

Candidate Handbook for Certification Programs for Certified Weighing Technician, Certified Weighing Salesperson and Certified Weighing Professionals

Sponsored by:

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For All Candidates:

This handbook contains valuable information about the Certification Program for candidates pursuing the title of Certified Weighing Technician (CWT), Certified Weighing Salesperson (CWS) and Certified Weighing Professional (CWP). It should be kept for reference until test results have been received.

Candidates must meet the eligibility requirements in effect at the time of their application. Credentialing Services Inc. (CS) administers the examination for the International Society of Weighing and Measurement.

Credentialing Services Background

Credentialing Services (CS) was founded in 1983 for the purpose of providing constituent evaluation and professional development services to credential awarding organizations. Located in the Western Illinois region, CS maintains a nationwide network of test sites and proctors. They provide credentialing services to a number of businesses, educational foundations, and associations.

While computers do the "busy work", all work is double-checked and verified by hand. Human input focuses upon interacting with people, judgments and policies, and interpretation of statistics. All professional

work outputs are checked by other professionals. Credentialing Services views quality control as an essential ingredient in all work that they conduct.

CS uses a bank-within-a-bank database system for computerized storage and retrieval of professional content domain materials. Competencies, also referred to as standards of practice, are maintained in a subject-driven information subfile. Test items are maintained in a psychometrically-driven subfile. By using this sophisticated technology, CS can evaluate and score tests fairly and competently.

CS has been onboard with ISWM from the inception of the Certification Program. Through their vast knowledge of credentialing possibilities, ISWM is able to offer a secure & reliable program to measure the competency of our test candidates.

OBJECTIVES OF CERTIFICATION

By facilitating a certification program for our industry, ISWM hopes to serve the following purposes:

- * ***To elevate the standard*** of and advance the cause of the weighing industry by encouraging its study and improving its practices.

- * ***To determine the competence*** of those individuals involved in the weighing industry and to conduct examinations to test the ability and qualifications of individuals involved in the sales, installation, calibration, repair, and service of weighing equipment.

- * ***To grant and issue certifications*** in the weighing industry to eligible applicants and to maintain a registry of holders of such certificates.

- * ***To better serve the general public and weights and measures jurisdictions*** by encouraging improvements and enhancements of our industry and those that work in it, and to enable others to easily identify those individuals who have demonstrated that they can perform at a competent level.

ROLE DEFINITIONS

Certified Weighing Technician

Certified Weighing Technicians have a broad range knowledge of the technical and regulatory requirements of the industry, including installing, evaluating and servicing the customers weighing needs.

The Certified Weighing Technician has:

- technical knowledge in areas of testing, calibrating and troubleshooting for small/light capacity, medium/heavy capacity scales and balance weighing products.
- technical knowledge in the area of systems and systems communications.
- knowledge and proper completion of testing, reporting and documentation required within the weighing industry.
- knowledge of testing and legal regulations, as they relate to each customer's particular requirements.
- knowledge to reduce safety hazards by understanding and practicing safety standards as they relate to the customer's requirements.
- knowledge of the proper use and maintenance of testing equipment and tools used within the weighing industry.

Certified Weighing Salesperson

Certified Weighing Salespersons have a broad range knowledge of regulatory and industry specific requirements. The Certified Weighing Salesperson applies this knowledge by assisting the customer in determining the product(s) required to meet the end users objectives, as well as meeting the regulatory standards.

The Certified Weighing Salesperson has:

- knowledge to determine the proper applications and selection of small/light capacity, medium/heavy capacity scales and balance products and services.
- knowledge and practical use of proper units of measure and classification of weights.
- understands and uses the proper sales skills required to inform and educate the customer of the products available within the weights and measures market place.
- knowledge of testing and legal regulations, as they relate to each customer's particular requirements.
- knowledge to reduce safety hazards by understanding and practicing safety standards as they relate to the customer's requirements.

Certified Weighing Professional

Certified Weighing Professionals have in-depth knowledge of the complexities of the weights and measures industry. Through their management and customer relation skills, they provide a link between the

supplier and consumer to develop a greater awareness of the industry's products and standards.

The Certified Weighing Professional has:

- knowledge of and practices good safety standards and requirements.
- broad range knowledge of business operations.
- knowledge of and practices the ISWM Code of Ethics.
- knowledge of and promotes the weights and measures industry in daily activities and business.
- knowledge of maintenance and service regulations.
- knowledge of types, uses and classes of small/light capacity, heavy/medium capacity scales and balances.
- knowledge of system applications, encompassing communications, types of computer systems and basic terminology.

Assessment Structure

The CWT and CWS examinations will consist of approximately 100 multiple-choice questions (MCQ). Several types of MCQs may appear on an examination. The A-type consists of a stem and five options; it is the most common MCQ. The B-type is a short matching item. The K-type allows a combination of options to be selected. The S-type is a scenario with several common item types (or sets of items).

A separate application form for the CWP will be sent to those who achieve the combination of CWT/CWS status. The CWP assessment will consist of a portfolio analysis. A form containing a number of tasks performed by the weighing professional will be mailed to eligible applicants. Each task will be rated by the applicant. After completing the portfolio form, the applicant sends it to Credentialing Services, Inc. for scoring.

Eligibility Requirements

Certified Weighing Technician

The prerequisites for taking the Certified Weighing Technician test are:

1. Have, within the last five (5) years, a minimum experience of two (2) years working within the weights and measures industry in a technical or related position.
2. Have a High School diploma or equivalent.
3. Hold a Handbook 44 Certification from an ISWM approved testing center or demonstrate the equivalent.

Certified Weighing Salesperson

The prerequisites for taking the Certified Weighing Salesperson test are:

1. Have, within the last five (5) years, a minimum experience of two (2) years working within the weights and measures industry in a sales or related position.
2. Have a High School diploma or equivalent.
3. Hold a Handbook 44 Certification from an ISWM approved testing center or demonstrate the equivalent.

Certified Weighing Professional

The Certified Weighing Professional is open to individuals who:

1. Hold a certification as a Certified Weighing Technician AND as a Certified Weighing Salesperson from ISWM.
2. Have a minimum experience level of five years within the weights and measures industry.

Application Procedure

An application accompanies this handbook. Read all instructions thoroughly before starting. The completed application must be returned with the correct fees included. Additional applications may be obtained from ISWM. All applications need to be completely filled out and submitted a minimum of thirty (30) days prior to the testing date.

Candidate Information

1. *Test Site*: Print the test site city and state on the line to the right.
2. *Name*: Print your last name, first name, middle initial, and suffix (e.g., Jr.) in the spaces provided – one letter per space.
3. *Address*: Print your current mailing address, preferably your home address, in the space provided.
4. *Contact Phone Number*: Print your daytime phone number.
5. *Specialty*: Mark an "X" in the appropriate box to select Certified Weighing Technician or Certified Weighing Salesperson as your specialty. You may sit for only one specialty exam per test date. Once you have successfully passed both the CWT and CWS, a special application form

will be mailed to you, allowing you to apply for the Certified Weighing Professional.

6. *Diplomas and Degrees*: Check the box indicating the type of degree you have received. Enter the date received and the school or organization issuing the degree. Include a copy of your degree with this application.

7. *Handbook 44 Certification*: Proof of successful completion of an ISWM approved Handbook 44 course, or demonstrate the equivalent, within the last five (5) years is a prerequisite to taking the CWT and CWS tests. A copy of certificate must accompany application. Currently, ISWM recognizes these credentials:

- ISWM Sponsored Handbook 44 Course
- ISWM Endorsed Handbook 44 Course
- Ohio or Texas State Technicians License.

Anyone scheduled to take an ISWM sponsored Handbook 44 Course the day before the test can write the upcoming test date in place of providing their Handbook 44 proof of completion. If you do not pass the ISWM sponsored course, your certification application fees will be refunded and you will not be allowed to take the certification test the next day.

8. *Years of Experience*: Enter the number of years of full-time experience you have in the field of weights and measures.

9. *Your Present Employer*: Indicate your present employer. If you own your own business, check the appropriate box. You must indicate the amount of time worked as well as the percentage of full-time work.

10. *Previous Employment*: If you have not worked in your current job the appropriate number of years to qualify for certification, please list your previous employment information.

11. *Customer References*: If you are self-employed and will be using customer references to substantiate your claim of years in the field, list their name, address and phone number in the space provided. Include the starting date of your employment. Indicate the name of the person to contact. If you do not have the name of a person to contact, send a letter addressed to Credentialing Services, Inc. (CS) along with your application to explain the particulars of your situation.

Required Attachments

Each applicant will be required to submit proof of the education level or experience level claimed.

Proof of minimum educational level consists of photocopies of high school or college diplomas, or General Education Development (GED).

Each applicant will be required to submit proof of Handbook 44 Certification from an ISWM approved testing center or demonstration of equivalent.

Proof consists of photocopies of diplomas or certificates received within the last five (5) years.

Fees

The full fee must accompany the completed application. Make check or money order payable to ISWM, or use Visa, MasterCard or American Express. Include signature and expiration date.

The Application Fee is non-refundable and is required of all candidates applying for the first time. The CWT or CWS examinations or the CWP portfolio analysis may be retaken two times within five years, without submitting the application fee again.

The Testing Fee must be submitted each time a candidate requests to sit for a CWT or CWS examination (repeat or different specialty) or sends in a portfolio for analysis for the CWP.

The Late Fee is required if the candidate's application arrives after the regular registration deadline.

Application Fee: \$50.00

Discounted Application Fee for ISWM Members: \$35.00

Testing Fees:

| <i>Test Description</i> | <i>Cost</i> | <i>Discounted Fee for ISWM Members</i> |
|---------------------------------|-------------|--|
| Certified Weighing Technician | \$180.00 | \$155.00 |
| Certified Weighing Salesperson | \$180.00 | \$155.00 |
| Certified Weighing Professional | \$180.00 | \$155.00 |

Late Fee: \$50.00

Fee Examples:

An ISWM member applying for and requesting any one of the above tests, for the first time, should send a payment of:

Application Fee \$35.00
Test Fee \$155.00
Total Fees: \$190.00

The next test could be taken for a total charge of \$155.00.

A non-member applying for and requesting any one of the above tests, for the first time, should send a payment of:

Application Fee \$50.00
Test Fee \$180.00
Total Fees: \$230.00

The next test could be taken for a total charge of \$180.00.

Testing Policies and Procedures

A candidate will receive written acknowledgement of receipt of application from the testing office at Credentialing Services (CS), Inc. Eligible candidates will be sent an admission ticket prior to the test date. Candidates who do not have an admission ticket one (1) week prior to the test date should call CS at (309) 343-1202 for instructions.

Candidates who cannot sit for the examination should notify CS in writing prior to the day of the test. Emergencies that prevent a candidate from appearing on the day of the test must be reported and explained in writing within fifteen (15) days of the test date. Candidates whose eligibility is in question will be asked for more information and/or documentation.

Test Center Information

Test Date

The test date and times will be announced as they are determined by ISWM.

Admission to Testing

Each candidate must present an admissions ticket and two (2) forms of identification to be admitted to the testing area. One of the forms of identification must include a photograph. In case of a lost admission

ticket, call CS at (309) 343-1202 for alternate authorization to sit for the examination.

Test Center Regulations

The following regulations will be observed at all test sites to insure uniform testing conditions:

1. Arrive at the test site on time. Proctors will **not** admit candidates who arrive after the reading of examination instructions has begun.
2. Bring several sharpened #2 pencils.
3. Non-programmable, silent calculators may be used **only** if they do not require electrical outlets.
4. Visitors are not permitted.
5. Proctors are instructed to answer questions about the testing procedures only. They will not respond to inquiries regarding examination content.
6. No reference materials of any kind are permitted.
7. No memoranda, documents or test materials of any sort may be taken from the test site.

Pass/Fail Standard

The passing level is a standard of knowledge set by a criterion-referenced methodology (similar to setting par in golf), using the combined judgments of the Examination Committee resulting in a recommendation to the Certification Committee for final review. Using this methodology there is no curve, and candidates do not compete against each other.

ADA Compliance

Test locations are accessible. Applicants should advise ISWM's Executive Director of their requirements in writing no later than the deadline for application.

Test Results

Candidates will be mailed written notice of their examination results approximately six (6) to eight (8) weeks after administration or portfolio submission.

Retake Examinations

Unsuccessful candidates may retake the examination or portfolio analysis twice without paying additional application fees. Test fees do apply to each attempt. If a candidate fails three times, the candidate must re-apply, paying the application fee again.

Certification Renewal

Renewal of certification will be required after five (5) years. Renewal can be achieved through ISWM authorized continuing education programs or a retaking of the certification examination or portfolio analysis, depending on ISWM's policy at the time.

Security and Revocation of Certification

Anyone giving or receiving assistance of any kind from another person during the test will be required to turn in his/her test materials immediately and leave the test site. The candidate's answer sheet will not be scored and application and testing fees will not be refunded. Any candidate who either removes or attempts to remove test material from the test site may be prosecuted and forfeits all rights to sit for the exam again. The application and test fees will not be refunded. In addition, candidate risks revocation of previous ISWM Certifications for these actions.

ISWM reserves the right to refuse or revoke any certification in the event the recipient has been found to be acting in a deceptive or unethical manner of any kind. There is a review process for any candidate whose certification has been revoked. Candidates who desire to appeal* must do so in writing to Credentialing Services, Inc. within 45 days of the revocation.

*Eligibility Appeals Process available upon request to Credentialing Services, Inc.

Examination Content

Certified Weighing Technician Examination Outline

| Categories | Approx. Percentage |
|-------------------------|--------------------|
| I. Small-Light Capacity | 16 |
| A. Testing | |
| B. Calibration | |
| C. Trouble-Shooting | |

| | |
|--|----|
| II. Medium-Heavy Capacity | 16 |
| A. Testing | |
| B. Calibration | |
| C. Trouble-Shooting | |
| III. Balance | 16 |
| A. Testing | |
| B. Calibration | |
| C. Trouble-Shooting | |
| IV. Systems | 16 |
| A. Communications Diagnostics | |
| B. Systems Set-Up | |
| C. Systems Overview | |
| D. Basic Blue Prints & Schematics | |
| V. Documentation | 6 |
| A. Placed-in-Service | |
| B. As Found | |
| C. As Left | |
| D. Awareness of Customer Documents | |
| VI. Safety | 5 |
| A. Lock-out/Tag-out | |
| B. Confined Space | |
| C. Power Safety | |
| D. Personal Protection Equipment (PPE) | |
| VII. Legal Regulations | 5 |
| A. Handbook 44 | |
| B. NTEP | |
| C. Local Requirements | |
| VIII. Testing Regulations | 5 |
| A. GIPSA | |
| B. PUB 112 EPO | |
| C. HB 44 | |
| D. Proper Class of Weights | |
| IX. Test Equipment/Tools | 5 |
| A. Maintenance of Test Weights | |
| B. Device Knowledge | |
| C. Protocol Analyzer | |
| D. Manufacturers' Specifications | |

| | |
|---|------|
| X. Basic Scale Components & Technical Terms | 10 |
| A. Mechanics | |
| B. Electronics | |
| C. Terms and Definitions | |
| D. Basic Computer Knowledge | |
| TOTAL | 100% |

The examination will contain approximately 100 test questions. The maximum time allowed for completing the examination is three hours and fifty minutes.

Certified Weighing Salesperson Examination Outline

| Categories | Approx. Percentage |
|----------------------------|--------------------|
| I. Small–Light Capacity | 16 |
| A. Type | |
| B. Application | |
| C. Classes | |
| D. Maintenance and Service | |
| II. Medium–Heavy Capacity | 16 |
| A. Types | |
| B. Application | |
| C. Classes | |
| D. Maintenance and Service | |
| III. Balance | 16 |
| A. Types | |
| B. Application | |
| C. Classes | |
| D. Maintenance and Service | |
| E. Metric System | |
| F. Unit of Measure | |
| G. Class of Weights | |
| IV. Systems | 16 |
| A. Communications | |
| B. Applications | |
| C. Components | |
| D. Software Term Basic | |
| V. Sales Skills | 16 |
| A. Documentation | |

| | |
|--|------|
| B. Communications Skills | |
| C. Prospecting | |
| D. Closing | |
| E. Follow Up | |
| F. Presentation Skills | |
| G. Market Knowledge | |
| VI. Legal Regulations | 5 |
| A. USDA | |
| B. NTEP | |
| C. GIPSA | |
| D. HB 44 | |
| E. Local Requirements | |
| VII. Safety | 5 |
| A. OSHA | |
| B. Underground Utilities | |
| C. FM | |
| D. UL | |
| E. Explosion Proof | |
| VIII. Basic Scale Components & Technical Terms | 10 |
| A. Mechanics | |
| B. Electronics | |
| C. Terms and Definitions | |
| D. Basic Computer Knowledge | |
| TOTAL | 100% |

The examination will contain approximately 100 test questions. The maximum time allowed for completing the examination is three hours and fifty minutes.

Recommended Review Material

Some test material may be tied to ideas and/or concepts from books and videos in the following list, but the test is not limited to these sources. Prices include shipping.

ISWM Publications

Complete Scaleman's Handbook of Metrology (\$20 Members/\$45 Non-Members)

Electronic Conversion of Mechanical Scales – VHS Tape (\$25 Members/\$45 Non-Members)

Calibration of an Electronic Weighing Device – VHS Tape (\$25 Members/\$45 Non-Members)

Calibrating a Fully Electronic Multiple Load Cell Weighing Device – VHS Tape (\$25 Members/\$45 Non-Members)

*Current Handbook 44 Scale Code Field Manual
(One Copy Free to ISWM Members/\$30 Non-Members)*

Send your check payable to the ISWM to: ISWM, 15245 Shady Grove Road, Suite 130, Rockville, MD 20850.

Other Sources

For Lab Balances Training: Contact IES Corporation, 1-800-541-0852.

For National Institute of Standards and Technology (NIST) Information: Visit www.nist.gov for information on training programs, order forms for publications, calendar of events, monthly newsletter, copies of Certification, etc.

For Complete Courses or Manufacturer Specific Training: Contact ISWM manufacturer members to determine the specific training programs each offers. The companies can be found in ISWM's Annual Membership Directory and Product Guide, and on our web site at www.iswm.org.

For Regional Training: ISWM offers a wide array of speakers and training opportunities at local division meetings. Attend the next meeting near you. Review our Calendar of Events on our web page often for current listings. Visit us at www.iswm.org.

Sample Questions

Certified Weighing Technicians Examination Sample Questions

001. When replacing a local cell in a bench scale, the technician should:

- (1) not re-adjust overload stops.
- (2) use the original load cell shims, if possible.
- (3) allow twice acceptance tolerance errors.
- (4) run a shift and linearity test.

- A. (1), (2) and (3) only are correct.
- B. (1) and (3) only are correct.
- C. (2) and (4) only are correct.

- D. (4) only is correct.
- E. All are correct.

The correct answer is "C."

Match the scale types and accuracy classes.

- A. analytical balance
- B. wheel head weighers
- C. hopper scale (non-grain)
- D. 10,000 lb. floor scale
- E. jeweler's scale

- 002. class I
- 003. class II
- 004. class III
- 005. class III L

The correct answers are "A", "E", "D" and "C."

006. The minimum amount of test weight required to test a 300 lb. scale in a legal-for-trade application is:

- A. 50 lb.
- B. 75 lb.
- C. 150 lb.
- D. 300 lb.
- E. whatever can be conveniently carried.

The correct answer is "D."

Certified Weighing Salesperson Examination Sample Questions

001. Required markings on a one-piece legal-for-trade scale include:

- (1) accuracy class.
- (2) serial number and prefix.
- (3) nominal capacity.
- (4) certificate of conformance number.

- A. (1), (2), and (3) only are correct.
- B. (1) and (3) only are correct.
- C. (2) and (4) only are correct.
- D. (4) only is correct.
- E. All are correct.

The correct answer is "A."

Match the items to be weighed with the most appropriate scale type:

- A. belt conveyor scale
- B. grain test scale
- C. crane scale
- D. floor scale
- E. in-line checkweigh scale

002. bundle of 24 foot steel rods

003. gravel transported via conveyor

004. cereal boxes moving 300 per minute

005 pallet of boxes.

The correct answers are "C", "A", "E" and "D."

006. A 30 lb. X 0.01 lb. digital bench scale in a legal-for-trade application has been in service for two years. If loaded to 32 lb., it shall indicate:

- A. between 31.97 and 32.03 lb.
- B. between 32.00 and 32.03 lb.
- C. between 31.98 and 32.02 lb.
- D. overload
- E. zero

The correct answer is "D."

Badges, Placques and Recognition

A symbol of leadership and accomplishment, the CWT, CWS and CWP are designations highly regarded by peers, customers, and weights and measures jurisdictions.

Certified candidates will be mailed camera ready artwork and are authorized to use it with their name on letterhead, business cards, and all forms of advertising, in accordance with ISWM's established policy.

Certified candidates will be announced in ISWM publications (unless the candidate requests in writing to have name withheld) to give deserved recognition.

Certified Weighing Technician

Upon successful completion of the CWT test, the candidate will be mailed a certificate and three patches, signifying their accomplishment. Additional patches may be purchased and worn only by CWTs.

Certified Weighing Salesperson

Upon successful completion of the CWS test, the candidate will be mailed a certificate and one lapel pin, signifying their accomplishment. Additional pins may be purchased and worn only by CWSs.

Certified Weighing Professional

Upon successful completion of the CWT and CWS tests, and receiving the certification for such, the candidate will be mailed an application for CWP. If candidate elects to apply for the CWP designation, a portfolio analysis must be completed. Upon successful scoring, the candidate will receive a wall plaque and lapel pin with the CWP logo. Additional pins may be purchased and worn only by CWPs.

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