



# CSCS<sup>®</sup> Exam Candidate Handbook

Certified Strength and Conditioning Specialist<sup>®</sup>

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# Introduction

*The CSCS credential identifies those individuals who have knowledge in the scientific foundations of strength and conditioning.*

## **About the NSCA and the CSCS Examination**

The National Strength and Conditioning Association (NSCA) is an international, nonprofit, educational association representing strength training and conditioning professionals, sports science researchers, athletic trainers, sports medicine therapists and physicians, personal trainers, students and others interested in fitness and strength and conditioning activities and their relationship to overall sport and fitness performance.

The NSCA publishes two of the world's premier strength and conditioning journals. They link what is being learned in the sport science research laboratories to what is being taught by fitness professionals, thereby bridging the gap between theory and practice.

After years of development, the CSCS was initiated in 1985. The CSCS credential identifies those individuals who have knowledge in the scientific foundations of strength training and conditioning as well as the skills to apply that knowledge in a practical format. These skills are tested by two separate sections of the examination: a Scientific Foundations section and a Practical/Applied section. The Scientific Foundations section consists of 80 multiple-choice questions. The Practical/Applied section has 110 questions, 40 of which involve viewing a videotape.

The CSCS examination is constantly monitored for content validity and updated for timeliness. It is designed to ensure a minimum level of competence among practitioners and to create a better awareness among the public of the nature and purpose of the profession. One focal point of the examination is to ensure candidates possess appropriate knowledge of industry guidelines for the safe and effective strength training and conditioning of athletes.

The policies and procedures described herein regarding the CSCS program will continue to be modified in response to changes in the profession as directed by the NSCA Certification Commission Executive Council. Such modifications will be announced to candidates via our Web site ([www.nasca-cc.org](http://www.nasca-cc.org)), the *Strength and Conditioning Journal*, the *NSCA Bulletin* and special mailings.

## **Testing Agency**

The NSCA Certification Commission Executive Council has the overall responsibility for exam development and policies governing eligibility and administration of the examination. It is also responsible for contracting with a professional testing agency that administers and provides psychometric expertise.

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Applied Measurement Professionals, Inc. (AMP) is the professional testing agency contracted by the NSCA Certification Commission Executive Council to assist in the development, administration, scoring and analysis of the CSCS examination based on the exam specifications developed by the Executive Council. The testing agency is also responsible for the establishment of test centers and examination security.

## The Examination

The exam is developed by the CSCS Examination Development Committee, which is comprised of individuals whose knowledge and experience in exercise sciences and strength training and conditioning qualify them as content experts. The committee develops specifications that define the content areas to be covered, the number of questions on the test and the abilities and skills measured by the examination.

The CSCS examination consists of a Scientific Foundations section and a Practical/Applied section, which are administered on the same day. The actual testing time required to take both sections of the examination is approximately four hours, excluding the lunch break between the exam sections.

Candidates taking the exam for the first time must register and take both sections of the examination. Candidates who achieve passing scores on both sections of the examination are awarded the CSCS credential. Those who pass one section may become certified after retaking and passing the failed section.

The Scientific Foundations section of the exam, consisting of 80 multiple-choice questions, covers the content areas of exercise science and nutrition. The Scientific Foundations section was developed to objectively measure the candidate's academic preparation and to set uniform standards for measuring such knowledge.

The Practical/Applied section of the exam, consisting of 110 multiple-choice questions, covers the candidate's knowledge of program design, exercise technique, weight room policies/procedures, testing and other practical applications. Additionally, the candidate views a videotape that shows various exercises and performance tests. There are 40 questions on the Practical/Applied section related to the exercises/tests shown on the video. Candidates need to respond to multiple-choice questions while viewing the video.

## Registration and Admission Policies

Registrants must submit an original, official transcript of their academic work, showing attainment of at least a bachelor's degree (BS/BA) or chiropractic medicine degree granted by an accredited institution.\* College seniors can also take the CSCS exam; however, they must be

*Candidates taking the exam for the first time must register to take both sections of the examination.*

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enrolled in an accredited institution.\* For college seniors, the NSCA Certification Commission will not release their exam scores until we receive a transcript verifying graduation and noting the degree earned.\*\*

\*In the United States, the accrediting institutions are Middle State Association, New England Association, North Central Association, Northwest Association, Southern Association and Western Association.

\*\*Individuals enrolled as seniors at colleges or universities are eligible to sit for the CSCS examination. College seniors will receive a pass/fail notification approximately six to eight weeks after the exam administration. However, college seniors who pass the CSCS exam do not become CSCS certified until: (1) they have graduated from college and (2) the NSCA Certification Commission receives their original, official transcript verifying graduation and degree earned. Once the NSCA Certification Commission receives the required documentation (original, official transcript verifying graduation and degree earned), the Commission will release the actual score reports and certificates (if passed).

Current CPR certification is also a requirement. If candidates do not have current CPR certification, they can still register for and take the CSCS examination. The NSCA Certification Commission will not release a candidate's exam scores until we have received documentation of a valid CPR certification.

The NSCA Certification Commission will accept any adult CPR certification obtained by attending a CPR course that meets the following criteria:

- Must have a hands-on training component (certification through an online course will not be accepted)
- Must include a skills performance evaluation
- Must require the passing of a written exam

Examples of approved CPR providers include:

- American Heart Association
- American Red Cross
- National Safety Council
- St. John Ambulance

Candidates will receive an official confirmation notice approximately three weeks after the registration deadline. The confirmation notice will include the examination site and date for which they are registered. One week prior to the examination date, candidates will receive a test center admission ticket (one for each section) identifying the exact time and address where candidates should report for the examination. It is very important to review the confirmation notice and admission

***One week prior to the examination date, candidates will receive a test center admission ticket (one for each section) identifying the exact time and address where the candidates should report for the exam.***

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*Insufficient documentation will result in the registrant becoming ineligible to sit for the examination.*

ticket information and notify the NSCA Certification Commission immediately if there are any errors.

The admission ticket serves as authorization to sit for the examination and, if incorrect, could preclude admission to the examination center.

At the testing site, candidates are required to present proof of identity that includes a photograph (valid driver's license, state or military ID card, passport or notarized photograph).

## **Registrant Ineligibility**

A registrant may be determined ineligible for either of the following reasons:

- 1) insufficient documentation to assess eligibility
- 2) documentation provided or fees submitted do not meet eligibility requirements for the examination

If the NSCA Certification Commission Executive Council determines that the provided information is inadequate to assess eligibility, the registrant will be notified and given a deadline to respond to a request for necessary documentation. Documentation not received by the specified deadline will result in the registration being denied. In such instances, the registration must be resubmitted during a later examination cycle.

## **Refund of Fees**

*Cancellation Policy:* Notice of cancellation must be in writing. The NSCA Certification Commission provides a 50 percent refund when we receive the written notice of cancellation at least seven days before the scheduled exam date. No refunds will be made after that date.

Should fewer than 15 candidates register for a site, the Executive Council retains the right to cancel the examination site. Those affected will be notified no later than four weeks after the registration cutoff date and offered the opportunity to transfer to a different date/site at no additional cost. The Commission is not responsible for expenses incurred by a candidate due to a cancelled exam (e.g., airfare, hotel).

*No-shows:* Candidates who do not arrive to take the exam and who do not cancel or transfer their registration will forfeit the registration fee. Should they wish to take the exam at a later date, they would need to register again and provide the full registration fee.

## **Transfer Policy**

If candidates are unable to take the exam on the date or at the location for which they are registered, they may transfer their registration by contacting the Exam Department at 888-746-2378, ext. 118 or 103, no later than seven days before the original exam date. Candidates will

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be asked to specify the date and site to which they wish to transfer. The date and site that a candidate wishes to transfer into must be open for registration — the registration deadline must not have passed. All candidates wishing to transfer their registration need to provide payment of the appropriate transfer fee. If a candidate wishes to transfer to a different date and site, but remain in the same certification program, he or she needs to provide a \$75 transfer fee. The transfer fee increases to \$100 for change of location/date AND type of exam (i.e., CSCS to NSCA-CPT®). Please consult our Web site at [www.nasca-cc.org](http://www.nasca-cc.org) for the most current listing of exam dates and sites. Exam registrations cannot be transferred to another person. If a candidate's transfer form and payment are not received by the deadline indicated on the transfer form, his or her registration fee is forfeited and he or she will need to reregister and provide the appropriate registration fee.

## Special Accommodations

The NSCA Certification Commission Executive Council is committed to ensuring that no individual with a disability is deprived of the opportunity to take the examination solely by reason of that disability. Candidates may request special accommodations if they have a medical condition that will prevent them from taking the examination as it is typically administered. (Special language accommodations are not made for those whose primary language is not English.) A request for special accommodations must be made at the time of registration and must include both of the following:

- 1) official documentation from a physician or other health professional verifying and explaining the condition and
- 2) a clear statement of the nature of the accommodations requested

Prior to the exam, candidates will receive notification from the NSCA Certification Commission of the accommodations that they will receive.

If no information is provided or if the NSCA Certification Commission Executive Council determines that the provided information is inadequate to assess special needs requirements, candidates will be asked to provide additional information/documentation and given a deadline by which they need to respond. If the required information is not received by the specified deadline, the request for accommodations will be denied.

## Reapplying for the Exam

In situations where it is imperative that candidates earn the CSCS credential, they can register for another exam administration even if they do not have a score report from the previous exam. Just complete and submit the registration form with the appropriate fee. In the event candidates are successful in passing the first exam, they need

*In situations where it is imperative that candidates earn the CSCS credential, they can register for another exam administration even if they do not have a score report from the previous exam.*

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*If candidates have a change of address, they should notify the Commission immediately.*

*Candidates must provide two forms of identification to gain admission to the test center, one of which must be photo-bearing.*

only to contact the NSCA Certification Commission, in writing, to obtain a refund of the second registration payment. Contact the Exam Department at ext. 118 or 103 with questions regarding this option.

## Address Changes

The address provided on a candidate's registration will be used for mailing the exam confirmation notice, admission ticket(s) and exam results. If candidates have a change of address, they should notify the NSCA Certification Commission no later than four weeks prior to the examination date. If a candidate moves after this time, he or she should leave a forwarding address at the post office so that the admission ticket(s) and exam results will be sent to the new address. Candidates can update their address with the NSCA Certification Commission in one of the following ways:

1. Visit [www.nasca-cc.org](http://www.nasca-cc.org) and submit the Change of Address form online
2. Call 888-746-2378
3. E-mail [commission@nsca-cc.org](mailto:commission@nsca-cc.org)
4. Send a fax to 402-476-7141
5. Mail the information to NSCA Certification Commission, 3333 Landmark Circle, Lincoln NE 68504

## Test Center Locations

The exact location of the testing center in each city may change from exam to exam, depending on the space availability and/or conditions of the facility. Each exam candidate will be notified of the exact exam location with a mailed admission ticket (sent by the independent testing agency two weeks before the exam).

## Exam Schedule

1. If candidates are registered for both sections of the CSCS examination on the same day, they will receive a separate admission ticket for each section of the examination. First-time candidates must take both sections of the examination. Be sure to take both admission tickets to the test center address shown on the tickets; candidates will be required to show the appropriate admission ticket to the proctor.
2. Candidates must provide two forms of identification to gain admission to the test center, one of which must be photo-bearing. The photo-bearing identification must be one of the following: a valid driver's license, state or military ID card, passport or notarized photograph. Candidates must have proper identification to gain entry to the test center. Candidates are required to sign the registration list prior to entry to the test center.

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3. Candidates should report to the test center no later than 8:30 a.m., except at the NSCA National Conference and at certain alternative sites. Reporting times may vary somewhat from site to site; please check the admission ticket(s). Registration, seating, distribution of test materials and instructions for taking the examination will begin at approximately 9:00 a.m. Anyone arriving after testing begins will not be admitted.
4. Candidates will have four hours to complete both sections of the examination (1.5 hours for the Scientific Foundations section and 2.5 hours for the Practical/Applied section), excluding a lunch break. Candidates can expect to leave the test center at 3:00 p.m., except at the NSCA National Conference. If a candidate completes the examination early, he or she may request permission to leave.
5. If candidates are taking only the Scientific Foundations section of the examination, they should report to the test center no later than 8:30 a.m., with the exception of the NSCA National Conference and at certain alternative sites. Registration, seating, distribution of testing materials and instructions will begin shortly thereafter. Testing is scheduled to begin at 9:00 a.m.; however, start time may vary somewhat from site to site. Anyone arriving after testing begins will not be admitted. Candidates will have 1.5 hours in which to complete the examination. Candidates can expect to leave the test center about 10:30 a.m. If candidates complete the examination early, they may request permission to leave.
6. If candidates are taking only the Practical/Applied section of the examination, they should report to the test center no later than noon with the exception of the NSCA National Conference examination and at certain alternative sites. Registration, seating, distribution of test materials and instructions will begin shortly thereafter. Testing is scheduled to begin at 12:30 p.m.; however, start times may vary from site to site. Anyone arriving after testing begins will not be admitted. Candidates will have 2.5 hours to complete this examination. Candidates can expect to leave the test center about 3:00 p.m. If candidates complete the examination early, they may request permission to leave.
7. Additional time, beyond that stated above, for completion of the examination will not be allowed.

**NO**  
*stopwatches,  
cell phones or  
other timing  
devices may be  
used.*

## Rules for Examination

1. Our testing service provides pencils at the testing site.
2. Candidates may wish to bring a watch to help pace themselves on the exam; however, NO stopwatches, cell phones or other timing devices may be used.

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*Commenting on exam questions does not affect exam scores.*

*Exam scores are never released by telephone, fax or e-mail, even to candidates.*

The test center supervisor will keep the official time and ensure that candidates are given the allotted amount of time for the exam.

3. No cell phones, recording devices, books, slide rules, calculators, papers, dictionaries or other reference materials may be taken into the examination room.
4. No test materials, documents or memoranda of any kind are to be taken from the examination room.
5. No questions concerning the content of the examination may be asked during the exam. Listen carefully to the instructions given by the proctor, and read all directions in the test booklet thoroughly.
6. Candidates may comment on any question if they believe it is misleading or deficient in accuracy or content. A form for this purpose is included on the back of the answer sheet. Be specific when commenting on any item. Each comment is reviewed by the examination committee before test scoring. Individual responses to question comments, however, are not provided and such comments do not affect exam scores.
7. Candidates must have the test center supervisor's permission to leave the room during the examination. Candidates will not be allowed additional time to make up for time lost.
8. The test center supervisor may dismiss a candidate from the examination for any of the following reasons: if the candidate's admission to the examination is unauthorized; if a candidate creates a disturbance, is abusive or is otherwise uncooperative; if a candidate gives or receives help or is suspected of doing so; if a candidate attempts to remove exam materials or notes from the test center or if a candidate attempts to take the examination for someone else.

## Release of Information

Both the NSCA Certification Commission and its testing agency are committed to protecting the confidentiality of candidate records. For this reason, examination scores are never released by telephone, fax or e-mail, even to candidates. Also, information regarding candidate scores is never released to any third party. Verification of the certified status of an individual, however, is provided upon receipt of a written request.

Neither the NSCA nor the NSCA Certification Commission Executive Council members or their respective staff are involved in any way with the handling or scoring of any examination. This is the testing agency's responsibility.

# Administrative Policies

## **NSCA Certification Commission Privacy Policy**

The NSCA Certification Commission is committed to the right of privacy for certificate holders (Certified Strength and Conditioning Specialist and NSCA-Certified Personal Trainer®) and examination candidates. The NSCA Certification Commission will exercise care with customer property and personal information while it is under our control or used by the Commission. The Commission staff will handle and protect customer property/information as is done with all Commission property. Only employees authorized by the Commission Administrator (or designee) will have access to customer files. The designated employees are responsible for maintaining the confidentiality of the information in those files.

The NSCA Certification Commission staff will not discuss, disclose or release any information submitted for certification purposes to any third party without the certificate holder's or candidate's written consent.

- The official examination candidate needs to make all inquiries pertaining to material submitted for certification examinations and/or information related to the exam administration.
- With the exception of verification of certification, written consent from the certificate holder or exam candidate is required prior to the release of any information from the individual's record.

To complete and submit the "Authorization to Release Information Form," please visit our Web site at [www.nsca-cc.org/downloads/release.pdf](http://www.nsca-cc.org/downloads/release.pdf). Or contact the NSCA Certification Commission at [commission@nsca-cc.org](mailto:commission@nsca-cc.org) to receive a faxed or mailed copy of this release form.

NSCA Certification Commission reserves the right to modify its Privacy Policy without prior notification. In the event that we make a material change to our policy, we will post a notice of the change on our Web site ([www.nsca-cc.org](http://www.nsca-cc.org)).

## **Reporting of Results**

The testing agency will mail score reports to the candidate six to eight weeks following the examination. (Refer to Page 5 if the candidate is a college senior taking the examination.) The total scaled score will determine whether the candidate passed. This scaled score is statistically derived from the raw score and can range from 1 through 99. The passing scaled score is 70 for the examination. The passing score reflects the amount of knowledge that a committee of experts has determined to be appropriate for credentialing. A criterion-referenced standard-setting procedure and expert judgment were used to evaluate each item on the examination in order to identify the passing point.

*The testing agency will mail score reports to the candidate six to eight weeks following the examination.*

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A candidate's ability to pass the examination depends on the amount of knowledge displayed and is not based upon the performance of others taking the exam (i.e., the examination is not based on a "curve").

The reason for calculating scaled scores is that different forms (or versions) of the exam may vary in difficulty. As new forms of the exam are introduced, a certain number of questions in each content area are replaced by new questions. These changes may cause one form of the exam to be slightly easier or more difficult than another form. To adjust for these differences in difficulty, a procedure called "equating" is used. The goal of equating is to ensure fairness to all candidates.

In the equating process, the minimum raw score (number of correctly answered questions) required to equal the passing scaled score of 70 is statistically adjusted (or equated).

For instance, if the exam is determined to be more difficult than the base form of the exam, then the minimum raw score required to pass will be slightly lower than the original passing raw score. If the exam is easier, the passing raw score will be higher. Equating helps to ensure that the passing scaled score of 70 represents the same level of knowledge, regardless of which form of the exam a candidate takes.

## **Scores Cancelled by the NSCA Certification Commission Executive Council**

The testing agency is obligated to the NSCA Certification Commission Executive Council to report scores that accurately reflect the performance of each candidate. For this reason, the testing agency maintains exam administration and exam security standards that are designed to ensure that all candidates are provided the same opportunity to demonstrate their abilities and to prevent some candidates from gaining an unfair advantage over others due to testing irregularities or misconduct. The testing agency routinely reviews irregularities and exam scores suspected of resulting from unusual or nonstandard circumstances and reports such to the Executive Council.

The NSCA Certification Commission Executive Council reserves the right to withhold or cancel exam scores if, in its opinion, there is reason to question their validity. Scores considered for cancellation by the Executive Council may be grouped into two categories:

1. *Suspected candidate misconduct:* In such cases, the NSCA Certification Commission may initially withhold exam scores and notify the candidates so that they have the opportunity to provide additional information as requested by the Executive Council. The Executive Council may also undertake a confidential review of the circumstances giving rise to questionable score validity.

*The NSCA Certification Commission Executive Council reserves the right to withhold or cancel test scores if, in its opinion, there is reason to question their validity.*

# Administrative Policies

If it is determined that there is sufficient cause to question score validity, the Executive Council may cancel the score(s) and inform the involved parties.

2. *Irregularities:* Scores may be withheld and/or cancelled because of circumstances beyond the candidates' control, such as defective exam materials or mistiming of the exam. In such cases, candidates will be informed and offered an opportunity to retake the examination if the Executive Council determines that scores must be cancelled.

In addition to the reasons listed, the Executive Council may withhold or cancel examination results if, upon investigation, a violation of policies as outlined in this publication is found to have been committed.

## Verification of Scores

Candidates receiving failing scores may request their answer sheet be scored by hand. A request for hand scoring should be submitted in writing with a \$25 hand scoring fee to the NSCA Certification Commission. Upon receipt of a written request and hand scoring fee, the candidate's answer sheet will be inspected and hand scored by the testing agency. This process ensures that no stray pencil marks, multiple responses or other conditions interfered with computer scoring. Requests for hand scoring answer sheets must be received no later than 60 days following the release of examination results. Requests received after that date will not be honored.

To ensure correct reporting of results, the testing agency selects a random sampling of answer sheets of candidates who score within one unit of passing. These answer sheets are manually rescored before results are mailed as a quality control measure.

Therefore, the Executive Council does not encourage candidates to request verification of their scores as it is extremely doubtful that any examination results will be changed from "fail" to "pass."

## Receiving the Certificate

When candidates pass the CSCS examination, they will receive a certificate acknowledging their achievement approximately two weeks after receiving the exam results. Exception: If candidates take and pass the CSCS exam as a college senior, they will not be awarded the CSCS credential until after they graduate and the NSCA Certification Commission receives an original, official transcript verifying graduation and degree earned.

## Continuing Education Requirements

Candidates who pass the examination will receive information concerning requirements associated with the NSCA Certification Commission's Continuing Education Unit (CEU) program. It is important that this information be thoroughly read and understood. Certified Strength and Conditioning Specialists are required to earn 6.0 CEUs (typically 1 contact

*When candidates pass the CSCS exam, they will receive a certificate acknowledging their achievement. Certificates are sent approximately two weeks after the exam results are released.*

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hour equals 0.1 CEU) over specific three-year periods (2003-2005, 2006-2008, etc.) to maintain their certification. *Those certified within an existing three-year period will have their initial CEU requirement prorated to the end of the reporting period.*

A recertification fee for each certification is assessed for each three-year period. Those holding both certifications (CSCS and NSCA-CPT) may not need to acquire separate CEUs for each certification, as CEUs acquired will apply to both certifications in most cases. No CEUs will be awarded for activities completed prior to becoming certified. If you earn certification, be sure to review the *Recertification Policies and Procedures*.

## Reasons for Disciplinary Action

The NSCA Certification Commission Executive Council has approved the following items as reasons why registrants for the CSCS examination may be refused or for which examination candidates or credentialed individuals may be disciplined, up to and including the revocation of their certified status:

1. Obtaining or attempting to obtain certification by fraud, deception or artifice.
2. Knowingly assisting another person or other persons in obtaining or attempting to obtain certification by fraud, deception or artifice.
3. Illegal use or falsification of certification certificates, credentials or any other CSCS documents.
4. Unauthorized possession and/or distribution of any official CSCS testing materials to include copying and/or reproduction of any part of the CSCS examination questions or scenarios.
5. Unauthorized use of any of the registered trademarks owned by the NSCA or NSCA Certification Commission. These include the association and certification logos.
6. Not accumulating and/or reporting the required number of CEUs or not paying the recertification fee within the applicable time period.

## Appeals

Any action taken by the NSCA Certification Commission Executive Council affecting the status of a certificate holder may be appealed. Appeals must be in writing and received within 90 days after receipt of such notice.

## Statement of Nondiscrimination

The NSCA Certification Commission Executive Council does not discriminate among exam candidates on the basis of age, gender, race, religion, national origin, disability or marital status.

*Candidates may be disciplined for unauthorized possession and/or distribution of any official CSCS testing materials to include copying and/or reproduction of any part of the CSCS examination questions or scenarios.*

# CSCS Examination Content

## Exam Content

To begin preparing in an informed and organized manner, candidates should be aware of what they are expected to know for the examination.

The exam outline on the following five pages describes the content covered on the examination. The outline provides a general impression of the examination and, with closer inspection, gives candidates specific direction for studying. By comparing the number of items in each category, candidates can determine the relative importance given to each category on the examination. For example, topics relating to "Exercise Sciences" comprise 58 out of the 80 total questions on the "Scientific Foundations" section of the exam

## CSCS SCIENTIFIC FOUNDATIONS SECTION OUTLINE

### I. Exercise Sciences (58 questions)

- A. Develop training programs that demonstrate an understanding of human muscle anatomy and physiology
  - 1. Muscle anatomy
  - 2. Muscular dynamics involved during movement patterns
- B. Develop training programs that demonstrate an understanding of human neuromuscular anatomy and physiology
  - 1. Neuromuscular anatomy
  - 2. Neuromuscular responses to exercise
- C. Develop training programs that demonstrate an understanding of the basic principles of human biomechanics with respect to exercise selection, execution and sport performance
  - 1. Kinetic laws and principles of human movement
  - 2. Kinematic laws and principles of human movement
  - 3. Role of muscles in movement
- D. Develop training programs that demonstrate an understanding of human bone and connective tissue (e.g., tendon and ligament) anatomy and physiology
  - 1. Bone and connective tissue anatomy
  - 2. Bone and connective tissue responses to exercise
- E. Develop training programs that demonstrate an understanding of human bioenergetics and metabolism
  - 1. Characteristics of the energy systems
  - 2. Effects of manipulating training variables
- F. Develop training programs that demonstrate an understanding of human neuroendocrine physiology
  - 1. Functions of hormones
  - 2. Neuroendocrine responses to exercise
- G. Develop training programs that demonstrate an understanding of human cardiopulmonary anatomy and physiology
  - 1. Cardiopulmonary anatomy
  - 2. Cardiopulmonary responses to exercise
- H. Develop training programs that demonstrate an understanding of physiological adaptations to exercise
  - 1. Adaptations to aerobic exercise and training
  - 2. Adaptations to anaerobic exercise and training
  - 3. Causes, signs, symptoms and effects of overtraining and detraining

# CSCS Examination Content

## CSCS SCIENTIFIC FOUNDATIONS SECTION OUTLINE (CONT.)

- I. Develop training programs that demonstrate an understanding of the anatomical, physiological and biomechanical sport-specific differences of athletes (e.g., age, gender, training status, various sports)
  - 1. Anatomical, physiological and biomechanical differences among athletes
  - 2. Effects of age on performance
  - 3. Implications of training status on developing exercise programs
- J. Use psychological techniques to enhance the training and/or performance of an athlete
  - 1. Motivational techniques
  - 2. Effects of practice conditions and teaching strategies on motor learning and skill acquisition

## II. Nutrition (22 questions)

- A. Explain nutritional factors affecting health and performance
  - 1. Food groups and food pyramid and their health-related and performance-related values
  - 2. Basic nutritional needs of individuals and the special needs of athletes
  - 3. Nutritional density
  - 4. Caloric expenditure with respect to training intensities
  - 5. Coronary artery disease risk factors associated with dietary choices
  - 6. Effects of fluid and electrolyte balance/imbalance on health and performance
- B. Explain the techniques to manipulate food choices and training methods to maximize performance
  - 1. Training/nutritional programs that produce desired changes in body composition
  - 2. Nutritional factors affecting muscular endurance, hypertrophy, strength and aerobic endurance
- C. Recognize signs, symptoms and behaviors associated with altered eating habits and disorders
  - 1. Signs and symptoms associated with disordered eating, bulimia and anorexia
  - 2. Body composition changes and performance variations associated with eating disorders
- D. Explain the effects, risks and alternatives of various performance-enhancing substances and methods
  - 1. Ergogenic aids and dietary supplements
  - 2. Signs and symptoms of ergogenic aid abuse
- E. Recognize the nature of an athlete's nutritional status and determine the appropriateness of a referral to a qualified healthcare professional

## CSCS PRACTICAL/APPLIED SECTION OUTLINE

### I. Exercise Technique (39 questions)

- A. Describe, teach and evaluate safe and effective resistance training exercise technique
  - 1. Instruct an athlete to perform proper exercise technique using free weight training equipment
    - a. Teach proper preparatory body and limb position
    - b. Teach execution of proper technique
    - c. Identify and correct improper exercise technique

# CSCS Examination Content

## CSCS PRACTICAL/APPLIED SECTION OUTLINE (CONT.)

2. Instruct an athlete to perform proper exercise technique using resistance machines
  - a. Teach proper preparatory body and limb position
  - b. Teach execution of proper technique
  - c. Identify and correct improper exercise technique
3. Instruct an athlete to perform effective spotting procedures and techniques for resistance training exercises
  - a. Identify the number of spotters to use for a given situation and/or exercise
  - b. Teach correct spotter location
  - c. Teach proper preparatory body and limb placement required when spotting the lifter
4. Instruct an athlete to perform proper exercise technique using alternative modes
  - a. Teach proper preparatory body and limb position
  - b. Teach execution of proper technique
  - c. Identify and correct improper exercise technique
- B. Describe, teach and evaluate safe and effective plyometric exercise technique
  1. Teach proper preparatory body and limb position
  2. Teach execution of proper technique
  3. Identify and correct improper exercise technique
- C. Describe, teach and evaluate safe and effective speed and speed-endurance development technique
  1. Teach proper preparatory body and limb position
  2. Teach execution of proper technique
  3. Identify and correct improper exercise technique
- D. Describe, teach and evaluate safe and effective agility technique
  1. Teach proper preparatory body and limb position
  2. Teach execution of proper technique
  3. Identify and correct improper exercise technique
- E. Describe, teach and evaluate safe and effective aerobic endurance exercise technique
  1. Instruct an athlete to perform proper exercise technique using cardiovascular equipment
    - a. Explain machine programming and setup
    - b. Teach proper preparatory body and limb position
    - c. Teach execution of proper technique
    - d. Identify and correct improper exercise technique
  2. Instruct an athlete to perform proper general body-only aerobic endurance exercise technique
    - a. Teach execution of proper technique
    - b. Identify and correct improper exercise technique
- F. Describe, teach and evaluate safe and effective flexibility exercise technique
  1. Instruct an athlete to perform static stretching exercises
    - a. Teach proper preparatory body and limb position
    - b. Teach execution of proper technique
    - c. Identify and correct improper exercise technique
  2. Instruct an athlete to perform proprioceptive neuromuscular facilitation (PNF) stretching exercises
    - a. Teach proper preparatory body and limb position
    - b. Teach execution of proper technique
    - c. Identify and correct improper exercise technique

# CSCS Examination Content

## CSCS PRACTICAL/APPLIED SECTION OUTLINE (CONT.)

3. Instruct an athlete to perform dynamic and ballistic stretching exercises
  - a. Teach proper preparatory body and limb position
  - b. Teach execution of proper technique
  - c. Identify and correct improper exercise technique

### II. Program Design (39 questions)

- A. Design training programs that maximize performance by prescribing various training methods and modes based upon an athlete's health status, strength and conditioning levels and training goals
  1. Describe different types of training methods
  2. Manipulate training methods to accomplish desired goals
  3. Combine different types of training methods to attain maximum performance results
- B. Design training programs that maximize performance and muscle balance by selecting exercises based upon an athlete's health status, strength and conditioning levels and training goals
  1. Identify exercises that simulate the functional movements and utilize certain muscles of specific sport activities
  2. Classify exercises based upon muscle group or groups
  3. Classify exercises based upon type of kinetic chain movement
  4. Describe muscle balance and body part ratios
  5. Prescribe exercises to achieve muscular balance
- C. Design training programs that maximize performance by applying the principles of exercise order based upon an athlete's health status, strength and conditioning levels and training goals
  1. Select exercise order according to the training phase and goal
  2. Differentiate between various exercise orders
- D. Design training programs that maximize performance by determining and prescribing appropriate loads/resistances (including heart rate guidelines) based upon an athlete's health status, strength and conditioning levels and training goals
  1. Describe methods to determine absolute and relative strength levels
  2. Describe commonly accepted methods for assigning loads/resistances
  3. Prescribe loads/resistances related to specific goals and outcomes of training
- E. Design training programs that maximize performance by determining and prescribing appropriate volumes (defined as sets x reps) based upon an athlete's health status, strength and conditioning levels and training goals
  1. Explain outcomes associated with the manipulation of training volume
  2. Prescribe volumes related to specific goals and outcomes of training
- F. Design training programs that maximize performance by determining and prescribing appropriate work/duration and rest periods, recovery methods and training frequencies based upon an athlete's health status, strength and conditioning levels and training goals
  1. Prescribe work and rest periods and recovery methods related to specific goals and outcomes of training
  2. Prescribe training frequency related to specific goals and outcomes of training
- G. Design training programs that maximize performance by determining and prescribing appropriate exercise progression based upon an athlete's health status, strength and conditioning levels and training goals

# CSCS Examination Content

## **CSCS PRACTICAL/APPLIED SECTION OUTLINE (CONT.)**

1. Describe when and how to progress exercise mode, intensity, duration and frequency
2. Prescribe progression related to specific goals and outcomes of training
- H. Design training programs that maximize performance by utilizing the principles of periodization
  1. Explain periodization
  2. Describe training variations based on the seasonal aspects of sports
  3. Design periodized programs specific to the needs of a sport/sport position
  4. Design periodized programs specific to an athlete's training level
- I. Design training programs for an injured athlete to maintain training level during the rehabilitation and reconditioning period

### **III. Organization and Administration (10 questions)**

- A. Establish policies and procedures associated with the day-to-day operation of the strength and conditioning facility
  1. Establish policies and procedures for the facility
  2. Design and adjust schedules and programs to match the needs and demands of the involved sport teams and special groups with the facility's characteristics
  3. Provide operating procedures for and identify the characteristics of strength and conditioning equipment
- B. Determine the layout of the facility for effective use of time and space
  1. Establish methods of organizing teams or special groups
  2. Arrange equipment to reduce the potential for injury
- C. Maintain equipment and facility to provide a safe training environment
  1. Establish procedures for facility and equipment maintenance
  2. Identify litigation issues relating to facility operation
  3. Establish procedures to promote an accident- and injury-free environment

### **IV. Testing and Evaluation (22 questions)**

- A. Select and administer appropriate tests to maximize test reliability and validity
  1. Select a valid test or tests based upon the unique aspects of a sport, sport position and training status
  2. Establish proper procedures to maximize test reliability
    - a. Explain test administration procedures that utilize equipment, personnel and time efficiently
    - b. Administer testing protocols and procedures to ensure reliable data collection
      - 1) Describe the testing equipment and its proper use
      - 2) Explain testing procedures
      - 3) Describe safety factors surrounding the testing environment
      - 4) Administer tests to assess physical characteristics and evaluate performance
- B. Evaluate and identify the significance of testing results
  1. Interpret test results for various sports and sport positions and how they influence the design of a training program
  2. Recognize typical and atypical performance values in various tests

# Helpful Tips

## Helpful Pre-Exam Information

**Visit [www.nsca-cc.org](http://www.nsca-cc.org):** Many exam candidates find the “CSCS Exam Preparation Suggestions” located in the “Downloads” section of the Web site to be helpful in their preparation for the exam.

**Exam Hours:** The examination hours are 8:30 a.m. to 3:00 p.m. (except for the examination held in conjunction with the NSCA National Conference and at certain alternative sites).

**Hotel Information:** The best source for hotel information is a travel agency in candidate's area or the Internet.

**Admission Ticket:** Candidates will receive the admission ticket(s) one week prior to the exam. If a map of the area is available, it will be provided.

**Bring with You:** Bring two forms of ID, one of which is photo-bearing and the admission ticket(s) to the exam.

**Questions?** Contact the NSCA Certification Commission toll-free at 888-746-2378 or e-mail [commission@nsca-cc.org](mailto:commission@nsca-cc.org). We're here to help!

## Helpful Post-Exam Information

**Exam Scores:** Candidates will receive their exam scores six to eight weeks after the exam administration.

**Certificates:** Individuals who pass the CSCS exam will receive their CSCS certificate two weeks after receiving the exam scores. Additional certificates are available for a nominal fee.

**Certified Merchandise:** CSCS credential holders may purchase a variety of materials, including posters, business cards and clipboards that communicate their certified status. Visit [www.nsca-cc.org](http://www.nsca-cc.org) to order.

**Retakes:** There is no limit to the amount of times a candidate may retake the exam.

**Continuing Education Requirements:** Each CSCS certified professional must fulfill all continuing education requirements to retain CSCS certification through the next reporting period. Important recertification materials will be included with the CSCS certificate that is mailed to each newly certified individual.

**Continuing Education Opportunities:** Individuals who become CSCS certified have many opportunities to earn continuing education units. Some of the opportunities include online CEU quizzes, online practice exams and pre-approved courses/events listed on the CEU Activity Calendar. All of these CEU options are available at [www.nsca-cc.org](http://www.nsca-cc.org).

## NSCA CERTIFICATION COMMISSION®

The Certifying Agency for the National Strength and Conditioning Association

3333 Landmark Circle • Lincoln, NE 68504 • Phone: 402-476-6669 • Toll-free: 888-746-2378 • Fax: 402-476-7141  
Fax on Demand Hotline: 877-441-2378 • Web site: [www.nsca-cc.org](http://www.nsca-cc.org) • E-mail: [commission@nsca-cc.org](mailto:commission@nsca-cc.org)