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Department of Physical Education
Semester- IV/V/VI

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SYLLABUS OF DISCIPLINE SPECIFIC CORE PAPERS (DSC)

SEMESTER-4

B.A.-PE-DSC-4 (MINOR)

ATHLETIC CARE AND REHABILITATION

DSC

Sl. No.	Course Title & Code	Credits	Credit Distribution of the Course			Eligibility Criteria	Pre-Requisite of the Course (if any)
			Lecture	Tutorial	Practical		
1.	Athletic Care and Rehabilitation	04	3	0	1	XII Pass	NIL

Objective:

The objective of this course is to provide an understanding and practices to the learners about Athletic Care, Sports Injuries with their management and rehabilitation.

Learning Outcomes:

1. The learners will be able to understand the concept of Athletic Care and Sports Medicine.
2. The learners will be able to comprehend the prevention and safety measures to avoid injuries in sports.
3. The learners will be able to classify the types of injuries in sports with their causes.
4. The learners will be able to apply the skills of first aid and management of sports injuries.
5. The learners will be able to develop rehabilitation programmes for overcoming injuries in sports and also in general.
6. The learners will be able to learn the application of various therapeutic modalities in sports rehabilitation with creativity.

SYLLABUS

CREDITS: 4 [Theory-3, Practical-1]

Theory-45 hours

Practical-30 hours

PART-A: THEORY

Unit-1: Introduction to Athletic Care (10 hours)

- 1.1 Meaning, Definition, and Significance of Athletic Care and Sports Medicine
- 1.2 Principles of injury prevention, Concept of safety measures in games/ sports
- 1.3 Important aspects of Athletic Care- Nutrition, Supplements, Ergogenic Aids, Ethical Considerations, psychological support, etc.

Unit-2: Sports Injuries (8 hours)

- 2.1 Meaning and Definition of Sports Injuries, Causes of Sports Injuries
- 2.2 Classification of Injuries in Sports
- 2.3 Basic concept of Sports Injuries- Sprain, Strain, Fracture, Dislocation, Frozen Shoulder, Tennis Elbow, Golfers Elbow, Shin Splint, Blister, Abrasion, Laceration, Haematoma

Unit-3 Therapeutic Modalities**(8 hours)**

- 3.1 Concept and Significance of Physiotherapy and Therapeutic Modalities in Sports Rehabilitation
- 3.2 Introduction to various Therapeutic Modalities- Steam Bath, Contrast Bath, Wax Bath, Therapeutic Ultrasound, Infrared Lamp, Interferential Therapy Unit, T.E.N.S, Short Wave Diathermy, Hot Fomentation
- 3.3 Sports Massage, Types of Massage, Physiological Effect of Massage

Unit-4: First Aid and Management of Sports Injuries**(12 hours)**

- 4.1 Meaning and Significance of First Aid
- 4.2 Basic concepts and applications of PRICE, DRABC, CPR
- 4.3 Management of Sports Injuries- Immediate and Later Management (Sprain, Strain, Fractures, Dislocations, Frozen, Shoulder, Tennis Elbow, Golfers Elbow, Shin Splint, Blister, Abrasion, Laceration, Haematoma).

Unit-5: Rehabilitation**(7 hours)**

- 5.1 Meaning and Definition of Rehabilitation
- 5.2 Importance of Rehabilitation in Sports
- 5.3 Rehabilitation Techniques- Active (Concentric, Eccentric, and Static) and Passive Exercises (Relaxed, Forced, Passive- Stretching), Strengthening, and Conditioning Exercises.

PART-B: PRACTICALS:**(30 hours)**

1. Demonstrate Warming Up and Cooling Down Exercises- 5 exercises each
2. Visit any Physiotherapy Center and prepare a report
3. Demonstrate First Aid and PRICE in different Sports situations.
4. Demonstrate Muscle Strengthening Exercises.
5. Survey of safety measures for prevention of Sports Injury

SUGGESTED READINGS:

1. Agarwal M., Arora S. (2018), Gupta B **"Posture; Athletic Care and First Aid"**, Vivechan Publications (INDIA) ISBN: 978-9-38391-490-6
2. Bhandari, P. (2021) **"Athletics Care and Rehabilitation"**. New Delhi: KSK Publishers.
3. **"Essentials of Strength Training and Conditioning"** (pp.73-90). Champaign, IL: Human Kinetics.
4. Karad, P.L, (2019) **"Prevention and Treatment of Sports Injuries"**. New Delhi: KSK Publishers.
5. Kumari, Sheela S.; Rana, Amita; & Kaushik, Seema (2008), **"Fitness, Aerobics and Gym Operations"** (New Delhi: Khel Sahitya Kendra).
6. Meena, T.R. (2022) **"Sports Medicine, Physiotherapy and Rehabilitation"**. New Delhi: KSK Publishers.
7. Pande, P.K. (1987), **"Outline of Sports Medicine"** (New Delhi: Jaypee Brothers)
8. Prentice, W. (2017). **"Principles of Athletic Training: A Competency-Based Approach"**. McGraw-Hill Education.
9. Sharma, Kavita et.al. (2014), **"Fitness, Aerobics and Gym Operations"** (New Delhi: Jyoti Enterprises)
10. Singh, Ajmer et.al. (2006), **"Essentials of Physical Education"** (Ludhiana: Kalyani Publishers)
11. उप्पल, ए.के.; पदयाल, अंजुम और लाल, राजेंदर (2022), **"अंग-विन्यास तथा खिलाड़ी की देखभाल"** (नई दिल्ली: फ्रेंड्स पब्लिकेशन)
12. कुमारी, शीला एस.; राणा, अमिता; और कौशिक, सीमा (2012), **"फिटनेस, एरोबिक्स व जिम ऑपरेशंस"** (नई दिल्ली: खेल साहित्य केंद्र)
13. Sharma. R., Handbook of **"Exercise Therapy and Rehabilitation"**, ISBN : 978-93-88269-54-4, Year 2019 published by Sports Publication , Daryaganj, New Delhi.

14. Shaw D. (2018). **"Pedagogic Kinesiology"** Sports Publication, ISBN: 978-93-86592-43-9.
15. Shaw D. (2018) **"Fundamental Statistics in Physical Education and Sports Sciences"** Sports Publication, ISBN: 81-86190-57-0.
16. Shaw D. (2019) **"Obesity Management"** Khel Sahitya Kendra, ISBN: 978-93-88159-93-7.
17. Shaw D. (2019) **"Kinesio Taping in Games and Sports"** Sports Publication, ISBN: 978-93-88269-33-9.
18. Shaw D. (2019) **"Sports Injuries: A Demographic Study on Indian Sports Person"** Khel Sahitya Kendra, ISBN: 978-93-88159-87-6.
19. Shaw D. (2020) **"Physical Education Practical Manual for Class XI"** Prachi Publication, ISBN : 978-8193-7698-0-5.
20. Shaw D. (2020) **"Physical Education for Class XII"** Prachi Publication, ISBN : 978-81-7730-848-8.
21. Shaw D. (2020) **"Physical Education for Class XI"** Prachi Publication, ISBN : 978-81-7730-847-1.
22. Shaw D. (2020) **"Physical Education Practical Manual for Class XII"** Prachi Publication, ISBN : 978-81-937698-1-2.
23. Shaw D. (2020) **"Yoga Asanas and their Benefits"** Sports Publication, ISBN : 978-81-9436-11-9-0.
24. Shaw D. (2020) **"Parable Global English Hindi Dictionary of Physical Education & Sports Sciences"** Khel Sahitya Kendra, ISBN : 978-93-90461-18-9.
25. Shaw D. (2021) **"Sports Training"** Sports Publication, ISBN : 978-81-943611-3-8.
26. Shaw D. (2021) **"Athletic Care and Rehabilitation"** Sports Publication, ISBN : 978-81-951044-9-9.
27. Shaw D. (2019) **"Encyclopaedia of Sports Injury"** Khel Sahitya Kendra, ISBN : 978-93-88159-87-6.
28. Shaw D. (2021) **"Lesson Planning & Teaching Methods"** Khel Sahitya Kendra, ISBN :978-81-7524-022-9.

SEMESTER-4
B.A.-PE-DSC-4 (MAJOR)
CORRECTIVES IN PHYSICAL EDUCATION
DSC

Sl. No.	Course Title & Code	Credits	Credit Distribution of the Course			Eligibility Criteria	Pre-Requisite of the Course (if any)
			Lecture	Tutorial	Practical		
1.	Correctives in Physical Education	04	3	0	1	XII Pass	NIL

Objective:

The objective of this course is to provide an understanding and practical applications to the learners about the posture mechanics, anatomy and movement of the spine, common postural deformities with their corrective measures, strengthening exercises, and ergonomics application in sports.

Learning Outcomes:

1. The learners will be able to understand and analyze the concept of posture and its impact on overall health.
2. The learners will be able to comprehend and correlate the significance of good posture and the risks associated with poor posture.
3. The learners will be able to apply the knowledge of the anatomy of the spine and movement around the spine to avoid related problems.
4. The learners will be able to identify common postural deformities and apply the acquired knowledge of corrective exercises for posture improvement and management.
5. The learners will be able to demonstrate the strengthening and stretching exercises for better posture.
6. The learners will be able to better their posture in the workplace and in everyday life.

SYLLABUS

CREDITS: 4 [Theory-3, Practical-1]

Theory- 45 hours

Practical-30 hours

PART-A: THEORY

Unit-1: Introduction to Posture

(9 hours)

- 1.1 Meaning of Posture, Significance of Good Posture
- 1.2 Factors affecting posture, Risks associated with Poor Posture.
- 1.3 Posture and Body Mechanics - sitting, standing, walking, sleeping, lifting

Unit-2: Anatomy and Movement of Spine

(8 hours)

- 2.1 Structure and the Function of the Spine
- 2.2 Types of Spinal Movement
- 2.3 Role of the Spine in Maintaining Posture.

Unit-3: Common Postural Deformities**(12 hours)**

- 3.1 Types of Postural Deformities- Kyphosis, Lordosis, Scoliosis, Rounded Shoulder, Knock Knees, Bow Legs, Flat Foot, Duck Feet.
- 3.2 Causes of Postural Deformities, Prevention Methods for Postural Deformities
- 3.3 Corrective Exercises and Management of Postural Deformities-Kyphosis, Lordosis, Scoliosis, Rounded Shoulder, Knock Knees, Bow Legs, Flat Foot, Duck Feet.

Unit-4: Strengthening Exercises**(8 hours)**

- 4.1 Core Strengthening Exercises
- 4.2 Strengthening Exercises for Back and Neck Muscles
- 4.3 Stretching Exercises for Muscles Stiffness

Unit-5: Ergonomics in the Workplace, Everyday Life and Sports**(8 hours)**

- 5.1 Ergonomics of Workplace
- 5.2 Active Lifestyle for Corporates/occupations with long seating hours
- 5.3 Sports Ergonomics-Meaning, Importance, and Applications (shoes and apparel)

PART-B: PRACTICALS:**(30 hours)**

1. Demonstration of corrective exercises for Kyphosis, Scoliosis, Lordosis, Knock knees, Bow Legs, Flat Foot, and Duck Feet (2 exercises for each postural deformity)
2. Demonstrate strengthening exercises for Core, back, and neck (3 exercises each)
3. Demonstrate stretching exercises for improving range of motion (5 exercises)
4. Assessment of own posture and recommendation for improvement (if any)

SUGGESTED READINGS

1. Agarwal M., Arora S., Gupta B, (2018) **"Posture; Athletic Care and First Aid"**, Vivechan Publications (INDIA) ISBN: 978-9-38391-490-6.
2. Bhandari, P. (2021) **"Athletics Care and Rehabilitation"**. New Delhi: KSK Publishers.
3. **"Essentials of Strength Training and Conditioning"** (pp.73-90). Champaign, IL: Human Kinetics.
4. Karad, P.L, (2019) **"Prevention and Treatment of Sports Injuries"**. New Delhi: KSK Publishers.
5. Kumari, Sheela S.; Rana, Amita; & Kaushik, Seema (2008), **"Fitness, Aerobics and Gym Operations"** (New Delhi: Khel Sahitya Kendra).
6. Meena, T.R. (2022) **"Sports Medicine, Physiotherapy and Rehabilitation"**. New Delhi: KSK Publishers.
7. Pande, P.K. (1987), **"Outline of Sports Medicine"** (New Delhi: Jaypee Brothers)
8. Prentice, W. (2017). **"Principles of Athletic Training: A Competency-Based Approach"**. McGraw-Hill Education.
9. Sharma, Kavita et.al. (2014), **"Fitness, Aerobics and Gym Operations"** (New Delhi: Jyoti Enterprises)
10. Singh, Ajmer et.al. (2006), **"Essentials of Physical Education"** (Ludhiana: Kalyani Publishers)
11. उप्पल, ए.के.; पदयाल, अंजुम और लाल, राजेंद्र (2022), **"अंग-विन्यास तथा खिलाड़ी की देखभाल"** (नई दिल्ली: फ्रेड्स पब्लिकेशन)
12. कुमारी, शीला एस.; राणा, अमिता; और कौशिक, सीमा (2012), **"फिटनेस, एरोबिक्स व जिम ऑपरेशंस"** (नई दिल्ली: खेल साहित्य केंद्र)।
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27. Shaw D. (2021) **"Lesson Planning & Teaching Methods"** Khel Sahitya Kendra, ISBN :978-81-7524-022-9.

SEMESTER-5
B.A.-PE-DSC-5 (MINOR)
SPORTS PSYCHOLOGY
DSC

Sl. No.	Course Title & Code	Credits	Credit Distribution of the Course			Eligibility Criteria	Pre-Requisite of the Course (if any)
			Lecture	Tutorial	Practical		
1.	Sports Psychology	04	3	0	1	XII Pass	NIL

Objective:

The objective of this course is to provide an understanding and practices to the learners about psychology and sports psychology, growth and development, the concept of learning, personality, motivation, and psychological factors affecting sports performance.

Learning Outcomes:

1. The learners will be able to understand the concept and practices of sports psychology and its significance for sports performance.
2. The learners will be able to manage various psychological factors like stress, aggression etc.
3. The learners will be able to analyze the personality

SYLLABUS

CREDITS: 4 [Theory-3, Practical-1]

Theory- 45 hours

Practical-30 hours

PART-A: THEORY

Unit – 1: Psychology and Sports Psychology (9 hours)

- 1.1 Meaning, Definition, and Dimensions of Psychology.
- 1.2 Meaning, Definition, and Importance of Sports Psychology, Scope of Sports Psychology
- 1.3 Concepts of Sports psychology intervention

Unit – 2: Growth and Development (9 hours)

- 2.1 Meaning and Definition of Growth and Development, Difference between Growth and Development
- 2.2 Principles and Factors Affecting Growth and Development
- 2.3 Stages of Growth and Development -Infancy, Childhood, Adolescence, Adulthood

Unit – 3: Learning (9 hours)

- 3.1 Definition and Types of Learning
- 3.2 Theories of Learning (Trial and Error, Conditioned Response and Learning by Insight)
- 3.3 Laws of Learning (Law of readiness, Exercise, Effect), Transfer of Training, Learning Curve and its application in the field of Sports.

Unit –4: Personality (9 hours)

- 4.1 Meaning and Types of Personality, Factors Affecting Personality
- 4.2 Dimensions and Characteristics of Personality
- 4.3 Role of Physical Activity in the Development of Personality

Unit – 5: Motivation and Psychological Factors**(9 hours)**

- 5.1. Concept and Role of Motivation in Sports
- 5.2 Types and Techniques of Motivation in Sports
- 5.3 Psychological Factors Affecting Sports Performance — Stress, Anxiety, Tension, Aggression, Emotion, Leadership, Goal Setting, Mental Imagery.

PART-B: PRACTICALS:**(30 hours)**

1. Eysenck Personality Questionnaire (EPQ)
2. Sports Competitive Anxiety Test (SCAT)
3. Demonstrate the technique of Progressive Muscle Relaxation for stress management.
4. Practical Application of Autogenic Training for Relaxation.
5. Practical Application of Visualization in Games/ Sports.

SUGGESTED READINGS:

1. Arora S., Agarwal M., **“Sports Psychology”**, Khel Sahitya Kendra ISBN: 978-81-947808-8-5, (2020)
2. Cohen RJ and Swerdlik ME (2002). **Psychological Testing and Assessment: An Introduction to Tests and Measurement**. McGraw Hill. New York. U.S.A.
3. Cox RH (2002). **Sport Psychology**. McGraw Hill. London.
4. Liukkonen JED (2007). **Psychology for Physical Educators**. Human Kinetics. U.S.A. Martin GL (2003). **Sports Psychology**, Sports Science. Press. USA.
5. Sahni SP (2005). **Psychology and Its Application in Sports**. D.V.S. Delhi. Shaw D and Other (2005). **Sport & Exercise Psychology**. Bios. U.K.
6. Verma V (1999). **Sport Psychology & All Round Development**. Sports Pub. New Delhi.
7. Wann DL (1997). **Sport Psychology**. Prentice Hall. New Jersey.
8. Saini, N. (2020). **“Yoga & Stress Management”**, Friends Publications. New Delhi.
9. Saini, N., Suri M., (2020). **“Sports Psycho-Physiology”**, Friends Publications. New Delhi.
10. Luthra, A., Sharma, P., and Padyal, A. (2019), **Yoga and Stress Management**. Pinnacle Learning, New Delhi. ISBN: 978-93-83848-57-7
11. Sethi, P.K (2016) **“Yoga for stress Release”** Shree Publication, Darya Ganj, New Delhi. ISSN 978-81-8329-776-9.
12. Shaw D. (2020) **“Physical Education Practical Manual for Class XI”** Prachi Publication, ISBN : 978-8193-7698-0-5.
13. Shaw D. (2020) **“Physical Education for Class XII”** Prachi Publication, ISBN : 978-81-7730-848-8.
14. Shaw D. (2020) **“Physical Education for Class XI”** Prachi Publication, ISBN : 978-81-7730-847-1.
15. Shaw D. (2020) **“Physical Education Practical Manual for Class XII”** Prachi Publication, ISBN : 978-81-937698-1-2.
16. Shaw D. (2020) **“Parable Global English Hindi Dictionary of Physical Education & Sports Sciences”** Khel Sahitya Kendra, ISBN : 978-93-90461-18-9.

SEMESTER-5
B.A.-PE-DSC-5 (MAJOR)
SPORTS SOCIOLOGY
DSC

Sl. No.	Course Title & Code	Credits	Credit Distribution of the Course			Eligibility Criteria	Pre-Requisite of the Course (if any)
			Lecture	Tutorial	Practical		
1.	Sports Sociology	04	3	0	1	XII Pass	NIL

Objective:

The objective of this course is to provide an understanding and practices to the learner about sports sociology, the interrelationship between society and sports, and also gender and socialization.

Learning Outcomes:

1. The learner will understand the importance and applications of sports sociology.
2. The learners will be able to articulate sociological perspectives with sports.
3. The learners will be able to inculcate the sports culture in their life & society.
4. The learner will be able to establish the relationship between society and sports.
5. The learner will be able to analyze gender inequality in sports.
6. The learner will be able to understand the significance of socialization through games and sports.

SYLLABUS

CREDITS: 4 [Theory-3, Practical-1]

Theory- 45 hours

Practical-30 hours

PART-A: THEORY

Unit – I: Sports Sociology (9 hours)

- 1.1 Meaning and Definition of Sociology and Sport Sociology
- 1.2 Nature and Scope of Sociology, Importance of Sports Sociology
- 1.3 Sociological Perspectives in Sports and Physical Education (Functionalism, conflict and Interactionism)

Unit-2: Culture and Sports (9 hours)

- 2.1 Meaning of Culture and Sports Sub Culture
- 2.2 Characteristics of Sports Culture, Elements of Culture in Relation to Sports
- 2.3 Club Culture and Sports

Unit-3: Sports and Society (9 hours)

- 3.1 Meaning and Structure of Society
- 3.2 Historical Development of Sports in different types of Societies.
- 3.3 Changes in Sports (Amateur, Professional, Commercial).

Unit-4: Gender and Sports**(9 hours)**

- 4.1 Gender Inequality in Sports
- 4.2 Women's Participation in Sports
- 4.3 Barriers to Women's Participation in Sports

Unit-5: Socialization and Sports**(9 hours)**

- 5.1 Meaning of Socialization and Sports Socialization
- 5.2 Agencies of Sports Socialization, Role of Family, School, College, and Peer Group in Sports Socialization
- 5.3 Socialization through games and sports, De-socialization, Violence, and Deviance in Sports.

PART-B: PRACTICALS:**(30 hours)**

- 1. Conduct a survey on the status of sports in society/ community.
- 2. Measurement of Group Dynamics.
- 3. Selection of Leader/ Captain in games & sports setup.
- 4. Measurement of Social Desirability.

SUGGESTED READINGS:

- 1. Bhupinder Singh (2004), **Sports Sociology-An Indian Perspective**. New Delhi: Friends Publications, ISBN 978-8172160852.
- 2. Brown, S.P. (2006). **Introduction to the Sociology of Sport**. Baltimore: Lippincott Williams & Wilkins.
- 3. Coakley, J.J. (2009). **Sporting Sociology, Issues and controversies**, McGraw Hill International.
- 4. Coakley, J.J. (2015). **Sports in society: Issues and controversies**. New York: McGraw-Hill; Olympic Studies Centre. (2014).
- 5. Delaney, T. & Madigan, T. (2009). **The Sociology of Sport: An introduction**. USA: McFarland & Company.
- 6. Shaw D. (2020) **"Physical Education Practical Manual for Class XI"** Prachi Publication, ISBN : 978-8193-7698-0-5.
- 7. Shaw D. (2020) **"Physical Education for Class XII"** Prachi Publication, ISBN : 978-81-7730-848-8.
- 8. Shaw D. (2020) **"Physical Education for Class XI"** Prachi Publication, ISBN : 978-81-7730-847-1.
- 9. Shaw D. (2020) **"Physical Education Practical Manual for Class XII"** Prachi Publication, ISBN : 978-81-937698-1-2.
- 10. Shaw D. (2020) **"Parable Global English Hindi Dictionary of Physical Education & Sports Sciences"** Khel Sahitya Kendra, ISBN : 978-93-90461-18-9.

SYLLABUS OF GENERIC ELECTIVE PAPERS (DSE)
SEMESTER-V
B.A.-PE-DSE-(4)-1.1-
SPORTS TRAINING
DSE

Sl. No.	Course Title & Code	Credits	Credit Distribution of the Course			Eligibility Criteria	Pre-Requisite of the Course (if any)
			Lecture	Tutorial	Practical/Practic		
1.	SPORTS TRAINING	04	3	0	1	XII Pass	NIL

Learning Objective:

The objective of this course is to provide the understanding through practical knowledge, skills and practices with enough scope of creativity/Innovations.

Learning Outcomes:

- The learner will be able to apply the concept of sports training for improvement of sports performance.
- The learner will be able to develop strength, endurance, speed, flexibility and coordination through various scientific methods and programme.
- The learner will be able to draw and prepare phases of technical and tactical training of sportsperson.
- The learner will be able to analyse the adjustment of load and intensity in different phases of training.
- The learner will be able to create sports training plan and develop methods for Talent Identification & Development.

Syllabus

CREDITS: 4 [Theory-3, Practical-1]

Theory-45 hours

Practical-30 hours

PART-A: THEORY

UNIT-I INTRODUCTION TO SPORTS TRAINING

(9 Hours)

- 1.1 Meaning & Definition of Sports Training
- 1.2 Aim & Objective of Sports Training
- 1.3 Principles of sports Training
- 1.4 Systems of sports training-Basic, Good and high-performance training

UNIT- II FITNESS COMPONENTS

(9 Hours)

- 2.1 Strength-Definition, types and methods of improving strength- Isometric, Isotonic and Isokinetic.
- 2.2 Endurance-Definition, Types and Methods to develop Endurance- Continuous Training, Interval Training and Fartlek Training

2.3 Speed-Definition, types and methods to develop different speed abilities.

2.4 Flexibility- Definition, Types and Methods to improve Flexibility (static and dynamic)

2.5 Coordinative Abilities-Definition, Types and methods of improvement of coordinative abilities.

UNIT – III Training Process (9 Hours)

3.1 Technical Training – Meaning, stages and Methods of Technique Training

3.2 Tactical Training – Meaning and Methods of Tactical Training

3.3 Circuit training and weight training

UNIT – IV Load Adaptation and Planning (9 Hours)

4.1 Training Load and recovery - Definition and Process

4.2 Principles of Intensity and Volume of stimulus

4.3 Planning-Training Session, Different types of training cycle (macro cycle, meso cycle, micro cycle, yearly cycle and Olympic Cycle)

UNIT -V TRAINING, PROGRAMMING & PLANNING (9 Hours)

5.1 Periodization-Meaning & Types of Periodization

5.2 Aims & Contents of Periods-Preparatory, Competition, Transitional

5.3 Talent Identification & Development

PART B- PRACTICALS (30 Hours)

1. Develop a training session.
2. Develop a micro cycle training program.
3. Develop a meso cycle training program.
4. Develop a macro cycle training program.
5. Develop a yearly training program.
6. Develop of Strength training program.
7. Develop of circuit training program.
8. Develop of weight training program.

Suggested Readings:

- Dick, W. F. (1980) **Sports Training Principles** London: Lepus Books.
- Harre, D. (1982) **Principles of Sports Training** Berlin: Sporulated.
- Jensen, R. C.& Fisher, A.G. (1979) **Scientific Basis of Athletic Conditioning**. Philadelphia: Lea and Fibiger, 2nd Edn.
- Matvyew, L.P. (1981) **Fundamental of Sports Training**. Moscow: Progress Publishers.
- Shaw, D. (2020) **Sports Training** Sports Publication.
- Shaw, D. (2021) **Athletic Care and Rehabilitation** Sports Publications.
- Singh, H. (1984) **Sports Training, General Theory and Methods**. Patiala: NSNIS.
- Uppal, A.K., (1999) **Sports Training** New Delhi: Friends Publication.

SYLLABUS OF DISCIPLINE SPECIFIC ELECTIVE PAPERS (DSE)
SEMESTER-V
B.A.-PE-DSE- (4)- 1.2
STRENGTH AND CONDITIONING

Sl. No.	Course Title & Code	Credits	Credit Distribution of the Course			Eligibility Criteria	Pre-Requisite of the Course (if any)
			Lecture	Tutorial	Practical/Practice		
2	STRENGTH AND CONDITIONING	04	3	0	1	XII Pass	NIL

Objective:

The objective of this course is to provide an understanding, practices and practical skills to the learners about Strength and Conditioning, Load and Adaptation, Warming-Up and Limbering Down, Strength and Conditioning Programme Design.

Learning Outcomes:

1. The learners will be able to understand the concept and applications of Strength and Conditioning.
2. The learners will be able to understand the concept and applications of Load and Adaptations.
3. The learners will be able to understand and analyse the popular trends and updated research in the sports industry, specifically in the area of strength and conditioning.
4. The learners will be able to design strength and conditioning programme.

Syllabus

CREDITS: 4 [Theory-3, Practical-1]

Theory-45 hours

Practical-30 hours

PART-A: THEORY

UNIT-I Introduction to Strength and Conditioning

(7 Hours)

- 1.1 Meaning and Concept of Strength and Conditioning.
- 1.2 Aim and Objectives of Strength and Conditioning.
- 1.3 General Principles of Strength and Conditioning.

UNIT-II Load and Adaptation

(8 Hours)

- 2.1 Training Load- Definition and types of training load.
- 2.2 Principles of training load (Frequency, Intensity, Density, and Volume).
- 2.3 Relationship between load and adaptation. Over load and critical load.
- 2.4 Concept of load and factor affecting of load and adaption.

UNIT-III Strength Training

(10 Hours)

- 3.1 Strength – Definition, types and their characteristics.

- 3.2 Types of muscular contraction.
- 3.3 Development of strength using own body weight and external resistance, field tests for measuring strength.
- 3.4 Core Strength and Functional training

UNIT-IV: Warming-Up and Limbering Down

(10 Hours)

- 4.1 Concept of Warming-Up and Limbering Down
- 4.2 Importance of Warming-Up and Limbering Down
- 4.3 Types of Stretching- Static Stretching Techniques and Dynamic Stretching Techniques

UNIT-V: Strength and Conditioning Programme Design

(10 Hours)

- 5.1 Exercise Selection, Training Frequency, Exercise Order, Training Load and Repetitions, Volume, Rest Periods.
- 5.2 Means and Methods of Training (Resistance Training)
- 5.3 Plyometric Training, Circuit Training, Free Weight Training Methods, Bodyweight Training Methods, Core Stability and Balance Training Methods

PART-B: PRACTICALS

(30 hours)

1. Design a Warming Up Exercise Programme.
2. Design a Limbering Down Exercise Programme.
3. Prepare a Strength and Conditioning Programme for a specific games/sport.
4. Demonstrate Exercises for Core Stability and Balance (any five).

Suggested Readings:

- Arnheim, Danial D. & Arnheim, Helene (1987) **Essentials of Athletic Training** Toronto Times Mirror.
- Arnheim, Danial D. (1985) **Modern Principles of Athletic Training**. Toronto Time Mirror.
- Bunn, John W. (1955) **Scientific Principles of Coaching** Englewood Cliffs N. J. Prentice Hall, Inc.
- Dick, Frank W. (1980) **Sports Training Principles** London: Lepus Books.
- Haff, G.G. (2016) **Essentials of Strength Training and Conditioning** Human Kinetics.
- Hare, Dietrich (1982) **Principles Sports Training**, Berlin: Sportverlag.
- Jensen, Clayne R & Fisher, Garth A. (1979) **Scientific Basis of Athletic Conditioning** Philadelphia: Lea & Febiger
- Joan A. (1987) **Coaching – an Effective Behavioural Approach**, Toronto: Time Mirror
- Novich, Max M. & Taylor Buddy (1983) **Training and Conditioning of Athletes** Philadelphia: Lea & Febiger
- Sands, W.A., Wurth, J.J., Hewit, J.K. (2012) **Basics of Strength and Conditioning Manual** The National Strength and Conditioning Association.
- Shaw, D. (2020) **Sports Training** Sports Publication.
- Shaw, D. (2021) **Athletic Care and Rehabilitation** Sports Publications.
- Singh, Hardayal (1991) **Science of Sports Training** New Delhi: D.A.V. Publication
- Uppal A. K. (2010) **Principles of Sports Training** Friends Publications (India)
- Uppal A. K. (2013) **Science of Sports Training** Friends Publications (India)
- Uppal A. K. (2013) **Scientific basis of Sports Conditioning** Friends Publications (India)

SYLLABUS OF GENERIC ELECTIVE PAPERS (DSE)
SEMESTER-V
B.A.-PE-DSE-(4)-1.3-
FITNESS FOR SENIOR CITIZENS

Sl. No.	Course Title & Code	Credits	Credit Distribution of the Course			Eligibility Criteria	Pre-Requisite of the Course (if any)
			Lecture	Tutorial	Practical/Practice		
3.	FITNESS FOR SENIOR CITIZENS	04	3	0	1	XII Pass	NIL

Learning Objectives:

This course will help the learner to understand the process of aging and develop the basic concepts of the physiological, psychological and social issues affecting the fitness levels of senior citizens in society. Also, learners will be able to test and design exercise programs for the Senior Citizen.

Learning Outcomes:

1. Learners will be able to identify the physical, psychological and social aspects of aging.
2. Learners will be able to understand aging adults' limitations, common medical conditions, aging process, and frequent fitness obstacles.
3. Learners will be able collect information regarding events organized by state, national and international sports federations to promote physical activity among the aged population.
4. Learners will be able to test and design exercise programs for the Senior Citizen.
5. Learners will be able to understand and demonstrate importance of fitness for senior citizens.
6. Learners will be able to evaluate fitness of senior citizen.
7. Learners will be able to improve the quality of life of senior citizen.

Syllabus

CREDITS: 4 [Theory-3, Practical-1]

Theory-45 hours

Practical-30 hours

PART-A: THEORY

UNIT- I Introduction – Ageing and Physical Activity (9 hours)

- 1.1 Meaning, Definition of ageing.
- 1.2 Countries and policies that are sensitive and caring for the ageing population
- 1.3 Scope of practice for Senior Fitness Specialists and understand their role in the healthcare industry

UNIT -II Physical and Physiological Considerations of Aging (9 hours)

- 2.1 Physical and Physiological changes that occur in the ageing population
- 2.2 Changes in the nervous system with relation to the aged.
- 2.3 Cardiorespiratory system and its changes according to age.

- 2.4 Effects of ageing on the musculoskeletal system
- 2.5 The physical effects of exercise and physical activity of aged people.

UNIT -III Psychological Considerations of Aging (9 hours)

- 3.1 Age-related influences on the quality of life,
- 3.2 Self-perception for the senior citizen.
- 3.3 Emotional well-being of aged populations
- 3.4 Psychosocial effects of exercise and physical activity of aged people.

UNIT-IV Fitness Assessments for the Active Older Adult (9 hours)

- 4.1 Functional fitness of older adults.
- 4.2 Health risks related to aged and physical activity.
- 4.3 Diet and Nutrition - caloric requirements, and nutrition guidelines for aged population
- 4.4 Chronic conditions and comorbidities associated with active senior citizens

UNIT-V Training the Senior Citizen (9 hours)

- 5.1 Cardiorespiratory Training for Active Senior Citizens
- 5.2 Resistance Training for Active Senior Citizens
- 5.3 Flexibility and Balance for Active Senior Citizens
- 5.4 Sports for Veterans and Active Senior Citizens

PART-B: PRACTICALS (30 hours)

1. Develop Cardiorespiratory Training Programme for Active Senior Citizens
2. Develop Resistance Training programme for Active Senior Citizens
3. Develop Flexibility exercises for Active Senior Citizens
4. Develop Balancing exercises for Active Senior Citizens
5. Physical Fitness Testing and Evaluation of Senior citizen (men and women)

Suggested Readings:

- Folan, Maureen (1995) **Exercise Machines for Older People** Physiotherapy, vol. 81, page 771. [http://dx.doi.org/10.1016/s0031-9406\(05\)66612-6](http://dx.doi.org/10.1016/s0031-9406(05)66612-6).
- Hollrock, Ardelle P. (2004) **Exercise and the Elderly** Fogler Library, University of Maine. <http://www.library.umaine.edu/theses/pdf/HollrockAP2004.pdf>.
- Rikli, Roberta E. & Jones, C. Jessie (2013) **Senior Fitness Test Manual** Human Kinetics.
- Skelton, D. A., and N. Beyer. (2003) **Exercise and Injury Prevention in Older People** Scandinavian Journal of Medicine & Science in Sports vol. 13, pp. 77–85. <http://dx.doi.org/10.1034/j.1600-0838.2003.00300.x>.
- Shaw, D., and Andrabi, S.M.H. (2021) **Fitness Reference of Senior Citizens** Khel Sahitya Kendra.
- Shaw D. (2020) **“Parable Global English Hindi Dictionary of Physical Education & Sports Sciences”** Khel Sahitya Kendra, ISBN : 978-93-90461-18-9.
- Shaw D. (2021) **“Sports Training”** Sports Publication, ISBN : 978-81-943611-3-8.
- Underhill, J. A. (1993) **Exercise for Older People with Dementia** Age and Ageing, vol. 22, P35—P36. http://dx.doi.org/10.1093/ageing/22.suppl_3.p35-c

SYLLABUS OF GENERIC ELECTIVE PAPERS (GE)**SEMESTER- V****B.A.-PE-GE- 5 (4)****YOGA AND STRESS MANAGEMENT****GE**

Sl. No.	Course Title & Code	Credits	Credit Distribution of the Course			Eligibility Criteria	Pre-Requisite of the Course (if any)
			Lecture	Tutorial	Practical/Practice		
1.	YOGA AND STRESS MANAGEMENT	04	3	0	1	XII Pass	NIL

GE-5 (4)-YOGA AND STRESS MANAGEMENT**Learning objective:**

The objective of this course is to provide the understanding through practical knowledge and practices with enough scope of creativity/Innovations.

Learning outcomes:

1. Understand the concept of yoga.
2. Demonstrate different asanas to achieve healthy lifestyle.
3. Apply Pranayama and Shat karmas to reduce day to day stress in our life.
4. Management of Stress by using different yogic relaxation techniques.
5. Develop Physical Fitness Program.

SYLLABUS

No. of Credits: 04 (Lecture-03, Practical-1)

Theory: 45 hours, Practical: 30 hours.

Unit-1: INTRODUCTION**(9 hrs. Lectures)**

- 1.1 Meaning, Definition and Importance of Yoga.
- 1.2 Origin and Historical development of Yoga.
- 1.3 Concept of the importance of Yogic Diet.

Unit-II: YOGA-ASANAS**(9 hrs. lectures)**

- 2.1 Ashtanga Yoga (Maharishi Patanjali): Meaning and importance.

2.2 Supine Position Asanas (Ardh-Halasana, Sarvangasana, Pawanmuktasana);
Prone Position Asanas (Bhujangasana, Salabhasana, Dhanurasana)

2.3 Sitting Asanas (Ardh Matsyendrasana, Paschimotanasana, SuptaVajrasana);
Standing Asanas (Utkatasana, , Trikonasana and Tadasana).

Unit-III: PRANAYAMAS AND SHAT KARMAS

(9 hrs. lectures)

3.1 Meaning, Procedure, Precautions and Benefits of the following Pranayamas:
Anulom-Vilom, Suryabhedh, Bhrameri, Sheetal, Sheetkari Pranayamas.

3.2 Meaning, Procedure, Precautions and Benefits of the following Shatkarmas:
Kapalbhati, Trataka and Neti (Jal and sutra).

3.3 Relevance of yoga for holistic health development in the society.

Unit-IV: STRESS MANAGEMENT

(9 hrs. lectures)

3.1 Concept, Causes and Effects of Stress.

3.2 Non-communicable diseases (due to stress), Stress prevention and good health.

3.3 Stress Management through relaxation techniques (autogenic training and progressive muscle relaxation, deep breathing, meditation), and sports, recreational, adventure sports, physical activities and developing healthy relationships as coping strategies.

Unit V: HOLISTIC HEALTH DEVELOPMENT AND STRESS MANAGEMENT

(9 hrs. lectures)

5.1 Physiology of stress and mind.

5.2 Holistic well-being and dimensions of holistic health: physical, emotional, social, mental, spiritual, and environmental.

5.3 Planning and maintaining a Personal Fitness Program.

Practicals

(30 hrs.)

1. Suryanamaskar and any four asanas.
2. Pranayams (any one).
3. Practice Meditation for 10-15 minutes.
4. Assessment of stress (Questionnaire-PSQ)

Suggested Readings:

1. Arora S., Agarwal M. (2022), **"Yoga & Stress Management"**, Khel Sahitya Kendra ISBN: 978-93-90461-38-7.
2. Pawar,B., Gosain,N., Sharma,S.(2021), **"Yoga & Stress Management"**, Friends Publications. New Delhi (India) ISBN-978-81-7216-579-6.
3. Saini, N. (2020). **"Yoga & Stress Management"**, Friends Publications. New Delhi. ISBN: 978-93-88457-58-3
4. Arora S., Agarwal M. (2020), **"Yoga Skills"**, Khel Sahitya Kendra ISBN: 978-81-947808-4-7.
5. Pahuja M., Pahuja S., Panda S. (2020), **"Yoga & Stress Management"**, Friends Publications. New Delhi (India) ISBN-978-8195365593.
6. Gupta, B., Chakravortty,S.K., ., Chakravortty, Munesh.,(2019) **"Yoga & Stress Management"**, Friends Publications. New Delhi (India) ISBN-978-81-7216-568-0.
7. **"Anger and Stress Management"**. God's Way. Calvary Press, USA.
8. Swate Y B (2009). **"Anger Management"**. Sage Publication. New Delhi.
9. NCERT & CBSE publication and reading for stress management.
10. Davis M. et al (2008). **"The Relaxation and Stress Reduction"** workbook. Harbinger Publications, USA
11. Greenberg J.S. (2008). **"Comprehensive Stress Management"**. McGraw Hill, USA
12. HippE. (2008). **"Fighting Invisible Tigers: Stress Management for Teens"**. Free Spirit Publishing, USA.
13. Petee F (2006). **"Anger Management"**. Pentagon. Press. New York. U.S.A.
14. Gupta Rashmi (2015), **"Yoga and Pranayam Exercise"**. Aryan Publication.
15. Gupta Rashmi (2016), **"Yogaasana and pranayama abhayas"**. Aryan Publication.
16. Shaw D. (2018) **"Fundamental Statistics in Physical Education and Sports Sciences"** Sports Publication, ISBN: 81-86190-57-0.
17. Shaw D. (2020) **"Physical Education Practical Manual for Class XI"** Prachi Publication, ISBN : 978-8193-7698-0-5.
18. Shaw D. (2020) **"Physical Education for Class XII"** Prachi Publication, ISBN : 978-81-7730-848-8.
19. Shaw D. (2020) **"Physical Education for Class XI"** Prachi Publication, ISBN : 978-81-7730-847-1.
20. Shaw D. (2020) **"Physical Education Practical Manual for Class XII"** Prachi Publication, ISBN : 978-81-937698-1-2.
21. Shaw D. (2020) **"Parable Global English Hindi Dictionary of Physical Education & Sports Sciences"** Khel Sahitya Kendra, ISBN : 978-93-90461-18-9.
22. Shaw D. (2020) **"Yoga Asanas and their Benefits"** Sports Publication, ISBN : 978-81-9436-11-9-0.

SEMESTER-6
B.A.-PE-DSC-6 (MINOR)
KINESIOLOGY
DSC

Sl. No.	Course Title & Code	Credits	Credit Distribution of the Course			Eligibility Criteria	Pre-Requisite of the Course (if any)
			Lecture	Tutorial	Practical		
1.	Kinesiology	04	3	0	1	XII Pass	NIL

Objective:

The objective of this course is to provide an understanding and practices to the learners about Kinesiology and its application in sports and develop the foundation to learn sports biomechanics and performance analysis.

Learning Outcomes:

1. The learners will be able to understand the fundamental concepts and practical applications related to kinesiology.
2. The learners will be able to demonstrate and correlate different components of science of motion (human).
3. The learners will be able to analyze the sports/ exercise movements and design movement-oriented exercises.
4. The learners will be able to develop the exercise program for strengthening and stretching the muscles based on kinesiology (science of motion).
5. The learners will be able to apply the knowledge and skills related to the science of movement to create a strong foundation for better sports performance.

SYLLABUS

CREDITS: 4 [Theory-3, Practical-1]

Theory- 45 hours

Practical-30 hours

PART-A: THEORY

Unit-I: Introduction to Kinesiology (8 hours)

- 1.1 Meaning and Definition of Kinesiology,
- 1.2 Aim, Objectives, and Scope of Kinesiology for Physical Education and Sports
- 1.3 Importance of Kinesiology for Physical Education Teachers, Athletes, and Coaches

Unit-II: Anatomical Fundamental Concepts in Kinesiology (8 hours)

- 2.1 Fundamental Anatomical positions (Anterior, Posterior, Superior, Inferior, Lateral, Medial)
- 2.2 Fundamental Movements- Flexion, Extension, Abduction, Adduction, Rotation, Circumduction, Medial and Lateral rotation, Inversion, Eversion, Supination, Pronation
- 2.3 Fundamental Concepts- Centre of Gravity, Line of Gravity, Axis and Planes of motion.

Unit-III: Physiological Fundamentals Concept of Kinesiology (7 hours)

- 3.1 Classification of Joints and Muscles in Relation to Motion.
- 3.2 Types of Muscle Contractions (Isometric, Isotonic and Isokinetic)

3.3 Physiological Fundamental concepts- Angle of Pull, All or None Law, Reciprocal Innervation

Unit-IV: Location and Action of Muscles (10 hours)

- 4.1 Location and action of muscles at various joints: upper extremity: pectoralis major – pectoralis minor – deltoid – biceps brachii – triceps – teres major – latissimus dorsi – trapezius
- 4.2 Location and action of muscles at various joints: Lower extremity: rectus femoris – vastus group – Sartorius – biceps femoris – semi membranous – semi tendinosus – gluteus – gastrocnemius muscles

Unit-V: Muscular and Movement Analysis (12 hours)

- 5.1 Muscular Analysis of fundamental movements – walking/ running, jumping and throwing.
- 5.2 Movement Qualities: Movement Rhythm, Movement precision, Movement Amplitude, Movement Coupling, Movement tempo, Movement Flow
- 5.3 Structure of motor action: cyclic – acyclic motor action – movement combination.

PART-B: PRACTICALS: (30 Hours)

- 1. Demonstration of planes and axes of a given movement.
- 2. Determination of the location of muscles at various joints.
- 3. Muscular analysis of any technique/exercise/skill of your choice.
- 4. Suggest any five exercises to stretch and strengthen the muscles of the shoulder and hip joint.

SUGGESTED READINGS:

- 1. Broer, M.R. **Efficiency of Human Movement** (Philadelphia : W.B. Saunders Co. 1969
- 2. Bunn, J. W. (1972).Scientific principles of coaching. Englewood Cliffs, N.J.: Prentice Hall Inc.
- 3. Dhanajoy.S., 2005, “**Pedagogic of Kinesiology**”, Sports Publication, Chennai.
- 4. Gerry Carr, Mechanics of Sport Human Kinetics, 199
- 5. Hay, J. G. & Reid, J. G.(1982).**The anatomical and mechanical basis of human motion**. Englewood Cliffs, N.J.: prentice Hall Inc.
- 6. Hay, J. G. & Reid, J. G.(1988).**Anatomy, mechanics and human motion**. Englewood Cliffs, N.J.: prentice Hall Inc.
- 7. Hay, J. G. (1970).**The biomechanics of sports techniques**. Englewood Cliffs, N.J.: Prentice Hall, Inc.
- 8. James G. Hay, **The Biomechanics of Sports Techniques**. Prentice hall International Inc, New Jersey 1993.
- 9. Katharine, F. Luttgens Kathryn, **Kinesiology – Scientific Basis of Human motion Singapore** : Mc. Graw Will International Book Company, 1984)
- 10. Kathryn Luttgens et al. **Kinesiology (Scientific Basis of Human Motion)**, Brown and Bench mark, 1992.
- 11. Rasch and Burke, **Kinesiology and applied Anatomy** (Philadelphia :Leaand Fiber, 1967)
- 12. Roger Bartlett, **Introduction to Sports Biomechanics**. E& FN Spon NewYork 1997
- 13. Simonian, C. (1911).**Fundamentals of sport biomechanics**. Englewood Cliffs, N.J.: Prentice Hall Inc.
- 14. Shaw D. (2018). “**Pedagogic Kinesiology**” Sports Publication, ISBN: 978-93-86592-43-9.
- 15. Shaw D. (2018) “**Fundamental Statistics in Physical Education and Sports Sciences**” Sports Publication, ISBN: 81-86190-57-0.
- 16. Shaw D. (2019) “**Obesity Management**” Khel Sahitya Kendra, ISBN: 978-93-88159-93-7.
- 17. Shaw D. (2019) “**Kinesio Taping in Games and Sports**” Sports Publication, ISBN: 978-93-88269-33-9.
- 18. Shaw D. (2019) “**Sports Injuries: A Demographic Study on Indian Sports Person**” Khel Sahitya Khel Sahitya Kendra, ISBN: 978-93-88159-87-6.
- 19. Shaw D. (2020) “**Physical Education Practical Manual for Class XI**” Prachi Publication, ISBN : 978-8193-7698-0-5.
- 20. Shaw D. (2020) “**Physical Education for Class XII**” Prachi Publication, ISBN : 978-81-7730-848-8.

21. Shaw D. (2020) **"Physical Education for Class XI"** Prachi Publication, ISBN : 978-81-7730-847-1.
22. Shaw D. (2020) **"Physical Education Practical Manual for Class XII"** Prachi Publication, ISBN : 978-81-937698-1-2.
23. Shaw D. (2020) **"Yoga Asanas and their Benefits"** Sports Publication, ISBN : 978-81-9436-11-9-0.
24. Shaw D. (2020) **"Parable Global English Hindi Dictionary of Physical Education & Sports Sciences"** Khel Sahitya Kendra, ISBN : 978-93-90461-18-9.
25. Shaw D. (2021) **"Sports Training"** Sports Publication, ISBN : 978-81-943611-3-8.
26. Shaw D. (2021) **"Athletic Care and Rehabilitation"** Sports Publication, ISBN : 978-81-951044-9-9.
27. Shaw D. (2019) **"Encyclopaedia of Sports Injury"** Khel Sahitya Kendra, ISBN : 978-93-88159-87-6.
28. Shaw D. (2021) **"Lesson Planning & Teaching Methods"** Khel Sahitya Kendra, ISBN :978-81-7524-022-9.

SEMESTER-6
B.A.-PE-DSC-6 (MAJOR)
SPORTS KINANTHROPOMETRY
DSC

Sl. No.	Course Title & Code	Credits	Credit Distribution of the Course			Eligibility Criteria	Pre-Requisite of the Course (if any)
			Lecture	Tutorial	Practical		
1.	Sports Kinanthropometry	04	3	0	1	XII Pass	NIL

Objective:

The objective of this course is to provide an understanding and practices to the learners about the concepts in kinanthropometry, knowledge/skills of various methods of measuring body composition, physical and physiological considerations of kinanthropometry, and knowledge about norms and standards for kinanthropometric data for different applications.

Learning Outcomes:

1. The learners will have the knowledge and practices of Kinanthropometry.
2. The learners will be able to practically measure & evaluate different kinanthropometric measurements related to movement, kinesiology, health, fitness, growth & development including sports performance.
3. The learners will be able to safely and effectively use instrumentation and equipment to assess and record human anthropometry, physique and somatotype.
4. The learners will be able to acquire the knowledge/skills in regard to various methods of measuring body composition.

SYLLABUS

CREDITS: 4 [Theory-3, Practical-1]

Theory- 45 hours

Practical-30 hours

PART-A: THEORY

Unit-I: Introduction to Anthropometry and Kinanthropometry (8 Hours)

- 1.1 Meaning and Definition of Anthropometry, Kinanthropometry, sports kinanthropometry
- 1.2 History and development of Anthropometry and Kinanthropometry
- 1.3 Applications and Significance of kinanthropometric knowledge in sports promotion.

Unit-II: Physical and Physiological Considerations of Kinanthropometry (8 Hours)

- 2.1 Classification of Body Types- Kretchmer, Sheldon, and Heath Carter, Somatotype- Endomorphy, Mesomorphy, Ectomorphy
- 2.2 Relationship between kinanthropometric measurements and sports performance.
- 2.3 Kinanthropometric considerations of sports selection (players).

Unit-III: Kinanthropometric Landmarks and Tools (8 Hours)

- 3.1 Kinanthropometric Landmarks: Vertex, Acromiale, Subscapular, Supralliac, Trochanterion, Stylium, Sphyrion, Femoral Bicondylar, Humeral Bicondylar.
- 3.2 Anthropometric Instruments: Tools and Techniques (Skinfold Caliper, spreading caliper, anthropometer with rod and anthropometric tape)

Unit-IV: Body Composition**(8 Hours)**

- 4.1 Meaning and Definition of Body Composition, Importance of Body Composition in sports
- 4.2 Body Compositions for health and different games & sports.
- 4.3 Assessment of Fat mass, Assessment of Fat free mass and Assessment of Lean body mass

Unit-V: Body Measurement and Procedures**(13 Hours)**

- 5.1 Gross Body Measurements and Procedures- (i) Gross mass and size; (ii) Segment Lengths or heights of body parts; (iii) Skinfold measurements.
- 5.2 Kinanthropometric Measurements: Height, Sitting Height, Leg Length, Bi-acromian Diameter, Bi-iliocrystal Diameter, Bitrochantarian Diameter, Femoral Bicondylar, Humeral Bicondylar
- 5.3 Measurements for Body Composition: (a) Skinfold Measurements: Biceps, Triceps, Supra-iliac, Chest, Subscapular, Thigh, Calf; (b) Circumference Measurements: Chest, Upper Arm, Fore Arm, Abdominal, Hip, Thigh, Calf

PART-B: PRACTICALS:**(30 Hours)**

1. Measurement of Height and Weight for 10 individuals.
2. Calculation of BMI for 10 individuals with interpretation.
3. Calculation of Waist-Hip Ratio for 10 individuals with interpretation.
4. Identification of Kinanthropometric landmarks and marking of anatomical sites for five measurements.
5. Measurement of Segmental Lengths/ Circumference/ Skinfolds (Any five measurements) for 05 individuals with interpretation.

SUGGESTED READINGS:

1. **Genetic and Anthropological Studies of Olympic Athletes** by De Garraay, Louis Levine & Cater, Academic Press, London
2. H.S. Sodhi: **Sports Anthropometry (A Kinanthropometric Approach)**, Anova Publications
3. James A.P. Day: **Perspectives in Kinanthropometry**, Human Kinetics Publishers, Inc. Champaign, Illinois
4. Kansal, D. K. (2017) **A Textbook of Sports Science: Test, Evaluation, Accreditation Measurements and Standards**. K. K. Publications, New Delhi, In Press
5. **Kinanthropometry** by Roger Eston and Thomas Reilly, E & F.N. SPON, London.
6. **Kinanthropometry** by S.P. Singh and P. Malhotra, Luna Publication, Patiala.
7. L.S. Sidhu Et. Al: Sports Sciences – **Health, Fitness and Performance**, IASSPE 7. L.S. Sidhu Et. Al: Trends in Sports Sciences, IASSP
8. Ostym, Beunen and Simons: **Kinanthropometry II**, University Park Press, Baltimore
9. **Physique and Selection of Sportsmen** by H.S. Sodhi and L.S. Sidhu.
10. Singh, S. P. and P. Malhotra (1989). **Kinanthropometry**. Lunar Publications, Patiala, India
11. **Skeletal Maturity** by S.P. Singh, L.S. Sidhu, and J. Singh, Human Biology Publication Society, Punjabi University, Patiala.
12. **Sports Anthropometry** by H.S. Sodhi, ANOVA Publication.
13. Verma and Mokha: **Nutrition, Exercise and Weight Reduction**, Exercise Science Publication Society.
14. Shaw D. (2018). **"Pedagogic Kinesiology"** Sports Publication, ISBN: 978-93-86592-43-9.
15. Shaw D. (2018) **"Fundamental Statistics in Physical Education and Sports Sciences"** Sports Publication, ISBN: 81-86190-57-0.
16. Shaw D. (2019) **"Obesity Management"** Khel Sahitya Kendra, ISBN: 978-93-88159-93-7.
17. Shaw D. (2019) **"Kinesio Taping in Games and Sports"** Sports Publication, ISBN: 978-93-88269-33-9.
18. Shaw D. (2019) **"Sports Injuries: A Demographic Study on Indian Sports Person"** Khel Sahitya Khel Sahitya Kendra, ISBN: 978-93-88159-87-6.
19. Shaw D. (2020) **"Physical Education Practical Manual for Class XI"** Prachi Publication, ISBN : 978-8193-7698-0-5.
20. Shaw D. (2020) **"Physical Education for Class XII"** Prachi Publication, ISBN : 978-81-7730-848-8.
21. Shaw D. (2020) **"Physical Education for Class XI"** Prachi Publication, ISBN : 978-81-7730-847-1.

22. Shaw D. (2020) **"Physical Education Practical Manual for Class XII"** Prachi Publication, ISBN : 978-81-937698-1-2.
23. Shaw D. (2020) **"Yoga Asanas and their Benefits"** Sports Publication, ISBN : 978-81-9436-11-9-0.
24. Shaw D. (2020) **"Parable Global English Hindi Dictionary of Physical Education & Sports Sciences"** Khel Sahitya Kendra, ISBN : 978-93-90461-18-9.
25. Shaw D. (2021) **"Sports Training"** Sports Publication, ISBN : 978-81-943611-3-8.
26. Shaw D. (2021) **"Athletic Care and Rehabilitation"** Sports Publication, ISBN : 978-81-951044-9-9.
27. Shaw D. (2019) **"Encyclopaedia of Sports Injury"** Khel Sahitya Kendra, ISBN : 978-93-88159-87-6.
28. Shaw D. (2021) **"Lesson Planning & Teaching Methods"** Khel Sahitya Kendra, ISBN : 978-81-7524-022-9.

SYLLABUS OF DISCIPLINE SPECIFIC ELECTIVE COURSE PAPER (DSE)
SEMESTER – VI
B.A P.E.DSE-(4)-2.1
Research Methods in Physical Education and Sports

Sl. No.	Course Title & Code	Credits	Credit Distribution of the Course			Eligibility Criteria	Pre-Requisite of the Course (if any)
			Lecture	Tutorial	Practical/ Practice		
04	RESEARCH METHODS IN PHYSICAL EDUCATION AND SPORTS	04	3	0	1	XII Pass	NIL

Learning Objective:

The student will be able to use the knowledge of Research for analysis of data leading to logical conclusion on any field of investigation in physical education and sports.

Learning Outcomes:

1. The learner will be able to understand the concept and types of research for different applications.
2. The learner will be able to apply different sampling technique and tools in research.
3. The learner will be able to apply the criteria of selection of a problem.
4. The learner will be able to collect review of literature from different resources.
5. The learner will be able to develop a research proposal.
6. The learner will be able to develop the concept of writing a research paper/ article/ project/ dissertation.

Syllabus

CREDITS: 4 [Theory-3, Practical-1]

Theory-45 hours

Practical-30 hours

PART-A: THEORY

Unit I Introduction

(7 Hours)

- 1.1. Definition and concept of Research, Need and importance of Research in Physical Education and sports.
- 1.2. Scope of Research in Physical Education and sports
- 1.3. Types of Research: Analytical, Descriptive, Experimental, Qualitative etc.

Unit II Sampling Techniques and Hypothesis

(8 Hours)

- 2.1. Identification of Research Problem
- 2.2. Meaning, definition and importance of Hypothesis
- 2.3. Meaning, definition and importance of Sampling
- 2.4. Types of Sampling Techniques

Unit III Tools in Research (8 Hours)

- 3.1. Types of data, collection of data, data interpretation and result analysis.
- 3.2. Different types of tools of research: questionnaires, Interviews, observation, test and inventories

Unit IV Criteria of Selection of Research and Literature Search (11 Hours)

- 4.1 Criteria of Selection of Problem, Statement of a Research Problem, Limitations and Delimitations. Review of related literature
- 4.2 Reason for surveying related literature
- 4.3 Major literature resources- Documentation over-view, Library sources, Research reviews, Card catalogue indices – physical education indices, Abstracting material

Unit V Method of Writing Research Proposal/ Thesis/ Research articles (11 Hours)

- 5.1 Method of writing Research proposal
- 5.2 Method of writing Thesis
- 5.3 Method of writing abstract
- 5.4 Method of writing research paper for conference and journals
- 5.5 Method of Writing Footnote and Bibliography
- 5.6 Method of representing data through tables, graphs and illustrations

PART-B: PRACTICALS (30 hours)

1. Prepare ten footnotes and bibliography containing references from books, journals, dissertation, periodicals and websites etc.
2. Prepare a review of literature (any ten researches) related to any one topic of your choice.
3. Prepare a research proposal

Suggested Readings:

- Author's Guide. (1991) **Research Methods applied to Health Physical and Recreation** Washington, D.C.
- Best John & Kahni, J.V. (1992) **Research in Education** New Delhi: Prentice Hall of India (Pvt.) Ltd.
- 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.
- Clark, H. H., & Clark, D. H. (1975) **Research Process in Physical Education** Englewood cliffs, New Jersey: Prentice Hall, Inc.
- Clarke, H.H. (1992) **The Application of Measurement in Health and Physical Education**.
- Garrett, H.E. (1981) **Statistics in Psychology and Education** New York: Vakils Feffer and Simon Ltd.
- Koul, L. (2002) **Methodology of Educational Research** Vikas Publishing House, New Delhi
- Oyster, C. K., Hanten, W. P., & Llorens, L. A. (1987) **Introduction to Research: A Guide for The Health Science Professional**. Landon: J.B. Lippincott Company.

- Rothstein, A.L. (1985) **Research Design and Statistics for Physical Education** Prentice Hall, New Jersey, U.S.A.
- Shaw, D. (2007) **Fundamental Statistics in Physical Education & Sports Sciences**, New Delhi: Sports Publication.
- Smith, R. Philosophy (2007) **Methodology and Educational Research** Wiley Black Well, USA.
- Swann, J. Pratt (2007) **Educational Research in Practice: Making Sense of Methodology** New Delhi: Viva.
- Thomas, J.R., & Nelson J.K. (2005). **Research Method in Physical Activity**. U.S.A: Champaign, IL: Human Kinetics Books.
- Thomas, J.R., Nelson, J.K. & Silverman, S.J. (2011) **Research Method in Physical Activity** U.S.A: Champaign, IL: Human Kinetics Books.

SYLLABUS OF GENERIC ELECTIVE PAPERS (DSE)

SEMESTER-VI B.A.-PE-DSE-(4)-2.2-

PUBLICATION ETHICS IN PHYSICAL EDUCATION AND SPORTS SCIENCES

DSE

Sl. No.	Course Title & Code	Credits	Credit Distribution of the Course			Eligibility Criteria	Pre-Requisite of the Course (if any)
			Lecture	Tutorial	Practical/ Practice		
5	PUBLICATION ETHICS IN PHYSICAL EDUCATION AND SPORTS SCIENCES	04	3	0	1	XII Pass	NIL

Learning Objective:

The objective of this course is to provide the understanding through practical knowledge and practices about publication ethics in physical education and sports sciences for enough scope of creativity/Innovations in the field of physical education.

Learning Outcomes:

1. The learner will be able to understand the concepts with practices and skills of research integrity and publication ethics.
2. The learner will be able to (Hands-on-sessions are designed) identify research misconduct and predatory publications, Indexing and citation databases, open access publications, research metrics (citations, h-index, Impact Factor, etc.) and plagiarism tools along with the contents of the theory and practical syllabus.

Syllabus

CREDITS: 4 [Theory-3, Practical-1]

Theory-45 hours

Practical-30 hours

PART-A: THEORY

UNIT-I Philosophy and Ethics (7 Hours)

- 1.1 Introduction to Philosophy: definition, nature and scope, content, branches
- 1.2 Ethics: definition, moral philosophy, nature of moral judgements and reactions

UNIT-II Ethics and Research (8 Hours)

- 2.1 Ethics with respect to science and research
- 2.2 Intellectual honesty and research integrity

UNIT-III Scientific Conduct (10 Hours)

- 3.1 Scientific misconducts: Falsification, Fabrication, and Plagiarism (FFP)
- 3.2 Redundant publications: duplicate and overlapping publications, salami slicing
- 3.3 Selective reporting and misrepresentation of data

UNIT-IV Publication Ethics (10 Hours)

- 4.1 Publication ethics: definition, introduction and importance
- 4.2 Best practices / standards setting initiatives and guidelines: COPE, WAME, etc.
- 4.3 Conflicts of interest

UNIT-V Publication Violations (10 Hours)

- 5.1 Publication misconduct: definition, concept, problems that lead to unethical behavior and vice versa, types
- 5.2 Violation of publication ethics, authorship and contributorship
- 5.3 Identification of publication misconduct, complaints and appeals
Predatory publishers and journals

PART: B- PRACTICALS (30 hours)

- 1. Open access publications and initiatives
- 2. SHERPA/RoMEO online resource to check publisher copyright & self-archiving policies
- 3. Software tool to identify predatory publications developed by SPPU
- 4. Journal finder/ journal suggestion tools viz. JANE, Elsevier Journal Finder, SpringerJournal Suggester, etc.
- 5. Group Discussions
 - a. Subject specific ethical issues, FFP, authorship
 - b. Conflicts of interest
 - c. Complaints and appeals: examples and fraud from India and abroad
- 6. Software tools uses: Use of plagiarism software like Turnitin, Urkund and other open source software tools
- 7. Databases and Research Metrics
 - a. Databases

- b. Indexing databases
- c. Citation databases: Web of Science, Scopus, etc.

8. Research Metrics

- a. Impact Factor of journal as per Journal Citation Report, SNIP, SJR, IPP, CiteScore
- b. Metrics: h-index, g index, i10 index, altmetrics

Suggested Readings:

- Bird, A. (2006) **Philosophy of Science** Routledge.
- MacIntyre, Alasdair (1967) **A Short History of Ethics**. London.
- P. Chaddah, (2018) **Ethics in Competitive Research: Do not get Scooped; do not get Plagiarized**, ISBN:978- 9387480865
- National Academy of Sciences, National Academy of Engineering and Institute of Medicine. (2009) **On Being a Scientist: A Guide to Responsible Conduct in Research: Third Edition**. National Academies Press.
- Resnik, D. B. (2011) What Is Ethics in Research & Why is It Important. *National Institute of Environmental Health Sciences*, 1-10. Retrieved from <https://www.niehs.nih.gov/research/resources/bioethics/whatis/index.cfm>
- Beall, J. (2012) Predatory Publishers are Corrupting Open Access. *Nature*, 489(7415), 179-179. <https://doi.org/10.1038/489179a>
- Indian National Science Academy (INSA) (2019), **Ethics in Science Education, Research and Governance** ISBN:978-81-939482-1-7 http://www.insaindia.res.in/pdf/Ethics_Book.pdf

SYLLABUS OF GENERIC ELECTIVE PAPERS (DSE)

SEMESTER-VI

B.A.-PE-DSE-(4)-2.3-

THESIS WRITING IN PHYSICAL EDUCATION AND SPORTS DSE

Sl. No.	Course Title & Code	Credits	Credit Distribution of the Course			Eligibility Criteria	Pre-Requisite of the Course (if any)
			Lecture	Tutorial	Practical/Practice		
6	THESIS WRITING IN PHYSICAL EDUCATION AND SPORTS	04	3	0	1	XII Pass	NIL

Learning Objective:

The objective of the course is to provide an understanding and practices to the learners about thesis writing mechanism, skill and practices in physical education and sports

Learning Outcomes:

1. Learners will be able to develop a synopsis/ research proposal.
2. Learners will be able to prepare abstract of a research article/ thesis/ project.
3. Learners will be able to cite references in different formats.
4. Learners will be able to write the dissertation/thesis.

Syllabus

CREDITS: 4 [Theory-3, Practical-1]

Theory-45 hours

Practical-30 hours

PART-A: THEORY

UNIT I Introduction to Scientific Writing (9 hours)

- 1.1 Thesis Writing
- 1.2 Dissertation
- 1.3 Project Report
- 1.4 Short Article
- 1.5 Long article

UNIT II Introduction to Research Proposal and Case Study (9 hours)

- 2.1 Synopsis
- 2.2 Research Proposal
- 2.3 Abstract and Short Abstract
- 2.4 Case Study

UNIT III Different Format of Thesis Writing (Basic Introduction) (12 hours)

- 3.1 APA- American Psychological Association
- 3.2 MLA - Modern Languages Association
- 3.3 MHRA- Modern Humanities Research Association
- 3.4 Turabian
- 3.5 IEEE- Institute for Electrical and Electronics Engineers
- 3.6 Chicago
- 3.7 Harvard System

UNIT IV Bibliography and References (7 hours)

- 4.1 Bibliography and Working Bibliography
- 4.2 References
- 4.3 Scientific Abstracting
- 4.4 Footnote/Citation

UNIT V General Thesis Format (8 hours)

- 5.1 Certifications and Preliminaries
- 5.2 Introduction

- 5.3 Review of Related Research
- 5.4 Procedure
- 5.5 Analysis of the Data and Findings of the Study
- 5.6 Summary, Conclusions and Recommendations
- 5.7 Appendix

PART-A: PRACTICALS

(30 hours)

1. Prepare an abstract of a research article
2. Prepare bibliography of atleast 10 references from a topic
3. Prepare a research proposal of your choice

Suggested Readings:

- Author's Guide (1991) **Research Methods Applied to Health Physical and Recreation** Washington, D.C.
- Best John & Kahni, J.V. (1992) **Research in Education**, New Delhi. Prentice Hall of India (Pvt.) Ltd.
- 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.
- 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.
- Clarke, H.H. (1992). **The Application of Measurement in Health and Physical Education** Prentice Hall, New York.
- Garrett, H.E. (1981) **Statistics in Psychology and Education**. New York: Vakils Feffer and Simon Ltd.
- Koul, L. (2002) **Methodology of Educational Research**, Vikas Publishing House, New Delhi
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- Shaw, Dhananjay (2007) **Fundamental Statistics in Physical Education & Sports Sciences**, Sports Publication, Delhi.
- Smith, R. Philosophy (2007) **Methodology and Educational Research**, Wiley Black Well, USA.
- Swann, J. Pratt (2007) **Educational Research in Practice: Making Sense of Methodology**, Viva, New Delhi
- Thomas, J.R., & Nelson J.K. (2005) **Research Method in Physical Activity**. U.S.A: Champaign, IL: Human Kinetics Books.
- Thomas, J.R., Nelson, J.K. & Silverman, S.J. (2011) **Research Method in Physical Activity**. U.S.A: Champaign, IL: Human Kinetics Books.

SYLLABUS OF GENERIC ELECTIVE PAPERS (GE)**SEMESTER- VI****B.A.-PE-GE-6 (4)****OBESITY AND WEIGHT MANAGEMENT****GE**

Sl. No.	Course Title & Code	Credits	Credit Distribution of the Course			Eligibility Criteria	Pre-Requisite of the Course (if any)
			Lecture	Tutorial	Practical/Practice		
1.	Obesity and Weight Management	04	3	0	1	XII Pass	NIL

GE-6(4)-OBESITY AND WEIGHT MANAGEMENT**Learning Objective:**

The objective of this course is to provide the understanding through practical knowledge and practices with enough scope of creativity/Innovations.

Learning Outcomes:

1. The learner will learn about the concept of obesity and its causes.
2. The learner will practice and manage the ways to prevent obesity.
3. The learner can assess the obesity (Basic methods).
4. The learner can practice and maintain healthy weight.
5. The learner can make behaviour modification to control weight through diet and physical activities.
6. The learner can design the balance diet chart for his/her own requirements.

SYLLABUS

No. of Credits: 04 (Lecture-03, Practical-1)

Theory: 45 hours, Practical: 30 hours.

Unit-I: OBESITY & IT'S ASSESSMENT**(9 hrs. lectures)**

1.1 Concept and Causes of Obesity.

1.2 Health Risks Associated with Obesity.

1.3 Assessment of Obesity-Body Mass Index (BMI), Waist-Hip Ratio, Waist-Height ratio, Skinfold Thickness (Abdomen, triceps, thigh, Suprailliac).

Unit-II: MANAGEMENT OF OBESITY THROUGH DIET**(9 hrs. lectures)**

- 2.1 Nutrition and Balanced Diet.
- 2.2 Dietary Aids and Gimmicks.
- 2.3 Obesity and weight management through diet.

Unit- III: WEIGHT MANAGEMENT

(9 hrs. lectures)

- 3.1 Concept of weight, Importance of weight Management in Life.
- 3.2 Cultural and social aspect, Life style patterns in contemporary system.
- 3.3 Goal setting and goal accomplishment, Self-control skills for weight management.

Unit-IV: WEIGHT MANAGEMENT THROUGH PHYSICAL ACTIVITIES AND BEHAVIOUR MODIFICATION

(9 hrs. lectures)

- 4.1 Importance of maintaining Healthy Weight; Weight Management and Energy Balance.
- 4.2 Principles of weight management; Aerobic & Anaerobic activities.
- 4.3 Behaviour Modification techniques for weight management.

Unit- V METABOLISM AND WEIGHT CONTROL

(9 hrs. lectures)

- 5.1 Metabolism and factors affecting metabolism, Basal Metabolic Rate and Methods for Measuring BMR.
- 5.2 Strategies for weight control, concept of weight loss and fat loss
- 5.3 Weight control for special population.

Practical

(30hrs.)

- 1. Use BMI to identify the actual body weight status and desirable body weight status of at least ten students.
- 2. Calculate Waist-Hip ratio, waist-height ratio of ten persons.
- 3. Suggested exercises for Obesity (Jogging, Running, Aerobics and calisthenics exercises)
- 4. Development of a Diet chart for a sportsperson

Suggested Reading

1. Pawar,B., Joshi.A., Chaudhary,V.(2022), **“Practical Manual for Physical Education”**, Friends Publications. New Delhi (India) ISBN-978-93-95829-30-4.
2. Kumar, P (2022). **“Assessment & Management of Obesity”**. Friends Publication (India)
3. Saini N.,Suri.M., (2020) **“ Sports Psycho-Physiology”**, Friends Publication, New Delhi (India) ISBN-978-93-88457-58-3.
4. **“Sports Nutrition and Weight Management”**, ISBN : 978-93-88269-53-7, Year 2019, published by Sports Publication , DaryaGanj, New Delhi-110002
5. Anspaugh, D. J., Hamrick, M. H., &Rosato, F. D. (2006). **“Wellness: Concepts and applications”**. McGraw-Hill Companies.
6. Caliendo, M. A. (1981). **“Nutrition and preventive health care”**. Macmillan.
7. Hales, D. (2006). **“An invitation to health”**. Cengage Learning.
8. Hoeger, W. W. K., &Hoeger, S. A. (2007). **“Fitness & Wellness.Belmont”**, USA: Thomson Wadsworth
9. Howley, E. T., & Franks, B. D. (1986). **“Health/Fitness Instructor's Handbook”**. Human Kinetics Publishers, Inc., Marketing Director, Box 5076, Champaign,IL.
10. Kansal D.K. (2012). **“Test Measurement and Evaluation”**. Sports Spiritual Sciences Publications, New Delhi.
11. Kumari, S. S., Rana, A., &Kaushik, S. (2008). **“Fitness, Acrobics & Gym Operations”**. New Delhi: KhelSahitya Kendra
12. Sharma K. et. al. (2014), **“Fitness Aerobics & Gym Operations”**, Jyoti Enterprises, Delhi.
13. Tiwari S. (1999). **“Excrise Physiology”**, Sports Publications, Delhi.
14. Shaw D. (2018) **“Fundamental Statistics in Physical Education and Sports Sciences”** Sports Publication, ISBN: 81-86190-57-0.
15. Shaw D. (2020) **“Physical Education Practical Manual for Class XI”** Prachi Publication, ISBN : 978-8193-7698-0-5.
16. Shaw D. (2020) **“Physical Education for Class XII”** Prachi Publication, ISBN : 978-81-7730-848-8.
17. Shaw D. (2020) **“Physical Education for Class XI”** Prachi Publication, ISBN : 978-81-7730-847-1.
18. Shaw D. (2020) **“Physical Education Practical Manual for Class XII”** Prachi Publication, ISBN : 978-81-937698-1-2.
19. Shaw D. (2020) **“Parable Global English Hindi Dictionary of Physical Education & Sports Sciences”** Khel Sahitya Kendra, ISBN : 978-93-90461-18-9.
20. Shaw D. (2020) **“Yoga Asanas and their Benefits”** Sports Publication, ISBN : 978-81-9436-11-9-0.