# DAV UNIVERSITY JALANDHAR



Course Scheme & Syllabus For Ph.D (Physical Education) (Program ID-)

Syllabi Applicable for Admissions in 2023-24 onwards

## DAV University, Jalandhar

S.No.	Paper	Course Title	In Hours Weightage												
	Code		L	Т	Р	Cr	W	S	ATT.	LP/ CA	MTE	MTP	ETE	ETP	TOTAL
							Q	Α							
								Р							
				Core	Cour	ses			•		•	•	•	•	
1	PHD801	Research Methods & AppliedStatistics	4	0	C	4	10	10	05	0	25	0	50	0	100
2	PHD802	Research and Publication Ethics	2	0	1	2	10	10	05	0	25	0	50	0	50
3	PHD	Seminar- I				2									50
			•	Dep	artm	enta	lEleo	ctive	, ,				•		
4	PHE - XXX	Elective Subject	4	0	C	4	10	10	05	0	25	0	50	0	100
5	PHE - XXX	Elective Subject	4	0	C	4	10	10	05	0	25	0	50	0	100
			14	0	1	14									

## **Total Credits: 14**

L: Lectures

T: Tutorial

P: Practical

**Cr: Credits** 

S.No.	Paper	Course Title	In Hours				Weightage								
	Code		L	Т	Р	Cr	W Q	S A P	ATT.	LP/ CA	MTE	МТР	ETE	ETP	TOTAL
1	PHE - 903	Sports Psychology	4	0	0	4	10	10	05	0	25	0	50	0	100
2	PHE - 904	Exercise and Sports Physiology	4	0	0	4	10	10	05	0	25	0	50	0	100
3	PHE - 905	Evaluation Technology in Physical Education & Sports	4	0	0	4	10	10	05	0	25	0	50	0	100
4	PHE - 906	Management of Physical Education & Sports	4	0	0	4	10	10	05	0	25	0	50	0	100
	PHE - 907	Sports Biomechanics	4	0	0	4	10	10	05	0	25	0	50	0	100

Departmental Elective (Choose any two courses)

				Max.	Minimum
L	Т	Р	Credits	Marks	marks
4	0	0	4	100	40

## **Objective:**

To make the students learn how to design an experiment and what are the various research strategies.

## **Teaching Methodology:**

Class room Lectures, practicals, models, charts, power point presentations.

## Learning outcomes

This course will impart the comprehensive knowledge of designing a research experiment, how to write a research paper, the relevant ethics, copy right, impact factor etc.

## UNIT-I

**Biostatistics:** Definition and relevance in biological research; Measures of Central Tendency: Arithmetic Mean, median, mode, quartiles and percentiles; Measures of Dispersion: Range, variance, standard deviation, coefficient of variation; Skewness and Kurtosis.

**Inferential Statistics:** Hypothesis testing, Errors in Hypothesis Testing-Null Hypothesis, Alternative Hypothesis, Type I and Type II errors, Confidence Limits. Setting up of level of significance.One tailed and Two-tailed tests.

## UNIT-II

**Correlation and Regression:** Correlation coefficient (r), properties, interpretation of r, partial and multiple correlations, linear regression: Fitting of lines of regression, regression coefficient, Bivariate and Multiple Regression.

**Parametric and Non-Parametric Statistics:** Definition, Advantages, Disadvantages, Assumptions; Parametric Tests: Student's t-test, One Way Analysis of Variance, Two Way Analysis of Variance; Non-Parametric Tests: Analysis of Variance, Chi square and Kendall Rank Correlation.

## UNIT-III

**Experimental Set-up:** Basic principles and significance of research design; Randomized Block Designs (RBD), completely randomized designs (CRD); Latin square design and Factorial design.

Data collection, organization and interpretation.

Research articles, research papers, popular research articles and reviews; difference between periodicals; journals; monographs, magazines; proceedings.

## UNIT-IV

How to write a research paper, reference styles, process of submission of a paper; process of proof reading of a research manuscript; process of reviewing.

An introduction to Science citation index; H-index, i10 index, Impact factor calculation, Impact factor of a journal; Eigen factor, Major journal search engines.

Copyright act; Academic frauds; Plagiarism; Softwares to check plagiarism. Reproduction of published material, Citation and acknowledgement; Guidelines for Ph.D. thesis.

#### **References:**

1. Kothari, C.R. *Research Methodology–Methodsand Techniques*. 2nd revised ed. New Delhi: New Age International (P) Ltd. Publishers, 2007. Print.

2. McKillup, S.*Statistics Explained: An Introductory Guide for Life Scientists*. Cambridge, UK: Cambridge University Press, 2006. Print.

3. Selvin, S.*Biostatistics–How it Works: First Impression*. New Delhi: Pearson EducationInc., 2007.Print.

4. Agarwal, B.L. Basic Statistics. New Delhi: New Age International, 2006. Print.

					Max.	Minimum
Paper: Research and Publication	L	Т	Р	Credits	Marks	marks
Ethics	1	0	1	2	50	20
Code: Theory: PHD802						

#### **Objective:**

To acquaint the students with the necessary ethics to be taken care off when publishing there research.

#### **Teaching Methodology:**

Class room lectures, power point presentations.

#### Learning outcomes

This course will make the students learn the principles of publication ethics and help themto publish their work following proper procedures and ethics.

#### UNIT I

Introduction to philosophy, definition, nature and scope, concept, branches. Ethics: definition, moral philosophy, nature of moral judgments and reactions.

Ethics with respect to science and research. Intellectual honesty and research integrity.

## UNIT II

Scientific misconducts: falsification, fabrication, and plagiarism (FFP). Redundant publications: duplicate and overlapping publications, salami slicing. Selective reporting andmisrepresentation of data.

### UNIT III

Publication ethics: definition, introduction and importance. Best practices/standards settinginitiatives and guidelines: COPE, WAME, etc.

Conflicts of interest. Publication misconduct: definition, concepts, problems that lead tounethical behavior and vice versa, types.

#### UNIT IV

Violation of publication ethics, authorship and contributorship. Identifications of publication misconduct, complaints and appeals. Predatory publishers and journals.

#### **References:**

- Yadav, Santosh Kumar (2020). Research & Publication Ethics 1<sup>st</sup> edition. ANEbooks, New Delhi.
- Murlidhar, K; Ghosh, A and Singhvi, A. K. (2019). Ethics in Sciecne Education, Research and Governance, Indian National Science Academy, New Delhi.

OURSE TITLE: EMINAR-I		Т	Р	Credits	Marks
	0	0	4	2	50
COURSE CODE:PHE902					

#### **Instructions and Guidelines for Seminar**

1. Since PhD students must demonstrate the ability to interact with their peer group

- coherently, this course is designed to prepare students for research presentations.
- 2. This seminar will be related to the field of research.
- 3. During the course, researchers are expected to meet their guides regularly to seek guidance.
- 4. The final responsibility for giving effective presentations lies with researchers, not guides.
- 5. The evaluation will be based on contents and presentation skills of students.
- 6. Researchers must have a sound understanding of the research tools.
- 7. Students will have to meet the deadlines given by their respective guides and the department.
- 8. Each researcher will have to prepare a PPT on the topic approved by his/her guide.
- 9. Each researcher will be given 30-40 minutes for presentation
- 10. Slides must present researchers' work comprehensively.

#### COURSE TITLE: SPORTS PSYCHOLOGY COURSE CODE: PHE903

L	Т	Р	Credits	Marks
4	0	0	4	100

### Learning Outcomes:

On completion of the course the students shall be able to:

- All aspects of Sports psychology and different theories of play and Psychology of Motor Learning.
- All aspects of Psychology of Running, Children in Sports and Women in Sport.
- Students will understand, Personality of Sportsperson and Coach, Theories of Motivation and Aggression in Sports
- Socio-Psychological Dimensions of Sport, Psychological load in Competitive Sports and different aspects of volitional regulation.

#### UNIT – I

The History and Development of Sport Psychology. Psychology of Play: Traditional theories of Play, Twentieth century theories of Play. The Psycho-analytic position on Play. The behaviouristic position on Play, the Cognitive position on play. Psychology of Motor Learning: Meaning of the term, perceptual Motor Learning, Retention of Motor Skill, and Transfer of skill, Measurement of Learning and Learning curve. Attention and its role in Learning Motor Skill.

## UNIT – II

Psychology of Running: Running through your mind, running addition, the Anxiety of Runner. Children in Sports: Early Psychological Experiences, Motivation of children in Sports, Emotions of children in sports, child and coach, children and competitive Sport. Women in Sport: Issues and controversies. Physical Activities and the Psychological development of the Handicapped. Moral Growth in Sport.

#### UNIT – III

Personality of Sportsperson and Coach. Nature of Personality, The role of Heredity in Personality, Personality Traits and Sportspersons, Assessment of Personality Traits, The Coach and his personality. Problems of Sportspersons and how to solve them. Motivation in Sports

Nature of Motivation, Theories of Motivation, Achievement Motivation, Motivation and Participation in Physical Activity, Drop Outs in Sports. Aggression in Sports, theories of Aggression, Causes of Aggression, Aggression and its influence on performance.

#### $\mathbf{UNIT}-\mathbf{IV}$

Socio-Psychological Dimensions of Sport: Sport performance in groups, Team cohesion, sociometry in sports, Leadership in Sport, Sport Audience and its effect on performance, Psychology of Competition. Psychological characteristics of Pre, during and post competition (Anxiety, Fear, Frustration), Mental Training, Psychological Preparation for competition. Psychological load in Competitive Sports: Meaning of Psychological load, performance and mental load capacity of sportspersons. Volitional Regulation in Sports. Characteristics of Volitionally Regulated Actions. Factors affecting volitional regulation, Development of Volitional qualities.

## **REFERENCES:**

- Authors Guide (2013) National Library of Educational and Psychological Test (NLEPT)
- Catalogue of Tests, New Delhi: National Council of Educational Research and Training Publication.
- Authors Guide (2013) National Library of Educational and Psychological Test (NLEPT
- Catalogue of Test, New Delhi: National Council of Educational Research and TrainingPublication

#### PAPER TITLE: EXERCISE AND SPORTS PHYSIOLOGY PAPER CODE: PHE904

L	Т	Р	Credits	Marks
4	0	0	4	100

#### UNIT – I

Structure and functions of Muscle: Classification of muscles, Structure of Muscle tissues, various theories of muscular, contraction. Hypertrophy of muscles in relation to physical activity. Neuromuscular Physiology. Neuro motor units, Neuro muscular junction, bioelectric potential, kinesthesis Tone and Equilibrium. Bio-Energetics

Feel for muscular work, and energy for muscular contraction, aerobic and anaerobic system, interrelationship of aerobic and anaerobic system with special reference to different activities. Anaerobic – Threshold training. Physiological Changes due to exercise and training.

#### UNIT – II

Cardio vascular system and Exercise. Respiratory system and Exercise. Oxygen debt, Second wind, Micro-circulation. Effect of exercise of carbohydrate, fat and protein metabolism.

Work and Environment. Work capacity under different environmental condition such as hot, humid, cold and high altitude. Sports and Nutrition. Physiological considerations of diet in relation to components, quantities and significance, sports and diet, diet before during and after competition.

#### UNIT – III

Glycogen boosting: Determination of energy cost of various sports activities

Role of Sports Medicine in the field of Physical education and sports. Effect of smoking, drinking and drugs on athletic performance, Dope testing. Prediction and Performance by lab and field testing. Role, importance and construction of any National Physical Fitness Programme -a Physiological approach.

#### UNIT – IV

Effect of Exercise on various body systems. Instrumentation. Various instruments/equipment used in the field of exercise physiology lab in bio-chemical, histological and other studies. Sex difference and Sports: Exercise – Aging and Cardio-vascular diseases.

#### **REFERENCES:**

- Bourne, Geoffery H. "The Structure and Function of Muscles" (London Academic Press) 1973.
- Astrand, P.O. and Rodahl; Karre. "Text Book of work Physiology" (Tokyo Mc Graw. Hill Xogakusha, Ltd. 1979)
- Mathew. D.K. and Fox, E.L. "Physiological Basis of Physical Education and Athletics" (Philadelphia W.B. Saunder Company 1976)
- Wilmore H. Jack and Costill L.Pavid, "Physiology of Sports and Exercise" (Human Kinetics, 2004).
- Roberys A. Robert and Robert O. Scott. "Fundamental Principles of Exercise Physiology" (Mc. Grew Hill Companies, Inc. 2000).
- Katch L. Victor, Katch I. Frank and Mcardle D. William, "Exercise Physiology" (Williams & Wilkins, A Waverty Company, 1966).
- Adams M. Gene Exercise Physiology: Laboratory Manual, (WCB Mc Grew-Hill Companies, Inc, 1988).

#### COURSE TITLE: EVALUATION TECHNIQUES IN PHYSICAL EDUCATION AND SPORTS COURSE CODE: PHE902

L	Т	Р	Credits	Marks
4	0	0	4	100

#### Learning Outcomes:

On completion of the course the students shall be able to:

- Critical analysis of Measurement and Evaluation, Tests and grading system.
- All aspects of Anthropometric Measurements, Basic performance traits and Domains of behavior.
- Teaching aspects of Measurement and Evaluation
- Apply various psychological and sociological test in Physical Education, Measurement of components of all fitness components

#### UNIT – I

Introduction to Measurement and Evaluation. Critical Appraisal of the definitions of Tests Measurement and Evaluation. Classification of Tests. Items to be included in objective and subjective tasks and their advantages and limitations. Evaluating objective and subjective tests. Grading the students. Use of Grades. Philosophical consideration in assignments of Grades. Mechanical Grading Systems, Norms References Grading System, Normal Curve Grading. Natural Break Grading, Criterion Referenced Grading System, Absolute Percentage Grading, Relative absolute percentage Grading. Role of Grading in motivating and Discipline students

#### UNIT – II

Anthropometric Measurements. Why measure body structure and Composition. Sheldon's body type classification. Girth Measurement – Chest, Upper Arm, Forearm, Thigh and Calf. Breadth Measurement- Shoulder Width, Chest Width, Elbow Width, Hip Width and knee Width. Stature Measurement - Standing Height, Sitting Height, Arm Length and Leg Length

Basic performance traits - Strength tests - Cardiovascular tests. Multiple performance traits - Meter abilities – Athletic ability - Physical fitness – motor, fitness. Domains of behaviour - Psychomotor domain - Cognitive domain. Philosophical perspective. A systematic mode of evaluation. Formative and summative evaluation. Norm and criterion reference standards. Trends in Measurement and evaluation. Development of Instruments of evaluating skill and knowledge.

#### $\mathbf{UNIT}-\mathbf{III}$

Teaching Students how to take Tests. Familiarity with the Testing Medium. Preparing for the test. Test Wizeness. Norms and Scales. Raw scores and Derived Scores. Name- Grade Norms, Age Norms, Percentage Norms, Standard Scores Norms. Choice of types of scale. Criterion for Selecting Norms. Body Composition. Measuring body Density from under water weighing Converting Body Density to a percent Body fat. Predicting Body Density by skin fold Equations. Measuring skinfold fat. Computing Body Density and Percent Body Fat. Optimum percent body Fats, desirable Body weight.

#### $\mathbf{UNIT} - \mathbf{IV}$

Skill test, Rating scale, Knowledge test. Physical Fitness components. Motor Fitness components. Health Related Physical Fitness. Measurement of components of all fitness components. Speed. Agility, Balance, Flexibility, Strength, Endurance, Power. Hockey, Football, Basketball, Volleyball, Badminton.

#### **REFERENCES** :

- A Practical Approach to measurments in Physcial Education- by H.H. Barrow & R. Mogee.
- Application of Measurement to Health and Physical Education- by H. Harrison Clarke.
- Classroom Application of Educational Measurement by Albart O.
- Evaluated in Physical Education By Margarat J. Safrif.
- Measurement by the Physical Educator: Why and how by David K. Miller.
- Measurement in Physical Education- by Donald K. Mathew.
- Measurement and Evaluation in Physical Education and Exercise Science-by Baumgaitner

and Jackson Test and Measurement in Sports and Physical Education- By D.K. Kansal.

• Measurement and Evaluation in Physical Education- by D. Allen Phillips and James E. Hornak.

#### COURSE TITLE: MANAGEMENT OF PHYSICAL EDUCAITON AND SPORTS COURSE CODE: PHE906

L	Т	Р	Credits	Marks
4	0	0	4	100

#### UNIT – I

Historical Evolution of Management. Overview of Leadership, Management, and Administration in Physical Education and Sports, The Nature of Leadership, Management and Administration. The Unified Concept of Management. The purpose, Scope of Managing Physical Education, Fitness and Sports Programmes. The Effective Leader and Director. Philosophy, Personality and an Administrator/Manager. Principles; Policies and Standard Practices of Management. Office Management.

#### UNIT – II

Basic Skills/Functions in the Process of Management: Making wise decisions. Communicating Effectively. Managing time and Setting Priority, planning for the Activity Based Programmes, Organising for the Activity Based Programmes, Controlling the Activity Based Programmes, Delegation of duty in the Activity Based Programmes, Staffing and Leading Personnel in Activity Based Programmes. Managing Sports Facilities- Designing and Planning Sports Facilities, Sports Facility Specifications, Standards and Structures. Management and Sports Equipment- Selection, Purchase Maintenance and Security.

#### UNIT – III

Fundamental of Organisational Behaviour- Foundation of a Behavioural Approach to work, The Individual and work Environment, The Human behavioural and the Climate of the work Environment. Understanding Motivated Behaviour- Human needs and Motivation, Goal Setting and Reinforcement, Counselling and Reward System. Leadership and the Human Behaviour in the work. Environment-Leadership Style, Participative Management, Real and Imagined Leadership and Effective Group Performance. Unions and Labour Relations

#### UNIT - IV

Financial Management in Physical Education and Sports. Risk Management in Sports. Legal Aspects of Physical Education and Administration in Sports. Commuting Involvement and Public Relation. Training of Administrator/ Manager for better performance- Competency, Based Approach.

Analysis Administrator Performance Problems. How to Develop Behaviour and How to stop Problematic Behaviour- Punishment and Extinction.

Stress, Burnout and Conflicts in Management of Physical Education and Sports

#### REFERENCES

- Railey, Jim H. and Tscauner, Peggy, Railey, Managing Physcial Education fitness and sports performances (London: Mayfill Pubishig Company, 1988) 2nd Ed.
- Frost, B. and Lockhart, B.D. Marshall Stanley, J. Administration of Physical Education and Atlatics Concepts and Practicees (New Delhi: University Book Stall, 1992)2nd Ed.
- Horine, LARRY, Administration of Physical Education and Sports Programme, (Boul vand: Won C Brown Publisher 1991), 2ND Ed.
- Francis, James G, and Millbourn Cane Jr. Human Behaviour in the work Environment, ( Califoria : Goodyard Publishing Company, Inc. 1980)
- Davis, Keith Human Behaviour at work , (New Delhi : Tata Mc Graw- Hill Publishing Compnay Ltd., 1981)
- Whitaside, Lynn, W. Effective Management Techniaqes for getting things Done (Delhi : Vikas Publication 1971)

#### COURSE TITLE: SPORTS BIOMECHANICS COURSE CODE: PHE907

L	Т	Р	Credits	Marks
4	0	0	4	100

#### UNIT – I

Nature and Scope of Biomechanics in Physical Education. Human Motion: Linear Motion, Angular motion and General Motion. Centre of gravity, its location- Manikin Method, Segmentation methods Reaction board methods

#### UNIT – II

Linear Kinematics: Distance and Displacement, speed and Velocity Acceleration, Vectors and Scalers, Projectile motion, Angular Kinematics: Angular Distance and Displacement, Angular Speed and Velocity, Angular Acceleration, Angular motion vectors. Description of Human Movement – Planes, Axes. Classification of Force System Linear force system, parallel Force System, Concurrent force system, General Force system, composition and resolution of force.

#### $\mathbf{UNIT} - \mathbf{III}$

Linear Kinetics: Inertia, Mass, Force Momentum, Newton's Laws of motion, Newton's Law of Gravitation, Weight, Friction, Impulse, Impact, Pressure, work, Power Energy. Angular Kinetics: Eccentric Force, Couple. Moment, Equilibrium, Centre of Gravity, Stability, Moment of Inertia, Angular momentum, Newton's law of Angular motion, Transfer of Angular Momentum. Fluid Mechanics: Flotation, Relative motion, Fluid resistance.

#### UNIT - IV

Methods of investigation Photo instrumentation – Camera, Films, Exposure Meters, Calibration of Camera Speed, Filming Fundamentals, Films, Analysis, Fundamentals of films analysis. Methods of analysis of sports skills, Qualitative Method, Quantitative Method, Basic Steps: -Development of Model Observation of performance identification of foults.

Development of Model, Observation of performance, identification of faults, Evaluation of fault, Instruction to performer, Qualitative analysis of Running, Diving Serving, Tennis.

#### **REFERENCES:**

- Bunn. John W. Scientific Principles of Coaching (Englewood Ciggs., N.J. Prentice Hall Inc. 1972).
- Dysen Geoffrey, H.G. (The Mechanics of Athletics (London : University of Lond Press ltd. 1968)
- Hay, James G. The Biomechanics of sports Techniques (Englewood Cliffs, N.J.: Prentice Hall, 1985).
- Hay James G. The Anatomical and Mechanical Bases Human Motion. (Englewood Cliffs, N.J. : Prentice Hall, 1982)
- Hay James G. and Reid J.G. Avin Anatomy Mechanics and Human Motion (Englewood Cliffs, N.J. : Prentice Hall, 1988)
- Milles Harison and Nelson Richand C. Biomechans of sports A Research approach. ( Philadelphia : Lea and Febiger 1976)