

FUNDAMENTALS OF SPORTS SCIENCES		
Paper Code: BA-MIN-PH. ED-03		
MINOR DISCIPLINE CORE COURSE (MIN-03)		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		FUNDAMENTALS OF SPORTS SCIENCES
Credits		4 (Theory: 3, Practical;1)
Marks		100 : External = 50 (Theory) + 20 (Practical)+ 30 (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		



Dr. J. K. Nigam

Harjinder

	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
Unit 1	1. Anatomy and Physiology: Meaning and Importance. 2. Physiological Terms: Vital capacity, second wind, Oxygen debt, Resting Heart Rate, Cardiac Output and VO₂ max. 3. Kinesiology: Meaning, importance of Kinesiology in Games and Sports. 4. Biomechanics: Meaning, importance of Biomechanics in Games and Sports.
Unit 2	1. Biomechanical concept: Newton's laws of Motion, Levers, centre of gravity, Equilibrium, friction and force. 2. Skeletal System: Meaning, Types of bones, Functions & Structure. 3. Joints: Meaning, types and movements. 4. Muscular system: Introduction, Classification (Functional & Structural), Muscle Contractions
Unit 3	1. Respiratory system: Introduction, Types of respiration, organs and mechanism of respiratory system and Measurements of Ventilation. 2. Circulatory System: Introduction, structure & functions of heart, Cardiac Cycle, Basic Terminology: Cardiac output, stroke volume, Heart rate and blood pressure. 3. Digestive system: Introduction, organs and mechanism of Digestive system. 4. Endocrine system: Introduction, location and functions of endocrine glands.
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. Cooper 12 Minute run and walk test and Harvard Step Test. Test 2. Blood pressure and Body temperature. Test 3. Measurement of Basal Heart rate and Training heart rate.
SUGGESTED READINGS	1. McArdle, W. D., Katch, F. I., & Katch, V. L. (2014). <i>Essentials of Exercise Physiology</i> (5th ed.). Philadelphia, PA: Wolters Kluwer Health/Lippincott Williams & Wilkins. 2. Powers, S. K., & Howley, E. T. (2021). <i>Exercise Physiology: Theory and Application to Fitness and Performance</i> (11th ed.). New York, NY: McGraw-Hill Education. 3. Hoffman, J. (2014). <i>Physiological Aspects of Sport Training and Performance</i> (2nd ed.). Champaign, IL: Human Kinetics. 4. Muscolino, J. E. (2017). <i>Kinesiology: The Skeletal System and Muscle Function</i> (3rd ed.). St. Louis, MO: Elsevier Health Sciences. 5. Luttgens, K., Hamilton, N., & Deutsch, H. (2016). <i>Kinesiology: Scientific Basis of Human Motion</i> (12th ed.). New York, NY: McGraw-Hill Education.



Asian Educational
Institute, Patiala

Amritha *MSQ* *Hanjin*

SPORTS MANAGEMENT & COACHING	
MAJOR DISCIPLINE CORE COURSE (MIN-04)	SEMESTER – IV PAPER CODE-BA-MIN-PH-ED-04

SYLLABUS OBJECTIVES

Course Objective	1	To gain knowledge about aim, objectives, principles and various methods of sports training.
	2	To learn the effects and significance of warm-up and cool-down exercises.
	3	To understand the components of physical fitness and methods to improve Speed, Strength, Endurance, Agility, and Flexibility.
	4	To know the concept of transfer of training and its types and factors.
	5	To understand the concept of training load and its types.
	6	To ascertain the concept of intramural and extramural activities.
	7	To comprehend the types and how to make tournament fixtures.
	8.	To get the concept of sports management and how to organize and administer sports events

Course Outcome	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.
	Students develop knowledge regarding the benefits and importance of warm-up and cool-down routines in enhancing performance and preventing injuries
	Students will be able to define and differentiate between various components of physical fitness and apply effective training methods to enhance Speed, Strength, Endurance, Agility, and Flexibility.
	Students will be able to explain the types of transfer of training (positive, negative, and zero) and identify factors that influence transfer of training.
	Students will be able to define and differentiate between normal load, crest load, and overload.
	Students acquire knowledge regarding the significance and organization of intramural and extramural programs in promoting physical activity and sports development.
	Students gain understanding about the different types of tournaments and how to accurately draw fixtures for various tournaments.
	Learners will be capable of planning, organizing, and managing athletic meets effectively.

Outline Syllabus	SPORTS MANAGEMENT & COACHING
Credits	4 (Theory: 3, Practical;1)
Marks	100 : External = 50 (Theory) + 20 (Practical)+ 30(Internal Assessment) Performance in mid-semester test: 12 Assignment/Project/Seminar: 12 Attendance: 6
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
	1 Sports Training: Meaning, aim and objective.
	2 Principles of Sports Training.

Signature

NSQ

Hayfinar

Unit 1	3	Methods of Sports Training: Continuous method, Interval method, Fartlek, Repetition method and Circuit training.
	4	Warm-up, Cool-down: Meaning, effects & significance on body
Unit 2	1	Components of Physical fitness: Speed, Strength, Endurance, Agility and Flexibility.
	2	Methods of improving: Speed, Strength, Endurance, Agility and Flexibility.
	3	Transfer of Training: Types and factors affecting transfer of training.
	4	Load: Normal load, Crest load and Overload.
Unit 3	1	Intramural and Extramural: meaning, importance and conduct of intramural and extramural.
	2	Tournaments: Byes, fixtures, Types of Tournament and drawing out of fixtures (Knock Out, League: Cyclic method, Tabular method and Staircase method).
	3	Sports Management: Meaning, Steps and Importance.
	4	Event management: Organization and administration of sports events and Athletic meet.
PRACTICAL(20)	SYLLABUS	
	Games: Basketball or Table Tennis; Marking, Measurement, rules and regulation. Athletics: Javelin throw, High Jump: Marking, Measurement, Rules & regulation and Long Distance Running (3000 or 5000).	
TEST & EVALUATION	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.. 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, J.S. & Brar, R.S. (2026). Essential of Physical Education. Kalyani Publishers.	

Res Q1

Harpinder

Shruti Singh

