# हरियाणाकेंद्रीयविश्वविद्यालय
# CENTRAL UNIVERSITY OF HARYANA

(संसदकेअधिनियमसं. 25 (2009) केतहतस्थापित

(Established vide Act no. 25 (2009) of Parliament)

जांट-पाली, महेंद्रगढ़ (हरियाणा) - 123031

Jant-Pali, Mahendergarh (Haryana) – 123031

## DEPARTMENT OF PHYSICAL EDUCATION & SPORTS

## Ph.D. SCHEME AND SYLLABUS (2026-27)

| S. No. | Course Credit | Course Code | Course Title | Credits (Theory) | Credits (Tutorial/ Practicum) | Credits (Practical) | Class Teaching / Field Based Activity Hours per week |
|---|---|---|---|---|---|---|---|
| 1 | 4 | SOE PES 02 01 01 C4004 | Research Methodology in Physical Education | 4 | 0 | 0 | 4 |
| 2 | 4 | SOE PES 02 01 02 C4004 | Statistics and Computer Applications | 4 | 0 | 0 | 4 |
| **Library (2-Credits)** | | | | | | | |
| 3 | 2 | CUHCL0101C2002 | Research and Publication Ethics | 2 | 0 | 0 | 2 |
| **Discipline Centric Elective Courses (DCEC)** | | | | | | | |
| 4 | 4 | SOE PES 02 01 01 E3104 | Research Based Kinesiology and Sports Biomechanics | 3 | 1 | 0 | 4 |
| 5 | 4 | SOE PES 02 01 02 E3104 | Scientific Principles of Sports Training | 3 | 1 | 0 | 4 |
| 6 | 4 | SOE PES 02 01 03 E3104 | Psycho-Socio Basis of Physical Education | 3 | 1 | 0 | 4 |

| | Total Core Course Credits | Total Elective Couse Credits | Total Credits |
|---|---|---|---|
| **Semester- I** | 10 | 4 | 14 |

**Note:** For more details regarding Credit and other Academic requirement Ordinance II (A) of the University may be referred.

| Year | I | RESEARCH METHODOLOGY IN PHYSICAL EDUCATION | Credits | 4 |
|---|---|---|---|---|
| Semester | I | | Course Code | SOE PES 020101 C4004 |
| **Learning Outcomes** | At the end of the course, the students will be able to:<br>• Explain various approaches in the field of research.<br>• Develop a research proposal.<br>• Select an appropriate sampling design for a research study.<br>• Construct tools for different types of research.<br>• Document and disseminate research findings in physical education.<br>• Explain the significance of intellectual property rights in the field of research. | | | |
| **Course Content** | | | | |
| **Unit -1** | **Introduction of Research**<br>• Basic concept of Research and its scope in physical education. Scientific and Unscientific method of Problem Solving.<br>• Review of Related Literature. Importance, location of the research material – index, books, bibliography, reviews, abstract, critical and allied literature, Systematic Review and Meta-Analysis.<br>• Identification of area for research in Physical Education. Criteria for selecting research problem & variables, writing of title and objectives, Hypothesis and its form, limitation and delimitation of research problem, rationale of research study.<br>• Characteristics of a good research and good researcher. | | | |
| **Unit -2** | **Methods of Research**<br>• Analytical Research- Philosophical, Historical and Meta-Analyses<br>• Descriptive Research –Case Study and Survey (Cross-sectional, Longitudinal and Correlational)<br>• Qualitative and Quantitative Research<br>• Experimental Designs: Pre-experimental Designs, True Experimental Designs and Quasi Experimental Designs | | | |

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| **Unit -3** | **Sampling and Tools in Research** |
| | • Sampling: Population, Sample, Frame, Probability and Non- Probability Sampling Techniques, Sample size and sampling error<br>• Characteristics of a good research tools, Procedure of development and standardization of tools<br>• Types of tools for data collection – standardized and non-standardized, Primary and secondary sources for data collection<br>• Questionnaire, Interview, Observation, Psychological Test, Socio-metric Techniques, Scales, and Inventories, Methods for establishing reliability and validity. |
| **Unit -4** | **Academic Writing** |
| | • Different formats for reference and bibliography- APA, MLA, Chicago and Harvard<br>• Silent features of writing research proposal/report - Language & style, Precision, Consistency, Continuity, use of third person, use of tense, Use of headings, Table, Graph and Front page of thesis<br>• Research Proposal Writing, Method of writing research papers for seminars and publication in journals, writing of research dissertation and thesis, Writing of research Project.<br>• Introduction to Oral and Poster Presentation |
| **Teaching learning process/Transactional Strategies** | Lecture cum group discussion, PowerPoint presentations, assignments, school observation and report, case study, Project Method, Seminar, Dialogue and problem solving, brainstorming. |
| **Suggested Readings** | • Ahlawat, R. P. (2018). *Research process in physical education and sports sciences* (1st ed.). Friends Publications (India). ISBN: 9788172165239 |

- Best, J. W., & Kahn, J. V. (2016). *Research in education* (10th ed.). Pearson Education Inc. ISBN: 9789332574517
- Flick, U. (2017). *Introducing research methodology: A beginner's guide to doing a research project* (2nd ed.). SAGE Publications. ISBN: 9781473919389
- Flick, U. (2019). *An introduction to qualitative research* (6th ed.). SAGE Publications. ISBN: 9781526445650
- Kamlesh, M. L. (2019). *Methodology of research in physical education and sports* (4th ed.). Sports Publication. ISBN: 9788178798417
- Kothari, C. R., & Garg, G. (2019). *Research methodology: Methods and techniques* (4th ed.). New Age International Publishers. ISBN: 9789386649225
- Kumar, R. (2005). *Research methodology: A step-by-step guide for beginners* (2nd ed.). Pearson Education. ISBN: 9788131701633
- Mishra, S. (2018). *Research and statistics in physical education (B.P.Ed. new syllabus)* (1st ed.). Sports Publication. ISBN: 9788178799988
- Panneerselvam, R. (2009). *Research methodology* (1st ed.). Prentice Hall India. ISBN: 9788120349469
- Prathapan, K. (2014). *Research methodology for scientific research* (1st ed.). I.K. International Publishing House. ISBN: 9789382332855
- Sansanwal, D. N. (2020). *Research methodology and applied statistics* (1st ed.). Shipra Publications. ISBN: 9789388691550
- Singh, Y. K. (2008). *Fundamentals of research methodology and statistics* (1st ed.). New Age International Publishers. ISBN: 9788122418866
- Thomas, J. R., Nelson, J. K., & Silverman, S. J. (2015). *Research methods in physical activity* (7th ed.). Human Kinetics. ISBN: 9781450470445

| Year | I | STATISTICS AND COMPUTER APPLICATIONS | Credits | 4 |
|---|---|---|---|---|
| Semester | I | | Course Code | SOE PES 020102 C4004 |
| **Learning Outcomes** | At the end of the course, the students will be able to:<br>• Explain different Measuring Scales of Data<br>• Explain application of different data Analysis Software<br>• Illustrate data analysis with multiple correlation and regression techniques<br>• Analyze and present data with multivariate techniques. | | | |
| **Course Content** | | | | |
| **Unit -1** | **Computer Application**<br>• Using MS Word for typing, formatting, editing, reviewing, and preparing references/bibliography<br>• Using MS Power Point for preparing academic presentations, Using MS Excel for data processing and analysis<br>• SPSS & PSPP analysis.<br>• Google form for data collection, Padlet, Google Drive, Reference Manager & Using AI tools in Research (Research Rabbit, SciSpace, Perplexity, Notepad LM, Google AI Studio) / detecting similarity content/Plagiarism in Report Writing (Turnitin, Drill bit, etc). | | | |
| **Unit -2** | **Nature of Data, Hypothesis Testing and Design of Experiments**<br>• Nature of data and levels of measurement, Measures of Central Tendency and variability, Co-efficient of Variation.<br>• Testing normally Shapiro Wilk and Kolmogorov Smirnov test, Q-Q plot and Box plots for identifying outliers, developing profiles, Concept in hypothesis testing: Type I and II error, Power of the test, Sample size determination. | | | |
| **Unit -3** | **Correlation and Regression Analysis** | | | |

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| | • Parametric and non-parametric test, One & Two sample T-test, Analysis of Variance (One Way & Two-Way ANOVA), Chi-Square test.<br>• Post-hoc analysis Test: LSD, Scheffe's, Tukey- HSD, Correction for Inflating Type I error due to multiple comparisons. Effects size. |
| | • Correlation- Partial and multiple, limitations, Testing of significance, Regression Analysis- Simple and multiple regressions. Estimating intercept and slope.<br>• Least square methods, analyzing residuals, Residual Plot: Testing assumptions in the regression model Standard error of estimate, Testing significance of slope and model, Coefficient of Determination (R2)<br>• The Multiple Regression Model- Developing a Multiple Regression Model, Standardized regression coefficients. Different ways of testing a regression model, testing the significance of overall model and regression coefficients.<br>• Analyzing residuals, standard Error of the Estimate, The coefficient of determination (R2). Adjusted R2, Testing the significant of R2. Different approaches in developing multiple regression model: Stepwise, Forward, Backward and Enter. |

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| **Unit -4** | **Introduction to Statistical Design and Multivariate Analysis**<br>• Analysis of Covariance: Concept of Analysis of Covariance, ANCOVA model, Hypothesis tested.<br>• Application of ANCOVA in sports research. Statistical test used, Preparation of data file, Defining variables for the data in table. Output generated in the analysis and its interpretation.<br>• Classification of Multivariate Techniques: Techniques for understanding dependency and Interdependence. Techniques for understanding structural modeling.<br>• Factor analysis (Exploratory and Confirmatory.), Logistic Regression. Multivariate Analysis of Variance (MANOVA) model. |
| **Teaching learning process/Transactional Strategies** | Lecture cum group discussion, PowerPoint presentations, assignments, school observation and report, case study, Project Method, Seminar, Dialogue and problem solving, brainstorming. |
| **Suggested Readings** | • Sansanwal, D.N. (2020). *Research Methodology and Applied Statistics*. Shipra Publisher.<br>• Verma, J.P. (2019). *Statistics and Research Methods in Psychology with Excel.* Springer Nature Singapore Pte Ltd.<br>• John Wilkey & Sons (2015) *Repeated Measures Design for Empirical Researchers*.<br>• John Wilkey & Sons (2014) *Statistics for Exercise Science and Health with Microsoft Excel*. John Wilkey & sons.<br>• Springer Science & Business (2012a). *Data Analysis in Management with SPSS Software.* Media.<br>• Tata McGraw Hill Education Private Limited (2012b). *Statistics for Psychology*. |

| Year | I | RESEARCH AND PUBLICATION ETHICS | Credits | 2 |
|---|---|---|---|---|
| Semester | I | | Course Code | CUHCL0101C2002 |
| **Learning Outcomes** | At the end of the course, the students will be able to:<br>• By the end of the Course, learners will be able to understand the importance of being ethical in carrying out research and publication activities. They will also be able to adhere to the quality publication practices and at the same time be cognizant about dubious publishing practices/publishers.<br>• There will be an increased awareness about 'open accesses and benefits of open access publishing practices among the learners and also learners get acquainted with all necessary tools for carrying out research/ publication work. | | | |
| **Course Content** | | | | |
| **Unit -1** | **Theory 1. Philosophy and Ethics 2. Scientific Conduct 3. Publication Ethics**<br>• 1.1. Introduction to philosophy: definition, nature and scope, concept, branches, 1.2. Ethics: definition, moral philosophy, nature of moral judgements and reactions.<br>• 2.1. Ethics with respect to science and research, 2.2. Intellectual honesty and research integrity. 2.3. Scientific misconducts: Falsification, Fabrication, and Plagiarism (FFP) 2.4. Redundant publications: duplicate and overlapping publications, salami slicing 2.5. Selective reporting and misrepresentation of data.<br>• 3.1. Publication ethics: definition, introduction and importance. 3. 2. Best practices/standards setting initiatives and guidelines: COPE, WAME, etc. 3.3. Conflicts of interest, 3.4. Publication misconduct: definition, concept, problems that lead to unethical behavior and vice versa, types<br>• 3.5. Violation of publication ethics, authorship and contributor ship 3.6. Identification of publication misconduct, complaints and appeals. 3.7. Predatory publishers and journals | | | |

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| **Unit -2** | **<u>Practical</u> 4. Open Access Publishing 5. Publication Misconduct 6. Databases and Research Metrics**<br>• 4.1. Open access publications and initiatives, 4.2. SHERPA/RoMEO online resource to check publisher copyright and self-archiving policies, 4.3. Software tool to identify predatory publications developed by SPPU<br>4.4. Journal finder/journal suggestion tools viz. JANE, Elsevier Journal Finder, Springer Journal Suggester, etc.<br>• A. Group Discussions, 5.1. Subject specific ethical issues, FFP, authorship<br>5.2. Conflicts of interest, 5.3. Complaints and appeals: examples and fraud from India and abroad, B. Software Tools, 5.4. Use of plagiarism software like Turnitin, Urkund and other open-source software tools.<br>• A. Databases, 6.1. Indexing databases; Citation databases: Web of Science, Scopus, etc.<br>• B. Research Metrics, 6.2. Impact Factor of journal as per Journal Citation Report, SNIP, SIR,IPP, Cite Score, 6.3. Metrics: h-index, g index, i10 index, altmetrics. |
| **Teaching learning process/Transactional Strategies** | Lecture cum group discussion, PowerPoint presentations, assignments, school observation and report, case study, Project Method, Seminar, Dialogue and problem solving, brainstorming. |
| **Suggested Readings** | • Judging journals by their covers – What journal titles and mission<br>• statements tell us about their publications/ Cortes<br>• Predatory journals: no definition, no defence/ Grudniewicz<br>• Why India is striking back against predatory journals/ Patwardhan<br>• ploc – an app to discover and improve research/ Sokolovska<br>• Do we need all the components of the Research Excellence<br>• Framework? / Pinar & Horne |

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| | • Assessing research: The slippery slope/ Patwardhan<br>• Good academic and research practices/ UGC<br>• Academic integrity and research quality/ UGC<br>• Assessing research: the slippery slope/ Current Science<br>• India's fight against predatory journals: An interview with Professor<br>• Bhushan Patwardhan/ The Scholarly Kitchen<br>• UGC-CARE initiative to promote research quality, integrity and<br>• publication ethics / Current Science |
| **Talks (Videos)** | • Introduction of publication ethics and scientific writing/ B Patwardhan<br>• Publication ethics – COPE, WAME and ICMJE initiatives/ P Sahni<br>• Publication ethics/ C H Shashidharan<br>• Publication ethics/ Sirshendu<br>• Misconduct in Science/ H Schachman<br>• Plagiarism, fabrication and falsification/ S Pai<br>• Plagiarism – Why students do it and how you can help/ J Lambert<br>• Consequences of plagiarism/<br>• Publication ethics: SPPU initiatives/ S Nagarkar<br>• Science ethics and regulations: An editor's perspective/ S C Lakhotia<br>• Ethics in competitive research/ P Chaddah<br>• Publisher's role and perspective/ S Shukla<br>• Introduction to article types, structure, registries and EQUATOR network/ G Tillu |

| Year | I | RESEARCH BASED KINESIOLOGY AND SPORTS BIOMECHANICS | Credits | 4 |
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| Semester | I | | Course Code | SOE PES 020101 E3104 |
| **Learning Outcomes** | At the end of the course, the students will be able to:<br>• Understand about the importance of applied kinesiology and Sports Biomechanics.<br>• Analyze the action of muscles.<br>• Classify the different types of motion and force and its application in sports.<br>• Understand about the Methods /Tools /Software to Analysis of Human Movements. | | | |
| **Course Content** | | | | |
| **Unit -1** | **Introduction and Trends in Kinesiology**<br>• Aims and objectives of Kinesiology, Need and importance of Kinesiology in Physical Education.<br>• Joints, Types of joints, Description of Human movement.<br>• Axis and Planes – types and their interrelationship<br>• Muscles and Role of muscles. Structural and classification of muscle. | | | |
| **Unit -2** | **Introduction and Trends in Sports Biomechanics**<br>• Using various applications such as KINOVA, DARTFISH for Bio-mechanical Analysis.<br>• Classification of force system/ Force platform/ Computerized Treadmill for analysis.<br>• Classes of Lever and their principles in sports and physicalactivities.<br>• Concepts of Equilibrium and Stability, Motions, Laws of motion, their application and Kinematics. | | | |

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| **Unit -3** | **Analysis of Techniques of Sports Movement** |
| | • Introduction of Analyzing Techniques.<br>• Analysis of static positions of the body, Sitting /Standing and Lying<br>• Analysis of Locomotion, Walking / Running and Jumping, Hopping or Leaping<br>• Basic steps of Analysis Sport Technique, Development of Model, Observation, Identification of Faults, Evaluation of Faults, Instruction to the Performer |
| **Unit -4** | **Analysis of Techniques with modern Equipment's** |
| | • Methods of analysis of sports skills: Qualitative Methods & Quantitative Method.<br>• Methods of investigation: Photo instrumentation: Camera, Films, Exposure Meters, Calibration of Camera Speed, Filming Fundamentals, Films Analysis, Fundamentals of film analysis.<br>• Others methods of investigation: Goniometry, Accelerometers, Dynamometry, Electro-Myograph.<br>• Software Assessments. |
| **Practical** | 1. Goniometry – measurement of joint ROM / Elgon.<br>2. Manual testing of big muscles of the body.<br>3. Basic anthropometric measurements (stature, sitting height, different body segment length, weight, BMI and skin fold measurements).<br>4. Action of Muscles of upper and lower extremities by palpations method.<br>5. Manual calculations of various kinetic and kinematic parameters – distance, displacement, speed, velocity, acceleration, momentum, force, mass, weight, resultant vector, pressure, work, power, energy etc.<br>6. Stick diagram (basic techniques; anatomical posture, walking, push up, sit ups etc.). |

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| | 7. Goniometry – measurement of joint ROM / Elgon.<br>8. Basic anthropometric measurements (stature, sitting height, different body segment length, weight, BMI and skin fold measurements).<br>9. Classification of different movement according to axes in plane. |
| **Teaching learning process/Transactional Strategies** | Lecture cum group discussion, PowerPoint presentations, assignments, school observation and report, case study, Project Method, Seminar, Dialogue and problem solving, brainstorming. |
| **Suggested Readings** | • Carl, J. Payton & Adrian, Burden. (2017). Biomechanical Evaluation of Movement in Sport and Exercise. The British Association of Sport and Exercise Sciences Guide, Routledge.<br>• Duane, Knudson. (2012). Fundamentals of Biomechanics. Springer publication; 2nd edition.<br>• Hoffman, S.J. (2005). *Introduction to Kinesiology*. Human Kinesiology PublicationIn.<br>• Knudson, D. (2007). *Fundamentals of Biomechanics*. SpringerPublication.<br>• Kumar, P. (2019). "Biomechanical Analysis of Forward Head Posture among Pondicherry University Research Scholars Based On the Laptop Working Hours: An Analytical Study". *International Journal of Emerging Technologies and Innovative Research*, 6 (6), 463-466.<br>• Kumar, P., & Singh, R. R. M. (2019). "Biomechanical analysis of anisomelia among the young children's in Puducherry". *Discrepancy* (LLD), 330, 19.<br>• Peter, M. & Mc. Ginnis. (2013). *Biomechanics of Sport and Exercise*. Human Kinetic Publication, ThirdEdition.<br>• Raj Lakshmi, D. (2007). *Biomechanics for Sports and Games*. Sports Educational Technologies.<br>• Singh, R. R. M. (2019). "Biomechanical Analysis of Footprint Measurement among School Boys: A Positive Approach to Posture". *Journal of the Gujarat Research Society*, 21(1), 167-169. |

| Year | I | SCIENTIFIC PRINCIPLES OF SPORTS TRAINING | Credits | 4 |
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| Semester | I | | Course Code | SOE PES 020102 E3104 |
| Learning Outcomes | At the end of the course, the students will be able to:<br>• Understand the concept of training and planning.<br>• Develop mastery on training sessions.<br>• Understand about how the psychological factors affect sports performance.<br>• Develop the concept of periodization.<br>• Aware about the preparation for competition. | | | |
| **Course Content** | | | | |
| Unit -1 | **Introduction of Training Principles**<br>• Teaching, Training and Coaching: Meaning, aims & Characteristic.<br>• Principles of Training<br>• Training Load: Meaning & characteristic of training load, Principles of Load & Adaptation, Judgment of Load<br>• Over Load: Causes, Symptoms and tackling of over load and Altitude Training-Cross Training. | | | |
| Unit -2 | **Introduction and Training of Motor Components**<br>• Strength: Meaning, Importance & types of Strength, Methods & Precautions of Strength training.<br>• Endurance: Meaning, Importance & types of Endurance, Factors determining endurance, Methods of Endurance Training.<br>• Speed: Meaning, Importance & types of Speed, Factors Determining Speed, Methods of speed training. | | | |

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| | • Flexibility: Meaning, Importance & types of flexibility, Factors Determining flexibility, Methods of flexibility development & Co-coordinative Ability: Meaning, Importance & types of Coordinative ability, Factors determining Coordinative ability & Methods of development. |
| **Unit -3** | **Various Training Methods** |
| | • Training Methods, Weight training, Circuit training, Continuous training, Interval training, Fartlek training, Repetition training- Isometric, Isotonic<br>• Technical Training & Tactical Training: Meaning, Importance of Methods of Technical training.<br>• Doping: Definition & type of doping.<br>• Training and Exercise Analysis. |
| **Unit -4** | **Preparation of Training Plan** |
| | • Planning of training: Meaning of Planning, Importance, and Principles of Planning of types of Training Plans. Training plan, Macro cycle, Meso cycle, Micro cycle, short term and long-term plan.<br>• Periodization: Meaning and its types, contents for various period of training, General Principles of training schedules. Single, Double and Multiple periodization.<br>• Factor influencing the Performance in Sports.<br>• Competition Performance Analysis. |
| **Practical** | 1. Measurement of Height and Sitting Height.<br>2. Measurement of Biacromial Diameter (Shoulder Width)<br>3. Measurement of Humerus Bicondylar Diameter (Elbow Width)<br>4. Measurement of Chest Circumference (Normal and Maximal) |

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| | 5. Determination of Body Mass Index.<br>6. Evaluation of Flexibility (Sit & Reach Test)<br>7. Evaluation of Strength (Grip Strength, Leg Strength and Back Strength)<br>8. Estimation of Target Heart Rate<br>9. Measurement of heart rate<br>10. Blood Pressure measurement (sphygmomanometer)<br>11. Evaluation of Percent Body Fat and Lean Body Mass by the through skin fold (Durninand Rehman Chart) |
| **Teaching learning process/Transactional Strategies** | Lecture cum group discussion, PowerPoint presentations, assignments, school observation and report, case study, Project Method, Seminar, Dialogue and problem solving, brainstorming. |
| **Suggested Readings** | • Bompa, T. O., & Buzzichelli, C. (2018). *Periodization-: Theory and Methodology of Training*. Human kinetics.<br>• Bompa, T., Bompa, T. O., & Carrera, M. (2005). *Periodization Training for Sports* (2nd Edition). Human Kinetics.<br>• Jesudoss,S. J. (2015). *Principles of Sports Training*. Friends Publications. (ISBN- 9789384603304).<br>• Kurz, T. (2001). *Science of Sports Training: How to Plan and Control Training for Peak Performance*. Stadion.<br>• Loehr, J. E. (1995). *PDF The New Toughness Training for Sports: Mental Emotional Physical Conditioning From One of The World Premier Sports Psychologists*. Online Book.<br>• OBE, F. W. D. (2014). *Sports Training Principles: An Introduction To Sports Science*. Bloomsbury Publishing.<br>• Viru, A. (2017). *Adaptation In Sports Training*. Routledge Publishers. |

<table>
<tr><td>Year</td><td>I</td><td rowspan="2">PSYCHO-SOCIO BASIS OF PHYSICAL EDUCATION</td><td>Credits</td><td>4</td></tr>
<tr><td>Semester</td><td>I</td><td>Course Code</td><td>SOE PES 020103 E3104</td></tr>
<tr><td colspan="2">Learning Outcomes</td><td colspan="3">At the end of the course, the students will be able to:<br>• Develop understanding about various learning, personality and motivation theories.<br>• Understand about how the psychological factors affect sports performance.<br>• Develop the concept of team cohesion and leadership.<br>• Understand how to assess anxiety, coordination and reaction of athletes.<br>• Understand the usage of different psychological and sociological test.</td></tr>
<tr><td colspan="5">Course Content</td></tr>
<tr><td rowspan="2">Unit -1</td><td colspan="4">Introduction</td></tr>
<tr><td colspan="4">• Relationship of sport psychology with other sports sciences, Psychological Profiling of Sportsmen/Athletes<br>• Self-regulation, Bio-feedback, Self Confidence and Self efficacy<br>• Coping with stress and anxiety, preparing athlete for major competition Goal setting and Sports Performance.<br>• Application of modern tools like Vienna Testing System (VTS), EEG-based Neurofeedback Analyzer, and Digital Reaction Time Test.</td></tr>
<tr><td rowspan="2">Unit -2</td><td colspan="4">Personality-based tests</td></tr>
<tr><td colspan="4">• Personality traits of Sportsmen and Theories of Personality<br>• Anxiety – Types, Theories and Effect of Anxiety on performance<br>• Personality and Motivation Assessment Tools: 16 PF, EPQ, Achievement Motivation Inventory, and Sports Motivation Scale (SMS).<br>• Interest, Attitude, Team Cohesion, and Leadership Assessment.</td></tr>
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| **Unit -3** | **Social Implications** |
| | • Sociology of Sports as a separate discipline, inter-relation of sports and Sociology. Social Significance of Sports, Social Evils- Drugs, Smoking, Violence, Inequality.<br>• Psycho-Social implications and impact of organized youth sport.<br>• Gender equity, inclusion, and diversity in sports.<br>• Relationship of sports with social institutions- Family, School, Education system, Peer groups, Voluntary Association, Religion, Organized sports programmes for children. |
| **Unit -4** | **Psychological Skills Training** |
| | • PST and Sports Performance, Designing and Implementing PST Programme.<br>• Common problems in Implementing PST Programme, Importance of Psychological Skill Training Programme.<br>• Mindfulness-Based Cognitive Training (MBCT) for athletes.<br>• Cognitive Technique for Building Confidence Concentration and Attention Control Training, Intervention strategies for activation techniques. |
| **Practical** | 1. Assessment of Personality {Personality Tests [Eysenck, Big Five] and introduction to Projective Technique [Thematic Apperception Test and Rorschach Test].<br>2. Assessment of Motivation - Achievement Motivation, Participation Motivation and SMS Incentive Motivation inventory.<br>3. Assessment of Emotions and Emotional Intelligence in sport.<br>4. Measuring Anxiety and Assessment-Spieilberger Anxiety Test, Sport Competition Anxiety test (SCAT). |

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| | 5. Reaction Time Experiments, Anticipation, Adaptive Spatial Ability, Depth Perception.<br>6. Measuring Cohesion, Designing and implementing PST programme.<br>7. Assessment of Socio-Psychological aspect of sport participation.<br>8. Attentional Span, Memory Experiments and Intelligence testing (Jalota, Ravens Progressive Matrices). |
| **Teaching learning process/Transactional Strategies** | Lecture cum group discussion, PowerPoint presentations, assignments, school observation and report, case study, Project Method, Seminar, Dialogue and problem solving, brainstorming. |
| **Suggested Readings** | • Cox, R.H. (1998). *Sport Psychology – Concepts and Applications.* Iowa Champaign, IL. Human Kinetics Publishers.<br>• Cratty, Bryant. J. (1973). *Movement Behavior and Motor Learning*. Philadelphia: Lea and Febiger.<br>• DC Gonzalez, (2013). *The Art of Mental Training - A Guide to Performance Excellence*. Gonzo Lane Media Publisher.<br>• John Perry, (2016). *Sports Psychology - A Complete Introduction*. Teach Yourself Publisher.<br>• Ronald E.Smith,(2012). *Sport Psychology for Youth Coaches: Developing Champions in*<br>• *Sports and Life.* Rowman & Littlefield Publishers. |