

SCIENCE OF SPORTS TRAINING & COACHING

Course Code

PE-221

Credit Hours

3 (2-1)

Course Description:

This course focuses on the scientific principles and methodologies in sports training and coaching. Students will learn about training techniques, performance evaluation, periodization, and psychological and physiological preparation. The course combines theory with practical application, ensuring students are well-equipped to coach athletes at different levels.

Course Learning Outcomes (CLOs):

By the end of this course, students will be able to:

1. Understand the fundamentals of sports training and its underlying scientific principles.
2. Apply methods of physical and technical preparation in training sessions.
3. Evaluate athletes' performance through modern testing methods.
4. Develop comprehensive training programs, including periodization.
5. Implement psychological techniques to enhance athletic performance.

Course Content:

Week 1-2

Introduction to Sports Training

- History and Development of Sports Training Science
- Role of Sports Coaches and Trainers
- Basic Concepts: Load, Adaptation, Recovery, and Performance

Week 3-4

Principles and Methods of Training

- Principles of Sports Training: Progression, Specificity, and Individualization
- Types of Training: Strength, Speed, Endurance, Flexibility, and Skill
- Methods for Skill Development
- **Practical:** Designing a Training Plan for Specific Skill Development

Week 5-6

Components of Physical Fitness

- Definition and Role of Aerobic and Anaerobic Fitness
- Functional Training for Sports
- Testing Physical Fitness
- **Practical:** Conducting Fitness Assessments and Evaluations

Week 7-8

Periodization and Training Planning

- Introduction to Periodization: Macrocycles, Mesocycles, and Microcycles
- Long-Term Athlete Development Models
- Competition Preparation and Tapering
- **Practical:** Creating a Periodization Plan for a Specific Sport

Week 9-10

Psychological Preparation and Coaching Techniques

- Psychological Factors in Sports Performance
- Motivational Strategies for Athletes
- Leadership Styles and Communication in Coaching
- **Practical:** Role-Playing Different Coaching Scenarios

Week 11-12

Injury Prevention and Recovery

- Principles of Preventing Sports Injuries
- Warm-Up and Cool-Down Routines
- Recovery Techniques: Stretching, Massage, Hydrotherapy
- **Practical:** Demonstrating Injury Prevention and Recovery Strategies

Week 13-14

Performance Analysis in Sports

- Modern Tools and Technology in Training Analysis
- Evaluating Athletic Performance with Metrics and Video Feedback
- Case Studies: Performance Analysis in Professional Sports
- **Practical:** Performance Analysis Using Software and Recording Techniques

Week 15-16

Final Assessments and Practical Demonstrations

- Comprehensive Review of Training and Coaching Strategies
- Individual Presentation of a Training Program Design
- Practical Demonstration of Training Techniques

Teaching and Learning Methods:

- **Lectures:** Core principles with multimedia resources
- **Workshops:** Interactive sessions on coaching strategies and methods
- **Practical Exercises:** Hands-on coaching and training practice
- **Case Studies:** Analyzing real-world scenarios in coaching and performance
- **Group Projects:** Collaborative training program development

Recommended Books (APA Style):

1. Bompa, T. O., & Buzzichelli, C. (2019). *Periodization: Theory and methodology of training* (6th ed.). Human Kinetics.
2. Martens, R. (2012). *Successful coaching* (4th ed.). Human Kinetics.
3. Weinberg, R. S., & Gould, D. (2018). *Foundations of sport and exercise psychology* (7th ed.). Human Kinetics.
4. Brown, L. E. (Ed.). (2014). *Strength training* (2nd ed.). National Strength and Conditioning Association.
5. Joyce, D., & Lewindon, D. (2014). *High-performance training for sports*. Human Kinetics