



CONTINUING EDUCATION PROGRAM

PROVIDERS handbook

For Information Contact:

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Continuing Education Program

Providers Handbook

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Preface

Welcome to NGA's Continuing Education Program. The purpose of this program is to provide NGA-certified auto glass technicians and glass installers with the opportunity and option to earn Certification Credits (CCs) for certification renewal instead of sitting for the certification exam again. Taking the exam for certification renewal, however, is always an acceptable option.

The providers of continuing education are important components in the process of certification renewal. It is their education and training programs that provide the appropriate content and opportunity for auto glass technicians and glass installers to renew their certification credentials through program attendance and participation in lieu of re-taking the exam. This *Handbook* explains NGA's continuing education program participation requirements for Continuing Education Providers.

NGA's Mission Statement

NGA provides information and education, as well as promotes quality workmanship, ethics, and safety in the architectural, automotive and window and door glass industries. NGA acts as a clearinghouse for industry information, a catalyst in education and training matters, and a powerful voice on behalf of our members.

Statement of Scope and Purpose for NGA Training and Educational Programs

The National Glass Association (NGA) is a District of Columbia nonprofit corporation which is tax exempt under Section 501(c)(6) of the Internal Revenue Code. NGA's training and educational programs have been developed in furtherance of its nonprofit tax exempt purposes primarily to benefit the architectural, automotive and specialty glass industries. These programs have been developed by NGA or its instructors to provide general education and training in connection with the above industries. These programs cannot, however, anticipate all physical and factual situations, and cannot take the place of professional experience and judgment. NGA does not guarantee, warrant or endorse the methods, procedures and manner of work or services described or referred to in the educational and training materials, or any work or services performed by any individual person or any firm or shop; all warranties are expressly excluded. Neither NGA nor its officers, directors, members, employees, instructors or agents shall be liable for any loss, damage, or claim with respect to any work or services performed, whether or not it is based on the training and education programs. All such liabilities including special, indirect,

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or consequential damages are expressly disclaimed and excluded. Certification by NGA indicates that an individual has met the specific requirements of the NGA certification process but is not a guarantee of competency, accuracy, or workmanship. NGA does not assume any liability or duty to the public for the service of auto glass technicians, glass installers, or auto glass repair technicians.

Who is Eligible for Continuing Education

Currently certified auto glass technicians and glass installers are eligible to choose continuing education as an option for certification renewal when notified by NGA that their certifications are about to expire. Their alternate option is to take the appropriate examination again. NGA will notify technician of expiration and how many CCs they have collected. He/she has three (3) years to earn the appropriate numbers and types of certification credits (CCs) for certification renewal. CCs are available through attendance and participation in NGA-approved continuing education provider programs.

Note: Passing the certification exam is required for initial certification.

How are CCs Awarded

One hour of continuing education is equivalent to one CC of credit. Providers must determine credit according to the following requirements:

50–60 minutes	=	1 contact hour
30–49 minutes	=	.5 contact hour
Less than 30 minutes	=	not counted

Note: Credit is awarded for educational time only. Credit is not awarded for program registration, class breaks, meals, travel, receptions, and so forth. Where a presentation occurs at a meal, credit is not awarded for the time spent eating.

The time frame for earning the 30 CCs is 3 years. Once a candidate passes the appropriate certification exam, the candidate must earn 30 CCs within the 3-year time frame that his/her certification is valid. Otherwise, the candidate will need to take and pass the exam again in order to renew the certification. If the candidate earns the 30 CCs through NGA-approved continuing education providers, the certification will be renewed for another 3 years with the ongoing requirement for continuing education.

Candidates will keep their certificates of completion from the providers on file and submit them as requested by NGA. In the unlikely event of disagreement, candidates may need to produce their certificates of completion as proof of attendance.

Note: The provider's documentation is the principal proof of a candidate's attendance. Candidate copies are considered as back-up only.

Guidelines for Providing Continuing Education

Below are the basic guidelines for vendors, trade associations, educational institutions, and others who wish to become approved providers of NGA's continuing education CCs:

- Providers will submit a letter of intent (see Appendix A) indicating their desire to become NGA continuing education providers and their agreement to follow NGA provider guidelines and requirements. **Letter of intent and all forms must be typed and not handwritten.**
- With the letter of intent, providers will submit signed copies of the NGA Continuing Education Provider Application Form and Provider Code of Conduct Agreement (see Appendix A).
- Providers will submit their continuing education programs to NGA for review and acceptance at least **30 days** prior to the program's presentation.

Note: Providers will be charged an additional processing fee for "rush" requests (i.e., less than 30 days) for program reviews.

- NGA will maintain a record of approved provider course(s). When a new course is added or updated, providers must submit new information within (30) days prior to offering the course. This information must be included on the NGA Continuing Education Provider Application Update Form. Failure to comply with these requirements may result in placing the program on probation.

- As a minimum, providers will submit the following program elements for review and acceptance as indicated on the Application Form (see Appendix A). When a provider has more than one continuing education program available, the provider will submit each program separately for review and acceptance:
 - Program Title
 - Program Length (1 hour minimum)
 - Applicable Certification Category and Topic (see Appendices C and D)
 - Program Type (Lecture, demonstration, hands-on training, and so forth)
 - Learning Outcomes (performance-based) (see Appendix B)
 - Program Outline
 - Program Resources/References
 - Attendee Evaluation Method (Quiz, question/answer period, observation, and so forth)

- It is required to submit two (2) typed copies of the completed application to seek approval. One copy will remain on file at NGA headquarters and the second will be sent to committee/technical consultant for further processing.

- Providers will issue certificates of completion to NGA attendees who complete their continuing education programs. List the courses you wish to provide and the type of certificate that you will award to attendees. Attach a sample Certificate of Completion or Certificate of Achievement (whichever you use). Each certificate must include:
 - Name of the provider
 - Number of continuing education hours or CCs issued
 - Name of course
 - Participant's name
 - Date of completion

- The provider must maintain transcripts and/or other records on file for three years that are issued to participants for documentation for completion and must be reproduced at the certificant's request. The provider must publish a written policy to ensure the privacy and security of the certificant's records is maintained.

- Providers will submit a NGA Continuing Education Program Attendance Form (see Appendix A) signed and dated by the instructor/presenter as documentation that a candidate attended and completed (i.e., participated in the evaluation method) a particular program. Providers will forward this information to NGA for processing within 10 working days of program completion. Providers that fail to comply will be penalized or dismissed as a NGA Approved Provider.

- Providers will be classified according to category and will be charged a one time fee according to their provider category. **The rate is per credit hour:**

– Non-profit Training Provider, Trade Association (not a NGA Chapter)/ Educational Institution	\$ 50.00
– NGA Chapter	No charge
– Training Provider	\$ 200.00
– Product or Services Vendor	\$ 200.00
– Government Agency	No charge

- Marketing and promotional materials must inform the potential participant/student not only what will be presented, but what criteria must be met for successful completion of an educational activity. The provider should disclose:

- Publish policies of the organization/individuals related to the delivery of all the educational offerings must be published and made available to the certificants and or public.
- Providers must publish and submit advertising promotional materials that include clear statements regarding: Course prerequisites, learning outcomes, learning activities, qualifications of instructors, benefits for the certificants, attendance of the entire program in order for a certificate to be issued, deadlines, fees, refunds and approval status.
- Providers must inform participants in advance that learning outcomes will be assessed. Learners who do not satisfactorily complete course requirements will not be awarded contact hours.
- Providers must disclose their proprietary interest in any commercial product. Whenever commercialized products are displayed, a statement reflecting this must be on the written materials.

- Providers will use evaluations at the conclusion of the program to ensure continuous improvement of the education program to ensure the effectiveness of the material. Properly design and utilize evaluation forms that evaluate the achievement of each objective and expertise of each presenter. Provide information regarding the effectiveness of the program and evidence for any necessary changes or improvements.

Providers Application Package Checklist

To ensure that potential Providers submit all the needed information **for each program** to NGA for review and acceptance, refer to the following checklist:

- _____ Signed Letter of Intent
- _____ Completed and Signed Application Form (including program outline)
- _____ Signed Code of Conduct Agreement
- _____ Sample Attendance Form
- _____ Sample Certificate of Completion
- _____ Payment (according to provider category)

NGA's Role for Continuing Education Processing

- Promote NGA's continuing education program to potential continuing education providers.
- Review and accept (or reject) provider programs as NGA-compliant. For routine applications, providers should receive notification from NGA within two (2) weeks of NGA's receipt of their complete program information.
- Assign provider numbers and program numbers for use on all subsequent correspondence pertaining to the provider's continuing education program(s).
- Provide NGA's Continuing Education logo to providers for use in promotion of their NGA-compliant program(s).
- Promote the continuing education program to glass shops (member and non-member).
- Notify candidates of certification expiration and continuing education transcripts.
- Manage continuing education database (candidates and providers).
- Issue credentials to approved continuing education providers.
- Promote approved provider programs and their availability (notices in magazines,

and on Web site; internet links to provider sites, and so forth).

- Send providers renewal notices when their registered programs are about to expire.

Appeal Process

Organizations/individuals may have a one time appeal of decisions based on denial under the following actions:

1. An application is deferred or denied approval for reasons related to compliance with the NGA continuing professional education criteria, or
2. A provider (person or organization) has been placed on probation or had approval withdrawn for reasons related to compliance with NGA Continuing Education criteria.

Monitoring of Providers

NGA has the responsibility of maintaining the integrity of the approval process and the quality of programs offered by approved providers. NGA retains the right to monitor providers' programs and operations without being served a fee associated with the program under the following conditions:

Written complaints regarding:

- Any component of the program that does not reflect adherence to the teaching/learning principles of continuing professional education.
- Suspected violation of NGA policies or Provider agreement.
- Ethical or Professional misconduct within the context of the educational program.
- Fraud and/or misrepresentation including misuse of NGA Certification Logo.

Appendix A

Note: These forms are also available on the NGA Web site www.glass.org.

Sample Provider Letter of Intent

Provider Letterhead

TO: Certification Manager, NGA Department of Professional Development

TOPIC: Intent to Provide Continuing Education

DATE:

Dear NGA Certification Manager:

This letter indicates (Company's) intention to become an NGA continuing education provider and (Company's) agreement to follow NGA provider guidelines and requirements. (Company) will provide these elements of each continuing education program to NGA for review and acceptance:

- Program Title
- Program Length (1 hour minimum)
- Topic Category
- Program Type (Lecture, demonstration, hands-on training, and so forth)
- Learning Outcomes
- Program Outline
- Attendee Evaluation Method (Quiz, question/answer period, observation, and so forth)

(Company) will provide a certificate of completion to each attendee who completes the entire program. Each certificate will include the name of the provider, continuing education hours or CEs issued, date of completion, name of course and the participant's name.

(Company) will provide NGA with documentation of individual attendance within 10 working days of the completion of the program. (Company) understands that it is (Company's) responsibility to ensure that NGA receives this information within the time frame specified and that failure to do so may compromise (Company's) ability to be an NGA continuing education provider.

(Company) understands that as a provider, (Company) may be subject to onsite unscheduled reviews/evaluations by NGA-designated reviewers.

(Company) will remit to NGA an annual (calendar year) review/filing fee of \$ _____ for each program according to the _____ (Provider Category) fee schedule.

(Company) has read and will comply with the policies in the Continuing Education Program Providers *Handbook* and agrees to completely and accurately provide NGA with all requested information. (Company) owns all courses and program materials or has permission to use all such materials.

(Company) will offer and conduct all courses or programs in accordance with all applicable federal, state, or local laws. (Company) will defend, indemnify and hold harmless NGA, its officers, directors, members, agents, and employees, from and against all claims, losses, and expenses (including reasonable attorney's fees) arising out of the courses or programs.

Company Representative's Signature

You may copy this page and complete or submit forms electronically. Please return to the continuing education web page for forms in electronic format.

NGA Continuing Education Provider Code of Conduct Agreement

As an applicant for acceptance as an NGA Continuing Education Provider, I/our organization agree(s) to:

1. Provide accurate information to the NGA in all transactions to the best of our knowledge.
2. Assure that certification credits are awarded only to certificants who successfully complete the program according to the published requirements.
3. Conduct the operations and programs in an ethical manner that respects the rights and worth of the clients we serve.
4. Use and display the NGA Continuing Education Provider statement and logo according to NGA's requirements.
5. Furnish requested information; work cooperatively with NGA and pay fees in a timely manner.
6. Accept the NGA designated monitors without fees in any programs we provide for purposes of monitoring compliance with NGA's continuing education criteria.
7. After due review and comment period, abide by any revisions of the criteria or inform the NGA of any intention to withdraw as a Provider.
8. Maintain compliance with NGA's continuing education policies and procedures.
9. Adhere to the NGA criteria/standards or relinquish the NGA's acceptance status after due process.
10. Report to the NGA any major organizational or program change(s) within thirty (30) days that impacts the criteria on which provider acceptance is based.

Provider _____ hereby agrees with all of the foregoing terms and conditions.

Signature: Chief Administrative Officer

Title

Print/Type Name

Print/Type Title

Date _____

You may copy this page and complete or submit forms electronically. Please return to the continuing education web page for forms in electronic format.

NGA Application for Continuing Education Providers

(Page 1 of 3)

****Type or legibly print this page only. All other materials must be typed.****

Date: _____

Name of Provider: _____

Address: _____

City: _____ State: _____ Zip: _____ Country: _____

Phone: () _____ Fax: () _____

E-mail: _____

Individual responsible for completing this application:

Name: _____ Title: _____

Phone: () _____ Fax: () _____

E-mail: _____

Indicate Status of Provider:

Providers will be classified according to category and will be charged a one time fee according to their provider category. **The rate is per credit hour:**

- Non-profit Training Provider, Trade Association (not an NGA Chapter)/
Educational Institution \$ 50.00
- NGA Chapter No Charge
- Training Provider \$ 200.00
- Product or Services Vendor \$ 200.00
- Government Agency No Charge
- Check enclosed
- Credit Card Visa Mastercard American Express

Credit Card Information for Visa / MasterCard

Name on Card: _____

Authorized Signature: _____

Credit Card Number: _____

Expiration Date: _____

Total Amount Charged: \$ _____

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NGA Application for Continuing Education Providers

(Page 2 of 3)

Program Title/Topic _____

Date(s) _____ **Location(s)** _____

Program Length _____ hrs. **Total Number of CCs** _____

Check One: Ongoing Program _____ One-time Program _____

Program Type

Check all that apply:

Lecture _____ Demonstration _____ Hands-on Training _____

Other (Specify) _____

Program Description

- **Learning Outcomes:** Each program must include at least one performance-based learning outcome that fulfills a required category. For category topics refer to NGA's Continuing Education Program Providers Handbook.

Category Topic(s)

Learning Outcome(s) (Performance-based)

(What task/activity will the attendee be able to do as a result of the presentation?)

■ Program Outline

Please provide a detailed outline of your program on page 3 of this form.

■ Evaluation Method

Check all that apply:

Quiz/Test _____ Q&A/Discussion _____ Observation _____

Other (Specify) _____

I certify that this information is true and correct.

Provider Contact Person Signature/Date

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NGA Continuing Education Program Review Form

(Page 3 of 3)

Program Outline

Please provide a detailed outline of your program in the space provided. Attach additional sheets, if necessary.

Training Aids

Check all that apply:

PowerPoint Presentation

Demo. Materials

(Specify) _____

Handouts

(Specify) _____

Other

(Specify) _____

Resources/References

Please list the resources or references you consulted or used to develop this program (i.e., subject matter experts, reference manual or journal article, product samples, and so forth).

Please provide this form to NGA's Professional Development Department for review at least 30 days prior to program presentation. National Glass Association, ATTN: Continuing Education, 8200 Greensboro Drive, Suite 302, McLean, VA 22102-3881; Fax 703/442-0630; or E-mail cert@glass.org.

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NGA Continuing Education Program Reviewer Checklist

Program Title _____

Company/Instructor _____

Date(s) _____ Location _____

Program Length _____ CCs _____

Ongoing Program _____ One-time Program _____

Program Type

Lecture _____ Demonstration _____ Hands-on Training _____

Other (Specify) _____

Program Presentation

Learning Outcomes Stated? Yes _____ No _____

Applicable Certification Category Topic(s)

Training Aids

Check all that apply:

_____ PowerPoint Presentation

_____ Demo. Materials

(Specify) _____

_____ Handouts

(Specify) _____

_____ Other

(Specify) _____

Evaluation Method:

Quiz/Test _____ Q&A/Discussion _____ Observation _____

Other (Specify) _____

Certificates of Completion Provided to attendees? Yes _____ No _____

Reviewer's Comments

Reviewer's Signature

You may copy this page and complete or submit forms electronically. Please return to the continuing education web page for forms in electronic format.

NGA Continuing Education Provider Program Update Letter

Provider Letterhead

TO: Certification Manager, NGA Department of Professional Development

TOPIC: Update of Continuing Education Program

DATE:

Dear NGA Certification Manager:

(Company's) Continuing Education Program (Title and Number) will remain the same for calendar year _____ as last year.

or

The following elements of (Company's) Continuing Education Program (Title and Number) have been revised or updated for calendar year _____.

Include a **signed** copy of the **NGA Continuing Education Application Update Form** and indicate program revisions.

Company Representative's Signature

You may copy this page and complete or submit forms electronically. Please return to the continuing education web page for forms in electronic format.

NGA Continuing Education Provider Application Update Form

Only submit update form if you are revising or adding new program information.
(Page 1 of 3)

****Type or legibly print this page only. All other materials must be typed.****

Date: _____

Name of Provider: _____

Address: _____

City: _____ State: _____ Zip: _____ Country: _____

Phone: () _____ Fax: () _____

E-mail: _____

Individual responsible for completing this application:

Phone: () _____ Fax: () _____

E-mail: _____

Indicate Status of Provider:

Providers will be classified according to category and will be charged a one time fee according to their provider category. **The rate is per credit hour:**

- | | |
|--|-----------|
| <input type="checkbox"/> Non-profit Training Provider, Trade Association (not an NGA Chapter)/
Educational Institution | \$ 50.00 |
| <input type="checkbox"/> NGA Chapter | No Charge |
| <input type="checkbox"/> Training Provider | \$ 200.00 |
| <input type="checkbox"/> Product or Services Vendor | \$ 200.00 |
| <input type="checkbox"/> Government Agency | No Charge |
| <input type="checkbox"/> Check enclosed | |
| <input type="checkbox"/> Credit Card <input type="checkbox"/> Visa <input type="checkbox"/> Mastercard <input type="checkbox"/> American Express | |

Credit Card Information for Visa / MasterCard / American Express

Name on Card: _____

Authorized Signature: _____

Credit Card Number: _____

Expiration Date: _____

Total Amount Charged: \$ _____

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NGA Continuing Education Provider Application Update Form

(Page 2 of 3)

Program Title/Topic _____

Date(s) _____ **Location(s)** _____

Program Length _____ hrs. Total Number of CCs _____

Check One: Ongoing Program _____ One-time Program _____

Program Type

Check all that apply:

Lecture _____ Demonstration _____ Hands-on Training _____

Other (Specify) _____

Program Description

- **Learning Outcomes:** Each program must include at least one performance-based learning outcome that fulfills a required category. For category topics refer to NGA's Continuing Education Program Providers Handbook.

Category Topic(s)

Learning Outcome(s) (Performance-based)

(What task/activity will the attendee be able to do as a result of the presentation?)

■ Program Outline

Please provide a detailed outline of your program on page 3 of this form.

■ Evaluation Method

Check all that apply:

Quiz/Test _____ Q&A/Discussion _____ Observation _____

Other (Specify) _____

I certify that this information is true and correct.

Provider Contact Person Signature/Date

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NGA Continuing Education Provider Application Update Form

(Page 3 of 3)

Program Outline

Please provide a detailed outline of your program in the space provided. Attach additional sheets, if necessary.

Training Aids

Check all that apply:

PowerPoint Presentation

Demo. Materials

(Specify) _____

Handouts

(Specify) _____

Other

(Specify) _____

Resources/References

Please list the resources or references you consulted or used to develop this program (i.e., subject matter experts, reference manual or journal article, product samples, and so forth).

Please provide this form to NGA's Professional Development Department for review at least 30 days prior to program presentation. National Glass Association, ATTN: Continuing Education, 8200 Greensboro Drive, Suite 302, McLean, VA 22102-3881; Fax 703/442-0630; or E-mail cert@glass.org.

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Appendix B

Writing Learning Outcomes

Learning outcomes, or objectives, comprise the main focus of your presentation. They indicate tasks or activities your learners should be able to perform at the end of your presentation or lesson. Thus, it would be more helpful for your learners and more precise for you, the instructor, to write the learning outcomes for your presentation from your learners' point of view.

Traditionally, there are three parts to a learning outcome or objective: the behavior, the condition(s), and the standard(s). The behavior is the activity or task that your learners will be able to perform as a result of your training presentation (list, describe, install, and so forth). The condition(s) indicates the "givens" or the environment where your learners will be able to perform the task (given an appropriate location, tools, and equipment, and so forth). The standard(s) determines the measurable criteria for your learners' successful completion of the task (without error, not less than 95% accuracy, resulting in no water or air leaks, and so forth). Here is an example of a traditional learning outcome:

Given a NGA *Employee Safety Guide* and appropriate items of personal protective equipment (PPE), list and describe the PPE used in the glass industry without error.

The behavior in this example is: "List and describe the PPE used in the glass industry."

The *conditions* in this example are: "Given a NGA *Employee Safety Guide* and appropriate items of personal protective equipment (PPE)."

The *standard* in this example is "Without error."

If the focus of your presentation is lecture and handout-oriented rather than hands-on, include only the *behavior statements*. (Example: List and describe the PPE...) of your learning outcomes in your continuing education program outline. NGA will assume that you are including the conditions (the "givens") in the presentation itself (to be confirmed from your presentation outline and handouts). NGA will also assume that the standards reflect "without error" or 100 percent accuracy.

If your presentation is hands-on, please include your complete (behavior/conditions/standards) learning outcomes.

NEED HELP DEFINING YOUR LEARNING OUTCOMES?

Refer to the following Learning Outcomes Worksheet.

Learning Outcomes Worksheet

1. *Behavior*: List one activity or task that the learners will be able to perform as a result of your presentation. Examples: Use a NAGS® catalog, read a blueprint, roll a lite of glass onto a cutting table.

2. *Conditions*: List the training or job aids that you will give the learners to help them perform the task. Note: You can prepare your handouts and audio-visual aids from this list. Examples: Current NAGS® catalog with a list of specific glass parts for lookup; simple blueprint with a list of symbols and their definitions; diagram of proper glass handling.

3. *Standard*: List the level of learner performance that is your goal. Note: Consider this to be "without error." If less than 100% is acceptable, list the level. Examples: 90% accuracy; 7 of 10 parts located; a certain number of symbols correctly defined.

4. Now build your presentation to help your learners achieve this learning outcome. Include a worksheet, quiz, game, or even a show of hands to provide you with learner feedback to monitor that the desired learning is taking place.

5. Repeat Steps 1-4 for every goal/learning outcome that you include in your presentation.

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Appendix C

Auto Glass Technician Topics and Certification Credits

Certified Auto Glass Technician

The required number of CCs to be earned is 30 within the 3-year eligibility time frame:

Safety	6
Glass Service	23
Pattern Making	1
<hr/>	
Total	30

See the following for a breakdown of CCs and applicable category subtopics.

Note: CCs for a particular category must be divided among the subtopics. Not all the required CCs can be earned in only one subtopic. Example: The 6 safety CCs must be divided among the 8 safety subtopics.

Safety Procedures (6 CCs)

- Safe operation of tools
- Safe practices when working with electrical systems
- Personal Protective Equipment (PPE)
- Safe lifting, handling, and storage procedures
- Potentially dangerous behavior
- Safety Standards (HAZCOM, OSHA, WHMIS, WCB)
- Basic first aid
- Policies & procedures to ensure safety of technician, coworkers, customers, and the general public

Adhesives (4 CCs)

- Procedures for documentation of conditions and materials related to service (i.e., lot numbers, expiration dates, part numbers, temperature, humidity)
- Adhesives and sealants
- Bonding surface preparation techniques

Installation (11 CCs)

- Pre-inspection checklist items
- Causes and types of glass breakage

- Vehicle protection materials
- Procedures for documentation of conditions and materials related to service (i.e., lot numbers, expiration dates, part numbers, temperature, humidity)
- Storage procedures
- Value-added glass parts
- Safety glass and related materials
- Electrical systems
- Types of gaskets
- Vehicle body construction
- Glass removal techniques for urethane, gasket, and butyl installations
- Non-glass parts and trim
- Installation and repair techniques for non-glass parts and trim
- Removal techniques for non-glass parts and trim
- Interior door parts
- Airbag disabling, removal, handling, installation, and arming procedures
- Windshield installation methods
- Door and vent glass installation methods
- Quarter and back glass installation methods
- Installation and repair procedures in various environmental conditions
- Custom accessories
- Procedures and equipment for OEM sunroof replacement and service
- Test equipment (window bypass kit, DVOM, leak detectors, test lights)
- Tests for leak detection (electronic, air, water)
- Procedures and materials used in cleaning vehicle after glass service
- After-market paint considerations
- Causes of rust and corrosion
- Effects of rust and corrosion on installation
- Rust and corrosion repair recommendations
- Repairability of value-added windshields
- Repair of windshields based on damage characteristics (acute area, size or type of damage)
- Expected outcome of an installation and/or repair
- Windshield repair system procedures and equipment

Tools (4 CCs)

- Vehicle protection procedures
- Hand, power, and specialized tools
- Glass removal techniques for urethane, gasket, and butyl installations
- Removal techniques for non-glass parts and trim
- Bonding surface preparation techniques
- Test equipment (window by-pass kit, DVOM, leak detectors, test lights)
- Tests for leak detection (electronic, air, water)
- Windshield repair system procedures and equipment

Industry Knowledge (4 CCs)

- Causes and types of glass breakage
- Reference materials (NAGS publications, MSDS, interchangeability charts, product technical data sheets)
- Procedures for documentation of conditions and materials related to service (i.e., lot numbers, expiration dates, part numbers, temperature, humidity)
- Regulations and standards from government, OEM, and other recognized agencies and groups
- OEM specifications relating to installations
- Differences between OEM and non-OEM products
- Value-added glass parts
- Safety glass and related materials
- Vehicle body construction
- Custom accessories
- Repairability of value-added windshields
- Repair of windshields based on damage characteristics (acute area, size or type of damage)

Pattern Making (1 CC)

- Pattern Making

Appendix D

Master Auto Glass Technician Topics and Certification Credits

Certified Master Auto Glass Technician

The required number of CCs to be earned is 30 within the 3-year eligibility time frame:

Safety	8
Troubleshooting	3
Complex/Unusual Situations	2
Glass Cutting	1
Industry Information	4
Adhesives	4
Installations	6
Electives	2
<hr/>	
Total	30

Note: Electives may be earned in any of the listed categories or in NGA-approved alternative categories.

See the following for a breakdown of CCs and applicable category subtopics.

Note: CCs for a particular category must be divided among the subtopics. Not all the required CCs can be earned in only one subtopic. Example: The 8 safety CCs must be divided among the 9 safety subtopics.

Safety (8 CCs)

- HAZCOM, MSDS, WHMIS
- Fire safety
- Safe electrical practices
- Blood borne pathogens
- Machine guarding
- Lock out/tag out
- Ergonomics
- Advanced first aid
- Personal Protective Equipment

Troubleshooting (3 CCs)

- Electrical:
 - Electrical terminology and definitions
 - Electrical schematics
 - Low voltage systems
 - Testing procedures
 - Specialized tools
- Noise/Leak Detection:
 - Advanced noise & leak detection methods & recommendations
 - Causes of noise & leaks

Complex/Unusual Situations (2 CCs)

- Advanced diagnosis, service, and replacement of OEM sunroofs
- Replacement & service of T-tops
- Corrosion management
- Glass service with vinyl roofs
- Corrosion management
- Unusual vehicles (e.g., custom, vintage)

Glass Cutting (1 CCs)

- Handling & storage procedures
- Composition of safety glass
- Geometry (e.g., pattern making from dimensions)
- Labeling & applied markings
- Glass cutting (straight & curved)
- Finishing the glass
- Special fabrication (e.g., hole drilling, notches)

Industry Information (4 CCs)

- ANSI standards for auto glass
- FMVSS (111, 205, 208, 212, 216)
- NHTSA (1397a2a)
- Research materials & resources

Adhesives (4 CCs)

- Procedures for documentation of conditions and materials related to service (i.e., lot numbers, expiration dates, part numbers, temperature, humidity)
- Adhesives and sealants
- Bonding surface preparation techniques

Installations (6 CCs)

- Pre-inspection checklist items
- Causes and types of glass breakage
- Vehicle protection materials
- Procedures for documentation of conditions and materials related to service (i.e., lot numbers, expiration dates, part numbers, temperature, humidity)
- Storage procedures
- Value-added glass parts
- Safety glass and related materials
- Electrical systems
- Types of gaskets
- Vehicle body construction
- Glass removal techniques for urethane, gasket, and butyl installations
- Non-glass parts and trim
- Installation and repair techniques for non-glass parts and trim
- Removal techniques for non-glass parts and trim
- Interior door parts
- Airbag disabling, removal, handling, installation, and arming procedures
- Windshield installation methods
- Door and vent glass installation methods
- Quarter and back glass installation methods
- Installation and repair procedures in various environmental conditions
- Custom accessories
- Procedures and equipment for OEM sunroof replacement and service
- Test equipment (window by-pass kit, DVOM, leak detectors, test lights)
- Tests for leak detection (electronic, air, water)

- Procedures and materials used in cleaning vehicle after glass service
- After-market paint considerations
- Causes of rust and corrosion
- Effects of rust and corrosion on installation
- Rust and corrosion repair recommendations
- Repairability of value-added windshields
- Repair of windshields based on damage characteristics (acute area, size or type of damage)
- Expected outcome of an installation and/or repair
- Windshield repair system procedures and equipment

Electives (2 CCs)

- Electives may be earned in any of the listed categories or in NGA-approved alternative categories.

Appendix E

Glass Installer Topics and Certification Credits

Certified Glass Installer

The required number of CCs to be earned is 30. The breakdown by topic is:

Workplace /Consumer Safety, Codes/Standards	12
Adhesives/Sealants, Tools	12
Glass Fabrication and Installation	6
<hr/>	
Total	30

Safety and Codes and Standards Topics (12 CCs)

- Personal safety protective equipment (e.g., respirators, goggles, gloves, hard hats, shoes, harnesses, belts)
- Glass handling
- Manual and power tool usage
- First aid procedures (e.g., cuts)
- Applicable accident and safety reports
- Safety glazing code
- OSHA regulations (including HAZCOM)
- National and local building codes

Adhesives, Sealants, and Tools Topics (12 CCs)

- Edge sealants (e.g., for mirrors)
- Types of sealants, including joint sealants
- Preparation of substrate and application of adhesives
- Sealant application techniques
- Types of abrasive products (e.g., belts, discs, drums)
- Glazing compounds (e.g., putty, caulking)
- Solvent application techniques for plastic fabrication
- Plastic bending techniques and tools (e.g., strip heater, torch)
- Types of metal finishes (e.g., anodized, painted, powder-coated)
- Types of glass machinery

- Machinery operation (e.g., metal fabrication)
- Types of drills (e.g., tube drill, bits, twist drills, countersinks)
- Hand tools (e.g., portable belt sanders, disc sanders, drill motor, screw gun, diamond saws)
- Preventive maintenance procedures
- Types and components of scaffolding, rigging, and ladders
- Types of measurement devices (e.g., transit, laser level, spirit level)
- Types of cutters for glass, heavy glass, and plastic

Glass Fabrication and Installation Topics (6 CCs)

- Types of glass
- Types of heavy glass
- Types of plastics
- Handling techniques for glass, plastic, metal, and panels
- Cutting techniques for glass
- Cutting techniques for heavy glass
- Cutting techniques for plastic
- Cutting techniques for metal
- Cutting techniques for panels
- Field glass cutting techniques
- Types of edgework
- Basic glass edge profiling
- Techniques used for hand-washing glass and glazing materials
- Types of cleaning products and techniques
- Metal joinery techniques (e.g., storm windows, shower doors, storefront, curtainwall)
- Metal shearing and forming techniques
- Assembly preparation procedures in metal fabrication (e.g., end dam, weep hole, setting blocks, pull-in vinyl, putty)
- Door hardware preparation procedures/applications (e.g., hinges, locks, pivots, holders)
- Types of applications (e.g., covered or uncovered edges, speak holes, screw spline, shear block)
- Mirror fastening techniques
- Types of fasteners and anchors

- Measurement units (e.g., reading a standard tape measure, the metric system)
- Trade mathematics (e.g., algebra, geometry, trigonometry)
- Manufacturer's installation instructions
- Types of glazing systems (e.g., aluminum, wood, vinyl)
- Types of doors (e.g., hinge, slide, revolve, swing)
- Types of door operators (e.g., swing, slide, revolving, balanced)
- Types of door hardware (e.g., locks, hinges, closers, pulls)
- Types of windows and window hardware

Statement of Scope for Continuing Education Providers

NGA accepts certification credits from candidates for certification renewal who have taken certain education and training courses or programs in connection with the architectural, automotive, and specialty glass industries. NGA does not accredit or certify individuals or entities providing continuing education courses or programs, but will make determinations solely as to whether credit hours from such courses or programs will be accepted when submitted by a candidate seeking NGA certification renewal. NGA does not guarantee, warrant, or endorse the methods, procedures, or quality of any courses or programs. NGA's determination regarding acceptance of credit hours is conducted in a fair, objective and unbiased manner; however, NGA reserves the right to accept or reject any course or program in its sole discretion. Education providers are prohibited from marketing or advertising courses or programs as having been evaluated, accredited, certified, or approved by NGA, but may only conduct such marketing or advertising in accordance with terms established by NGA. Neither NGA nor its officers, directors, members, employees, or agents shall be liable for any loss, damage, or claim arising from or in connection with any courses or programs taken or provided. All such liabilities including special, indirect, or consequential damages are expressly disclaimed and excluded.