

Course discipline/number/title: PHED 1191: Strength, Agility and Quickness Training for Volleyball and Soccer Athletes

A. CATALOG DESCRIPTION

1. Credits: 1
2. Hours/Week: 2
3. Prerequisites (Course discipline/number): None
4. Other requirements: None
5. MnTC Goals (if any): NA

B. COURSE DESCRIPTION: This course is designed to train the soccer and volleyball athlete techniques in strength, agility, and speed to prepare for the upcoming sport season. The student will also be exposed to basic anatomy/physiology principles regarding warm up, stretching, overuse injury prevention, and body musculature. Proper biomechanics education will be provided for jumping, hitting, pivoting, and sprinting activities as they relate to their respective sports.

C. DATE LAST REVISED (Month, year): February, 2021

D. OUTLINE OF MAJOR CONTENT AREAS:

1. Warm-up techniques specifically for the overhead athlete which will include biomechanics training on how to prepare for external rotation with extension such as used during attacking and serving.
2. Flexibility training that prepares both the sprinting athlete for safe and effective explosive movement on the court and field, including pre- and post-flexibility principles in dynamic and static stretching.
3. Safe and effective plyometric, speed, agility, and quickness training that prepare the volleyball and soccer athlete for reactive and quick lateral movement, explosive acceleration forward and backward, and safe deceleration.
4. Safe weightlifting techniques that utilize Olympic weightlifting systems and serve to increase total body strength, balance, and stability using simple and complex joint movement. For example, during triple extension in volleyball the athlete applies force with feet against the ground extending the hips, knees, and then ankles.
5. Running and jumping mechanics training to minimize the athlete's predisposition to ACL, MCL, and PCL tears, ankle sprains, and lower lumbar spine injury during the acceleration and deceleration phases of landing, transitioning, and pivoting on the court and field.
6. Shoulder "pre-habilitation" for the overhead athlete using physical therapy principles for rotator cuff strengthening (e.g., internal and external rotation, shoulder flexion, scapular range of motion, pectoralis stretch, shoulder abduction).
7. Knee "pre-habilitation" for the pivoting and jumping athlete to prevent Patella Femoral Pain Syndrome (i.e., "runner and jumpers knee") using physical therapy principles for strengthening quadriceps and hamstrings (e.g., patellar mobility training, VMO isometrics, un-resisted and resisted knee and hamstring extension exercises).
8. Ankle "pre-habilitation" (for soccer and volleyball players who use acceleration, pivoting and jumping) to prevent ankle sprains using physical therapy principles for strengthening the ankle joint (Achilles, tibialis anterior and posterior strengthening, wobble board, and ankle range of motion resisted).
9. Core stability training to prevent lower lumbar spine injury during hyperextension when attacking and serving, and during the volleyball approach, an attacker that has trained their core is better able to transfer power through their limbs as they jump to attack.

E. LEARNING OUTCOMES (GENERAL): The student will be able to:

1. Demonstrate proper biomechanics of the arm swing to increase hitting and throwing efficiency, and decrease shoulder injury.
2. Demonstrate a proper warm up that serves to prepare the athlete for a dynamic stretching routine.
3. Demonstrate a pre-exercise, sport specific dynamic stretching routine that promotes flexibility for overhead extension, spinal extension and flexion, and safe range of motion through the hip, knee and ankle joints.
4. Demonstrate a post exercise, sport specific static stretching routine that translates to increased flexibility serving to decrease chances of injury.
5. Demonstrate proper Olympic weightlifting techniques that serve to increase strength and stability.

- E. LEARNING OUTCOMES (GENERAL): The student will be able to: Continued. . .
6. Demonstrate safe and effective plyometric, speed, and agility training techniques that serve to increase vertical leap and explosiveness.
 7. 7. Demonstrate proper jumping and landing mechanics.
 8. Execute an extensive ankle, knee, shoulder and core strengthening program.
 9. Understand and relate the importance of self-discipline through personal responsibility, commitment to team goals and outcomes, and respect for coaching personnel, teammates, and the community they represent during each competition.
- F. LEARNING OUTCOMES (MNTC): NA
- G. METHODS FOR EVALUATION OF STUDENT LEARNING: Methods may include but are not limited to:
1. Attendance
 2. Fitness testing
 - a) 5 weeks
 - b) 10 weeks
 - c) 15 weeks
 3. Performance Activity Log
 4. Written Exams
- H. RCTC CORE OUTCOME(S). This course contributes to meeting the following RCTC Core Outcome(s): Critical Thinking. Students will think systematically and explore information thoroughly before accepting or formulating a position or conclusion.
- I. SPECIAL INFORMATION (if any): None