HNBGU, Srinagar Garhwal (Uttarakhand)

SYLLABUS

DOCTOR OF PHILOSOPHY

(Pre-PhD. course work)

DEPARTMENT OF PHYSICAL EDUCATION

SCHOOL OF EDUCATION

Department of Physical Education, Birla Campus Srinagar Garhwal

The Pre-PhD course work (One semester)-2020

The course work shall consist of the following:

1. **Core course**   **7 credits**
2. **Elective course**   **8 credits**

Core course shall be mandatory for all students and the total number of credit for the core and elective courses shall be of 15 credits with the following pattern:-

Paper, code	Title of the paper	Credit (Marks)		
		Theory (External+ Sessional)	Practical	Total
SOE/PE/C 901	Research Methods and Statistical Application in Research	3 (60+20)	1 (20)	4 (100)
SOE/PE/C 902	Research & Publication Ethics	2 (60+20)	1(20)	3 (100)
SOE/PE/E 903	Sports Psychology	3 (60+20)	1 (20)	4 (100)
SOE/PE/E 904	Exercise Physiology	3 (60+20)	1 (20)	4 (100)
SOE/PE/E 905	Sports Biomechanics	3 (60+20)	1 (20)	4 (100)
SOE/PE/E 906	Evaluation Techniques in Physical Education.	3 (60+20)	1 (20)	4 (100)
SOE/PE/E 907	Sport Management	3 (60+20)	1(20)	4 (100)
(SOE/PE/E 908)	Computer Application	3 (60+20)	1(20)	4 (100)

Note: Two core courses are compulsory and out of six electives courses, students can select any two depending upon the availability of faculty.

CORE COURSE   **4 + 3 = 7 credits**

I.   **Research Methods and Statistical Application in Research (SOE/PE/C 901)**
(3+1= 4 credits)

Max. Marks: 60

Unit -I

Developing & presenting the research problem: Identifying the Problem; Literature review; Hypothesis, Assumption, Limitations, delimitations; Criteria of choosing a problem.
Ethical issues in research: Areas of scientific dishonesty; ethical issues regard copyright; Scientific Misconduct; Animal subjects.

Unit-II

Historical Research: Sources; Admissibility of Historical evidences
Philosophical research: Purpose of Philosophical Research; Schools of Philosophy; Critical thinking; Reasoning
The Survey: Utility in Physical Education and Sports; Tools of Survey; Delphi Method; Case Study.
Experimental and Quasi-experimental research: Sources of Invalidity; Factors jeopardizing Validity; Controlling Threats; Types of designs.
Qualitative Research: Quantitative and qualitative research; Contrast. It's utility in Physical Education and Sports.
Research Report and proposal: Quality Proposal; Salient features of Proposal; Basic guidelines of Research Report; Parts of research Reports.

Unit-III

Important Terms: Variable, Attribute, Mutually exclusive attributes, Independent variable, Dependent variable, extraneous variable**.**
Types of data Quantitative data: Ratio scale, Interval scale; Qualitative data: Nominal scale, Ordinal scale.
Introduction to Multivariate Analysis in Sports : Classification of Multivariate Technique: Techniques for understanding dependence, Techniques for understanding Interdependence, Techniques for understanding structural modeling.
Analysis of Covariance and its Application Concepts of Analysis of Covariance: ANCOVA model, Hypothesis tested. Application of ANCOVA in physical education/sports: Objectives, Statistical test used, Preparation of data file, Defining variables for the data in table, Outputs generated in the analysis; Model way of writing the results of ANCOVA.

Practical   20 marks   (1 credit)
Research Project based on Statistical inferences in Physical Education and Sports: Students are required to select any one of the inferential statistical technique and identify the problem. After identification of the problem by the candidate, data needs to be collected and analyzed using any one statistical software package. The project needs to be completed and submitted in the last month of the course work and should be defended by the students in front of the departmental panel.

Research & Publication Ethics (SOE/PE/C 902)
(2+1= 3 credits)

Max. Marks: 60

Unit-I

Philosophy and Ethics : Introduction to philosophy: definition, nature and scope, concept, branches Ethics: definition, moral philosophy, nature of moral judgements and reactions

Scientific Conduct: Ethics with respect to science and research , Intellectual honesty and research integrity, Scientific misconducts: Falsification, Fabrication, and Plagiarism (FFP), Redundant publications: duplicate and overlapping publications, salami slicing , Selective reporting and misrepresentation of data

Unit-II

Publication Ethics :. Publication ethics: definition, introduction and importance, Best practices / standards setting initiatives and guidelines: COPE, WAME, etc. Conflicts of interest, Publication misconduct: definition, concept, problems and vice versa, types, Violation of publication ethics, authorship and contributor ship, Identification of publication misconduct, complaints and appeals, Predatory publishers and journals

Open Access Publishing:- Open access publications and initiatives, SHERPA/ROMEO online resource to check publisher copyright & self-archiving policies, Software tool to identify predatory publications developed by SPPU, Journal finder / journal suggestion tools viz. JANE, Elsevier Journal Finder, Springer Journal Suggester, etc.,

Unit-III

Publication Misconduct :- A. Group Discussions   Subject specific ethical issues, FFP, authorship, Conflicts of interest, Complaints and appeals: examples and fraud from India and abroad

B. Software tools Use of plagiarism software like Turnitin, Urkund and other open source software tools

Databases and Research Metrics:-A. Databases   Indexing databases, Citation databases: Web of Science, Scopus, etc.

B. Research Metrics Impact Factor of journal as per Journal Citation Report, SNIP, SJR, IPP, Cite Score

Metrics: h-index, g index, i10 index, altmetric

Practical   20 marks   (1 credit)

The students will conduct a Pilot study on any selected area of their specialization by applying the steps and procedure of Scientific Honesty and Research Ethics. The department committee will evaluate the study on the parameters of Publication and Research Ethics (PRE)

ELECTIVE COURSE

(4 + 4) = 8 credits   (100 + 100) = 200 Marks

Sports Psychology (SOE/PE/E 903)

(3+1= 4 credits)

Max. Marks: 60

UNIT-I

Sports Psychology: Meaning, Definition and Historical Evolution of the Subject.

Branches of Sports Psychology. Implications of Psychology for Effective Sports Performance.

Personality and Sports: Meaning and Types, Theories of Personality, Personality Traits. Assessment of Personality.

Motor Learning: Meaning of Term, Factors affecting motor learning. Perceptual Motor Learning. Attention and its role in Motor Skill Learning.

UNIT-II

Motivation in Sports: Meaning and Types of Motivation, Theories of Motivation, Achievement Motivation.

Aggression in Sports: Meaning and Types, Theories of Aggression, Aggression and s ports performance.

Anxiety: Meaning, Types and its impact on Sports Performance.

UNIT-III

Competition: Defining of competition, Determinates of competitive behavior, Characteristics-pre-competition, and post competition state. Psychological Preparation of competition: (Pre, during and Post Competition) long term preparation for   competition. Short-term preparation for competition. Psycho-Regulative Techniques for relaxation and activation in Sports.

Practical - 20 marks   (1 credit)

Research Project on Assessment of Questionnaires /Rating Scales /Profile Chart:(On Any Two) Emotional Intelligence Test, Sports Competition Anxiety Test –I, Aggression, General Mental Ability Test, Mental Toughness Test, Personality (EPI and EPQ), Achievement Motivation, Group Cohesion (GEQ By Carron et al),

Exercise Physiology (SOE/PE/E 904)

(3+1= 4 credits)

Max. Marks: 60

Unit -I

Exercise Physiology-Definition-and concept of exercise physiology, Scope of exercise Physiology in Physical Education & Sports.

Mechanism of muscular system- Structure of Muscle tissues, Various theories of muscular contraction, , Isometric Isotonic and Isokinetic exercises its relation with muscle development, Concept of plyometrics

Unit-II

Neuromuscular Physiology :- Neuro muscular junction,Bio-electric potential, kinesthesis Tone.

Bioenergetics- Definition of term, Explain Term-Aerobic and Anaerobic,aerobic and anaerobic system with special reference to different activities. Anaerobic – Threshold training. Metabolism-Human Energy Metabolism during exercise.

Unit-III

Physiological changes due to exercise &Training   :-Immediate effect of exercise/work on various systems of body,   cardio-respiratory muscular and thermo-regulatory system,

Effect of conditioning and training: Heart and circulatory training, Respiratory system.

Work and Environment- Work capacity under different environmental condition such as hot dry, hot humid, cold and high altitude.

Practical   20 marks   (1 credit)

Physiological Testing: - Blood pressure, VO_2 max, vital capacity, pulse rate

Nutritional Diet Analysis: -Calculation of nutritional requirements and prepare the competition diet chart for any sportsperson.

Unit-I

Linear, angular and general motion: Distance and displacement (linear and angular), Speed and velocity (liner and angular) Acceleration for liner and angular motion. Relationship for linear and angular. Centrifugal and centripetal forces. Newton's laws of motion as applicable to liner and angular motion.

Unit-II

Kinematics and kinetics: Force – meaning, units of force, effects of force, sources of force, Components and resultant of force. Work, power and energy. Projectiles, momentum and Impulse Stability (Static and Dynamic)   Spin, impact and elasticity.

Unit-III

Mechanical analysis of fundamental movements:

   a. Walking, running, jumping, throwing, catching, pulling and pushing.

Practical   20 marks   (1 credit)

Introduction of methods and techniques of biomechanical analysis: Photographic Method, Goniometry, Dynamometry.

Brief Orientation about Photographic Method: Estimation of Horizontal and Vertical Distances from the Photograph, Preparation of Stick Figures from the Photograph

Measurement of Angles of Various Joints on Stick Figures.

Calculation of Center of Gravity by Segmentation Method.

Research Project on Qualitative Analysis of film/ video in slow-motion.

Evaluation Techniques in Physical Education (SOE/PE/E 906)

(3+1= 4 credits)

Max. Marks: 60

Unit-I

Selection and construction of tests: Criteria of test Selections- Selections authenticity, (Reliability, validity, objective, norms) administrative feasibility and education application. Classification of tests: Standardized and teacher made tests   (Objective and subjective tests) Construction of test: Knowledge tests (Written test) and skill tests.

Unit-II

Tests and its evaluation: Critical evaluation of tests for Physical fitness, motor fitness , sports skill tests.

Anthropometric measurement :Measurement of Height and weight, Girth Measurement and Length and width.

Unit-III

Social & Psychological testing: Social efficiency index, Sociometrics ,16 PF personality questionnaire and SCAI

Health related Physical fitness:AAHPER

Practical   20 marks   (1 credit)

Assessment of Physical fitness: Any three physical fitness tests

Assessment of Health Related Physical fitness tests: Any two **Health** Related Physical fitness tests

Research Project on: Motor ability fitness tests, Anthropometrics measurement and body composition tests.

(3+1= 4 credits)

Max. Marks: 60

Unit-I

Management of sports: In schools, colleges and Universities., Inter- University, District, State and National levels., India and International Olympic association. and Sports authority of India.

Unit-II

 Sports Marketing: Changed process for the future: Theory and technique, system's   approach, marketing and sponsorship approach for competitive   sports, successful management in future.

Unit-III

 Professional preparation: Selected problems in management/administration, professional ethics, class discipline and students teaching.

Practical   20 marks (1 credit)

The student will have to take up a Research Project work in relevant areas of Sports Management. The report will be assessed by the department committee via presentation.

Computer Application (SOE/PE/E 908)
(3+1= 4 credits)

Max. Marks: 60

Unit-I

Fundamentals of computers and MS-Office:-Operating System: Creating file, directory, deleting and editing files/directory; Shortcut; Windows Explorer; search files; Recycle Bin; Windows components; Hardware Information; Printer properties; Software information; Windows Media Player. MS-Word: Modify text, Cut, Copy and Paste, Format Text, Alignment and Indentation, Find and Replace, Page Setup and Orientation; Insert Date, Symbols and ClipArt's, Headers and Footers, Tables
MS-Excel: Creating workbook, functions, Copy cells Special paste, Move, Delete, font, Align, Borders, Cell formatting, Insert sheets , Eliminate elements, Autocorrect Spelling correction, Page setup,
MS-PowerPoint: Presentation with PowerPoint, Modifying, Inserting Objects, Advanced Tools and Masters , Enhancing Charts , Inserting Illustrations, Objects and Media Clips, Using Advanced Features

Unit-II

Statistical Software Package: Preparations of data file: Types of data,
Defining variables and its properties, data entry validating data.
Installing and starting the statistical package.
Computations of descriptive statistics and its interpretation. Preparation of profile.

Unit-III

Computing Statistical Techniques using the software: Prepare the correlation matrix and compute partial and multiple correlations,
Regression analysis with step and step down methods,
Application of t, F and Z tests,
One and Two way Analysis of variance,
 Chi Square tests

Practical   20 marks   (1 credit)

Multivariate Analysis using statistical Software: Solving the research problems using - Analysis of covariance.

Programs for arranging scores: In ascending order; classification criteria; computing various indexes like strength index, ponderal index, fat percentage etc. The program needs to be completed and submitted in the last month of the course work and should be defended by the students in front of the panel.