BASIC SCIENCES OF SPORTS Paper Code- PHE-MDC-103		
MAJOR DISCIPLINE CORE COURSE (MAJ-3)		SEMESTER – III
SYLLABUS OBJECTIVES		
Unit 1	LO 1	To discover the anatomy and physiology of human beings.
	LO 2	To ascertain the importance of Kinesiology and Biomechanics in games and sports.
Unit 2	LO 3	To learn and understand the basic concepts of biomechanics i.e. Newton's laws, levers, center of gravity, equilibrium, friction, and force.
	LO 4	To understand the support extended by the skeletal system and Joint in the human body.
	LO 5	To know the role of muscles in movement, support, and other bodily functions.
Unit 3	LO 6	To comprehend the basics of the human respiratory system and the functions of the human heart.
	LO 7	To grasp the mechanisms of the digestive system.
	LO 8	To understand the introduction, location, and functions of major endocrine glands and their role in regulating bodily functions through hormone secretion.
LEARNING OUTCOMES		
Unit 1	LOs 1	Students will understand the anatomy of human beings and their physiology.
	LOs 2	Students develop knowledge regarding the need & importance of kinesiology and biomechanics in games and sports, and apply its principles to analyze and improve athletic techniques and performance.
Unit 2	LOs 3	Students will be able to know fundamental biomechanical concepts (Newton's laws, levers, center of gravity, equilibrium, friction, and force) to analyze and enhance human movement and sports performance.
	LOs 4	Students will be able to understand the role of the skeletal system in overall bodily function and movement.
	LOs 5	Students will understand the functional role of muscles in movement and physiological functions.
Unit 3	LOs 6	The students will get a deep understanding of the respiratory and circulatory system.
	LOs 7	Students can discover the importance of the digestive system's well-being.
	Los 8	The students will learn about the various glands in the endocrine system and their distinguished functions.
Outline Syllabus		**BASIC SCIENCES OF SPORTS**
Credits		4 (Theory: 3, Practical;1)
Marks		100 : External = 50 (Theory) + 30 (Practical)+ 20 (Internal Assessment)
Contact Hrs		75 Hours (Theory: 45 Hours, Practical: 30 hours) 15 hours theory= 1 Credit, 30 Hours practical =1 credit) NOTE: ➢ Six periods per week (4 periods for Theory and 2 periods Practical) ➢ One unit contains 60-80 students for theory and 30-40 students for Practical. ➢ Teacher who is preparing three teams for University Inter-college

Manoj Singh

	competitions, his/her workload shall be counted by including three periods per week in the teaching load.	
UNITS	**TOPICS**	Learning outcomes mapping
Unit 1	1. Anatomy and Physiology: Meaning and Importance.	LOs 1
	2. Physiological Terms: Vital capacity, second wind, Oxygen debt, Resting Heart Rate, Cardiac Output and VO2 max.	LOs 1
	3. Kinesiology: Meaning, importance of Kinesiology in Games and Sports.	LOs 2
	4. Biomechanics: Meaning, importance of Biomechanics in Games and Sports.	LOs 2
Unit 2	1. Biomechanical concept: Newton's laws of Motion, Levers, centre of gravity, Equilibrium, friction and force.	LOs 3
	2. Skeletal System: Meaning, Types of bones, Functions & Structure.	LOs 4
	3. Joints: Meaning, types and movements.	LOs 4
	4. Muscular system: Introduction, Classification (Functional & Structural), Muscle Contractions	LOs 5
Unit 3	1. Respiratory system: Introduction, Types of respiration, organs and mechanism of respiratory system and Measurements of Ventilation.	LOs 6
	2. Circulatory System: Introduction, structure & functions of heart, Cardiac Cycle, Basic Terminology: Cardiac output, stroke volume, Heart rate and blood pressure.	LOs 6
	3. Digestive system: Introduction, organs and mechanism of Digestive system.	LOs 7
	4. Endocrine system: Introduction, location and functions of endocrine glands.	LOs 8
PRACTICAL	SYLLABUS	
	1. Game: National style Kabaddi or Circle (Punjab) style Kabaddi: fundamental skills, Marking, Measurement, rules and regulation. **2. Athletics:** Long Jump, Discus throw: Marking, Measurement, Rules & regulation and Middle distance race (800 or 1500).	
TEST & EVALUATION AND PRACTICE	Test 1. Cooper12 Minute run and walk test and Harvard Step Test. Test 2. Blood pressure and Body temperature. Test 3. Measurement of Basel Heart rate and Training heart rate.	
SUGGESTED READINGS	1. McArdle, W. D., Katch, F. I., & Katch, V. L. (2014). Essentials of Exercise Physiology (5th ed.). Philadelphia, PA: Wolters Kluwer Health/Lippincott Williams & Wilkins. 2. Powers, S. K., & Howley, E. T. (2021). Exercise Physiology: Theory and Application to Fitness and Performance (11th ed.). New York, NY: McGraw-Hill Education. 3. Hoffman, J. (2014). Physiological Aspects of Sport Training and Performance (2nd ed.). Champaign, IL: Human Kinetics. 4. Muscolino, J. E. (2017).*Kinesiology: The Skeletal System and Muscle Function* (3rd ed.). St. Louis, MO: Elsevier Health Sciences. 5. Luttgens, K., Hamilton, N., & Deutsch, H. (2016). *Kinesiology: Scientific Basis of Human Motion* (12th ed.). New York, NY: McGraw-Hill Education.	

6. Rasch, P. J., & Burke, R. K. (1989). *Kinesiology and Applied Anatomy* (6th ed.). Philadelphia, PA:
7. Lippincott Williams & Wilkins. McGinnis, P. M. (2020). Biomechanics of Sport and Exercise (3rd ed.). Champaign, IL: Human Kinetics.
8. Bartlett, R. (2007).Introduction to Sports Biomechanics: Analysing Human Movement Patterns (2nd ed.). London: Routledge.
9. Knudson, D. (2007).Fundamentals of Biomechanics (2nd ed.). New York, NY: Springer.
10. R.S Brar. (2003). Essentials of Physical Education (4th edition) Kalyani Publisher, New Delhi.

	Areobics, Zumba And Folk Dance **Paper Code (PHE-SEC-103)**
Skill Enhancement course	**SEMESTER - III**
Course Objective	1. To understand basic principles and benefits of Aerobics, Zumba, and Folk Dance. 2. To Gain theoretical knowledge of different dance forms and fitness concepts 3. To identify cultural elements in Indian folk dances. 4. To demonstrate aerobic and rhythmic movement techniques in practical settings
Course Outcome	1. Students will be able to understand basic principles and benefits of Aerobics, Zumba, and Folk Dance. 2. Students will Gain theoretical knowledge of different dance forms and fitness concepts. 3. Students will learn cultural elements in Indian folk dances. 4. students will learn to demonstrate aerobic and rhythmic movement techniques in practical settings
Outline Syllabus	**AREOBICS, ZUMBA AND FOLK DANCE**
Credits	2 (Theory: 1, practical;1)
Marks	100 (Theory: 50, Practical: 20, Internal-30)
Contact Hrs	45 Hours (Theory: 15 hours, Practical: 30 hours) 15 hours theory= 1 Credit, 30 Hours practical = 1 credit)
	THEORY (70 Marks)
UNITS	**TOPICS**
Unit 1	1. Introduction to Aerobics: Definition, origin (Kenneth H. Cooper), and evolution, Objectives and goals of aerobics. 2. Types and Forms of Aerobics: Low-impact and high-impact aerobics. Step aerobics (equipment and technique).Floor aerobics and rhythmic routines and Dance aerobics and freestyle aerobics 3. Introduction to Zumba: Definition, Origin and founder: Beto Perez), and evolution, Objectives and goals of zumba. 4. Basic philosophy: Latin American roots of Zumba: Salsa, Cumbia, Reggaeton, Zumba vs. Traditional Aerobics
Unit 2	1. Introduction to Folk Dance: Definition and importance of folk dance, Role of folk dance in community and identity 2. Indian Folk Dances: Theory and Tradition of Bhangra and Giddha (Punjab) Garba (Gujarat), Lavani (Maharashtra):Ghoomar (Rajasthan) 3. Physiological effects on body systems (cardiovascular, respiratory, musculoskeletal) of aerobics, Zumba and folk dances. 4. Health and safety considerations: hydration, clothing, surface injury prevention

Practical (20Marks)	**SYLLABUS**
	1. Basic Aerobic Steps Practice: Step-touch, V-step, Grapevine, Hamstring Curl, Knee-lift, Jumping Jacks. 2. Zumba Routines: Music tempo management and intensity variations. 3. Folk Dance: Bhangra Basic steps: Jhummar, Luddi, Dhamaal Hand and leg coordination, use of dhol beats
SUGGESTED READINGS:	1. Cooper, Kenneth. *Aerobics for Fitness*. 2. Perez, Beto. *Zumba: Ditch the Workout, Join the Party*. 3. Ministry of Culture – Folk Dances of India (website)

	MEDITATION AND SHUDDHI KRIYAS Paper Code (PHE-IDC-103)
MULTI DISCIPLINARY COURSE (MDC-4)	SEMESTER -IV
Course Objective	1. To understand the various aspects of Meditation. 2. To highlight the importance ofshuddhi kriyas. 3. To provide a general understanding of different techniques of meditation and shuddhi Kriyas.
Course Outcome	1. Students will be able to understand various aspects meditation. 2. Students will learn the importance of shuddhi kriyas. 3. Students will learn about different techniques of meditation and shuddhi Kriyas.
Outline Syllabus	MEDITATION AND SHUDDHI KRIYAS
Credits	3 (Theory: 2, Practical;1)
Marks	100 (Theory: 50, Practical: 20 , Internal- 30)
Contact Hrs	60 Hours (Theory: 30 hours, Practical: 30 hours) 15 hours theory= 1 Credit, 30 Hours practical = 1 credit) NOTE: ➢ Twelve periods per week (6 periods each for Theory and Practical) ➢ One unit contains 60-80 students for theory and 30-40 students for Practical. ➢ Teacher who is preparing three teams for University Inter-college competitions, his/her workload shall be counted by including six periods per week in the teaching load.
UNITS	**TOPICS**
Unit 1	1. Meaning and concept of meditation, 2. Techniques (Mudras) of meditation 3. Benefits of meditation and chakras. 4. Safety measures and precautions during meditation.
Unit 2	5. Meaning and concept of shuddhi kriyas. 6. Techniques of different shuddhi kriyas. 7. Benefits of different shuddhi kriyas. 8. Safety measures and precautions during shuddhi kriyas.
Unit 3	1. Pranayama: Meaning and Different Phases in Pranayama Practice - Puraka (Inhalation), Kumbhaka (Retention) Rechaka (exhalation) 2. Techniques of different Pranayama. 3. Benefits of different Pranayama.

	4. Safety measures and precautions during Prayanama.
PRACTICAL	SYLLABUS
	1. Practices of different techniques of meditation 2. Practices of different techniques of shuddhi kriyas. 3. Practices of different techniques of pranayama.
SUGGESTED READINGS	1. Gore, (1990). Anatomy and Physiology of Yoga Practices. Lonavala: Kanchan 2. Iyengar, B.K.S. (2000). Light on Yoga. New Delhi: Harper Collins Publishers. 3. Karbelkar N.V.(1993).Patanjal Yogasutra Bhashya (Marathi Edition) Amravati: Hanuman Vyayam Prasarak Mandal 4. Kenghe. C.T. (1976). Yoga as Depth-Psychology and para-Psychology (Vol-I): Historical Background, Varanasi: Bharata Manishai. 5. Kuvalyananada Swami & S.L. Vinekar, (1963). Yogic Therapy – Basic Principles and Methods. New Delhi: Govt. of India. Central Health Education and Bureau. 6. Swami Kuvalayanda, (1998). Asanas. Lonavala: Kaivalyadhama. 7. Swami Satyananada Sarasvati. (1989). Asana Pranayama Mudra Bandha. Munger: Bihar School of Yoga

SPORTS COACHING AND ADMINISTRATION Paper Code- PHE-MDC-104		
MAJOR DISCIPLINE CORE COURSE (MAJ-4)		SEMESTER – IV
SYLLABUS OBJECTIVES		
Unit 1	LO 1	To gain knowledge about aim, objectives, principles and various methods of sports training.
	LO 2	To learn the effects and significance of warm-up and cool-down exercises.
Unit 2	LO 3	To understand the components of physical fitness and methods to improve Speed, Strength, Endurance, Agility, and Flexibility.
	LO 4	To know the concept of transfer of training and its types and factors.
	LO 5	To understand the concept of training load and its types.
Unit 3	LO 6	To ascertain the concept of intramural and extramural activities.
	LO 7	To comprehend the types and how to make tournament fixtures.
	LO 8	To get the concept of sports management and how to organize and administer sports events.
LEARNING OUTCOMES		
Unit 1	LOs 1	Students will be capable to define the aim, objectives, principles of sports training and use different training methods (Continuous, Interval, Fartlek, Repetition, and Circuit training) to improve athletic performance.
	LOs 2	Students develop knowledge regarding the benefits and importance of warm-up and cool-down routines in enhancing performance and preventing injuries.
Unit 2	LOs 3	Students will be able to define & differentiate between various components of physical fitness and apply effective training methods to enhance Speed, Strength, Endurance, Agility, and Flexibility.
	LOs 4	Students will be able to explain the types of transfer of training (positive, negative, and zero) and identify factors that influence transfer of training
	LOs 5	Students will be able to define and differentiate between normal load, crest load, and overload.
Unit 3	LOs 6	Students acquire knowledge regarding the significance and organization of intramural and extramural programs in promoting physical activity and sports development.
	LOs 7	Students gain understanding about the different types of tournaments (Knockout, League methods: Cyclic, Tabular, Staircase) and how to accurately draw fixtures for various tournaments.
	LOs 8	Learners will be capable of planning, organizing, and managing athletic meets effectively.
Outline Syllabus		SPORTS COACHING AND ADMINISTRATION
Credits		4 (Theory: 3, Practical;1)
Marks		100 : External = 50 (Theory) + 30 (Practical)+ 20 (Internal Assessment)
Contact Hrs		75 Hours (Theory: 45 Hours, Practical: 30 hours) 15 hours theory= 1 Credit, 30 Hours practical =1 credit) NOTE: ➢ Six periods per week (4 periods for Theory and 2 periods Practical) ➢ One unit contains 60-80 students for theory and 30-40 students for Practical.

	➢ Teacher who is preparing three teams for University Inter-college competitions, his/her workload shall be counted by including three periods per week in the teaching load.	
UNITS	**TOPICS**	Learning outcomes mapping
Unit 1	1. Sports Training: Meaning, aim and objective.	LOs 1
	2. Principles of Sports Training.	LOs 1
	3. Methods of Sports Training: Continuous method, Interval method, Fartlek, Repetition method and Circuit training.	LOs 1
	4. Warm-up, Cool-down: -Meaning, effects & significance on body.	LOs 2
Unit 2	1. Components of Physical fitness: Speed, Strength, Endurance, Agility and Flexibility.	LOs 3
	2. Methods of improving: Speed, Strength, Endurance, Agility and Flexibility.	LOs 3
	3. Transfer of Training: Types and factors, affecting on transfer of training	LOs 4
	4. Load: Normal load, Crest load and Over load.	LOs 5
Unit 3	1. Intramural and Extramural: meaning, importance and conduct of intramural and extramural.	LOs 6
	2. Tournaments: Byes, fixtures, Types of Tournament and drawing out of fixtures (Knock Out, League: Cyclic method, Tabular method and Staircase method).	LOs 7
	3. Sports Management: Meaning, Steps and Importance.	LOs 8
	4. Event management: Organization and administration of sports events and Athletic meet.	LOs 8
PRACTICAL	SYLLABUS	
	1. Games: Basketball or Table Tennis; Marking, Measurement, rules and regulation. **2. Athletics:** Javelin throw, High Jump: Marking, Measurement, Rules & regulation and Long Distance Running (3000 or 5000).	
TEST & EVALUATION AND PRACTICE	TEST 1:Phillip's J.C.R test TEST 2.Semo agility test, Shuttle Run Test TEST 3. Sit and reach test. TEST 4. Nelson Hand Reaction time test.	
SUGGESTED READINGS	1. Dick, W. F. (1980).Sports training principles. London: Lepus Books. 2. Harre, D.(1982).Principles of sports training. Berlin: Sporulated. 3. Jensen, R. C.& Fisher, A.G. (1979). Scientific basis of athletic conditioning. Philadelphia : Lea and Fibiger. 4. Matvyew, L.P. (1981). Fundamental of sports training. Moscow: Progress Publishers. 5. Singh, H. (1984). Sports training, general theory and methods.Patiala: NSNIS. 6. Uppal, A.K., (1999). Sports Training. New Delhi: Friends Publication. 7. Singh, A., Bains, J, Gill, JS & Brar, RS (2026). Essential of Physical Education. Published by: Kalyani Publishers.	