

SYLLABUS

Certified plyometric Specialist (CPLS):

Brief Description: Plyometric exercise refers to as jump training. It is the ability to combined limitstrength, Starting strength, explosive strength, dynamic balance and flexibility all together in a single form exercise. Plyometric training generally use to achieve superior performance in sports

Certifications: MIHFM certification

Minimum age: 18 Years and above

Personal Attributes: The job requires individual to have good communication skills, time management skills and ability to understand the body language of the trainees. The job requires individuals to possess key qualities such as self-discipline, confidence, maturity, patience, compassion, active listening, time management, empathy, language proficiency.

Duration of course: Not less than 15 hrs

Course Fees	Rs 3000/- (Three Thousand)
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Job Role: Sports coach, Gym trainer, Fitness Trainer, Fitness trainer role in all sports and game.

Requirement/ Eligibility: For admission in the course it is suggested/desired that the candidate should have passed 10th standard/ Secondary School Certification from a recognized board or equivalent, with two years of working experience.

Affiliation: SPFL-SC

Opportunities: Sporting club, Sports academy, Health club

PLYOMETRIC SYLLEBUS

A) History of Plyometric: Plyometric actually a form of “Jump Training” or “Stretch-shortening Cycle” **started** from 1980. 1980s – plyometrics applied to many sports and games incl. basketball, volleyball, tennis, football, etc. In 1990s, Germany, Holland applied plyometric in field hockey. In mid-1980s, Indonesia, Sweden in badminton.

B) Definition: Plyometrics -> plyo = increases / distances + metric = measurable => measurable increases (as a function of speed). Plyometrics essential for athletes who jump, lift, throw - require agility + power.

C) Physiology of Plyometric: Musculo-skeletal system provides movement, posture Muscles contract and stretch. eccentric, concentric , isometric , Extrafusul (standard muscle fibers that allow movement), Intrafusul (muscle spindles) are few basics but important thing .

D) Muscle Physiology in Training:

We should have few important information about muscle physiology like - eccentric contractions are immediately followed by concentric contractions , Nerve signals command immediate concentric contraction , Recovery or use of potential energy is partial , Plyometrics focuses on how to further shorten this amortization phase.

E) **AMORTIZATION PHASE (Stretch-Shortening Cycle):** Amortization originally called “ Stretch-Shortening Cycle or SSC ” there are two physiological factors contribute to SSC – stretch shortening of muscle tissue .

Muscle elasticity (stretching) is responsible for SSC generating more power than a simple concentric muscle contraction.

F) **Factors responsible for SSC; Muscle elasticity, Stretch reflex:** the three factors are *Rapid stretching, Rapid contraction, Stretch reflex.*

G) **Stretch or myotatic reflex:** Stretch or myotatic reflex responds to speed of muscle stretch

Reason 1: direct connection from / to sensory receptors in muscles and cells in *spinal cord,*

Reason 2: other reflexes are slower than stretch reflex. Faster the muscle stretch => greater the muscle contraction. Contraction = strength.

H) **Power Training:** Scientific research shows that , Traditional way to improve Power – heavy weight training , plyometrics + dynamic weight training increases explosive power , Maximal power output , Advanced variation: 5-5-5 rules etc .

I) **Training Technologies:** Few training procedure will help for better performance , we need dip knowledge about this like - Weight Training , Special LIGHT Resistance Training , Psychological Support, Medical Support, Diet Management, Nutrition and Supplementation , Alternative Therapies, Sport-specific Skills .

J) **Flexibility:** Plyometrics demands flexibility which can be increased thru static and dynamic stretching

K) **Anaerobic Training:** Plyometric training is anaerobic – in ATP-CP energy pathway.

L) **Power Training Considerations:** Improvement of **Power** training always depend on these factors - Physiological, Physical, Mental, Environmental, and Medical.

M) **Energy Metabolism:** 4 types of physical activity according to energy systems used they are - Strength Power, Sustained Power , Anaerobic Power Endurance , Aerobic Endurance .

N) **Types of muscle fiber:** There are two types of muscle fibers -

Fast twitch - Contract quickly. Explosive – high intensity, short duration workloads. Recruited in large numbers only for strength / power demand. Exhaust quickly .

slow twitch - Steady, low intensity, rhythmic, repetitive contractions for endurance workloads .

O) **Muscle roles :** In every movement or any work , attached muscle or muscle group have few activity individually or in a group - Prime Mover , Assistant Mover , Antagonist , Stabilizer , Synergists .

P) Strength Categories: Through plyometric training we get also benefitted of our certain goal like - Limit Strength , Absolute strength , Speed Strength , Anaerobic Strength , Aerobic Strength, Traditional Strength Classification. We should learn this method to input members training exercise program .

Q) The Strength Curve :

R) Equipment : equipment use in plyometric training program - Cones 8 to 12 inches high , Boxes/steps 6 – 12 – 18 – 24 – 30 – 36 inches high , Hurdles/barriers 6 – 12 – 18 – 24 – 30 – 36 inches high , Stairs – staircase or steps in stadium or building , Medicine Balls 5 lbs ++ , Angled boards , BOSU , Trampolines , Swiss Balls , Adjustable Ladders , Wobble Boards , Skipping Ropes , Dynamic / Resistance Tubes , Reaction Balls etc.

S) Training Eligibility: For Safe and scientific FITNESS ASSESSMENT, we need – analysis of fitness levels, medical condition, fitness goals, sport specific information, biomechanical skills, needs.

T) Skills developed through Plyometrics: plyometric is a very goal specific training program -Starting speed, Acceleration, Directional change, Vertical Jumps, Horizontal Jumps etc.

U) Plyometric Program Design: process of programming for individual or game specific group training .

V) Glossary (exercises name) :