Exam Content Outline

<table>
<thead>
<tr>
<th>Exam Content Outline</th>
<th># Items</th>
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<tr>
<td><strong>1 Exercise and Performance Nutrition</strong></td>
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<tr>
<td>A Energy Metabolism</td>
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<tr>
<td>1 Analyze and interpret available data in the context of enhancing athletic performance and health.</td>
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<tr>
<td>2 Design nutrition strategies for active individuals and populations applying the principles of energy metabolism.</td>
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<tr>
<td>3 Explain how energy is stored in skeletal muscle and other tissues.</td>
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<td>4 Describe oxygen transport in exercise and training.</td>
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<td>5 Evaluate and interpret factors influencing substrate use and exercise metabolism data.</td>
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<td>6 Evaluate factors that contribute to exercise-induced fatigue.</td>
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<tr>
<td>7 Describe the effects of nutrition and exercise on health and performance.</td>
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<tr>
<td>8 Explain the use of carbohydrates during exercise training, competition, and recovery.</td>
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<tr>
<td>9 Explain the use of fat during exercise training, competition, and recovery.</td>
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<tr>
<td>10 Explain the use of protein and amino acids during exercise training, competition, and recovery.</td>
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<td>11 Describe vitamin and mineral requirements for training and exercise.</td>
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<td>12 Describe the potential risks of excessive vitamin and mineral supplementation on health and performance.</td>
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<tr>
<td>13 Describe antioxidant function in relation to exercise, recovery, and long-term training adaptations.</td>
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<td>14 Describe the efficacy of vitamin and mineral supplementation on health and performance.</td>
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<tr>
<td><strong>B Fueling for Training and Competition</strong></td>
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<tr>
<td>1 Design nutrition plans for individuals and groups incorporating exercise-specific recommendations for carbohydrates.</td>
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<tr>
<td>2 Evaluate special issues related to carbohydrates.</td>
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<tr>
<td>3 Advise clients regarding fat consumption within a nutrition plan.</td>
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<tr>
<td>4 Evaluate special issues related to fat intake, fat storage, and health.</td>
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<tr>
<td>5 Design nutrition plans for individuals and groups incorporating exercise-specific recommendations for protein.</td>
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<td>6 Evaluate special issues related to protein.</td>
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<tr>
<td>7 Evaluate effects of inadequate vitamin and mineral status on health and performance.</td>
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</tbody>
</table>
8. Design nutrition strategies for individuals and/or groups for pre-workout and pre-competition, during training and competition, and for recovery following training and competition.
9. Observe athletes during training session for movement patterns, energy expenditure, training patterns, fatigue, fueling habits, and hydration habits.
10. Evaluate products, foods, and meals in accordance with compliance and permissibility rules of governing body.

### C Fluid and Electrolyte Balance

1. Assess fluid and electrolyte balance in training and performance.
2. Evaluate the effects of dehydration, over-hydration, hypothermia, and hyperthermia on training and performance.
3. Discuss the risks of hyponatremia on training and performance.
4. Design strategies for maintaining hydration and electrolyte balance before, during, and after exercise.
5. Evaluate fluid intake for training, performance, and recovery.
6. Evaluate the effects of environmental conditions on hydration status.

### D Sports Foods and Supplements

1. Evaluate dietary supplement use.
2. Evaluate supplements and ergogenic aids using evidence-based analyses (e.g., effectiveness, quality control, safety, and legality).
3. Advise clients regarding supplements and ergogenic aids using evidence-based analyses (e.g., effectiveness, quality control, safety, and legality).
4. Evaluate drug supplement, and nutrient interactions.
5. Demonstrate knowledge of rules and regulations of athletic governing bodies regarding banned drugs and restricted substances.
6. Evaluate beverages for efficacy and application during training, competition, and recovery.
7. Evaluate the effect of supplemental products on hydration status.
8. Evaluate carbohydrate supplement products for training, performance and recovery.

### 2 Clinical Sports Nutrition

#### A Energy Balance and Availability

1. Describe energy balance (energy intake and expenditure) in active individuals and special populations.
2. Design weight maintenance strategies for exercise and training.
3. Evaluate the role of aerobic training and strength training in management of body weight.
4. Conduct nutrition assessments for active individuals and special populations.
5. Evaluate nutrition status for active individuals and special populations.
6. Conduct body composition assessments on active individuals and special populations.
7. Evaluate body composition values and goals.
8. Estimate total energy expenditure in active individuals and special populations.

#### B Weight Management

1. Design weight loss strategies for active individuals and populations.
2. Design weight loss strategies for specific sports.
3. Design nutrition strategies for modifying weight, lean mass, and strength.
4. Evaluate the efficacy and safety of popular diets for weight management, health, and performance.
## C Special Populations

1. Design nutrition strategies for individuals and/or groups for recovery from sports injuries or overtraining.
2. Apply behavior modification coaching and counseling techniques.
3. Design nutrition strategies for active individuals with chronic disease risks.
4. Design nutrition strategies for active individuals exhibiting signs and symptoms of the female athlete triad (disordered eating, amenorrhea, bone mineral loss).
5. Design nutrition strategies for active individuals who are vegetarians or vegans.
6. Design nutrition strategies for active individuals with acute or chronic illness and/or injury.
7. Design nutrition strategies for active children, adolescents, and young adults.
8. Design nutrition strategies for active aging adults and the elderly.
9. Design nutrition strategies for active individuals with food allergies, sensitivities, or intolerances.

## D Disordered Eating

1. Identify athletes with sub-clinical disordered eating, clinical eating disorders, and related high risk factors.
2. Describe impact of disordered eating and eating disorders on health, training, and performance.
3. Educate individuals, coaches, and teams on risk factors associated with disordered eating, eating disorders, and distorted body image.
4. Assess nutritional needs based on disordered patterns.
5. Develop individualized nutrition goals, meal plan, and menu patterns.
6. Apply behavior modification coaching strategies and counseling techniques.
7. Contribute to monitoring of disordered eating symptoms and make recommendations for return to sport.
8. Refer individuals to other professionals as needed.
9. Participate as a member of a multi-disciplinary treatment team.

## 3 Nutrition Operations and Management

### A Food and Beverage Management

1. Design nutrition strategies for individuals and/or groups for grocery shopping and meal/snack preparation/selection.
2. Coordinate food production and distribution such as developing and managing training table menus and catering.
3. Coordinate nutrition for domestic and/or international travel for individuals and teams.
4. Prepare recovery foods and meals for individuals and teams.
5. Analyze training table menu items as it relates to an athlete's nutritional requirements.

### B Nutrition Administration

1. Design nutrition assessment and education protocols as part of a multi-disciplinary team.
2. Educate athletes, professionals, and the public through social media outlets.
3. Design, track, and document measurable outcomes of nutrition services.
4. Contribute to facility design to facilitate and encourage nutrition behaviors.
5. Manage department budget for equipment, meals, supplements, and staff.