MASTERS IN SPORTS SCIENCES -Exercise Physiology

BLOCK SYLLABUS

Semester	Course	Topics
I	Essentials of Exercise Physiology	Cardiovascular system Neuromuscular system Exercise & bioenergetics Endocrine & immune system
	Kinesiology	Joint and Muscle Structure Kinetics and Kinematics of Shoulder Complex Kinetics and Kinematics of Elbow Joint Kinetics and Kinematics of Wrist Joint Kinetics and Kinematics of Hip Joint Kinetics and Kinematics of Knee Joint Kinetics and Kinematics of Ankle Joint Kinetics and Kinematics of Spine
	Sports Nutrition 1	Introduction to Sports Nutrition Role of Carbohydrate in sports Role of Protein in sports Fats & Role of Fats in Sports
	Research Methodology	Introduction Developing the Problem Review of Related Literature, Writing a Proposal (Thesis) Non parametric approaches to data Research and publication ethics
	Literature review for research	Literature review for thesis
	Evidence Based Practice (Elective)	Introduction to evidence- based complementary medicine Types of Evidence Types of Studies Applications of Evidence Based Practice
	Sports Injury Prevention (Elective)	Performing Baseline Measurement Recording injury and their Magnitudes Exploring injury Mechanism Identifying Risk Factors Developing a preventive intervention

		Implementation & Adherence
II	Essentials of Psychology in Sports & Exercise	Developmental psychology Group Dynamics Health psychology
	Exercise Form and Technique	Basics of Exercise terminology and fitness variables Principles of Training & Periodisation Concept of Training Load Fitness Training Program Design
	Essentials of Mechanics	Biomechanics Kinematic Concept Kinetic Concept Kinematic of Motion Kinetics of Motion Fluid Mechanics
	Sports Nutrition 2	Assessing Nutritional Status in Athletes Sports Hydration and Electrolyte Balance Introduction to Micronutrients in Sports Nutrition
	Research proposal and ethical clearance	Thesis & Research work
	Research for Beginners (Elective)	Introduction to Research. Research planning Qualitative Research Quantitative Research Mixed methods Writing Research paper
	Introduction to Lifestyle Medicine (Elective)	Lifestyle Medicine Causes & implication of chronic disease Food as a cure and cause for obesity, diabetes, autoimmune, heart disease Effect of stress and alcohol of health Long lived populations and food web Implementing personal lifestyle changes

III	Applied Exercise Physiology	Cardiorespiratory Exercise Physiology Exercise in Extreme Environments Kinanthropometry & Exercise Physiology
	Clinical Exercise Physiology	Physical activity for health and fitness Cardiorespiratory disease Metabolic disorders Musculoskeletal & Neurological conditions Special Populations
	Physiology of Training & Sports	Principles of Exercise training Training for sport Ergogenic aids in sports Sports training in special populations Sports specific exercise testing
	Data Collection & Review Article	Thesis & Research work
	Fundamentals of Digital Marketing (Elective)	Digital marketing strategy Multimedia and social media Outbound marketing Multi-channels and attribution
	Women's Health & Exercise (Elective)	Women in sports Exercise and menstruation Pregnancy and exercise

IV	Internship	Exposure to sports scientific settings
	Thesis Writing & Submission	Completion and submission of thesis work