CANDIDATE AND CERTIFICANT HANDBOOK

for the

CERTIFIED TECHNICIAN-SUPPLY CHAIN AUTOMATION

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Version 1
Reviewed 6/2024

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The following information is being provided by the Manufacturing Skill Standards Council (MSSC) to help guide our candidates and instructors on the delivery and study of the CT-SCA coursework. These are general recommendations, please work with your individual institutions on the details. If there are any questions you can also reach out to MSSC at info@msscusa.org

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Welcome to the Certified Technician-Supply Chain Automation certification program!

MSSC is the national leader in preparing individuals with the training and certification needed for industry-wide front-line work in advanced manufacturing and supply chain logistics. For more information about MSSC, please visit our website at www.msscusa.org.

This new occupation is based upon a definition of "supply chain technician" provided by the National Center for Supply Chain Automation (NCSCA), as a technician *who installs, operates, supports, upgrades or maintains the automated material handling equipment and systems which support the supply chain.*

The CT-SCA certification system includes industry-validated standards, instructional materials, on-line assessments and a hands-on training and testing device called Skill Boss Logistics. This was invented for MSSC by Amatrol with the following Principal Participants.
Manufacturing Skill Standards Council (MSSC)
Material Handling Industry (MHI)
National Center for Supply Chain Automation (NCSCA)

INTRODUCTION

Program Description

The purpose of the MSSC Certified Technician-Supply Chain Automation (CT-SCA)™ program is to prepare technicians who install, operate, support, upgrade, and maintain the automated material handling equipment and systems which support the supply chain.

The CT-SCA Certification has three nationally portable MSSC Industry Certifications:

1. Maintaining Equipment/Systems: **CT-SCA EM**

2. Installing, Modifying, Troubleshooting and Repairing Equipment/Systems: **CT-SCA ER**

3. Installing, Modifying, Troubleshooting, Repairing Basic Controllers & Networks: **CT-SCA NR**

Skills Boss-Logistics

Drawing upon 100 skills from MSSC's industry-defined, nationally validated Logistics Standards, Amatrol has built an ingenious hands-on training and testing device called "Skill Boss-Logistics" which is,

- Compact and transportable

- Fits easily into a company training facility or community college

- Cost effective

- Hands-on experience to excite students to pursue a lucrative career in supply chain automation

Additional Requirements: MSSC does not have a requirement to start this training, however, MSSC strongly suggests candidates possess at least a 10th grade reading (English) and 9th grade math level.

Training Requirements: MSSC does not require candidates to take its training program in order to sit for an assessment. However, we find that students enrolled in our training program perform better than those who do not.

CERTIFICATES AND FEES

To obtain the total cost for registration and assessments, please contact your local assessment center. If you do not have the contact information for your local site you can find it here, https://www.msscusa.org/locations/

Candidates can download from any computer a free copy of their MSSC certificate(s), after 3 business days from their assessment date. MSSC will provide a candidate who has earned the Full EM, ER or NR certification with a copy of their Full certificate and a patch via the USPS.

Certificates:
Additional copies of the certificates and/or patches can be ordered by the candidate or by the Site Coordinator. See fees below.

$25 for one certificate + $10 shipping
$5 for one patch + $10 shipping

Refunds
Registrations and Assessments are **non-refundable**.
No refunds will be issued for individuals who fail to appear for a scheduled assessment.

REGISTRATION PROCESS

Prior to sitting for an MSSC assessment, all candidates must register with MSSC online at https://login.msscusa.org

Deadlines
Registration and assessment assignments must be submitted at least *72 hours* prior to the scheduled assessment date. Individual Assessment Centers may have additional deadlines that will need to be followed, contact your assessment center's site coordinator for information.

Special Accommodations
MSSC strives to provide a favorable environment for every participant during the assessment session. Special accommodation must be approved by MSSC. The application for special accommodations must be submitted by the site coordinator to MSSC *two weeks prior to the assessment date*. The online assessment system supports the following accommodations when requested and/or determined appropriate:

- *Text to speech* audio enhancement for online assessments
- *Extended time* option for adding time to assessment administration sessions to accommodate individuals with documented reading disabilities
- *Readers* additional copy of the assessment can be provided when a reader is used to accommodate individuals with documented eyesight difficulties
- MSSC does not allow for translators or translation of assessments.

ASSESSMENT ADMINISTRATION

Development of the CT-SCA program

The CT-SCA program was developed through collaboration with the National Science Foundation-funded National Center for Supply Chain Automation (NCSCA), Material Handling Industry (MHI), Material Handling Equipment Distributors Association (MHEDA), and NOCTI Business Solutions .

The CT-SCA EM, CT-SCA ER and CT-SCA NR certifications are awarded only when a candidate has completed their registration, submitted the appropriate assessment fees and has successfully passed each online and hands-on assessment.

Language

The CT-SCA assessments are offered in English only.

Assessment

Equipment Maintenance (EM): The *online assessment* consists of 92 multiple choice questions. Candidates are allowed 90 minutes to complete the assessment.

Equipment Repair (ER) The *online assessment* consists of 70 multiple choice questions. Candidates are allowed 90 minutes to complete the assessment.

Network Repair (NR): The *online assessment* consists of 64 multiple choice questions. Candidates are allowed 90 minutes to complete the assessment.

Each of the CT-SCA hands-on assessments cover critical work functions

Assessment Options and Locations

MSSC offers assessments at various Authorized Assessment Centers throughout the country. To find a center near you, see this map: http://msscusa.org/locations.

- Computer-Based: The primary method of delivery for MSSC assessments is through an online assessment process supported by NOCTI/The Whitener Group.

- ProctorU: Candidates have the option to test remotely, with our online proctoring partner, ProctorU. System and location requirements must be met prior to testing and candidates must create a record with ProctorU prior to being assigned a test. **This is the only method to test remotely approved by MSSC**.

- Paper/Pencil: If computers are not accessible, MSSC offers paper/pencil assessments.

- In person hands-on: This will be delivered at a site only if they have the necessary equipment, (Skill Boss Logistics machine). Only authorized instructors can deliver these assessments.

Assessment Security

A significant component of a successful and respected professional certification credential is maintaining the security of the assessment. MSSC relies upon the ethical behavior of certificants and applicants to maintain the security of the CT-SCA assessments. When those who seek to obtain the credential, or those who hold a MSSC credential reveal information about MSSC assessment content (other than that information published by MSSC), they violate the Affirmation and Authorization agreement all candidates agree to and accept when they apply for certification and take the assessment. They also violate the MSSC Code of Ethics.

The MSSC Board will take action against individuals who violate MSSC Board Policies and the Code of Ethics. Actions taken may include permanently barring individuals from pursuing MSSC credentials and revoking certifications from those who have been awarded the credential. MSSC will also pursue legal action against individuals or organizations who infringe upon our copyrights, proprietary rights and intellectual property.

Assessment Preparation

The MSSC Board employs strict measures to prevent the possession, reproduction and removal of assessment materials. A strategy for taking this assessment is:

1. Prepare in advance by becoming familiar with the concepts of the MSSC CT-SCA. MSSC does not require that individuals take any courses before taking a CT-SCA assessment.
2. When you login to the online exam, answer the questions that you know, and skip those which you do not know the answer to or are uncertain about.
3. On the second review, go back through the questions you skipped and try to choose the best answer.
4. Use the remaining time to answer any last questions and to make sure that you have answered all questions.

Assessment Admission

You are responsible for bringing your MSSC Identification Number (received upon registration) with you to the assessment and a valid photo ID. Candidates who do not possess valid identification will be denied access to the assessment. Identification must be a **current government issued picture ID bearing the candidate's signature.** Acceptable forms of government issued ID include a driver's license, passport, military ID, federal state or county issued ID.

You will not be permitted to take the assessment without a valid photo ID.

Assessment Rules and Procedures

The following rules and procedures will be strictly enforced on the day of the assessment.

- The assessment will begin promptly at the hour designated by the proctor and end at the stated time allowed for each particular exam offering.
- Candidates will not be allowed to enter the assessment after it starts.
- Visitors are not permitted in the assessment room.
- Instructors are not permitted in the assessment room.
- Pencils are not provided.
- Candidates are allowed to leave the room during the assessment with the proctor's permission. Lost time cannot be made up.
- Textbooks and notes are NOT permitted.

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- Calculators and other such aids are NOT permitted (a four-function calculator is provided within the online testing system).
- Scratch paper may be permitted but may not be taken from the assessment room.
- No cellular phones, pagers or other audible electronic devices, including watches with alarms, are permitted to be used during the assessment.

MSSC will invalidate your assessment and take disciplinary action if you access prohibited materials, if you cheat, have contact with anyone except proctoring staff, or engage in disruptive, unprofessional or conduct that violates the Code of Ethics at any assessment facility.

Actions / Disqualifications

The assessment center proctor or MSSC will take appropriate actions, up to and including disqualification from taking the assessment and withdrawal or revocation of certification when a candidate:

- Impersonates a candidate
- Creates a disturbance
- Cheats
- Gives or receives help on the assessment
- Uses a calculator or other such aid, which is prohibited during the assessment (other than the one included with the testing system)
- Attempts to remove assessment material or notes about the assessment from the assessment room
- Exhibits irregular assessment taking behavior, including consulting or attempting to consult with or give or obtain assistance during the assessment; bringing in or using unauthorized materials including cheat sheets, electronic, printed and/or other handwritten materials
- Provides false, misleading or incomplete information on the registration form

Examinee Conduct

All candidates are required to sign a statement agreeing not to disclose the contents of the assessment nor remove assessment materials from the assessment room. All candidates are also required to attest to the authenticity of their credentials and the accuracy of all statements made in their registration.

Cheating will not be tolerated, and all instances of suspected cheating will be fully investigated. Candidates who are caught cheating will have their assessment invalidated and can be prevented from taking an MSSC assessment for a determined time frame. MSSC will take disciplinary action and in some cases revoke candidate's certification.

Scoring

Computer-Based and ProctorU Testing
Answers are recorded directly on the computer screen. If you have questions on any content specific to the assessment, the Proctor will inform you that he/she is unable to answer content questions.

By completing the final online submission of the assessment answers, the candidates are certifying that they are the person whose name was submitted in the online registration and that they will not copy or retain assessment questions or transmit them in any form to anyone else. Scores of candidates sharing such assessment information will automatically be invalidated.

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If an individual has obtained any of the CT-SCA certifications, that certification will be forfeited for such actions.

The Proctor is not allowed to respond to any inquiries about the assessment questions.

Passing Scores for online assessments

- Equipment Maintenance (EM) 76.7 percent (76.7%).

- Equipment Repair (ER) 76.5 percent (76.5%).

- Network Repair (NR) 76.5 percent (76.5%).

Based upon guidance from industry experts, MSSC has established a minimum score for passing the CT-SCA exams.

Assessment takers will see a preliminary score report upon completion of the test and may request that the Proctor allow them to print it. The printout will reflect an **unofficial** assessment result. This is the only document you are allowed to take from the assessment room. MSSC policy prohibits release of any assessment scores to anyone other than the Candidate. The Candidate may choose to share their scores with the Proctor or other individuals.

Confidentiality Statement

Assessment results are confidential. MSSC shall not disclose information regarding assessment results or other information without the candidate's consent except,

- As necessary for MSSC staff, authorized consultants or others with a need to know
- When verifying references provided by the candidate
- As required by law. Candidates must request disclosure of assessment information in writing and identify the person to whom the disclosure should be made.

MSSC will publish the names of all individuals who have earned and maintain current certification. MSSC reserves the right to publish on the MSSC website the name of any certificant when a complaint about them has been upheld.

Information Release Policy

MSSC will not release any information regarding a Candidate's registration or assessment administration without written authorization from the Candidate. Assessment materials and answer sheets remain the sole property of MSSC. The materials are confidential and are not available for review by any person or agency for any reason.

During the candidate registration process, candidates will be asked to verify that they have read and understand the following:

I hereby authorize the Manufacturing Skill Standards Council (MSSC) to share my assessment results, including date(s) and location of testing, pass/fail status and assessment scores, with the following entities: federal, state or local educational authorities funding my training or assessments; employers funding my training or assessments.

[PLEASE NOTE: MSSC does not require your authorization for participation. However, some funding entities may require access to your assessment results in order to fund or allow your participation. Opting out may result in termination from the program. If you have any questions about your disclosure requirements, please contact your training and testing organization for more information.]

The Family Education Rights and Privacy Act applies to schools that receive federal funding. Under this act, MSSC is authorized to share your assessment results with:

- Federal, state or local educational authorities conducting an audit or evaluation or enforcement of education programs

- Organizations conducting studies on behalf of schools
- State and local officials in connection with service students under the juvenile justice system

Rescheduling and/or Cancelling the Assessment

If unable to attend the assessment at the scheduled time, contact your Assessment Site Coordinator in the timeframe established by them. Your assessment will remain valid for six months from the assigned date. You are responsible for rescheduling and/or canceling the assessment time with your Assessment Site.

Retaking the Assessment

- Each time an assessment is not passed, candidates must wait 15 days to retake it.

APPEAL PROCESS

Candidates have the right to file an appeal on matters relating to their registration, assessment, certification or other matters affecting their status as a Candidate or Certificant. Candidates who allege inappropriate administration procedures, severe environmental assessment conditions, or for other reason challenge results of an assessment have the right to file an appeal.

Submit all Appeals along with the $50 fee to:

MSSC Certification Department
901 N Washington St
Suite 600
Alexandria, VA 22314

CODE OF ETHICS

This document sets for the following code of ethics for all MSSC certificants:
- To comply with relevant provisions of the certification scheme
- To make claims only with respect to the scope (of the standards) for which the certification has been granted
- To discontinue the use of all claims to certification that contains any reference to the certification body upon suspension or withdrawal of certification
- To refrain from using certification in a misleading manner
- To understand the MSSC "Key Activities" document that describes the principal production activities to which the CPT certificates and full certification applies.
- To explain that the MSSC certificates document the individual's competency to achieve the required performance level on a national certification assessment only with respect to the Key Activities related to that certificate.
- To avoid using the certification in a manner that will bring MSSC into disrepute
- To understand that a violation of any of the above principles could lead to the suspense or withdrawal of this credential, after which the individual should discontinue the use of all claims to MSSC certification
- To refrain from altering the certification document in any way

Certificants shall, in their professional activities, sustain and advance the integrity, honor and prestige of the MSSC certification by adherence to this Code of Ethics. Certificants who intentionally or knowingly violate any provision of the Code of Ethics will be subject to revocation of the certification.

CREDLY DIGITAL BADGES

The Manufacturing Skill Standards Council (MSSC) has partnered with Credly, the largest online network and delivery platform of digital badges. The MSSC has created electronic badges for all our credentials so certificants can directly access, control and share their verified credentials in both electronic and print format.

Benefits
- Match candidate's skills to job opportunities with employers anywhere in their community or state. Search, access and apply to those relevant job postings pulled from specific employer sites and major job aggregator sites, i.e., Indeed, Monster, Career Builder, etc.
- Have direct access and control to share credentialed skills easily with employers through Multiple delivery modes, i.e., e-mail, LinkedIn, Facebook, Twitter, etc.
- Allow employers to view candidate's skills, competencies and knowledge earned with and verified by MSSC.

For more information and instructions on how to opt in please access the following URL
www.msscusa.org/credly-digital-badges

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CT-SCA LOGOS

Logo Usage

As a certificant in good standing, you may want to utilize the official CT-SCA logo to place on your business cards, email signature or other personal identification documents.

Please adhere to the following guidelines when using the CT-SCA logo:

The logo may not be revised or altered in any way. The logo must be displayed in the same form as produced by MSSC and cannot be reproduced unless such reproduction is identical to the logos provided by MSSC. The CT-SCA logo is meant to identify a Certificant as opposed to a business entity. The logo may be used only on the Certificant´s own business cards, stationery, forms showing the Certificant´s letterhead, inspection tags, and similar documents on which the name and address of the Certificant is prominently displayed.

The logo may not be used in any manner that detracts from the high ideals of MSSC or the CT-SCA certification. The CT-SCA logo may not be used in any manner which would tend to imply a connection between CT-SCA and the Certificant which, in fact, may not exist. This includes any use of the logo the public might construe as an endorsement, approval or sponsorship by MSSC of a Certificant or a Certificant´s business, or which might be taken to support or encourage a Certificant´s sale of product, process or installation. A Certificant is allowed to print the logo on an advertisement or product literature. Without limiting the foregoing restrictions, the logo may not be shown larger than 1.5 inches or 4 centimeters on a full page or proportionally on a smaller page.

To request an electronic version of the CT-SCA logo JPG or if you have any questions regarding its use, please contact MSSC at info@msscusa.org or 703-739-9000.

Affirmation of Proper Usage of CT-SCA Logo

All CT-SCA candidates and certificants sign an agreement that they will comply with the relevant provision of the CT-SCA program described in the CT-SCA Candidate Handbook. No person gains any rights whatsoever in the logo or its use; it remains the sole property of MSSC. MSSC reserves the right in its sole discretion to require the removal of the logo from any location or thing MSSC feels does not comply with these guidelines.

MSSC acts to challenge those who use the CT-SCA designation without authority from MSSC. Penalties may include barring from pursuing the certification and publishing the names of the violators. MSSC may authorize the use of the symbol, the phrase "Certified Technician-Supply Chain Automation in EM, ER or NR", and the initials "CT-SCA EM, ER or NR." by certificants only; provided such holder currently possesses a valid certificate issued by MSSC. An applicant/candidate who has had their applicant status terminated may appeal to MSSC in accordance with the Appeal and Complaint Process described in this handbook.

VERIFICATION OF PERSONAL DATA

Candidates and Certificants wishing to verify any personal data on file other than scores may contact MSSC

901 N. Washington St
Suite 600
Alexandria, VA 22314
703-739-9000 or info@msscusa.org.

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ASSESSMENT CONTENT OUTLINE (WORK STANDARDS)

The following shows the relative importance of each content domain on the certification exam. When preparing for the exam, candidates should spend proportionately more time studying the content domains that are more heavily weighted.

Equipment Maintenance Content Area Weighting

Implement and Remove Equipment/System Safety Protocols (20%)

Identify and Operate Major Automated Equipment/Systems (16%)

Monitor Machine/System Operations (8%)

Ensure Key Parts and Components are Available in Inventory (9%)

Implement Preventive Maintenance (5%)

Perform Preventive Maintenance (23%)

Established Monitoring and Maintenance Schedule for Equipment/Lubricant Condition (6%)

Safely Use Hand Tools to Maintain Equipment (5%)

Communicate with Co-Workers to Promote Productivity (5%)

Perform Technical and Administrative Duties (3%)

Equipment Repair Content Area Weighting

Troubleshoot Machine/Mechanical System/Electrical System Failure (33%)

Prepare for Repair (16%)

Repair Machine/Mechanical System/Electrical System Failure (30%)

Install, Move, Remove Equipment (21%)

Network Repair Content Area Weighting

Install and Maintain PLCs and PLC Modules (27%)

Troubleshoot and Repair PLCs with Discrete I/O PLC Modules (15.5%)

Modify, Troubleshoot or Manipulate Standard PLC Operating Programs and Test/Verify (15.5%)

Install, Maintain, and Troubleshoot PLC Systems with Variable Frequency AC Drives. (28%)

Operate and Test Equipment Network Systems, Scanners, and run Systems Applications (14%)

CT-SCA REGISTRATION CHECKLIST

Prior to sitting for an MSSC assessment, all candidates must register with MSSC online at
https://login.msscusa.org

To avoid potential delays in completing your online registration, use this checklist to carefully review the required information before beginning the registration process.

Have you…

- Read this Candidate Handbook cover-to-cover?
- Arranged for payment of the correct registration and assessment fees?
- Reviewed the MSSC Code of Ethics?

Note: During the registration process, you will be asked to confirm your receipt and conformance to the policies of this Candidate Handbook and receipt and acceptance of the MSSC Code of Ethics. You are responsible for reading these documents and adhering to their requirements.

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