840 Queen Street – New Bern, NC 28560 - 1-800-89-NARTE - Fax 1-252-672-0111 - www.narte.org

Associate Certification Application Package

---FORMS MAY BE PHOTOCOPIED---

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**Application
Forms**

About iNARTE Associate Certification

NARTE was established by industry leaders in 1982 in response to the FCC's deregulation and encouragement of industry certified personnel. As an objective third party certification body, NARTE developed an evaluation process based not only on examination, but real world skills and work experience. Early in 1987, it was determined that a credential certification process for EMC engineers and technicians was needed to help improve the quality of direct technical support to the Naval Air Systems Command (NAVAIR) and eventually to the U.S. Navy. In addition to improving the technical quality of support, certification, as a recognized standard, provides a demonstrable benchmark to differentiate qualified EMC/EMI personnel. In 2001 an Agreement was signed between NARTE and the IEEE EMC Society, whereby the EMCS became the keeper of the body of knowledge against which NARTE applicants are examined. Similar Agreements have since been executed with the IEEE PSE Society and the ESD Association. This approach establishes technical competency criteria for EMC, ESD and PSE Engineering and enforces these criteria for technical personnel performing work in these areas.

In 2007 the NARTE name was changed to iNARTE to recognize our growing global membership. The purpose of the iNARTE Associate Certification programs is to foster technical "excellence" in engineering and to allow new graduates to enjoy the benefits of iNARTE involvement as they build their careers. The programs benefit the individual engineer, the technician and the community as a whole by establishing a standard of excellence in engineering that will endure and extend across the boundaries of private and government agencies. iNARTE Associate Certification is a two-step process based on education and reference. Educational requirements for engineers include graduation from an Accredited four-year degree curriculum in engineering. For technicians, education includes graduation from an Accredited trade or vocational school two-year course in an approved technology. Associate Engineers and Technicians can maintain their status each year by providing a reference from their immediate supervisor. At such time that the Associate has gained the required work experience, they are encouraged to apply for Full Certification status

Submission of the application form implies agreement to adhere to the **iNARTE Code of Ethics**, available from iNARTE HQ or online at <http://www.narte.org/h/codeofethics.asp>



Who is Eligible for iNARTE Associate Certification:

There are a number of paths to obtaining **Associate Engineer Certification**:

- Graduate from an iNARTE Accredited University, School or Institute having completed a four (4) year degree program with a Grade Point Average of 3.0, or equivalent; or
- Graduate from an iNARTE Accredited University, School or Institute having completed a four (4) year degree program with a GPA below 3.0, but having passed an iNARTE short-form associate examination; or
- Graduate from an iNARTE Approved Training Center, or a non-Accredited University, School or Institute, having completed a four (4) year degree program and having passed an iNARTE short-form associate examination; or
- Pass the regular iNARTE Certification Examination prior to graduation, or prior to having completed nine (9) years of related education/work experience.

There are a number of paths to obtaining **Associate Technician Certification**:

- Graduate from an iNARTE Accredited University, School or Institute having completed a two (2) year degree/diploma program with a Grade Point Average of 3.0, or equivalent; or
- Graduate from an iNARTE Accredited University, School or Institute having completed a two (2) year degree/diploma program with a GPA below 3.0, but having passed an iNARTE short-form associate examination; or
- Graduate from an iNARTE Approved Training Center, or a non-Accredited University, School or Institute, having completed a two (2) year degree/diploma program and having passed an iNARTE short-form associate examination; or
- Pass the regular iNARTE Certification Examination prior to graduation, or prior to having completed six (6) years of related education/work experience.

All applicants are required to provide a letter of recommendation from a senior member of the University, School or Institute staff that is familiar with their work ethic for at least one of their last two study years. Reference forms are on Pages 6-7.

All applicants are required to submit five (5) questions that could be used in future iNARTE examinations. Questions are to follow the format on Page 8.

All applicants are required to submit a non-refundable Associate Certification registration fee of US\$65.00.

Advantages of iNARTE Associate Certification:

iNARTE Certified Engineers and Technicians are respected around the world for their professional expertise and ethical practices. They are acknowledged among their peers and the community at large for pursuing a program for the independent validation of their credentials. The iNARTE Associate Certification program allows new graduates to benefit from being associated with a prestigious, independent credentialing association and our select group of exceptional professionals.

iNARTE Associate Certificate holders will be accorded the following benefits as they build their chosen careers:

- **A resume that is enhanced through having been independently validated by iNARTE**
- **Access to the Career Listings and available Industry Positions on the iNARTE web site**
- **Availability to post a Resume on the iNARTE web site**
- **Free entry to the full iNARTE Certification examination when experience has been gained**
- **Preferred rate access to Symposiums, Conferences and Workshops arranged and supported by iNARTE and/or our Professional Affiliates, (IEEE EMCS, IEEE PSES, ESDA, ANSI C63, etc.)**

ASSOCIATE ENGINEER Certification Criteria

1. Complete the Application Form (Page5) and submit a **non-refundable** application fee of US\$65.00. Submission of the application form implies agreement to adhere to the iNARTE Code of Ethics. Available at: <http://www.narte.org/h/codeofethics.asp>
2. Provide evidence of education and training.
 - a) Graduation from an iNARTE Accredited University, School or Institute curriculum of four years shall be considered equivalent to four years of experience toward Full Certification status.
 - b) Graduation from an approved curriculum with a final GPA above 3.0, or equivalent eliminates the iNARTE Associate Engineer examination.
 - c) Graduation in a curriculum other than engineering or physical science will be evaluated by iNARTE.
 - d) Graduation from a non-iNARTE Accredited School or University will be evaluated by iNARTEOfficial school transcripts are required. Photocopies of applicable training certificates may be submitted.
3. References: Using the iNARTE reference forms (Pages 6-7), submit a minimum of one (1) reference from a senior course tutor, or school official supporting character and competency as an Engineer. Reference forms must be signed and forwarded directly to iNARTE. Referees shall have detailed knowledge of the applicant for a minimum of one year during the two final years of undergraduate studies. Reference forms must be signed and forwarded directly to iNARTE.
4. Compose 5 multiple-choice questions with correct answers and supporting references.
5. Graduates who have not achieved a GPA of 3.0, or have not graduated from an approved curriculum will be required to pass the iNARTE Associate Engineer examination in a discipline of their choosing.

ASSOCIATE TECHNICIAN Certification Criteria

1. Complete the Application Form (Page 5) and submit a **non-refundable** application fee of US\$65.00. Submission of the application form implies agreement to adhere to the NARTE Code of Ethics. Available at: <http://www.narte.org/h/codeofethics.asp>.
2. Provide evidence of education and training
 - a) Graduation from an iNARTE-Accredited School or College curriculum of two years shall be considered equivalent to four years of experience toward Full Certification status.
 - b) Graduation from an approved curriculum with a final GPA above 3.0, or equivalent eliminates the iNARTE Associate Technician examination.
 - c) Graduation in a curriculum other than engineering or physical science will be evaluated by iNARTE.
 - d) Graduation from a non-iNARTE Accredited School or University will be evaluated by iNARTEOfficial school transcripts are required. Photocopies of applicable training certificates may be submitted.
3. References: Using the iNARTE reference forms (Pages 6-7), submit a minimum of one (1) reference from a senior course tutor, or school official supporting character and competency as a Technician. Reference forms must be signed and forwarded directly to iNARTE. Referees shall have detailed knowledge of the applicant for a minimum of one year during the two final years of undergraduate studies. Reference forms must be signed and forwarded directly to iNARTE.
4. Compose five (5) multiple-choice questions with correct answers and supporting references.
6. Graduates who have not achieved a GPA of 3.0, or have not graduated from an approved curriculum will be required to pass the iNARTE Associate Technician examination in a discipline of their choosing.

Preparing for the iNARTE Short-Form Associate Examination

This examination is required for applicants that have not achieved the required GPA from an Accredited University, School or Institute, or who have graduated from a non-Accredited University, School, Institute or Training Center.

Where?

iNARTE has testing centers at over 180 locations in the US and at authorized facilities worldwide. iNARTE also administers testing at several special events each year. If no testing location is near you, iNARTE will coordinate an examination session at your school or workplace. Contact iNARTE at 1-800-89-NARTE for locations or see the test center listing online at <http://www.narte.org/h/testcenters.asp>

When?

Most test locations will coordinate an appointment upon request. Indicate your preferred testing dates on your application form. Once your Associate Certification application fee for Engineers or Technicians is received, iNARTE will effect the necessary coordination and arrangements for a testing date, time, location and point of contact.

How?

The short form examination for Associate Engineers or Technicians is approximately 4 hours duration in one session. All examinations are given with open book (see exam strategy below). Examinations are graded at iNARTE Headquarters and the applicant will be advised of a pass/fail within 10 working days. Passing score is 70%. Should a candidate fail the examination, a retake is permissible following a 90 day period. Examinations may be retaken any number of times, however, an examination processing fee is required each time the exam is re-taken, (see <http://www.narte.org/h/fees.asp>).

Basic Exam Strategy

The iNARTE short form examination is open book. Study/reference materials, calculators and personal computers are allowed. However, power and internet access is not guaranteed, but may be used if available.

The short form exam consists of one section of 48 questions.

Review all questions, then answer those you are most sure of first.

You must answer no more than 40 of the 48 questions. **You will be graded on the first 40 questions you answer.** For example: if you answer Questions numbered 1 through 43 in error, you will be graded on questions 1 through 40 only.

Associate Engineer Examination Subjects:

Engineers will be examined on the theory and science of their selected discipline. They will be expected to display knowledge of the fundamental equations that govern that discipline and the application of those relationships to typical practical situations.

Associate Technician Examination Subjects:

Technicians will be examined on more practical aspects of their selected discipline. They will be expected to demonstrate knowledge of instrumentation, test configurations, common industry standards and how they are applied in practice.

Term of Associate Certification:

Associate Certification can be granted to successful applicants immediately upon graduation. At which time Associate Engineers should have a minimum four (4) years of related education experience and Associate Technicians a minimum of two (2) years of related education experience. Full iNARTE Certification for an Engineer requires nine (9) years of experience and for a Technician six (6) years of experience.

During the years of work experience between Associate Certification and full Certification eligibility, Associate Engineers and Technicians will be required to renew their Certificate each year. The renewal process requires the submittal of an application form to be accompanied by a US\$50.00 renewal fee, together with a letter of recommendation from an immediate supervisor or manager and five additional questions in the format of Page 8.

At such time that sufficient experience has been gained for full Certification, the Associate will be encouraged to take the required examination, if not already having done so. However, the Associate Certification status will be allowed to continue for two more years in order to accommodate any difficulty in scheduling for any individual Associate.

The Associate who wishes to apply for full Certification will be required to submit an application form, together with three letters of reference. No examination fee will be required and no further questions will need to be prepared. There will be no requirement for education transcripts or for a detailed resume.



**APPLICATION for ASSOCIATE CERTIFICATION by
INTERNATIONAL ASSOCIATION FOR RADIO
TELECOMMUNICATIONS AND ELECTROMAGNETICS, INC.**
840 Queen Street, New Bern, NC 28560 1-800-89-NARTE or (252) 672-0200

| | |
|-----------------------------|--------------|
| FOR OFFICE USE ONLY | |
| Certification Number: _____ | Date: _____ |
| Test Type: _____ | Score: _____ |

Name _____
(First) (Middle Initial) (Last)

Name _____
(As to be shown on Certificate)

Address _____

City _____ State _____ Zip _____ Citizen of _____

Phone (Work): _____ (Home) _____

Date of Birth _____ Sex M F Email: _____

University, School or Institute: _____

Degree or Diploma Awarded: _____ Grade or GPA: _____

I hereby make application for iNARTE Associate Certification as: Engineer, or Technician.

My Technical Discipline is: EMC ESD Control Product Safety Engineering

I hereby authorize iNARTE, in accordance with iNARTE's privacy policy www.narte.org/h/privacy.htm to publish my name, city, state, country and any certification it may issue to me in all of its directories or registries. In addition, iNARTE is authorized to confirm my certification to inquiries on my behalf. I have read and agree to abide by the iNARTE Code of Ethics as published at www.narte.org/h/codeofethics.asp.

 Signature of Applicant _____
 Date

Reference:

| Name | Telephone Number or E-mail Contact |
|----------|------------------------------------|
| 1. _____ | _____ |

Payment Non-refundable application fee of US\$65.00

Check enclosed Charge Card No.: _____
MC VISA AMEX CVV # Exp. Date

 Signature

 Billing Address, if different from above State Post/Zip Code Country





Applicant's Name _____

Address: _____

Date: _____

Dear _____ (Name of Reference)

I have applied for Associate Certification in the field of _____, and request that you serve as the references on my application. If you are willing to do so, please provide the information requested on this form and return the form to iNARTE at 840 Queen Street, New Bern, NC 28560. The certification requirements for Engineer and Technician are quoted below and I have enclosed a copy of my education experience.

Thank you for your help. Please send the completed forms to iNARTE at your earliest convenience. iNARTE will not process my application until this reference form is received

 Signature of Applicant
 Date of Application to iNARTE _____

EDUCATION REQUIREMENTS FOR ASSOCIATE CERTIFICATION AS AN ENGINEER

- Graduation from a four (4) year degree curriculum at an iNARTE Accredited University, School or Institute; and
- Achieve a final Grade Point Average, GPA, of 3.0 or equivalent; or
- Pass the iNARTE Associate Engineer examination with a score of 70%

EDUCATION REQUIREMENTS FOR ASSOCIATE CERTIFICATION AS A TECHNICIAN

- Graduation from a two (2) year degree/diploma curriculum at an iNARTE Accredited University, School or Institute; and
- Achieve a final Grade Point Average, GPA, of 3.0 or equivalent; or
- Pass the iNARTE Associate Technician examination with a score of 70%

Equivalencies granted for study at schools approved by iNARTE are based on the schedule below. Engineering teaching experience may qualify the applicant for up to two years of experience equivalency.

| Education | Curriculum | Equivalency |
|--|---------------------------------|--|
| 1-4 years undergraduate study without degree | Engineering | 1 year of each year of study; maximum of 4 years |
| BS or BSc | Engineering of physical science | 4 years |
| BSET | Engineering technology | 2 years |
| BS/BA | Other than above | 2 years |
| Postgraduate study | Engineering or physical science | Up to one year |

***Education records will be reviewed by iNARTE.**



INARTE ASSOCIATE CERTIFICATION REFERENCE FORM Page 2– This Form May Be Duplicated

Name of Applicant _____

Do you know the applicant well? _____ Casually? _____ How Long? _____

What is your professional relationship to the applicant? _____

Has the applicant been educated as an Engineer _____ or Technician _____ or Both _____

Check the areas for which this applicant qualifies:

_____ EMC _____ ESD _____ Product Safety

Please evaluate the applicant in the space below:

| ENG | TECH | |
|------------|-------------|------------------------------|
| _____ | _____ | Exceptionally well qualified |
| _____ | _____ | Well qualified |
| _____ | _____ | Marginally qualified |
| _____ | _____ | Unqualified (explain below) |

Engineer or Technician? In a nutshell:
Engineers know the math and the physics of their field
Technicians know the instruments and test setups.
Engineers need good writing and verbal skills.
Technicians need to know the pitfalls of real measurements. Applicants do not have to be competent across the whole spectrum but do have to be competent in the fundamentals as well as the specifications which apply to their particular specialty.

Additional comments:

Your name (print) _____

Your University, School or Institute _____

Your Position _____

Signature _____

Date _____





ASSOCIATE CERTIFICATION QUESTION SUBMISSION FORM

The following format must be used. This form may be copied and used for each question.

SAMPLE QUESTION, (Applicable for EMC)

According to ISO 11452-1 (1993), for both substitution and closed-loop leveling methods, (CW and AM) the test severity levels are expressed in terms of equivalent _____. *Hint: A test severity of 20 V/m means a CE or AM test will be conducted for 28 V/m peak value.*

- a. Voltage.
- b. Current.
- c. RMS.
- d. E-Field.

Answer: C Time: 5 Minutes Reference: ISO 114521-1. '93 p.9 For: E & T

1. Question: (Try to avoid any possible misinterpretations of the question. If question is negative, i.e., "Which item does **NOT** include the following?", the **NOT** should be bolded and capitalized.)

2. Answers: (Only 4 answers) {Include all calculations if the answer is calculated}

- A.
- B.
- C.
- D.

3. Correct Answer: _____

4. Applicability Engineer Technician Both

5. Time required answering the question, (estimate): _____ Minutes

6. Reference(s) _____

Calculation (If answer is to be derived, show all calculation steps required to achieve answer)

7. Category (See below) _____

CATEGORIES OF QUESTIONS

Each discipline is segregated into a number of question categories. A list of these categories is shown on the following page. All question submitted are to be allocated to one of these categories.

SUBMISSION OF QUESTIONS

Questions are to be submitted as both hard copy and in electronic format. Electronic format may be submitted on diskette or via email, (contact information will be provided). All equations, calculations, diagrams and schematics are to be included in the electronic submission.

Notes on Question Content

- The questions you submit must be in your own words.
- Questions that relate to real-life work situations or problems are desirable (see example above).
- Questions should be challenging, yet answerable by a knowledgeable and experienced practitioner.
- Your questions should be geared toward the certification type for which you are applying (Technician or Engineer).



INARTE QUESTION CATEGORIES FOR EACH DISCIPLINE

| Electromagnetic Compatibility (EMC) | Electrostatic Discharge Control (ESD) | Product Safety Engineering (PSE) |
|--|---|---|
| Bonding Grounding Shielding Interface Control Filtering Materials and Special Devices Conducted Interference Radiated Interference Military Specifications/Standards/Handbooks EMC Test Plans Test Equipment Test Facilities Safety Terminology Mathematic Spectrum Analysis ESD EMP Lightning Protection Inter-system and Intra-system Design Equipment Design EMI Prediction EMI Analysis Field Theory Antennas Filter Theory | ESD Program Design & Management ESD Loss Analysis ESD Theory Math/Physics Safety Standards/Specifications Terminology System Test & Measurement Workstations Flooring ESD Shielding Analysis Equipment Design Intersystem & Intrasystem Design Body Charge Evaluation & Control Materials Test & Measurement ESD Prediction (Devices & Systems) ESD Analysis (Devices & Systems) Manufacturing/Repair Facility Evaluation, Survey & Auditing Plant Equipment ESD Control & Evaluation Clean Room Equipment & Material Control Garment Control & Evaluation Mfg Plant Handling Procedures ESD Control Material In-Field Testing Production Aids & Tool Evaluation Ionization Devices & Systems In Field ESD Controls Device Sensitivity Test & Measurement Grounding Technology Laboratory Test & Analysis of ESDC Packaging Materials | Connection to supply Isolation of supply Mechanical hazards Earthing Types of Insulation Protection against electrical shock Resistance to fire Fire hazards Limits on fuel Limits on heat Insulation damage Creepage and clearance Inter system and intra system design Equipment design Hazard analysis Risk assessment Design review Legislation US,EEC and International Military and Civil Electrical Safety Standards Safety tests Assessment authorities Competent Bodies Safety certification Declarations of Conformity Operating and maintenance instructions and handbooks |

