



Muscle System Specialist™ Course

Prerequisites

In order to register for the Muscle System Specialist™ Course an applicant must necessarily possess the following:

1. At least an undergraduate degree in a science field and/or from 2 -4 below:
2. A current certification in good standing with one of the following NCCA accredited certifying agencies:
 - a. American Council on Exercise
 - i. Personal Trainer
 - ii. Medical Exercise Specialist
 - b. National Academy of Sports Medicine
 - i. Personal Trainer
 - c. National Strength and Conditioning Association
 - i. Personal Trainer
 - ii. Strength and Conditioning Specialist
 - d. Resistance Training Specialist
 - i. Specialist
 - e. American College of Sports Medicine
 - i. Personal Trainer
 - ii. Exercise is Medicine Credential
 - iii. Exercise Physiologist (EP-C)
 - iv. Clinical Exercise Physiologist (CEP or RCEP)
 - f. Cooper Institute
 - i. Personal Trainer
 - g. International Sports Sciences Institute
 - i. Personal Trainer
3. A current Personal Training certification/diploma in good standing with one of the following non-NCCA accredited certifying agencies:
 - a. CanFitPro (Canada)
 - b. AFLCA - Alberta Fitness Leadership Certification Association
 - c. CYQ, TQ, Active IQ, or YMCA Awards Level 2 (UK)
 - d. National Personal Training Institute
4. A current license in good standing in any state or country for one of the following:
 - a. Physical Therapy
 - b. Occupational Therapy
 - c. Athletic Training
 - d. Chiropractic
 - e. Medical Doctor
 - f. Osteopathic Doctor
 - g. Naturopathic Doctor
 - h. Massage Therapy



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5. If no certification/license by a recognized agency (from #2, #3, and #4 above):
 - a. A Master's Degree in an Exercise Science Related Field*
 - b. A Doctorate Degree in an Exercise Science Related Field*
6. A current CPR/AED certification
7. Prove current liability insurance
8. Practicing for at least 2 years (of 15 hours per week average) providing exercise programming to individuals and/or small groups.
9. If there is a credential not listed that you would like to submit for an **Exception Review**, please provide any relevant documentation and a statement for why you think it should be considered with your application. Please note that your application may still be rejected.

*Exercise Science Related Fields: Biology, Physiology, Neurology, Myology, Sports Performance, Human Performance, Kinesiology, Cardiac Rehabilitation, Biomechanics.

It is strongly recommended that the applicant possess a working knowledge of the following content domains:

1. Musculoskeletal Anatomy
 - a. The names of all anatomical muscles and their normative attachment sites on the skeleton
 - b. The structure of skeletal muscle and its relationship to function
 - i. Length: Tension
 - ii. Force: Velocity
 - iii. Energy Substrate Utilization and Recovery Rates
 - c. The names and locations of all the skeletal bones
 - d. The structure of a synovial joint and its relationship to function
2. Nervous System Anatomy
 - a. The Central Nervous System Structure and Function
 - b. The Peripheral Nervous System Structure and Function
 - c. The Motor and Sensory Systems and the relationship between the two
3. Basic Mechanics (Statics)
 - a. Motion (Linear and Angular)
 - b. Momentum and Force
 - c. Lever Systems
 - d. Torque
4. Philosophy
 - a. Philosophy of Science
 - b. Epistemology
 - c. Worldview
5. The English Language



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In how many ways do you know you have what it takes to be a Muscle System Specialist? After reading the requirements needed to register for the Muscle System Specialist Course here is a self-administered exam to get a flavor of the knowledge domains the course will be working with:

1. Which best describes the attachments of the Triceps Lateral Head?
 - a. Posterior Tubercle of Glenoid and Posterior Proximal Ulna
 - b. Posterior Tubercle of Glenoid and Posterior Proximal Radius
 - c. Posterior Lateral Proximal Surface of Humerus and Posterior Olecranon Process
 - d. Anterior aspect of acromion and posterior aspect of radial head of radius
2. What definition fits the sarcoplasmic reticulum the best?
 - a. the specialized endoplasmic reticulum of cardiac muscle and skeletal striated muscle that functions especially as a storage and release area for calcium.
 - b. the specialized endoplasmic reticulum of cardiac muscle and skeletal striated muscle that functions especially as a storage and release area for ATP.
 - c. The fascial tissue surrounding a myofibril
 - d. None of the above
3. Which is not a component of a synovial joint?
 - a. Cruciate Ligament
 - b. Synovium
 - c. Joint Space
 - d. Cartilage
4. Which time interval is anaerobic glycolysis typically associated with?
 - a. 0 seconds to 10 seconds
 - b. 10 seconds to 120 seconds
 - c. 120 seconds to 480 seconds
 - d. 0 seconds to 3600 seconds
5. Which bones make up the coxa-femoral joint?
 - a. The innominate and the head of the femur
 - b. The tibia and the femur
 - c. The femur and the sacrum
 - d. None of the above
6. What is the function of the synovium?
 - a. To remove synovial fluid
 - b. To produce synovial fluid
 - c. Both a and b
 - d. None of the above
7. Which best describes the attachments of the Gastrocnemius
 - a. The posterior-lateral aspect of the medial and lateral femoral condyles and the Achilles tendon
 - b. The posterior upper 1/3 of the tibia and fibula and the posterior superior calcaneus
 - c. The posterior fascial sheath of the soleus and the Achilles tendon
 - d. The posterior distal femur and the inferior posterior aspect of the calcaneus



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8. Which of the following are considered part of the 7 divisions of CNS?
 - a. The Diencephalon
 - b. The Cerebellum
 - c. The Mid Brain
 - d. All of the above
9. What does afferent mean in terms of neurology?
 - a. Carrying sensory information toward a central organ or part
 - b. Carrying sensory information away from a central organ or part
 - c. The posterior aspect of a neuronal dendrite
 - d. Carrying motor information away from a central organ or part
10. What is the definition of momentum?
 - a. Inertia
 - b. The quantity of motion of a moving body
 - c. The product of a body's mass and velocity
 - d. Both b and c
11. Which best describes torque?
 - a. The amount of force that causes an object to rotate
 - b. The amount of force that causes an object to move along a straight path
 - c. The compressive force that breaks an object
 - d. None of the above
12. Which best defines the Z-Line of a muscle sarcomere?
 - a. The borders that separate and link sarcomeres within a skeletal muscle.
 - b. The attachment site for the thick filaments
 - c. The attachment site for the thin filaments
 - d. A pale band across a striated muscle fiber that consists of actin
13. What is the definition of a lever?
 - a. A wrench
 - b. The straight-line distance between an applied force and an axis
 - c. A simple machine consisting of a rigid bar pivoted on a fixed point and used to transmit force, as in raising or moving a weight at one end by pushing down on the other.
 - d. All of the above
14. Which best describes the definition of science?
 - a. A system of acquiring knowledge. This system uses observation and experimentation to describe and explain natural phenomena
 - b. An organized body of knowledge gained by experimentation
 - c. Any systematic field of study or the knowledge gained from it
 - d. All of the above
15. What is the relationship between muscle force and contraction velocity?
 - a. As muscle contraction velocity increases its force producing capabilities decrease
 - b. As muscle contraction velocity decreases its force producing capabilities remain the same
 - c. As muscle contraction velocity decreases its force producing capabilities decrease



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- d. As muscle contraction velocity increases its force producing capabilities increase
16. What is a worldview?
- The visual images gained from an orbiting satellite
 - The overall perspective from which one sees and interprets the world
 - A collection of beliefs about life and the universe held by an individual or a group
 - Both b and c
17. What is the role of cartilage?
- Provide support
 - Provide a smooth surface
 - Transmit energy into the bone
 - All of the above
18. Where is the middle phalange of the second finger?
- Between the metacarpal and the distal phalanges
 - Between the proximal and distal phalanges
 - Between the scaphoid and the metacarpal
 - There is no such thing
19. Which are components of a motor neuron?
- A soma
 - An axon
 - A dendrite
 - All of the above
20. What does the Length: Tension plot of a muscle show?
- That as sarcomere length changes the amount of tension produced changes
 - That muscle stretching increases its force production
 - That muscle stretching decreased its force production
 - None of the above

Answer Key: 1c, 2a, 3a, 4b, 5a, 6c, 7a, 8d, 9a, 10d, 11a, 12a, 13d, 14d, 15a, 16d, 17d, 18b, 19d, 20a

If you got 14 correct that's great.

Anything less - don't worry - now you have an idea on what to work on.



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Application

Date _____

Name _____

Address _____

Phone and Email Address _____

Education

Certification(s)

Years and Type of Experience (one-one, outpatient physical therapy, sports team etc.)

Work Environment (gym, clinic, hospital, etc.)

CPR/AED Certification Agency Name, Date Taken, and Next Renewal Date

Current Liability Insurance Carrier Name

Please email completed application to gtmack01@mac.com or mail to:

Exercise Professional Education
ATTN: Muscle System Specialist Course Application
2624 Billingsley Road
Columbus, Ohio 43235

You will receive an answer within 30 days



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Testing Process for Attaining the Muscle System Specialist™ Credential

In order to obtain the Muscle System Specialist™ credential, the following criteria must be met:

1. Completed and Approved Application
2. Pay for and Attend all 5 Weekends of the Muscle System Specialist™ Course
3. Pay for and pass the final written examination portion of the testing
4. Pay for and Pass the final practical examination portion of the testing

The Written Examination is \$150.00 US

The Practical Examination is \$350.00 US

The written and practical examinations are administered on the same day by an approved examiner.

The Written Examination is a combination of 75 Multiple Choice and True/False questions.
1.5 hours is allotted to complete the written examination.

The Practical Examination is a combination of performing various aspects of the consultation process, the assessment process, the analysis and decision-making process, the report of findings process, the field screens, and using the various contraction modes.

3.5 Hours is allotted to complete the practical examination

All examinations are to be scheduled in advance based on examiner availability – every attempt will be made to make an approved examiner available as soon as desired by the practitioner.

The final written and practical examinations must be scheduled and completed within a 12-month period following the last day of the Course. If this cannot be satisfied, then a written request must be submitted within the 12-month period explaining why an extension is required. Course administrators reserve the right to deny this request.

You will receive a certificate indicating your achievement suitable for framing and displaying where you see fit.

Examination Results and Retesting

Final written and/or practical examinations that fail to meet the minimum passing score of 70% *per examination* will need to be retaken within 6 months of the examination day or the full price for taking the examinations will apply. Appeals of scores below minimum required can be submitted with written argument for reconsideration. Administrators will respond within 30 days with an answer. This answer is final.



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Retake Fees

The Retake Written Examination is \$100.00 US

The Retake Practical Examination is \$250.00 US

Use of Documents, Terms and Logo

Upon passing both the written and practical examinations the practitioner will be provided with word, jpeg, and pdf files containing the approved Muscle System Specialist™ documents and logo's along with authorization to use the images in marketing and advertising.

The Approved Abbreviation for the Certified Muscle System Specialist is CMSS.

Continuing Education

There are no Continuing Education requirements to maintain the Credential. You earned it, so you keep it for life.

We are strong proponents of the life-long learner construct and of course encourage that practitioners continue to mature professionally and seek new learning opportunities.

If you choose, your on-line ExerciseProEd.com Muscle System Specialist™ website profile can reflect your credentials, the continuing education you have attained, and new coursework as you attain it.

Exercise Professional Education will create and provide many continuing education courses with content reinforcing the foundational knowledge presented in the Muscle System Specialist™ Course.

Website Listing and Profile

If you choose the ExerciseProEd.com website will provide a listing on its website with your profile and contact information for consumers to view as they seek out credentialed practitioners.