




 <b>Tactical Strength and Conditioning Facilitator (TSAC-F ) Detailed Content Outline 130 Items</b>	Cognitive Level			Total # of Questions
	Recall	Application	Analysis	
<b>I. EXERCISE SCIENCES</b>	<b>7</b>	<b>13</b>	<b>4</b>	<b>24</b>
<p>A. Apply General Concepts of Anatomy and Physiology</p> <ol style="list-style-type: none"> <li>1. Muscle anatomy (e.g., muscle group names, specific muscle names) and muscle responses to exercise</li> <li>2. Bone and connective tissue anatomy and responses to exercise</li> <li>3. Cardiopulmonary anatomy and responses to exercise</li> <li>4. Explain responses of bone, muscle, and connective tissue to occupation-related job tasks under load</li> </ol> <p>B. Apply Basic Concepts of Neuromuscular Anatomy and Physiology</p> <ol style="list-style-type: none"> <li>1. Neuromuscular anatomy (e.g., motor unit, Type I and II fibers, muscle spindles, stretch shortening cycle, Golgi tendon organs)</li> <li>2. Neuromuscular responses to exercise (e.g., chronic neuromuscular adaptations, motor unit recruitment patterns, nerve conduction, summation)</li> </ol> <p>C. Apply the Basic Principles of Biomechanics to Exercise Selection Relative to Operation/Mission Performance</p> <ol style="list-style-type: none"> <li>1. Kinetic laws and principles of movement (e.g., lever systems, momentum, work, isometric/isotonic/isokinetic)</li> <li>2. Kinematic laws and principles of movement (e.g., velocity, anatomical planes of movement, joint angles)</li> <li>3. Relationship of type of muscle action (i.e., isometric, concentric, and eccentric) to force production (i.e., force- velocity and torque-velocity relationships)</li> <li>4. Muscle dynamics and the role of muscles in movement (e.g., agonist, antagonist, synergist, stabilizer)</li> </ol> <p>D. Describe Bioenergetics and Metabolism (e.g., names and characteristics of energy systems, effects of manipulating training variables)</p>				


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<p>E. Describe Physiological Adaptations to Exercise Designed to Improve Physical Performance (e.g., aerobic endurance, muscular endurance, muscular strength, speed and agility, muscular power, and flexibility)</p> <ol style="list-style-type: none"> <li>1. Explain physiological implications related to age, sex, and training status</li> </ol> <p>F. Explain Detraining and Retraining</p> <ol style="list-style-type: none"> <li>1. The usual time course of detraining and retraining</li> <li>2. Minimum training requirements to maintain training adaptations</li> </ol> <p>G. Identify Environmental Concerns (e.g., heat, cold, altitude, smoke, uneven terrain) for Tactical Athletes</p> <ol style="list-style-type: none"> <li>1. Physiological adaptations to diverse environmental conditions</li> <li>2. Environmental illnesses (e.g., heat and cold injuries, altitude sickness) and their predisposing factors</li> <li>3. Effect of environmental conditions on physical performance and work capacity</li> <li>4. Process and time course of acclimatization/adjustment</li> <li>5. Recognize limitations to physical exercise in adverse conditions and manipulate training programs accordingly</li> <li>6. Effects of apparel selection and impacts on thermoregulation</li> </ol> <p>H. Explain the Endocrine (Hormonal) Responses to Exercise and Stress</p> <ol style="list-style-type: none"> <li>1. Explain acute responses and chronic adaptations of the endocrine system to exercise and occupation-related job tasks in high stress situations</li> <li>2. Recognize the causes, signs, symptoms, and effects of overtraining caused by inappropriate exercise and occupation-related work environments</li> </ol>				
<b>II. NUTRITION</b>	<b>6</b>	<b>8</b>	<b>1</b>	<b>15</b>
A. Explain Nutritional Factors Affecting Health and Performance				


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<ol style="list-style-type: none"> <li>1. Health-related and performance-related application of food (e.g., food groups, food exchanges, ChooseMyPlate.gov, nutrient density)</li> <li>2. Basic nutritional needs of individuals and the unique nutritional needs of tactical athletes (e.g., proteins, carbohydrates, fats, vitamins, minerals)</li> <li>3. Caloric expenditure during various forms of exercise and occupational tasks</li> <li>4. Chronic disease risk factors associated with dietary choices and obesity</li> <li>5. Effects of fluid and electrolyte balance/imbalance on health and performance</li> <li>6. Effects of unpredictable and/or prolonged schedules during deployment, field exercise, and shift work on nutritional status</li> </ol> <p>B. Explain Nutritional Strategies for Optimizing Body Composition and Maximizing Physical Performance and Recovery</p> <ol style="list-style-type: none"> <li>1. Nutritional strategies for altering and maintaining body composition</li> <li>2. Timing and composition of nutrient and fluid intake before, during, and after an exercise session or operation/mission/shift</li> <li>3. Nutritional factors that affect muscular endurance, hypertrophy, strength, and aerobic endurance</li> <li>4. Nutrition strategies to mitigate unpredictable and/or prolonged schedules during deployment, field exercise, and shift work</li> </ol> <p>C. Recognize Signs, Symptoms, Behaviors, and Performance Variations Associated with Altered Eating Habits and Disorders</p> <p>D. Explain the Effects, Risks, and Alternatives Associated with Common Dietary Supplements (e.g., creatine, protein, caffeine)</p> <ol style="list-style-type: none"> <li>1. Effects, side effects, and signs and symptoms of dietary supplement use</li> </ol>				
<b>III. EXERCISE TECHNIQUE</b>	<b>4</b>	<b>15</b>	<b>6</b>	<b>25</b>
A. Teach safe and effective exercise techniques				

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<ol style="list-style-type: none"> <li>1. Preparatory body and limb position (stance, posture, alignment)</li> <li>2. Execution of technique (body and limb positions, movement mechanics, breathing)</li> <li>3. Identification and correction of improper exercise technique</li> <li>4. Spotting</li> </ol> <p>B. Explain a Dynamic Warm-up that is Biomechanically and Metabolically Specific to the Prescribed Exercise Plan</p> <ol style="list-style-type: none"> <li>1. Expertise in movement patterns and energy systems</li> </ol> <p>C. Demonstrate and Explain Resistance Training Exercise Technique</p> <ol style="list-style-type: none"> <li>1. Free weight training equipment</li> <li>2. Resistance machines</li> <li>3. Bodyweight resistance (e.g., proprioception, functional movement)</li> <li>4. Alternative Implements (e.g., rope climbing, kettlebells, load carriage)</li> </ol> <p>D. Explain Plyometric Exercise Technique</p> <p>E. Explain Speed/Sprint Technique both with and without Occupational Equipment</p> <ol style="list-style-type: none"> <li>1. Recognize the difference between acceleration and maximal speed and their application</li> </ol> <p>F. Explain General Agility Technique</p> <ol style="list-style-type: none"> <li>1. Multidirectional movement to include stopping, starting, dropping and rising</li> <li>2. Explain the difference between change of direction speed and agility</li> </ol> <p>G. Explain Aerobic Endurance Exercise Technique</p> <ol style="list-style-type: none"> <li>1. Cardiovascular exercise modalities (i.e., machine and non-machine)</li> <li>2. Machine programming and set-up</li> <li>3. Occupational specific endurance activities (e.g., load carriage)</li> </ol> <p>H. Explain Flexibility Exercise Technique</p> <ol style="list-style-type: none"> <li>1. Static stretching exercises</li> </ol>				

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<ul style="list-style-type: none"> <li>2. Proprioceptive neuromuscular facilitation (PNF) stretching exercises</li> <li>3. Dynamic and ballistic stretching exercises</li> <li>4. Myofascial release (e.g., foam rolling)</li> </ul>				
<b>IV. PROGRAM DESIGN</b>	<b>7</b>	<b>13</b>	<b>10</b>	<b>30</b>
<ul style="list-style-type: none"> <li>A. Perform a Needs Analysis Based on Job Requirements                             <ul style="list-style-type: none"> <li>1. Identify critical job tasks</li> <li>2. Identify physiological, movement, and injury risk factors as they apply each critical task</li> <li>3. Identify energy systems associated with critical job tasks</li> </ul> </li> <li>B. Identify Circumstantial/Lifestyle Factors                             <ul style="list-style-type: none"> <li>1. Professional factors (e.g., work schedule, environmental factors)</li> <li>2. Personal factors (e.g., family obligations, personal fitness goals)</li> </ul> </li> <li>C. Assess and Evaluate Current Health, Fitness, and Performance Status                             <ul style="list-style-type: none"> <li>1. Identify abilities and limitations (e.g., age, sex, training status, injury status)</li> <li>2. Identify potential mandatory fitness requirements</li> </ul> </li> <li>D. Design Training Programs that Maximize Performance, Reduce Injury Risk, and Increase Long Term Wellness                             <ul style="list-style-type: none"> <li>1. Target specific energy systems by manipulating training variables (e.g., mode, intensity, duration, volume, work:rest ratio)</li> <li>2. Incorporate various training methods and modes (e.g., resistance, plyometric, speed/sprint, agility, aerobic, flexibility, anaerobic threshold)</li> <li>3. Utilize the concept of specificity</li> <li>4. Optimize muscle balance</li> <li>5. Apply the principles of exercise order based on the goal of the training session</li> <li>6. Establish appropriate exercise progression/regression</li> </ul> </li> </ul>				

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<ul style="list-style-type: none"> <li>7. Apply the principles of periodization based on occupational demands</li> <li>8. Develop appropriate training variations based on environmental constraints and operational tempo</li> <li>9. Identify training objectives for each phase of rehabilitation and reconditioning, and modify program based on abilities and limitations</li> </ul> <p>E. Incorporate Mental Skills into Program Design</p> <ul style="list-style-type: none"> <li>1. Motivational techniques</li> <li>2. Mental imagery</li> <li>3. Team dynamics</li> </ul>				
<b>V. ORGANIZATION AND ADMINISTRATION</b>	<b>4</b>	<b>5</b>	<b>1</b>	<b>10</b>
<ul style="list-style-type: none"> <li>A. Design and Organize the Training Area                             <ul style="list-style-type: none"> <li>1. Identify specific space and equipment needs of the population(s) that will use the area</li> <li>2. Apply strategies to arrange and space the equipment within the training area</li> </ul> </li> <li>B. Implement Policies and Procedures for the Training Area                             <ul style="list-style-type: none"> <li>1. Recognize the primary duties and responsibilities of the various personnel of the training area</li> <li>2. Establish rules for using the area based upon current industry best practices and organizational guidelines</li> </ul> </li> <li>C. Create a Safe Training Environment                             <ul style="list-style-type: none"> <li>1. Identify pre-participation screening and medical referral requirements for program participants</li> <li>2. Establish checklists and schedules for equipment maintenance and cleaning</li> <li>3. Identify common litigation issues and methods for reducing and/or minimizing the risk and liability</li> <li>4. Establish and/or follow procedures to respond to emergencies</li> <li>5. Maintain appropriate training records</li> </ul> </li> </ul>				

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6. Identify needs and strategies to accommodate dynamics/logistics of training large groups (e.g., limited equipment, experience level of tactical athletes and supervision of training) D. Understand Professional and Legal Responsibilities <ol style="list-style-type: none"> <li>1. Recognize litigation issues and circumstances</li> <li>2. Know when to refer individual to and/or seek input from appropriate health care professionals (e.g., chronic disease, eating disorder behavior, supplement use, injury, pain, behavioral health issues)</li> </ol>				
<b>VI. TESTING, ASSESSMENT, AND EVALUATION</b>	<b>5</b>	<b>7</b>	<b>2</b>	<b>14</b>
A. Administer Test <ol style="list-style-type: none"> <li>1. Recognize tests used by tactical organizations (e.g., Physical Fitness Tests, Job Suitability Tests, Fitness for Duty Test)</li> <li>2. Explain, and when appropriate, select tests based upon the unique aspects of the tactical athlete’s work demands, administrator and equipment availability, time constraints, and training status</li> <li>3. Develop alternative tests and make reasonable accommodations for individuals with different abilities and limitations</li> <li>4. Establish a plan for frequency of testing</li> <li>5. Administer testing protocols and procedures to ensure accurate and reliable data collection</li> </ol> B. Evaluate Results <ol style="list-style-type: none"> <li>1. Discuss criteria for rating test performance</li> <li>2. Use test results to design or modify training programs</li> <li>3. Discuss differences between tests, assessments and evaluations</li> </ol>				
<b>VII. WELLNESS INTERVENTION</b>	<b>5</b>	<b>5</b>	<b>2</b>	<b>12</b>
A. Describe Advantages of Performing Various Types of Physical Training				

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B. Describe Risks and Outcomes (e.g., stress fractures, over training) of Inappropriate Training (e.g., single modality training, excess volume and/or intensity) C. Describe and Mitigate Risk Factors Associated with Common Chronic Injuries/Diseases D. Understand Effects, Side Effects, Signs and Symptoms of Common Ergogenic Aids, and their Methods of Use E. Understand How Lifestyle and Occupation Affects Health Wellness and Performance				
<b>Totals</b>	<b>38</b>	<b>66</b>	<b>26</b>	<b>130</b>