COURSES IFBB

MASTER COURSE FITNESS TRAINING AND CROSS TRAINING DEGREE

MODULE I

Topic 1: Basic concepts of the skeletal muscle system

- Structure and function of the skeletal system (bones)
- Structure and function of the articular system
- Structure and function of the muscular system
- Musculoskeletal adaptations to weight training
- Musculoskeletal disorders

Topic 2: General Physiology

- The bone system
- The muscular system
- The cardiovascular system
- Bioenergetics
- The foundations of the sensory motor system
- The foundations of the endocrine system

Topic 3: Exercise Physiology

- The motor control and proprioception system during exercise
- Metabolic, cardiovascular, pulmonary and endocrine adaptations and responses to weight training
- The safety of weight training: hemodynamic factors and cardiovascular incidents
- Physiological aspects and safe prescription of bodybuilding exercises for special populations

Topic 4: Muscle skeletal injuries

- Definition
- Mechanics of injuries Principles of injuries
- Lower limb injuries
- Upper limb injuries
- Trunk injuries

Topic 5: Basic concepts of anthropometry

- Definition
- Body size
- Somatotype
- Variations of the human body and its relations with the bodybuilding machines

MODULE II

Topic 6: Kinesiological foundations of bodybuilding

- Muscle function
- Classification of muscles
- Factors that affect muscle function
- Muscle balance
- Tables of muscle actions
- Specific movements and muscles for articulation
- Movement-specific joints and muscles

Topic 7: Biomechanics foundations of bodybuilding

- Kinematics: the description of the movement
- Kinetics: Analysis of forces
- Applications of biomechanics in weight training
- Work and muscle power
- Curves
- Classification of bodybuilding exercises
- Mechanical conditions for the development of strength and hypertrophy
- Material in resistance training
- Training machines; joint biomechanics and bodybuilding methods

Topic 8: Kinesiology and biomechanics applied to bodybuilding exercises

- Applied kinesiology
- Main bodybuilding exercises

MODULE III

Topic 9: Basic nutrition

- Metabolism and energy balance
- Carbohydrates
- Proteins
- Fats
- Vitamins, minerals and water.
- Nutritional pyramid for performance
- Natural anabolic nutrition
- Basic sport nutrition
- The supplements
- The 20 best foods
- The recovery

MODULE IV

Topic 10: Neurological bases of functional training

- Central Nervous System
- Peripheral nervous system
- Autonomic nervous system
- Neuromuscular control, proprioception and balance.
- Proprioceptors
- Ruffini Corpuscle
- Pacinian Corpuscle
- Golgi Tendinous Organ
- Muscle receptors
- Touch Receivers

Topic 11: Middle zone or Core

- Abdominal Zone (Abdominal Rectum, Internal Oblique, External Oblique, Lumbar Square,
- Lumbar area
- Exercises: (Short Swim, Open and Close, Hunting Dog, Tantrum, Lumbar Hyperextension, Abdominal Crunch, Leg Raises, Obliques On The Floor, Front Plank or Bridge, Side Plank, Bosu)

Topic 12: Methodology of the main exercises in functional training

- Functional training (Cardiovascular / Respiratory Resistance, Resistance (Stamina), Strength, Flexibility, Power, Speed, Coordination, Agility, Balance, Accuracy
- The warming up
- The Training Session (Power, Jump, Throw, Olympic Movements, Transfer, Endurance Force
- The force
- The "Functional" Controversy,
- Cross Training exercises (Squat, bench press, pull-ups, but dead, initiation of Olympic weightlifting, jerk and pup jerk movements, box jump, wheel roll, others)

Topic 13: Personalized physical activity

- Aerobic Training
- Activities that meet the demands of aerobic work
- Exercise
- Intensity
- Low Intensity Zone
- Moderate Intensity Zone
- Moderate / High Intensity Zone.
- High Intensity Zone
- Cardiovascular Training Guide
- Rest
- Starting over
- Establishing a Program
- Program: Basic Conditions
- Asphalt
- Free running track
- Cross Country
- Grass
- Sand
- Anaerobic training
- Anaerobic Training Program
- Weight Training Program for First Weeks
- Warming up
- Structure
- Stretching
- Method
- Composition of stretching routine
- Muscular and respiratory relaxation
- Basic Relaxation Technique
- Breathing technique
- Questionnaires
- Waist / Hip Ratio
- Medical history
- Health Questionnaire
- General information
- Physical Fitness Questionnaire
- Health and conditioning records

MODULE V

Topic 14: The science of revitalization

- Introduction
- The science of revitalization
- Life expectancy
- Age: Synonymous Of Chronic Disease?
- Aging
- Anabolism-catabolism

- Hormonal secretions
- Work activity
- The Ideal Graph

Topic 15: Symptoms of aging

- Dehydration
- Water quality
- Aging of the Central Nervous System
- Morphological changes
- Changes in Tissues
- Functional Changes
- Loss of Bone Density
- Cartilage Aging
- Loss of lean muscle mass
- The muscle
- Morphological alterations
- Structural Alterations
- Metabolic Aging
- Neuromuscular disorders
- Muscle aging

Topic 16: Anti-aging medicine and technology

- Anti-Aging Medicine And Bioengineering
- Non-Aggressive Technologies: Prevention
- The principles of anti-aging nutrition

MODULE VI

Topic 17: Introduction to pedagogy

- Pedagogy: Communication (General and specific objectives; communication is not Easy; Obstacles to Active Listening; elements of verbal communication; Teaching – Learning and Progression Process)
- Media (foundations, processes, communication elements, different ways of elaborating messages and their pedagogical use)