

GURUKUL EDUCATIONAL AND RESEARCH INSTITUTE

CERTIFICATE IN GYM INSTRUCTOR

Subject and Syllabus



2022-23

Syllabus

CERTIFICATE IN GYM INSTRUCTOR

DURATION:- 6 MONTH

Theory

906 ANATOMY PHYSIOLOGY AND SPORTS MEDICINE

Skeleto-muscular System

- Introduction to Bone and Muscles
- Structure of bone and Muscles
- Functions of bone and Muscles
- Types of bone and Muscles
- Muscle contraction
- Types and Classification of Joints
- Anatomy of Joint
- Effect of exercise on skeleto- muscular system

Cardio respiratory systems

- Athletes Heart
- Supply of blood to the organs
- Carrying oxygen
- Blood pressure (systolic/ Diastolic)
- Respiration mechanism
- VO2 Max
- Tidal Volume
- Lung capacity
- Respiratory rate
- Effect of exercise on cardio-respiratory system

Injuries and their management

- Types of injuries (Visceral, soft tissue and musculo- skeletal injuries, body parts)
- Low back problems and management stretching and strengthening exercises for Back problems

- Common & Specific Sports Injuries
- Immediate and Later Management of Injuries

First aid

- Definition
- RICE therapy
- Other Methods, Prevention and Care of Injured Athlete
- Importance

Postural Deformities

- Types
- Causes
- Remedies & Prevention

Rehabilitation and Therapeutic Modalities

- Hydro-collateral pack (Hot and Cold)
- Hydrotherapy (Whirlpool)
- Diathermy
- Ultrasound
- Electrical muscle Stimulation
- Combination of Ultrasound and Electrical muscle stimulation
- Cryokinetics, cold spray Contrast bath, paraffin bath, infrared and ultraviolet rays.
- Rehabilitative exercises

Nutrition

- Food content
- Basic principles
- Balance diet
- Calories & diet
- Exercise & diet
- Supplements

907 BIOMECHANICS & KINESIOLOGY:

Introduction

- Definition

- Application of Bio-mechanics
- Analysis of Fundamental Movements and skills

Lever

- Types of lever
- Principles of Lever

Motion

- Types
- Laws of motion

Equilibrium

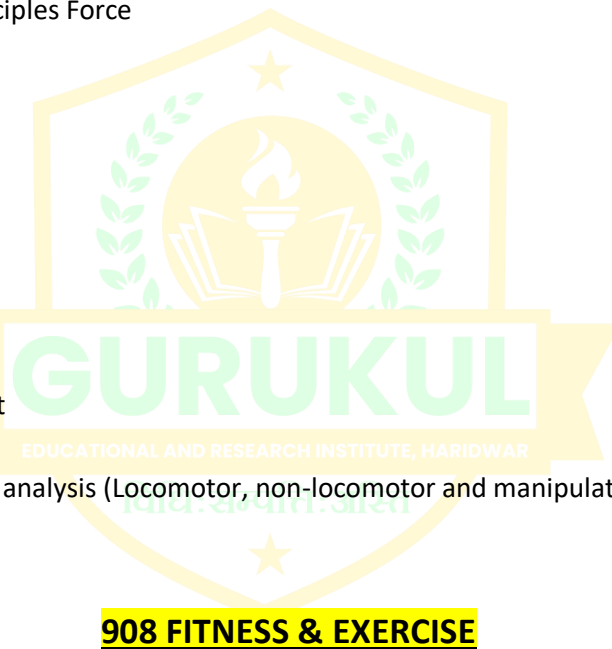
- Equilibrium and its principles Force

Force

- Friction
- Center of gravity

Kinesiology

- Meaning and definition
- Types of movement
- Plane & axial movement
- Muscular analysis
- Posture and Movement analysis (Locomotor, non-locomotor and manipulative)



908 FITNESS & EXERCISE

Unit I: Physical fitness factors

- **Cardio vascular endurance**
How to develop C. V.
endurance through wt.
training (Circuit training) Methods of developing Cardio vascular endurance
Aerobic & Anaerobic Capacity
- **Muscular Strength**
Type of Strength
Factors affecting Strength

Methods of Improving Strength

- **Muscular endurance**
Meaning of Muscular endurance
Different Muscles & Muscular endurance
Repetitions – Sets & Improvement
- **Flexibility Meaning of Flexibility**
Importance of Flexibility
Development & Maintenance of Flexibility
- **Body composition (% Fat)**
Body Mass Index (BMI)
Controlling % Fat

Unit II: Motor fitness factors

Unit III: Exercises

Effect of exercise on different systems



Definition of training and its Principles

Load and Adaptation

- Factors of load
- Load & adaptation
- Over load
- Recovery

Scheduling (Short term & long term training)

- Micro Cycle
- Meso Cycle
- Macro Cycle
- Total Load & Recovery
- Total sets & Reps
- Total exercises

Training Methods:

- Circuit Training Method
- Station Training Method
- Plyometric Training Method

Training for different factors

i. Cardio vascular endurance

- How to develop C. V. endurance through wt. training (Circuit training)
- Methods of developing Cardio vascular endurance
- Aerobic & Anaerobic Capacity

ii. Muscular Strength

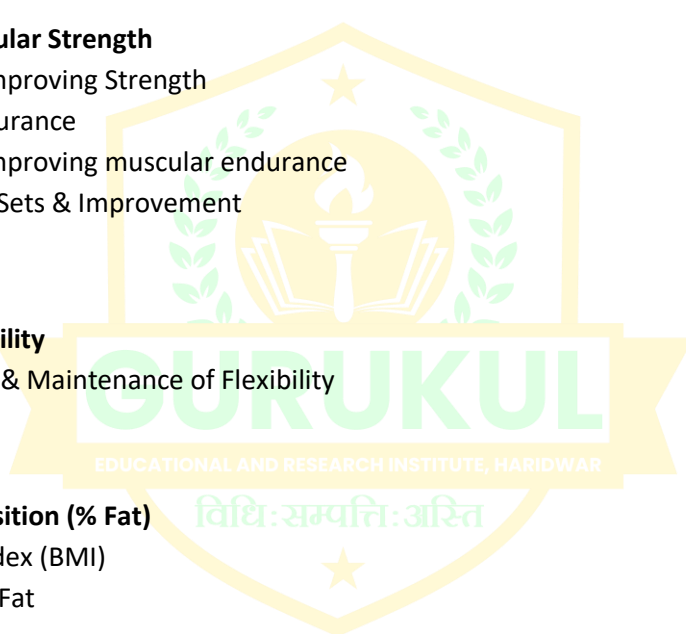
- Methods of Improving Strength
- Muscular endurance
- Methods of Improving muscular endurance
- Repetitions – Sets & Improvement

iii. Flexibility

- Development & Maintenance of Flexibility

i) Body composition (% Fat)

- Body Mass Index (BMI)
- Controlling % Fat



910 MANAGEMENT, TEST, MEASUREMENT AND EVALUATION:

Communication skills and appearance

Public relation Supervision and administration

Facility management

- Introduction to exercise equipments
- Types of exercise equipments
- Placement of equipments
- Handling and Utilization of equipments

Counseling

Test, Measurement and Evaluation

Concepts of tests

- Teacher made tests
- Paper pencil tests

Fitness testing

- Physical testing
- Physiological testing
- Anthropometric measurements

PRACTICAL

1. Warming up and cooling down:

- General exercise
- Stretching exercise
- Specific exercises
- Conditioning exercises

2. Exercises:

3. Basic Concept:

4. Prime movers:

5. Various training methods for fitness:

6. Training Programme:

7. Daily Analysis, Measurement and Record of athlete

