



# DAVANGERE UNIVERSITY

PHYSICAL EDUCATION AND SPORTS SCIENCES.

DEGREE COURSE

BA, B.Com, BSc, BBA and BCA

Physical Education

SEMESTER-V

SYLLABUS

Paper Code: HCPE-105

Total-75 Hrs

Marks:80+20=100

Title of the Paper: Kinesiology and Biomechanics

## Objective

1. To understand the fundamental concepts and significance of kinesiology and biomechanics in physical education and sports performance.
2. To develop knowledge of anatomical and mechanical principles related to human movement, including joints, levers, and muscle contractions
3. To apply principles of motion, force, and posture to improve athletic efficiency and prevent injuries
4. To analyse sports movements through mechanical concepts such as linear kinetics, kinematics, equilibrium, and projectile motion.

## Unit I: Introduction Kinesiology and Biomechanics

15Hrs

- Meaning, Definition of Kinesiology and Biomechanics
- Need and important of Kinesiology and Biomechanics
- Objectives of Kinesiology and Biomechanics
- Scope of Kinesiology and Biomechanics in the field of physical education

## Unit II: Fundamental concept of Anatomy

15Hrs

- Joint in the Human body, Movement around joints
- Muscle, types of Muscle contraction
- Lever meaning, types of levers and application to human body
- Movement around Axes and Plane

## Unit III: Principles and Posture

15Hrs

- Motion: -meaning, types and application of motion in sports
- Newton's Law of motion, Meaning, types and application in sports
- Force: -Meaning, definition, types and its application to sports activities
- Posture:- Mechanical concept of good posture and its use in sports

Unit IV: Mechanical Concepts

15Hrs

- Projectile: factor influencing projectile trajectory
- Fundamental concept of Equilibrium, Stability, Centre of gravity, Gyration
- Linear Kinematics- Distance, Displacement, speed and velocity, acceleration
- Linear Kinetics- Inertia, Mass, Momentum and Friction.

**PRACTICAL**

**Ball Game:** Volleyball, Basketball, Netball (Any one).

15Hrs

Reference

- Hall, S. J. (2018). Basic Biomechanics (8th ed.). McGraw-Hill Education.
- Hay, J. G., & Reid, J. G. (1988). Anatomy, Mechanics, and Human Motion. Prentice Hall.
- Knudson, D. (2007). Fundamentals of Biomechanics (2nd ed.). Springer.
- Kreighbaum, E., & Barthels, K. M. (1996). Biomechanics: A Qualitative Approach for Studying Human Movement (4th ed.). Allyn & Bacon.
- Enoka, R. M. (2008). *Neuromechanics of Human Movement* (4th ed.). Human Kinetics.
- McGinnis, P. M. (2013). *Biomechanics of Sport and Exercise* (3rd ed.). Human Kinetics.
- Nigg, B. M., & Herzog, W. (2007). *Biomechanics of the Musculo-skeletal System* (3rd ed.). Wiley.
- Zatsiorsky, V. M. (2002). *Kinetics of Human Motion*. Human Kinetics.

Activities for Internal Assessment

Activities and Marks Dividend Internal Assessment for Both theory and Practical		
	Internal Assessment	20 Marks
1.	2 Tests	5+5=10
2.	1 Assignment /seminar/project	5 marks
3.	Attendances	5 marks

Registrar  
Davangere University  
Shivangotri, Davangere

  
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Faculty of Education, Davangere University,  
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## PHYSICAL EDUCATION AND SPORTS SCIENCES.

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### DEGREE COURSE

BA, B.Com, BSc, BBA and BCA

Physical Education

SEMESTER- V

SYLLABUS

Paper Code: HCPE-108

Total-75Hrs

Marks:80+20=100

Title of the Paper Research and Stastics

#### Objectives:

- To familiarize the student with the dimensions and methods of research.
- To orient the student to make an informed choice from the large number of alternative methods and experimental designs available.
- To analyse an event or process or phenomenon to identify the cause-and-effect relationship
- To enable the student to present a good research proposal.
- To familiarize the student with the nature of research and scientific writing.

#### UNIT -1 RESEARCH

15 Hrs.

- Meaning, definition and important of Research
- Need and Objectives of research in physical education
- Scope of Research in physical Education
- Types of Research

#### UNIT- 2 Research criteria's 15Hrs

- Steps in research
- Criteria of selection of good research
- Qualities of good researcher
- Population and sampling techniques

UNIT-3 BASIC OF STASTICAL ANALYSIS 15Hrs

- Meaning, Definition and nature of Statistics
- Need and Importance of Statistics in Physical Education
- Raw data, Class-Intervals, Class Distribution and Construction of tables
- Graphical Representation: - Bar diagram, Histogram, Frequency polygon.

UNIT-4 STASTICAL MODELS IN EDUCATION 15Hrs

- Meaning and Definitions of Central Tendency, Mean, Median and Mode
- Advantages and Disadvantages of Mean, Median and Mode
- Calculation of Mean, Median and Mode of Grouped and Ungrouped Data
- Calculation of Standard Deviation and Co-efficient of Correlation.

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**PRACTICAL Indigenes games:**Atyapatya, tug of war and fluke games.15Hrs

**References:**

- Best, J.W. (1963). Research in education. U.S.A.: Prentice Hall.
- Bompa, T. O. &Haff, G. G. (2009). Periodization: theory and methodology of training, 5th ed.Champaign, IL: Human Kinetics.
- Brown, L. E., &Ferrigno, V. A. (2005). Training for speed, agility and quickness, 2nd ed. Champaign, IL: Human Kinetics.
- Brown, L.E. & Miller, J., (2005). How the training work. In: Training Speed, Agility, and Quickness. Brown, L.E. &Ferrigno, V.A &Ferrigno, V.A., eds. Champaign, IL: Human Kinetics.
- Carl, E. K., & Daniel, D. A. (1969). Modern principles of athletes training. St. Louis: St. Louis's Mosby Company.
- Clark, H. H., & Clark, D. H. (1975). Research process in physical education. Englewood cliffs, New Jersey: Prentice Hall, Inc.

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## PHYSICAL EDUCATION AND SPORTS SCIENCES.

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BA, B.Com, BSc, BBA and BCA

Physical Education

SEMESTER-VI

SYLLABUS

Paper Code: HCPE-107

Total-75Hrs

Marks:80+20=100

Title of the Paper: - Sports Injuries and Management

### Objective

1. To understand the types, causes, and nature of common sports injuries.
2. To learn injury classification and apply basic first aid and management techniques.
3. To explore injury prevention strategies including warm-up, protective gear, and physiotherapy.
4. To study rehabilitation methods and psychological aspects for effective athlete recovery.

Unit I: Introduction to Sports Injuries

15 Hrs.

- Meaning, Definition of sports injuries
- Common sports injuries in sports and games
- Causes and prevention of sports injuries
- Types of injuries: acute vs. chronic, Intrinsic, and extrinsic

Unit II: Injury Classification and Management

15Hrs

- Classification: soft tissue injuries (sprains, strains, contusions) Hard tissue, fractures, dislocations
- Symptoms and treatment for injuries
- On-field sports injuries management (RICE, PRICE, PRINCE principle)
- First aid, strapping and Bandaging technique

Unit III: Prevention and Management

15Hrs.

- Role and important of warm-up and cool-down in sports
- Protective equipment in various games and sports
- Meaning and benefits of physiotherapy, hydrotherapy and cryotherapy
- Common preventive measures for injuries

Unit IV: Rehabilitation and Recovery

15Hrs

- Rehabilitation phases of rehabilitation
- Massage: -Effleurage, Petrissage, Tapotement, Friction, and Vibration
- Return-to-play and re-training guidelines
- Psychological aspects of injury and recovery

**PRACTICAL Indigenes games: Kabaddi, kho-kho** 15Hrs

**Reference**

1. Brukner, P., & Khan, K. (2017). *Brukner & Khan's Clinical Sports Medicine* (5th ed.). McGraw-Hill Education.
2. Prentice, W. E. (2014). *Principles of Athletic Training: A Competency-Based Approach* (15th ed.). McGraw-Hill.
3. Walker, B. R. (2007). *Sports Injuries: Prevention, Diagnosis, Treatment and Rehabilitation*. Lotus Publishing.
4. Wilk, K. E., Reinold, M. M., & Andrews, J. R. (2012). *The Athlete's Shoulder* (2nd ed.). Churchill Livingstone.
5. Norkin, C. C., & Levangie, P. K. (2011). *Joint Structure and Function: A Comprehensive Analysis* (5th ed.). F.A. Davis Company.
6. Houglum, P. A. (2016). *Therapeutic Exercise for Musculoskeletal Injuries* (4th ed.). Human Kinetics.

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Physical Education

SEMESTER-VI

SYLLABUS

Paper Code: HCPE-106

Total-75Hrs

Marks:80+20=100

Title of the Paper: - Scientific Methods of training and test and measurement

### Objectives

1. Enhancement of Physical Fitness
2. Improvement tactical and Strategic
3. Injury Prevention and Health Promotion
4. Assessing Student/Athlete Performance

### Unit I Introduction 15Hrs

- Meaning and definition, type of sports training
- Aim and objective of sports training
- Need and importance of sports training
- Basic principles of sports training

### Unit II Component of physical fitness 15Hrs

- Strength: Meaning and types, importance of strength
- Flexibility: Meaning and importance of flexibility
- Speed: Meaning and importance of speed
- Endurance: Meaning and importance of endurance

### Unit III Test and Measurement 15Hrs.

- Meaning, definition of test, measurement and evaluation in physical education
- Need and important of test, measurement and evaluation
- Criteria of selection of good test
- Aim and objective of test and measurement, evaluation.

Unit: IV Sports skill Test 15Hrs

- Sports Skill test: Mc Donald Soccer test, Russell Lange Volleyball test, Johnson Basketball Ability test
- Knowledge test: meaning, purpose, types of knowledge test
- Psychology test: meaning, purpose and types of psychology test
- Anthropometric test: Height, Weight, Girth, body composition and BMI.

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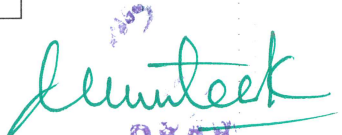
**PRACTICAL BALL GAMES-** Throwball, Hand ball, Football. (any one) 15Hrs

Reference

- **Barrow, H. M., & McGee, R.** *A Practical Approach to Measurement in Physical Education*– A foundational book covering various physical fitness tests and evaluation techniques.
- **Johnson, B. L., & Nelson, J. K.** *Practical Measurements for Evaluation in Physical Education*– Widely used for learning about testing methods and statistical evaluation.
- **Mathews, D. K.** *Measurement in Physical Education*– Focuses on different measurement techniques used in PE and sports sciences.
- **Bompa, T. O., & Haff, G. G.** *Periodization: Theory and Methodology of Training* – A key book on structuring and planning sports training programs.

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## Pattern of Question Paper

Duration – 3 Hours

Max Marks-80

Instructions:

- 1) Answer any Ten Question from Section- A
- 2) Answer any Four Question from Section- B
- 3) Answer any Four Question from Section- C

### Section- A

Answer any Ten of the following Questions in two-three Sentences each

10x2=20

- 1)
- 2)
- 3)
- 4)
- 5)
- 6)
- 7)
- 8)
- 9)
- 10)
- 11)
- 12)

### Section- B

Answer any any four of the following Questions

4x5=20

- 1)
- 2)
- 3)
- 4)
- 5)
- 6)

### Section- C

Answer any any four of the following Questions

4x10=40

- 1)
- 2)
- 3)
- 4)
- 5)
- 6)

Scheme of Internal Assessment

Two Test 5x2= 10 Marks

Attendance 05 Marks

Assignment/Seminar/Project 05 Marks



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