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| B.sc.,  physical education |
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| |  | | --- | | **SYLLABUS** | | **from the academic year**  **2023-2024** | |
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| **TAMILNADU STATE COUNCIL FOR HIGHER EDUCATION, CHENNAI – 600 005** |
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| **LEARNING OUTCOMES-BASED CURRICULUM FRAMEWORK GUIDELINES BASED REGULATIONS FOR UNDER GRADUATE PROGRAMME** | |
| **Programme:** | **B.Sc. PHYSICAL EDUCATION** |
| **Programme Code:** |  |
| **Duration:** | **3 Years (UG)** |
| **Programme Outcomes:** | **PO1: Disciplinary knowledge:** Capable of demonstrating comprehensive knowledge and understanding of one or more disciplines that form a part of an undergraduate Programme of study  **PO2: Communication Skills:** Ability to express thoughts and ideas effectively in writing and orally; Communicate with others using appropriate media; confidently share one’s views and express herself/himself; demonstrate the ability to listen carefully, read and write analytically, and present complex information in a clear and concise manner to different groups.  **PO3: Critical thinking:** Capability to apply analytic thought to a body of knowledge; analyse and evaluate evidence, arguments, claims, beliefs on the basis of empirical evidence; identify relevant assumptions or implications; formulate coherent arguments; critically evaluate practices, policies and theories by following scientific approach to knowledge development.  **PO4: Problem solving: Capacity** to extrapolate from what one has learned and apply their competencies to solve different kinds of non-familiar problems, rather than replicate curriculum content knowledge; and apply one’s learning to real life situations.  **PO5: Analytical reasoning**: Ability to evaluate the reliability and relevance of evidence; identify logical flaws and holes in the arguments of others; analyze and synthesize data from a variety of sources; draw valid conclusions and support them with evidence and examples, and addressing opposing viewpoints.  **PO6: Research-related skills**: A sense of inquiry and capability for asking relevant/appropriate questions, problem arising, synthesising and articulating; Ability to recognise cause-and-effect relationships, define problems, formulate hypotheses, test hypotheses, analyse, interpret and draw conclusions from data, establish hypotheses, predict cause-and-effect relationships; ability to plan, execute and report the results of an experiment or investigation  **PO7: Cooperation/Team work:** Ability to work effectively and respectfully with diverse teams; facilitate cooperative or coordinated effort on the part of a group, and act together as a group or a team in the interests of a common cause and work efficiently as a member of a team  **PO8: Scientific reasoning**: Ability to analyse, interpret and draw conclusions from quantitative/qualitative data; and critically evaluate ideas, evidence and experiences from an open-minded and reasoned perspective.  **PO9: Reflective thinking**: Critical sensibility to lived experiences, with self awareness and reflexivity of both self and society.  **PO10 Information/digital literacy:** Capability to use ICT in a variety of learning situations, demonstrate ability to access, evaluate, and use a variety of relevant information sources; and use appropriate software for analysis of data.  **PO 11 Self-directed learning**: Ability to work independently, identify appropriate resources required for a project, and manage a project through to completion.  **PO 12 Multicultural competence:** Possess knowledge of the values and beliefs of multiple cultures and a global perspective; and capability to effectively engage in a multicultural society and interact respectfully with diverse groups.  **PO 13: Moral and ethical awareness/reasoning**: Ability toembrace moral/ethical values in conducting one’s life, formulate a position/argument about an ethical issue from multiple perspectives, and use ethical practices in all work. Capable of demonstratingthe ability to identify ethical issues related to one‟s work, avoid unethical behaviour such as fabrication, falsification or misrepresentation of data or committing plagiarism, not adhering to intellectual property rights; appreciating environmental and sustainability issues; and adopting objective, unbiased and truthful actions in all aspects of work.  **PO 14: Leadership readiness/qualities:** Capability for mapping out the tasks of a team or an organization, and setting direction, formulating an inspiring vision, building a team who can help achieve the vision, motivating and inspiring team members to engage with that vision, and using management skills to guide people to the right destination, in a smooth and efficient way.  **PO 15: Lifelong learning:** Ability to acquire knowledge and skills, including „learning how to learn‟, that are necessary for participating in learning activities throughout life, through self-paced and self-directed learning aimed at personal development, meeting economic, social and cultural objectives, and adapting to changing trades and demands of work place through knowledge/skill development/reskilling. |
| **Programme Specific Outcomes:** | On successful completion of Bachelor of Physics with Computer Applications programme, the student should be able to:  **PSO1: Disciplinary Knowledge:** Understand the fundamental principles, concepts, and theories related to physics and computer science. Also, exhibit proficiency in performing experiments in the laboratory.  **PSO2: Critical Thinking:** Analyse complex problems, evaluate information, synthesize information, apply theoretical concepts to practical situations, identify assumptions and biases, make informed decisions and communicate effectively  **PSO3: Problem Solving:** Employ theoretical concepts and critical reasoning ability with physical, mathematical and technical skills to solve problems, acquire data, analyze their physical significance and explore new design possibilities.  **PSO4: Analytical & Scientific Reasoning:** Apply scientific methods, collect and analyse data, test hypotheses, evaluate evidence, apply statistical techniques and use computational models.  **PSO5: Research related skills:** Formulate research questions, conduct literature reviews, design and execute research studies, communicate research findings and collaborate in research projects.  **PSO6: Self-directed & Lifelong Learning:** Set learning goals, manage their own learning, reflect on their learning, adapt to new contexts, seek out new knowledge, collaborate with others and to continuously improve their skills and knowledge, through ongoing learning and professional development, and contribute to the growth and development of their field. |

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| **PO/PSO** | **PSO1** | **PSO2** | **PSO3** | **PSO4** | **PSO5** | **PSO6** |
| **PO1** |  |  |  |  |  |  |
| **PO2** |  |  |  |  |  |  |
| **PO3** |  |  |  |  |  |  |
| **PO4** |  |  |  |  |  |  |
| **PO5** |  |  |  |  |  |  |
| **PO6** |  |  |  |  |  |  |

**2. Highlights of the Revamped Curriculum**:

* Student-centric, meeting the demands of industry & society, incorporating industrial components, hands-on training, skill enhancement modules, industrial project, project with viva-voce, exposure to entrepreneurial skills, training for competitive examinations, sustaining the quality of the core components and incorporating application oriented content wherever required.
* The Core subjects include latest developments in the education and scientific front, advanced programming packages allied with the discipline topics, practical training, devising statistical models and algorithms for providing solutions to industry / real life situations. The curriculum also facilitates peer learning with advanced statistical topics in the final semester, catering to the needs of stakeholders with research aptitude.
* The General Studies and Statistics based problem solving skills are included as mandatory components in the ‘Training for Competitive Examinations’ course at the final semester, a first of its kind.
* The curriculum is designed so as to strengthen the Industry-Academia interface and provide more job opportunities for the students.
* The Statistical Quality Control course is included to expose the students to real life problems and train the students on designing a mathematical model to provide solutions to the industrial problems.
* The Internship during the second year vacation will help the students gain valuable work experience, that connects classroom knowledge to real world experience and to narrow down and focus on the career path.
* Project with viva-voce component in the fifth semester enables the student, application of conceptual knowledge to practical situations. The state of art technologies in conducting a Explain in a scientific and systematic way and arriving at a precise solution is ensured. Such innovative provisions of the industrial training, project and internships will give students an edge over the counterparts in the job market.
* State-of Art techniques from the streams of multi-disciplinary, cross disciplinary and inter disciplinary nature are incorporated as Elective courses, covering conventional topics to the latest DBMS and Computer software for Analytics.

**Value additions in the Revamped Curriculum:**

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| Semester | Newly introduced Components | Outcome / Benefits |
| I | **Foundation Course**  To ease the transition of learning from higher secondary to higher education, providing an overview of the pedagogy of learning abstract Statistics and simulating mathematical concepts to real world. | * Instil confidence among students * Create interest for the subject |
| I, II, III, IV | **Skill Enhancement papers** (Discipline centric / Generic / Entrepreneurial) | * Industry ready graduates * Skilled human resource * Students are equipped with essential skills to make them employable |
| * Training on Computing / Computational skills enable the students gain knowledge and exposure on latest computational aspects |
| * Data analytical skills will enable students gain internships, apprenticeships, field work involving data collection, compilation, analysis etc. |
| * Entrepreneurial skill training will provide an opportunity for independent livelihood * Generates self – employment * Create small scale entrepreneurs * Training to girls leads to women empowerment |
| * Discipline centric skill will improve the Technical knowhow of solving real life problems using ICT tools |
| III, IV, V & VI | Elective papers-  An open choice of topics categorized under Generic and Discipline Centric | * Strengthening the domain knowledge * Introducing the stakeholders to the State-of Art techniques from the streams of multi-disciplinary, cross disciplinary and inter disciplinary nature * Students are exposed to Latest topics on Computer Science / IT, that require strong statistical background * Emerging topics in higher education / industry / communication network / health sector etc. are introduced with hands-on-training, facilitates designing of statistical models in the respective sectors |
| IV | DBMS and Programming skill, Biostatistics, Statistical Quality Control, Official Statistics, Operations Research | * Exposure to industry moulds students into solution providers * Generates Industry ready graduates * Employment opportunities enhanced |
| II year Vacation activity | Internship / Industrial Training | * Practical training at the Industry/ Banking Sector / Private/ Public sector organizations / Educational institutions, enable the students gain professional experience and also become responsible citizens. |
| V Semester | Project with Viva – voce | * Self-learning is enhanced * Application of the concept to real situation is conceived resulting in tangible outcome |
| VI Semester | Introduction of  Professional Competency component | * Curriculum design accommodates all category of learners; ‘Statistics for Advanced Explain’ component will comprise of advanced topics in Statistics and allied fields, for those in the peer group / aspiring researchers; * ‘Training for Competitive Examinations’ –caters to the needs of the aspirants towards most sought - after services of the nation viz, UPSC, ISS, CDS, NDA, Banking Services, CAT, TNPSC group services, etc. |
| Extra Credits:  For Advanced Learners / Honors degree | | * To cater to the needs of peer learners / research aspirants |

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| **Skills acquired from the Courses** | Knowledge, Problem Solving, Analytical ability, Professional Competency, Professional Communication and Transferrable Skill |

**Credit Distribution for UG Programmes**

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| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Sem I** | **Credit** | **H** | **Sem II** | **Credit** | **H** | **Sem III** | **Credit** | **H** | **Sem IV** | **Credit** | **H** | **Sem V** | **Credit** | **H** | **Sem VI** | **Credit** | **H** |
| Part 1. Language – Tamil | 3 | 6 | Part..1. Language – Tamil | 3 | 6 | Part..1. Language – Tamil | 3 | 6 | Part..1. Language – Tamil | 3 | 6 | 5.1 Core Course –\CC IX | 4 | 5 | 6.1 Core Course –  CC XIII | 4 | 6 |
| Part.2 English | 3 | 6 | Part..2 English | 3 | 6 | Part..2 English | 3 | 6 | Part..2 English | 3 | 6 | 5.2 Core Course – CC X | 4 | 5 | 6.2 Core Course –  CC XIV | 4 | 6 |
| 1.3 Core Course – CC I | 5 | 5 | 2..3 Core Course – CC III | 5 | 5 | 3.3 Core Course – CC V | 5 | 5 | 4.3 Core Course – CC VII  Core Industry Module | 5 | 5 | 5. 3.Core Course CC -XI | 4 | 5 | 6.3 Core Course –  CC XV | 4 | 6 |
| 1.4 Core Course – CC II | 5 | 5 | 2.4 Core Course – CC IV | 5 | 5 | 3.4 Core Course – CC VI | 5 | 5 | 4.4 Core Course –  CC VIII | 5 | 5 | 5. 4.Core Course –/ Project with viva- voce  CC -XII | 4 | 5 | 6.4 Elective -VII Generic/ Discipline Specific | 3 | 5 |
| 1.5 Elective I Generic/ Discipline Specific | 3 | 4 | 2.5 Elective II Generic/ Discipline Specific | 3 | 4 | 3.5 Elective III Generic/ Discipline Specific | 3 | 4 | 4.5 Elective IV Generic/ Discipline Specific | 3 | 3 | 5.5 Elective V Generic/ Discipline Specific | 3 | 4 | 6.5 Elective VIII  Generic/ Discipline Specific | 3 | 5 |
| 1.6 Skill Enhancement Course SEC-1 | 2 | 2 | 2.6 Skill Enhancement Course SEC-2 | 2 | 2 | 3.6 Skill Enhancement Course SEC-4,  (Entrepreneurial Skill) | 1 | 1 | 4.6 Skill Enhancement Course SEC-6 | 2 | 2 | 5.6 Elective VI Generic/ Discipline Specific | 3 | 4 | 6.6 Extension Activity | 1 | - |
| 1.7 Skill Enhancement -(Foundation Course) | 2 | 2 | 2.7 Skill Enhancement Course –SEC-3 | 2 | 2 | 3.7 Skill Enhancement Course SEC-5 | 2 | 2 | 4.7 Skill Enhancement Course SEC-7 | 2 | 2 | 5.7 Value Education | 2 | 2 | 6.7 Professional Competency Skill | 2 | 2 |
|  |  |  |  |  |  | 3.8 E.V.S. | - | 1 | 4.8 E.V.S | 2 | 1 | 5.8 Summer Internship /Industrial Training | 2 |  |  |  |  |
|  | **23** | **30** |  | **23** | **30** |  | **22** | **30** |  | **25** | **30** |  | **26** | **30** |  | **21** | **30** |
| **Total – 140 Credits** | | | | | | | | | | | | | | | | | |

**Choice Based Credit System (CBCS), Learning Outcomes Based Curriculum Framework (LOCF) Guideline Based Credit and Hours Distribution System**

**for all UG courses including Lab Hours**

**First Year – Semester-I**

|  |  |  |  |
| --- | --- | --- | --- |
| **Part** | **List of Courses** | **Credit** | **No. of Hours** |
| Part-1 | Language – Tamil | 3 | 6 |
| Part-2 | English | 3 | 6 |
| Part-3 | Core Courses & Elective Courses [in Total] | 13 | 14 |
| Part-4 | Skill Enhancement Course SEC-1 | 2 | 2 |
| Foundation Course | 2 | 2 |
|  |  | **23** | **30** |

**Semester-II**

|  |  |  |  |
| --- | --- | --- | --- |
| **Part** | **List of Courses** | **Credit** | **No. of Hours** |
| Part-1 | Language – Tamil | 3 | 6 |
| Part-2 | English | 3 | 6 |
| Part-3 | Core Courses & Elective Courses including laboratory [in Total] | 13 | 14 |
| Part-4 | Skill Enhancement Course -SEC-2 | 2 | 2 |
| Skill Enhancement Course -SEC-3 (Discipline / Subject Specific) | 2 | 2 |
|  |  | **23** | **30** |

**Second Year – Semester-III**

|  |  |  |  |
| --- | --- | --- | --- |
| **Part** | **List of Courses** | **Credit** | **No. of Hours** |
| Part-1 | Language - Tamil | 3 | 6 |
| Part-2 | English | 3 | 6 |
| Part-3 | Core Courses & Elective Courses including laboratory [in Total] | 13 | 14 |
| Part-4 | Skill Enhancement Course -SEC-4 (Entrepreneurial Based) | 1 | 1 |
| Skill Enhancement Course -SEC-5 (Discipline / Subject Specific) | 2 | 2 |
| E.V.S | - | 1 |
|  |  | **22** | **30** |

**Semester-IV**

|  |  |  |  |
| --- | --- | --- | --- |
| **Part** | **List of Courses** | **Credit** | **No. of Hours** |
| Part-1 | Language - Tamil | 3 | 6 |
| Part-2 | English | 3 | 6 |
| Part-3 | Core Courses & Elective Courses including laboratory [in Total] | 13 | 13 |
| Part-4 | Skill Enhancement Course -SEC-6 (Discipline / Subject Specific) | 2 | 2 |
| Skill Enhancement Course -SEC-7 (Discipline / Subject Specific) | 2 | 2 |
| E.V.S | 2 | 1 |
|  |  | **25** | **30** |

**Third Year**

**Semester-V**

|  |  |  |  |
| --- | --- | --- | --- |
| **Part** | **List of Courses** | **Credit** | **No. of Hours** |
| **Part-3** | Core Courses including Project / Elective Based | 22 | 26 |
| **Part-4** | Value Education | 2 | 2 |
| Internship / Industrial Visit / Field Visit | 2 | 2 |
|  |  | **26** | **30** |

**Semester-VI**

|  |  |  |  |
| --- | --- | --- | --- |
| **Part** | **List of Courses** | **Credit** | **No. of Hours** |
| **Part-3** | Core Courses including Project / Elective Based & LAB | 18 | 28 |
| **Part-4** | Extension Activity | 1 | - |
| Professional Competency Skill | 2 | 2 |
|  |  | **21** | **30** |

**Consolidated Semester wise and Component wise Credit distribution**

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **Parts** | **Sem I** | **Sem II** | **Sem III** | **Sem IV** | **Sem V** | **Sem VI** | **Total Credits** |
| **Part I** | 3 | 3 | 3 | 3 | - | - | 12 |
| **Part II** | 3 | 3 | 3 | 3 | - | - | 12 |
| **Part III** | 13 | 13 | 13 | 13 | 22 | 18 | 92 |
| **Part IV** | 4 | 4 | 3 | 6 | 4 | 1 | 22 |
| **Part V** | - | - | - | - | - | 2 | 2 |
| **Total** | 23 | 23 | 22 | 25 | 26 | 21 | **140** |

**\*Part I. II, and Part III components will be separately taken into account for CGPA calculation and classification for the under graduate programme and the other components. IV, V have to be completed during the duration of the programme as per the norms, to be eligible for obtaining the UG degree.**

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| **Methods of Evaluation** | | |
| **Internal Evaluation** | Continuous Internal Assessment Test | 25 Marks |
| Assignments |
| Seminars |
| Attendance and Class Participation |
| **External Evaluation** | End Semester Examination | 75 Marks |
|  | Total | 100 Marks |
| **Methods of Assessment** | | |
| **Recall (K1)** | Simple definitions, MCQ, Recall steps, Concept definitions | |
| **Understand/ Comprehend (K2)** | MCQ, True/False, Short essays, Concept explanations, Short summary or  overview | |
| **Application (K3)** | Suggest idea/concept with examples, Suggest formulae, Solve problems,  Observe, Explain | |
| **Analyze (K4)** | Problem-solving questions, Finish a procedure in many steps, Differentiate | |
|  | between various ideas, Map knowledge | |
| **Evaluate (K5)** | Longer essay/ Evaluation essay, Critique or justify with pros and cons | |
| **Create (K6)** | Check knowledge in specific or offbeat situations, Discussion, Debating or  Presentations | |

**B.Sc. PHYSICAL EDUCATION**

**Programme Structure**

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Sem.** | **Part** | **Course Code** | **Title of the Paper** | **T/P** | **Cr.** | **Hrs./ Week** | **Max. Marks** | | |
| **Int.** | **Ext.** | **Total** |
| I | I | T/OL | Language--- Tamil | T | 3 | 6 | 25 | 75 | 100 |
| II | E | English | T | 3 | 6 | 25 | 75 | 100 |
| III | CC | Theory–I: Foundation of Physical  Education and Sports | T | 5 | 5 | 25 | 75 | 100 |
| CC | Theory - II: Anatomy and  Physiology | T | 5 | 5 | 25 | 75 | 100 |
| AL - IA | Information Technology/  Computer Science/ Software/BCA | T | 3 | 4 | 25 | 75 | 100 |
| AL - IA | Practical – Respective Allied  Theory Course | P | 2 | 2 | 40 | 60 | 100 |
| IV | SEC -I | Value Education | T | 2 | 2 | 25 | 75 | 100 |
|  |  |  |  |  |  |  |  |  |  |
|  |  |  | Total |  | **23** | **30** | **205** | **495** | **700** |
| II | I | T/OL | Language Tamil | T | 3 | 6 | 25 | 75 | 100 |
| II | E | English | T | 3 | 6 | 25 | 75 | 100 |
| III | CC | Theory–III: Organisation Administration and Methods in  Physical Education | T | 5 | 5 | 25 | 75 | 100 |
| CC | Practical-I: Theories Major  Games and Track & Field- I | P | 5 | 5 | 40 | 60 | 100 |
| AL - IB | Information Technology/  Computer Science/ Software/BCA | T | 3 | 4 | 25 | 75 | 100 |
| AL - IB | Practical – Respective Allied  Theory Course | P | 2 | 2 | 40 | 60 | 100 |
| IV | SEC -II | Environmental Studies | T | 2 | 2 | 25 | 75 | 100 |
|  |  |  |  |  |  |  |  |  |
|  |  | Total |  | **23** | **30** | 205 | 495 | **700** |

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| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| III | I | T/OL | Language Tamil | T | 3 | 6 | 25 | 75 | 100 |
| II | E | English | T | 3 | 6 | 25 | 75 | 100 |
| III | CC | Theory-IV: Yoga Education | T | 3 | 6 | 25 | 75 | 100 |
| CC | Theory-V: Scientific Principles  of Sports Training | T | 5 | 5 | 25 | 75 | 100 |
| CC | Theory – VI : Test and  Measurement & Evaluation | T | 5 | 5 | 25 | 75 | 100 |
| AL -IIA | Information Technology/ | T | 3 | 4 | 25 | 75 | 100 |

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|  |  |  | Computer Science/ Software/BCA |  |  |  |  |  |  |
| AL -IIA | Practical – Respective Allied  Theory Course | P | 1 | 1 | 40 | 60 | 100 |
| IV | SEC -III | Entrepreneurship | T | 2 | 1 | 25 | 75 | 100 |
|  |  |  | **Total** |  | **25** | **30** | **255** | **645** | **900** |
| IV | I | T/OL | Language Tamil | T | 3 | 6 | 25 | 75 | 100 |
| II | E | English | T | 3 | 6 | 25 | 75 | 100 |
| III | CC | Theory–VII: Exercise Physiology | T | 5 | 5 | 25 | 75 | 100 |
| CC | Theory-VIII: Theories Major  Games and Track & Field- II | T | 5 | 5 | 25 | 75 | 100 |
| CC | Practical –II: Theories of Major  Games and Track & Field- II | P | 3 | 3 | 40 | 60 | 100 |
| AL - IIB | Information Technology/  Computer Science/ Software/BCA |  | 2 | 2 | 25 | 75 | 100 |
| AL - IIB | Practical – Respective Allied  Theory Course |  | 2 | 2 | 40 | 60 | 100 |
| IV | NME- II | 1.Adipadai Tamil 2.Advance Tamil  3. Small Business Management / MOOC’S |  | 2 | 1 | 25 | 75 | 100 |
|  |  | Total |  | **25** | **30** | **230** | **570** | **800** |
| V | III | CC | Theory-IX: Sports Biomechanics  and Kinesiology | T | 4 | 5 | 25 | 75 | 100 |
| CC | Theory-X: Sports Psychology and  Sociology | T | 4 | 5 | 25 | 75 | 100 |
| CC | Theory–XI: Computer  Application in Physical Education | T | 4 | 5 | 25 | 75 | 100 |
| CC | Theory-XII: Research and  Elementary Statistics | T | 4 | 5 | 25 | 75 | 100 |
| CC | Theory- XIII: Sports Medicine  and Physiotherapy | T | 3 | 4 | 25 | 75 | 100 |
| CC | Theory- XIV: Sports Nutrition | T | 3 | 4 | 25 | 75 | 100 |
|  | Career development/  employability skills |  | 2 | 2 | 25 | 75 | 100 |
|  |  |  | Internship |  | 2 |  |  |  |  |
|  |  |  | Total |  | **26** | **30** | **180** | **420** | **600** |
| VI | III | DSE |  |  |  |  | **150** | **250** | **400** |
| **Or** |  |  |  |  |  |  |
| Theory I: Sports Management | T | 6 | 6 | 25 | 75 | 100 |
| Theory II: Health Education and  First Aid | T | 6 | 6 | 25 | 75 | 100 |
| Theory III: Theories Major  Games and Track & Field- III | T | 6 | 6 | 25 | 75 | 100 |
| Practical III : Theories of Major | P | 6 | 6 | 40 | 60 | 100 |

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|  |  |  | Games and Track & Field- III |  |  |  |  |  |  |
| Library / Yoga etc |  |  | 2 |  |  |  |
| Career development  /employability skills/Field trip |  | - | 4 | - | - |  |
|  |  | **24** | **30** | **100** | **300** | **400** |
| **Or** |  |  |  |  |  |  |
| Project |  | 6 | 10 | 25 | 75 | 100 |
| Theory I: Care and Prevention of  Athletic Injuries | T | 6 | 6 | 25 | 75 | 100 |
| Theory II: Theories Major Games  and Track & Field- III | T | 6 | 6 | 25 | 75 | 100 |
| Practical III: Theories of Major  Games and Track & Field- III | P | 6 | 6 | 40 | 60 | 100 |
| Library / Yoga / Career development /employability  skills/Field trip etc |  |  | 2 |  |  |  |
|  |  |  | **Total** |  | **24** | **30** | **100** | **300** | **400** |
|  |  |  | **Grand Total** |  | **140** | **--** | **--** | **--** | **4100** |

**Remarks: English Soft Skill Two Hours Will be handled by English Teachers**

**(4+2 = 6 hours for English).**

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| **Sem.** | **Part** | **Title of the Paper** | **Cr.** | **Hrs./ Week** | **Max. Marks** | | |
| **Int.** | **Ext.** | **Total** |
| I | III | Professional English for Physical Science -I | 4 | 5 | 25 | 75 | 100 |
| II | Professional English for  Physical Science -II | 4 | 5 | 25 | 75 | 100 |

* Language Tamil
* English
* CC-Core course –Core competency, critical thinking, analytical reasoning, research skill & team work
* Allied / GEC -Exposure beyond the discipline
* AECC- -Ability Enhancement Compulsory Course (Professional English & Environmental Studies) - Additional academic knowledge, psychology and problem solving etc.,
* SEC-Skill Enhancement Course - Exposure beyond the discipline (Value Education,

Entrepreneurship Course, Computer application for Science, etc.,

* NME -Non Major Elective – Exposure beyond the discipline
* DSE – Discipline specific elective –Additional academic knowledge, critical thinking, and analytical reasoning-Student choice - either Internship or Theory papers or Project + 2 theory paper.
  + If internship – Marks = Internal- 150 (75+75) two midterm evaluation through Viva voce + Report- 150+ External Viva voce- 100 = 400.
  + If Project – Marks = Internal- 50 +Thesis- 100 + Viva voce- 50 = 200 + 2 theory paper- 200 = 400
* Extension activity & MOOCs – Voluntary basis

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| **Semester – I** | | | | |
|  | **CORE COUSE - I** | **T/P** | **Credits** | **Hours** |
| **FOUNDATION OF PHYSICAL EDUCATION AND**  **SPORTS** |
| **T** | **5** | **5** |
| **Unit-I** | Meaning and Definition of Education and Physical Education – Need, Nature and Scope of Physical Education – Physical Training and Physical Culture. | | | |
| **Unit-II** | Aim and Objectives of Physical Education – Development of Physical , Cognitive, Neuro-muscular, Affective, Social, Emotional, Spiritual and Recreational – Theories of Learning – Laws of Learning. | | | |
| **Unit-III** | Scientific basis of Physical Education – Contribution of Allied Sciences – Anatomy, Physiology, Biomechanics, Kinesiology, Sports Medicine, Psychology, Sociology and Computer Science. | | | |
| **Unit-IV** | History of Physical Education in Sparta and Athens – Olympic Games: Ancient, Modern – Origin – Organisation and conduct of the game – Olympic Flag, Torch, Oath, Emblem and Motto. | | | |
| **Unit -V** | Recent development in India: SAI, NSNIS, SNIPES,LNIPE, Sports Academics – Award and Scholarships: Arjuna Award, Dhronochariya Award, Rajiv Gandhi Khela Ratna Award – International and National Competitions: Asian Games, SAF, SGF, RDS and BDS. | | | |
| **Books for References:**  Bucher Charles A., *Foundations of Physical Education*, St. Louis the C.V. Mosby Company, 1983. Kamlesh M.L., Physical Education : *Facts and Foundation*, New Delhi, P.B. Publications, 1988.  Thirunarayanan, C. and Hariharan, S., *Analytical History of Physical Education*, Karaikudi, C.T. & S.H., Publications, 1990.  Sharma, O.P., *History of Physical Education*, New Delhi, Khel Shitya Kendra, 1998.  Wakharkar D.G., *Manual of Physical Education in India*, Pearl Publicatons Pvt. Ltd., Bombay, 1967. Wuest, Deborah, A. and Charles A. Bucher, *Foundations of Physical Education and Sport*, New Delhi  : BL. Publication Pvt., Ltd.  Wellman and Cowell, *Philosophy and Principles of Physical Education*, A marvati: Suyog Prakasan. Jackson Sharman/ *Modern Principles of Physical Education*, New York: A.A.Barnes & Co.  Khan, Eraj Ahmed, *History of Physical Education*, Patna Scientific Book Co. | | | | |

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| **Semester - I** | | | | |
|  | **Core Course – I**  **ANATOMY AND PHYSIOLOGY** | **T/P** | **Credits** | **Hours** |
| **T** | **4** | **4** |
| **Unit-I** | Meaning of Anatomy and Physiology – Need and Scope of Anatomy and Physiology in Physical Education – Cell – Structure and Functions – Tisuues – Types and Function-Muscular System – Types of Muscles: Skeletal Muscle,  Cardiac Muscle, and smooth muscle. | | | |
| **Unit-II** | Skeleton : Meaning and Functions – Bones: Classification and Functions – General Features of Various Bones: Vertebral Column, Pelvic Bone, Radius and Ulna, Sacbula, Femer and Bones of Skill – Joints: Definition and Classification of  Joints | | | |
| **Unit-III** | Nervous System : Neuron – Central Nervous System(CNS): Brain and Spinal Cord  – Peripheral Nervous System (PNS): cranial Nerves and Spinal Nerves – Digestive System : Structure & Functions – Digestive Process – Liver, Pancreas – Functions | | | |
| **Unit-IV** | Respiratory System – Respiration – Respiratory Track – Alveoli – Lungs: Structure & Functions – Gas Exchange – Vital Capacity.  Circulatory System – Heart: Structure & Functions – Cardiac Cycle, Cardiac Output, Stroke Volume. | | | |
| **Unit -V** | Endocrine Glands – Functions of Endocrine Glands: Pituitary, Thyroid, Para-Thyroid, Thymus, Pancreas, Adrenal & Sex – their role, in growth,  development and regulations of body functions. | | | |
| **Books for References:**  Guyton A.C., 1969, *Functions of the Human Body*, London, W.B. Saunders Company, Dr. V. Selvam *“Anatomy and Physiology”* Bodinayakanur.  Dr. N.M. MUTHAYYA *“Physiology”* J.J. Publications, Madurai. SEELEY et. all *Anatomy and Physiology* Mc Graw Hill.  Srivastava et. 1976, All, Text Book of Practical Physiology, Calcutta Scientific Book Agency, | | | | |

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| **Semester - I** | | | | |
|  | **Core Course – III ORGANIZATION ADMINSTRATION AND**  **METHODS IN PHYSCIAL EDUCATION** | **T/P** | **Credits** | **Hours** |
| **T** | **5** | **5** |
| **Unit-I** | Meaning and Importance of Organization and administration – Scheme of Physical Education in: Schools, Colleges, Universities, Districts State and National Level. | | | |
| **Unit-II** | Facilities – Track, Play Grounds, Gymnasium, Swimming Pole – Layout of Play fields (Basketball, Kabbadi, Hockey, Volleyball, Cricket) Care and Maintenance of Play fields. | | | |
| **Unit-III** | Method in Physical Education – meaning – Factors influencing Method Presentation Technique – Teaching Aids – Principles of Class Management.  Teaching of activities: Marching, Calisthenics, light apparatus(Wands, Hooks, Poles) Lezium, Folk dance – Minor Games – Lead up activities. | | | |
| **Unit-IV** | Teaching activities of minor games, major games track and field, Yogic Practice, Suryanamaskar, Calisthenics, Light apparatus, Rhythmic activities, Commands, Marching. | | | |
| **Unit -V** | Tournaments – Types of Tournament, Knock out, League, Combination  Tournament, Methods of drawing Fixtures. | | | |
| **Books for References:**  Kamlesh M.L. Scientific “Art of Teaching Physical Education” New Delhi Metropolitan 1994. Thiru. Narayanan C and Harishara Sharma “Methods in Physical Education” Karailkudi CJ and  S.H. 1989  Joseph. P.M. “Organization of Physical Education”. | | | | |

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| **Semester - I I** | | | | |
|  | **Core Course – III**  **MAJOR GAMES – I AND TRACK & FIELD – I** | **T/P** | **Credits** | **Hours** |
| **T** | **4** | **4** |
| **(Major Games: Football, Basket Ball & Volleyball**  **Track & Field: Sprint, Middle Distance and Long Distance Race)** | | | | |
| **Unit-I** | Origin, History and Development of the Game – International, National and State Level Organization. | | | |
| **Unit-II** | Fundamental Skills – Lead – Up Games, Various Symptoms of Play – Selection of Players. | | | |
| **Unit-III** | Training: Warm – up Technical Training – Tactical Training – Coaching Programme | | | |
| **Unit-IV** | Layout of Playfield – Rules and their Interpretations – methods of officiating Duties of Officials – Important Tournaments and Cups. | | | |
| **Unit -V** | Athletics: Sprint, Middle distance and Long Distance Race. | | | |
| **Books for References:**  Conling David, Athletics, London, Robert Hale, 1980  Prabhakar Eric, The way to Athletic Gold, Madras East – West press Pct. Ltd., 1995 Dr.P.Mariayyah, Football, Sports Publications, Raja Street, Coimbatore.  Dr. P.Mariayyah, Kabaddi, Sports Publications, Raja Street, Coimbatore. Dr. P.Mariayyah, Volleyball, Sports Publications, Raja Street, Coimbatore.  Dr. P.Mariayyah, Track and Field, Sports Publications, Raja Street, Coimbatore. Thompson Ganagon, Play Better Soccer in all colour, W.B.Saubders Company, 1972. DHanaraj V.Hubert, Volleyball – A Modern Approach, Patiala, Sainsoris, 1991. | | | | |

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| **Semester - III** | | | | |
|  | **Core Course – III**  **YOGA EDUCATION** | **T/P** | **Credits** | **Hours** |
| **T** | **3** | **3** |
| **Unit-I** | Yoga: Meaning, Definition – Concept of Yoga – Aim and Objectives of Yoga – History of Yoga – Systems of yoga : Bhakthi yoga – Jnana yoga – Hatha yoga – Karma yoga – Kundalini yoga – mantra yoga – Raja yoga – Ashtanga yoga : Yama – Niyama – Asana – Pranayama – Pratyahara – Dharana – Dhayana – Samathi. | | | |
| **Unit-II** | Asanas: Meaning and Definition – Classification of asanas: Meditative, Relaxative, Cultural – Guidelines for practicing asanas – Various types of asanas and their benefits – Difference between physical exercise and yogic asanas. | | | |
| **Unit-III** | Pranayama: Meaning and Definition – Concept of Pranayama – Nadis – Ida nadi – Pingala Nadi – Sushumna nadi – Controlling of breath: Puraka – Kumbhaka – Rechaka – Guidelines for practicing Pranayama – Benefits of Pranayama – Types of Pranayama: Nadi Suddhi – Nadi Shodhana – Surya Bhedana – Kapalabhati – Bhastrika  – Sitkari – Sitali – Bhramari – Ujjayi. Bandhas: Meaning and Definition – Types: Jallandra – Uddiyana – Mula. | | | |
| **Unit-IV** | Kriyas – Types of Kriyas – Procedures and Benefits of: Kapalabhati – Tratakka – Neti (Jala neti, Sutra neti) – Dhauti; Vamana Dhauti – Vastra Dhauti – Nauli – Bhasti.  Mudra: Meaning – Types : Chin Mudra – Chinmaya Mudra – Yoga Mudra – Brahma Mudra – Appana Mudra. | | | |
| **Unit -V** | Meditation: Meaning and Definition – Concept of meditation – Types of meditation – Physiological benefits of meditation – yoga and competition – Principles of yogic Diet – Integration of Yoga with modern education – yoga institutions in India and Abroad – General Yogic Schedule. | | | |
| **Books for References:**  Iyengar B.K.S. (1989), Light on Yoga. London: Unwin Publishers New Delhi. Chandrasekaran K.(1999) Sound Health through Yoga, Sedapatti: Prem Kalyan Publicaions. Moorthy, A.M. and S. Alagesan(2004), Yoga Therapy, Coimbatore  Swami Sivananda (1983), Practical Lessons I Yoga, Shivananda Nagar : The Devine Life Society. | | | | |

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| **Semester - III** | | | | |
|  | **Core Course – III**  **SCENTIFIC PRINCIPLES OF SPORTS TRAINING** | **T/P** | **Credits** | **Hours** |
| **T** | **3** | **3** |
| **Unit-I** | Introduction–Meaning and Definition of Sports Training – Principles of Sports Training. | | | |
| **Unit-II** | Training Load and Recovery – Factors of Load – Load intensity, Load Volume  – judgement of Load – Relationship between Load and Adaptation Over Load. | | | |
| **Unit-III** | Training of Motor qualities:  Strength : Forms – Means and Methods to improve strength Speed : Forms – Means and Methods to improve speed Endurance : Forms – Means and Methods to improve Endurance Flexibility : Forms – Means and Methods to improve flexibility. Coordination : Forms – Means and Methods to Improve Coordination. | | | |
| **Unit-IV** | Training plan – Periodisation – stages of periodisation – Types of Periodisation – Preparatory period – Competition period – Transitional period – long term and short term plans – Cyclic process of training. | | | |
| **Unit -V** | Techniques preparation – Aims to techniques in sports – Fundamentals and methods for development of techniques in sports – stages of techniques development. Aims of Tactics – Methods of tactical development. | | | |
| **Books for References:**  Hardayal Singh(1991) Science of sports Training, New Delhi: DVS Publications. John Bunn, Scientific Principles of Coaching.  Miler, Fundamental of Track and Field Coaching. | | | | |

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| **Semester - III** | | | | |
|  | **Core Course – III**  **TEST AND MEASUREMENT & EVALUATION** | **T/P** | **Credits** | **Hours** |
| **T** | **3** | **3** |
| **Unit-I** | Meaning of Test, Measurement and Evaluation – Brief History of Test, Measurement and Evaluation – Need and Importance of measurement and Evaluation in Physical. | | | |
| **Unit-II** | Classification of Test – Standardized and Teacher Made test - Object and subject Tests  – construction of Knowledge’s test and skill Test – Administration of Test– Duties during testing – Duties after Testing. | | | |
| **Unit-III** | Criteria of test selection – Validity, reliability, Objectivity, Norms, Administrative feasibility – Strength test – Bend Knee sit ups test. Flexibility test – Sit and reach test  – Speed test – 50 mts run – Cardio respiratory Endurance – Cooper 2 minute Run / Walk test. Explosive strength test – Standing Broad Jump. | | | |
| **Unit-IV** | AAHPERD Youth Fitness test. JCP test  Barrow motor ability test Harward step test  Magaia – Kalamen power test | | | |
| **Unit -V** | Test of Specific sport skills  Badminton : French Short Serve Test Basketball : Johnson Basketball Ability test Hockey : Hendry Friedal Field Hockey test. Soccer : Mc Donald Volleying Soccer test. Tennis Boer : Miller Tennis test  Volleyball : Helmen Volleyball test | | | |
| **Books for References:**  Safrit Margarat J Measurement in Physical Education and Exercises Science, St Louis Times Morror Mos by college publishing.  Bosco James Measurement and Evaluation in Physical Education and Sports New Jersy Prenstice Hall in 1983.  Barry L. Johnson, Jack K. Nelson and Measurement for Evaluation in Physical education the Surjeet Publications.  A.K.Gupta Tests&Measurement in Physical Education sports publication New Delhi – 52 A Practical applied to measurement in Physical Education – Horold M. Borrow. | | | | |

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| **Semester - IV** | | | | |
|  | **Core Course – III**  **EXERCISE PHYSIOLOGY** | **T/P** | **Credits** | **Hours** |
| **T** | **4** | **4** |
| **Unit-I** | Metabolism and Energy Transfer :- Metabolism – Energy – Unit of measuring energy  – Sources of energy – Adenosine Triphospate – Phosphagen system – Anacroble metabolism – Aerobic metabolism – Fat metabolism – protin metabolism – energy metabolism during rest, exercise and recovery – oxygen debt – oxygen deficit. | | | |
| **Unit-II** | **MORPHOLOGICAL FEATURE OF SKELETAL MUSCLE AND FUNCTION.**  Structure of the skeletal muscle – Chemical composition – Sliding filament theory of muscular contraction – muscle fiber types – fiber distribution and performance – All or none principle – muscle tone – Types of muscular contraction – Staircase Phenomenon or treppe – Heat production in the muscle – Residual muscle  soreness – Effect of Training on muscular system. | | | |
| **Unit-III** | **RESPIRATORY SYSTEM AND EXERCISE:**  Mechanism of breathing – Pulmonary ventilation / minute ventilation during  rest and exercise – control of ventilation – Lung volumes and capacities - Effect of exercise on Respiratory system. | | | |
| **Unit-IV** | **CARDIOVASCULAR SYSTEM AND EXERCISE:**  Structure properties of the heart and cardiac cycle, cardiac output during rest and exercise Stroke volume and heart rate – control of heart rate – Heart rate response to exercise on stroke volume– Blood pressure – factors affecting blood pressure and  heart rate – Regulation of blood flow – effect of exercise on circulatory system. | | | |
| **Unit -V** | **EXERCISE AND ENVIRONMENT:**  Exercise and temperature regulations – Hot humid climate – Exercise and temperature regulations in cold climates – Effect of High altitude on Physical performance – Physiological adaptations to altitude – Physiological changes in under  water conditions. | | | |
| **Books for References:**  William D.Mcarole. Frank.I Katch Victor.  Exercise Physiology Energy, Nutrition and Human performance Lea & Febiger Philade Richard W.Bowers and Edward L. Fox – Sports Physiology Third Edition wm c Brown Publishers  Laurence E Morehouse Augustus T.Miller, JR Seventh Edition Physiology of Exercise The c.v.  Mostly Company.  David H.Clarke Exercise Physiology prenties Hall, Inc: Englewood Cliffs, new jersey. Larry G.Shaver Essentials of exercise Physiology surjeet publications.  Dr.Amrit Kumar R.Moses introduction to exercise physiology poompugar pathipagam.  Donald Health. David Reid Williams.  Man at high altitude second edition, Churchill livi gstone. | | | | |

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| **Semester - IV** | | | | |
|  | **Core Course – III**  **THEORIES OF MAJOR GAMES – I AND TRACK & FIELD – II**  **(Major Games : Football, Basket Ball & Volleyball Track & Field: Sprint, Middle Distance and Long Distance Race)** | **T/P** | **Credits** | **Hours** |
| **T** | **4** | **4** |
| **Testing on:**   1. Fundamental Skills 2. Finer Skills 3. Playing Ability / Performance 4. Officiating Techniques   **Scheme of Assessment:**   1. Fundamental Skill & Defensive and Offensive Skill - 35 2. Playing ability / Performance - 20 3. Officiating Technique - 10 4. Record note - 10   **TOTAL** - 75 | | | | |
| **Books for Reference**:  Conling David, Athletics, London, Robert Hale, 1980.  Prabhakar Eric, The way to Athletic Gold, Madras East – West press Pvt. Ltd., 1995. Dr. P. Mariayyah, Football, Sports Publications, Raja Street, Coimbatore.  Dr. P. Mariayyah, Kabaddi, Sports Publications, Raja Street, Coimbatore. Dr. P. Mariayyah, volleyball, Sports Publication, Raja Street, Coimbatore.  Dr. P. Mariayyah, Track and Field, Sports Publications, Raja Street, Coimbatore. Thompson William, Teaching Soccer, Delhi, Surjeet Publications 1996.  Carting Ganagon, Play Better Soccer in All Colour, W.B. Saubders Company,1972. Dhanaraj V. Hubert, Volleyball – A Modern Approach, Patiala, Sainsoris, 1991. | | | | |

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| **Semester - IV** | | | | |
|  | **Core Course – III**  **THEORIES OF MAJOR GAMES – I AND TRACK & FIELD – II**  **(Major Games : Football, Basket Ball & Volleyball Track & Field: Sprint, Middle Distance and Long Distance Race)** | **T/P** | **Credits** | **Hours** |
| **P** | **4** | **4** |
| **Testing on:**   1. Fundamental Skills 2. Finer Skills 3. Playing Ability / Performance 4. Officiating Techniques   **Scheme of Assessment:**   1. Fundamental Skill & Defensive and Offensive Skill - 35 2. Playing ability / Performance - 20 3. Officiating Technique - 10 4. Record note - 10   **TOTAL** - 75 | | | | |
| **Books for Reference**:  Conling David, Athletics, London, Robert Hale, 1980.  Prabhakar Eric, The way to Athletic Gold, Madras East – West press Pvt. Ltd., 1995. Dr. P. Mariayyah, Football, Sports Publications, Raja Street, Coimbatore.  Dr. P. Mariayyah, Kabaddi, Sports Publications, Raja Street, Coimbatore. Dr. P. Mariayyah, volleyball, Sports Publication, Raja Street, Coimbatore.  Dr. P. Mariayyah, Track and Field, Sports Publications, Raja Street, Coimbatore. Thompson William, Teaching Soccer, Delhi, Surjeet Publications 1996.  Carting Ganagon, Play Better Soccer in All Colour, W.B. Saubders Company,1972. Dhanaraj V. Hubert, Volleyball – A Modern Approach, Patiala, Sainsoris, 1991. | | | | |

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| **Semester - IV** | | | | |
|  | **Core Course – III**  **SPORTS BIOMECHANICS & KINESIOLOGY** | **T/P** | **Credits** | **Hours** |
| **T** | **4** | **4** |
| **Unit-I** | Meaning and Definition – aim, Need and Importance of Bio-Mechanics in the field of Physical education and sports – Types of motion-linear and angular motion – Function  – air and Water resistance. | | | |
| **Unit-II** | Linear Kinematics – Distance and Displacement, Speed, Velocity and  Acceleration and Projectile – Angular Kinematics – Angular distance and Displacement, Angular speed, Velocity and acceleration. | | | |
| **Unit-III** | Center of Gravity Equilibrium – Stages of equilibrium – Factors affecting – equilibrium. Centrifugal and Centripetal, Force-Direction-angle, Point of application – Lever – Principles and its types-Mechanical Advantage – Application of Levers in  Physical Education & Sports. | | | |
| **Unit-IV** | Inertia-Mass and Weight – Force-Factors affecting force-Types of force –  Work, Power and Energy-Impact and Elasticity – Newton’s Law of motion. | | | |
| **Unit -V** | Use of the above scientific principles in: Track & Field events – Running, throwing, Jumping – Basketball, football, Volleyball. | | | |
| **Book for References:**  Greire millor, Paul & smith, Techniques for the analysis of Human movement lapse books London 1975.  Bunn John W “Scientific Principles of coaching”.  Charles “Fundamental of Sports Bio-Mechanics Techniques. Hay, James G “The Biomechanics of Sports”.  T. Mc Clurg Anderson Bio Mechanics of Human Motion. | | | | |

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| **Semester - IV** | | | | |
|  | **Core Course – III**  **SPORTS PSYCHOLOGY & SOCIOLOGY** | **T/P** | **Credits** | **Hours** |
| **T** | **4** | **4** |
| **Unit-I** | Meaning and Definition of Psychology and sports Psychology – Development of sports Psychology in India – Need and importance of sports Psychology in the field Physical Education and sports. | | | |
| **Unit-II** | Definition Motor Learning – Physical and Motor considerations – Body Build, Height and Weight, Strength, Muscular, Endurance, Flexibility, Balance Co-Ordination, Reaction time, Movement time and Reflex time Cognitive – Affeative – Psychomotor | | | |
| **Unit-III** | Definition of Perception – Theory of Perception Gestult Theory , Palror Theory and witkin’s Theory emotional effects tension, anxiety and stress – its role in Physical education and sports. | | | |
| **Unit-IV** | Personality traits of sports person – composition of personality – Aggression – theories of Aggression – Psycho- regulative procedures. Autogenic training, yoga and Music’s. | | | |
| **Unit -V** | Meaning , Nature and Scope of Sociology in Physical education and sports – social factors in sports – Leadership in sports spectators and fans group cohension social Integration. | | | |
| **Book for References:**  Alderman A.B. Psychology Behavior in sports W.B. Saundar company Saundar 1974. Puni A.T. Sports Psychology Chanduga NIS.  Alderman Psychology Behavior  Cratty B.J. Psychology and Physical acivity. Singer R.N. Coaching, Athletics and Physiology. | | | | |

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| **Semester - V** | | | | |
|  | **Core Course – III**  **COMPUTER APPLICATION IN PHYSICAL EDUCATION** | **T/P** | **Credits** | **Hours** |
| **T** | **4** | **4** |
| **Unit-I** | Introduction to Computer – History of Computers – Block diagram of a Computer – Input Devices, Keyboard and Monitor, Visual Display Terminal, Function Keys, Numeric Key pad, Light Pen and Mouse, Bar Codes – Out put Devices, Video Display unit – Dot Matrix Printers, Line Printers. | | | |
| **Unit-II** | Memory, Function of Memory, Read only Memory (ROM), Random Access Memory (RAM), Floppy Disk, Magnetic tape, Hard Disk – Central Processing Unit – Important characteristics of a computer. | | | |
| **Unit-III** | Software and Hardware, Machine Language, Assembly Language, High Level Language, Advantages of High Level Languages, Interpreters, Operating Systems, Basic Knowledge about different Software packages(Dbase, Spread Sheet, Word Processors) | | | |
| **Unit-IV** | Applications in windows – Application and document files, M.S.Dos. Clock and Calendar, Calculator, Paint, WordPad – Working with multiple applications. | | | |
| **Unit -V** | Practical – Windows ’98 Word PowerPoint and Excels – 100 Marks | | | |
| **Book for References:**  Cassel. P and Hart. M Windows 98, Techmedia , New Delhi, 1998  Norton. P, Complete Guide to Windows, BPB Publication, New Delhi, 1998 Teach Yourself Excel 97 for Windows, BPB Publication, New Delhi, 1998 Mastering Power Point for Windows, BPB Publication New Delhi, 1996 Computer Basics, BPBP Publications, New Delhi.  Computer Concepts and Facts, BPB Publication, New Delhi. Handbook for Windows, Power Point and Excel.  National Institute for Computer Education, Chennai | | | | |

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| **Semester - V** | | | | |
|  | **Core Course –**  **RESEARCH AND ELEMENTARY STATISTIC** | **T/P** | **Credits** | **Hours** |
| **T** | **4** | **4** |
| **Unit-I** | **INTRODUCTION**  Definition for Research – Need, importance and scope of research in Physical Education – Basic research – Applied research. | | | |
| **Unit-II** | **FORMULATION AND DEVELOPMENT OF RESEARCH PROBLEM**  Location of research problem – Criteria in selecting the research problem – Hypothesis – Research proposal. | | | |
| **Unit-III** | **HISTORICAL RESEARCH**  Definition of Historical research – Steps in historical research – Sources of Historical data-primary and secondary sources of data – Historical criticism and internal. | | | |
| **Unit-IV** | Definition and meaning of variables, constants, population, sample and parameter – Scales of Measurement - Nominal, Ordinal, Internal and Ratio – Definition and meaning of range, quartile deviation, mean deviation and standard Deviation – Computation of standard deviation and quartile deviation from ungrounded and grouped data- Characteristics and uses of measures of variability. | | | |
| **Unit -V** | Meaning and importance of percentiles – Computation of percentiles from ungrouped data and grouped and grouped data – Construction of percentiles scales – Computing percentiles in deciles and quartiles. | | | |
| **References:**  Clarke, David Hand Clarke H.Harrison Research process. In physical education (2nd edition) Engle wood cliff, new jersey, prentice hall, Inc. 1984  Best John W.Research in Education, Englewood clifts, New jersey, prentice hall, Inc.1971 | | | | |

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| **Semester - V** | | | | |
|  | **Core Course –**  **SPORTS MEDICINE AND PHYSIOTHERAPY** | **T/P** | **Credits** | **Hours** |
| **T** | **4** | **6** |
| **Unit-I** | Common Athletic injuries and their treatment, Sprain, Strain.  Types of fracture and their treatment | | | |
| **Unit-II** | Dislocation, Muscle cramp, Bleeding, Wound and its types, Contusion, Abrasion and Puncture wounds | | | |
| **Unit-III** | Meaning, Nature, Need and importance of Physiotherapy  Short wave Diathermy, Microwave Diathermy, Diapulse Diathermy, Ultra Sound Waves, Infra red rays, Ultra violet rays. | | | |
| **Unit-IV** | Brief History of Message Classification of the Manipulations used in message the techniques and uses indication of all manipulation | | | |
| **Unit -V** | Rhumatic Conditions   1. Classification – Rhumatoid Arthritis 2. Spondylytis 3. A cute respiratory conditions 4. Chronic respiratory conditions 5. Conditions of the Nervous System.   Introduction, Sign and Symptoms of neurological dis-orders like Paralegia, Hemiplegia, Cerebral Palsy. | | | |
| **Book for References:**  Thorndike, Athletic injuries.  I.B. Clayton, Text Book of Electro therapy and Action therapy. Edwin M. Prasnet, Manual of message and Movements.  R. Foracks, Exercise Therapy.  M. V. Locs, Manual of Message.  Adish Luchwald, Physical Rehabilitation for Daily Living. | | | | |

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| **Semester - V** | | | | |
|  | **Core Course – SPORTS NUTRITION** | **T/P** | **Credits** | **Hours** |
| **T** | **4** | **4** |
| **Unit-I** | **INTRODUCTION TO NUTRITION**  Definition – Meaning – Need of sports Nutrition – Essential nutrition – Energy nutrients minerals and vitamins – Water –basic four food plan - balanced diet – daily recommended allowances. | | | |
| **Unit-II** | **CARBHOHYDRATES:**  The nature of CHO – Kinds and sources of CHO – recommended intake of CHO  – Role of carbohydrates in the body – energy sources – protein sparing – metabolic primer Fuel for the central nervous system – CHO balance in exercise – Intense exercise – moderate and prolonged exercise – effect of diet on muscle glycogen – administration of oral glucose. | | | |
| **Unit-III** | **FAT**  Nature of fat – kinds and sources of fat – Recommended intake of fat – Role of fat in the body – energy sources and reserve – protection and insulation – vitamin carrier and Hunger depressor – Fat Balance in Exercise – Role of fat in Glycogen Sparing – Fat rich foods.  **PROTEIN**  The nature of protein – kinds and sources of protein – recommended intake of protein Role of protein in the body – Protein balance in exercise – dynamics of protein metabolism – protein rich foods.  **VITAMINS**  The nature of vitamins – kinds of vitamins – Role of vitamins in the body – vitamins and exercise performance – Dietary sources – RDA – Vitamins and functions  – vitamins deficiency diseases – vitamin rich foods. | | | |
| **Unit-IV** | **MINERALS**  The nature of minerals – kinds and sources of minerals – role of minerals in the body – Minerals and exercise performance – Recommended daily allowances – functions – deficiency – diseases – Dietary sources.  **WATER:**  Water in the body – water balance intake versus output – functions of body | | | |

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|  | water – water requirement in exercise – Dehydration – Rehydration – Fluid facts for thirsty Athletes – Liquid meal. |
| **Unit -V** | **DIET PLANNING FOR SPORTS PERSON:**  Diet planning – factors determining diet planning – The Athlete’s diet – Nutrition before exercise – pre game meal carbo-loading for endurance exercise – Nutrition after exercise – electrolytes and its function – sodium – Potassium Chlorine – Sodium Chloride(Salt) – Electrolyte replacement. |
| **Book for References:**  William D. Mc Arodle Frank I. Katch Victor L Katch Exercise Physiology Energy, Nutrition and Human performance Lea & Febiger Philadelphia  Richard W. Bowers on Edward L. Fox sports Physiology Third Edition.WM. C. Brown Publishers.  Laurence E. Morehouse Augustus T. Miller, Jr. Seventh edition Physiology of exercise. The C.V. Mosby Company.  David H. Clarke exercise Physiology prentice – Hall, Inc. Englewood Cliffs, New Jersey. Larry G. Shaver Essentials of Exercise Physiology subject publications. | |

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| **Semester - V** | | | | |
|  | **Core Course – SPORTS MANAGEMENT** | **T/P** | **Credits** | **Hours** |
| **T** | **4** | **4** |
| **Unit-I** | Meaning and Definition of Sports management – Scope of sports management  – Basic principles of sports management – Functions of sports management. | | | |
| **Unit-II** | Personal management: Objectives – Personal policies – Personal Recruitment  – Role of Personal manager. Programme management: Importance of programme development – Factors influencing programme development – Competitive sports programs. | | | |
| **Unit-III** | Sports marketing: Meaning – Factors involved in the marketing of sports – Market awareness – Developing a target market strategy – Quality and price of sports products. | | | |
| **Unit-IV** | Supplies of sports Equipment: Guidelines for selection and supply of equipments – Equipment room, Equipment and supply manager – Guidelines for checking, storing and issuing – Care and Maintenance of equipments. | | | |
| **Unit -V** | Accounting and Budgeting – Definition and role of accounting in sport and fitness enterprise Raising of funds – Types of Budget – Budget record maintenance – The accounting system. | | | |
| **Book for References:**  Bucher A. Charles (1993) Management of Physical Education and sports (10th ed.,) St. Louis: Mobsy Publishing Company.  Chellaldurai. P(1999) Human Resource Management in sport and Recreation, Human kinetics. Chakraborthy, Samiram (1988), Sports Management, Sports publications, New Delhi.  Lazer. W and Cultey. J Marketing Management. Boston Houghton Miffing Co. Ruben Acosta Hernandez, Managing sport organizations, Human kinetics. | | | | |

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| **Semester - VI** | | | | |
|  | **DSE**  **SPORTS MANAGEMENT** | **T/P** | **Credits** | **Hours** |
| **T** | **4** | **4** |
| **Unit-I** | Meaning and Definition of Sports management – Scope of sports management – Basic principles of sports management – Functions of sports management. | | | |
| **Unit-II** | Personal management: Objectives – Personal policies – Personal Recruitment  – Role of Personal manager. Programme management: Importance of programme development – Factors influencing programme development – Competitive sports programs. | | | |
| **Unit-III** | Sports marketing: Meaning – Factors involved in the marketing of sports – Market awareness – Developing a target market strategy – Quality and price of sports products. | | | |
| **Unit-IV** | Supplies of sports Equipment: Guidelines for selection and supply of equipments – Equipment room, Equipment and supply manager – Guidelines for checking, storing and issuing – Care and Maintenance of equipments. | | | |
| **Unit -V** | Accounting and Budgeting – Definition and role of accounting in sport and fitness enterprise Raising of funds – Types of Budget – Budget record maintenance – The accounting system. | | | |
| **Book for References:**  Bucher A. Charles (1993) Management of Physical Education and sports (10th ed.,) St. Louis: Mobsy Publishing Company.  Chellaldurai. P(1999) Human Resource Management in sport and Recreation, Human kinetics. Chakraborthy, Samiram (1988), Sports Management, Sports publications, New Delhi.  Lazer. W and Cultey. J Marketing Management. Boston Houghton Miffing Co. Ruben Acosta Hernandez, Managing sport organizations, Human kinetics. | | | | |

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| **Semester - VI** | | | | |
|  | **DSE**  **HEALTH EDUCATION AND FIRST AID** | **T/P** | **Credits** | **Hours** |
| **T** | **4** | **4** |
| **Unit-I** | Meaning, Nature, Need and Scope of health Education. Factors influencing  Health.  State, National and International health organization. Meaning of wellness and Health  – components of Health-Physical and Mental Health. Community health, Environment health, Occupational health. Personal hygiene School health programme. | | | |
| **Unit-II** | Communicable diseases – agent, causative organism, Incubation period-Mode of spread, sign and symptoms and preventive measure of typhoid, Cholera, Pulmonary Tuberculosis, Amoeniasus, Malaria, Tetanus, Poliomyneens, Non-Communicable diseases – Symptoms and Prevention of Peptic aulser, Maligrency, Cancer, Hyper  tension, Diabetic mellius. | | | |
| **Unit-III** | Definition – Characterstics – Principles of Safety Education – Need for Safety Education in Physical Education.  Factors affecting safety – Need and Importance of safety for preventing injuries. | | | |
| **Unit-IV** | Definition and importance of first aid – first aid for Athletic injuries – sprain, strain –  dislocation – cramp – fracture and its types. | | | |
| **Unit -V** | Sign, Symptoms and first aid for Poisoning, Drowning, Dog Bit and Burns. Types of  Bleeding – Wound and its type – Contusion – Abrasion – Puncher wound – Laceration. Artificial respiration. | | | |
| **Book for References:**  Mangal SK and Chandra, P.C. (1979) Health and Physical Education, Ludhiana Tandon Brothers Publication.  Neiniah (1978) School Health Education, New York: Harper and Brothers Royappa, Daisy Joseph and Govindarajulu, JK. (1972) Safety Education First Aid to the Injured, New Delhi: St. John Ambulance Association  School Safety Policies, Washington: America Association for Health, Physical Education and Recreation.  Florio, A.E and Stafford, G.T., (1969) Safety Education, New York: Mc Graw Hill Book Company.  William, Evans, A, (1952) Everyday Safety, Lyons and Carnahan  Miller, David. E, (1976) Occupational Safety, Health and Fire Index, New York: Marcel Dekker Inc. | | | | |

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| **Semester - VI** | | | | |
|  | **DSE**  **THEORY III – THEROIRES OF MAJOR GAMES AND TRACK & FIELD – III**  **(Major Games: Basket ball, Cricket, Hockey and Kho-Kho)** | **T/P** | **Credits** | **Hours** |
| **T** | **4** | **4** |
| **Unit-I** | History of Track & Field: Track events, Throws, Jumps, Organizational set up in District,State and National level.  Shot Put : Fundamental skills: Grip, Placement of shot, initial stance, Glide, Releasing, Reserve Hammer Throw: Initial stance – rotation – Releasing and Follow through.  Javelin : Holding – Approach run – release – reverse. | | | |
| **Unit-II** | Long Jump : Fundamental Skills of long jump: Approach run, Take off, Flying Phase, Landing High Jump : Approach run, Take off, Flying phase – landing  Long Distance Running: Correct running style, proper arm and leg action., Running Tactics Rules and their interpretations – methods of officiating – Duties of official – Equipment and their Specification – Layout of the Track Events – Throws and Jumps. | | | |
| **Unit-III** | Origin, History and development of the game – International, National and State Level Organizations. Fundamental Skill – Lead Up Games – Various System of Play – Selection of Players. | | | |
| **Unit-IV** | Training: Warm-Up and Warm down – Technical Training – Tactical Training – Coaching Program. Layout of Playfield with all Measurement, Facilities and equipment and its specifications. | | | |
| **Unit -V** | * Rules and their Interpretation * Methods of Officiating * Duties of Officials | | | |
| **Books for References:**  Dr. Anil Sharma, O.P. Sharma Rules of Sports, Sports Publication, 4264/3 Ansari Road New Delhi – 2.  Conling David, Athletics, London Robert Hale 1980  Dr. P. Mariayyah Track & Field, Sports publication, Raja St. Coimbatore  Ken O. Bosen, “Track & Field Fundamental Techniques NIS Publications, Patiala.  Doherty, J. Mennath, “Modern Track & Field”, Englewood cliffs, Prentice Hall. Inc., New Jersey. Wein Harat “The Science of Hockey” London Pelham Books, 1979  Tyson Frank “The Cricket Coaching Manual”, Calcutta, Rupa & Co, 1985 | | | | |

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| **Semester - VI** | | | | |
|  | **DSE**  **PRACTICAL OF MAJOR GAMES II AND TRACK & FIELD III**  **(Major Games: Basket ball, Cricket, Hockey and Kho-Kho)** | **T/P** | **Credits** | **Hours** |
| **T** | **4** | **4** |
| **GAME**  General and specific conditioning exercise Fundamental Skills  Drills for developing the skills Team Tactics and Strategy System of Play  Standardized skill test Scouting of Performance Rules  Officiating  **ATHLETICS**  General and specific conditioning exercise Teaching of Skill  Practicing the Skills Equipments  Scouting of Performance Rules  Officiating techniques Practicing the Skills Equipments  Scouting of Performance Rules  Officiating techniques | | | | |

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| **Semester - VI** | | | | |
|  | **DSE**  **CARE AND PREVENTION OF ATHLETIC INJURIES** | **T/P** | **Credits** | **Hours** |
| **T** | **4** | **4** |
| **Unit-I** | 1. Types of Movements, Concentric, exocentric (Isotonic), Static (Isometric) and Isokinetic exercises. 2. Posture and body mechanics – Standards of Standing posture, values of good posture, drawback and causes of poor posture. | | | |
| **Unit-II** | 1. Posture Tests – Examination of the spine. New York State posture Rating Chart Test, Organization of special classes for postural correction. 2. Some common deviation in posture – normal curvature of the spine and its utility, kyphosis, lordosis, kypholordosis, flat back, scolosis (C and S curve, functional and structural round shoulders). Knock knees, bow legs, flat foot, causes for these deviations and treatment including exercise. | | | |
| **Unit-III** | 1. A brief history of massage and remedial exercise 2. Muscle relaxation as an aid to massage 3. Points to be considered in giving massage 4. Physiological effects of massage 5. Classification of the manipulations used in massage and their specific uses on the Human body a stroking manipulation. 6. Effleurage, Stroking, Kneading, Friction, Hacking, Clapping, Beating and Pounding. | | | |
| **Unit-IV** | 1. Common athletic injuries and their treatment 2. Sprains 3. Strains 4. Contusions 5. Abrasions 6. Type of fractures and their management | | | |
| **Unit -V** | Principles of applying heat/cold, ultra-violet rays, infra-red rays, contrast bath ultrasonic | | | |
| **Book for References:**  Corrective Physical Education, Rathborne J.I.W.B. Saunders and co., London 1995. Manual of massage and movement, Prof E.M. Naro Faber and Faber Ltd.  Therapeutic Exercise for body Alignment and Education, by William mareuam and Catherine Worthingham, WB. Saunders and Co., 1965  Massage and Medical Gymnastics, M.V. Lace J. & A. Churchill Ltd., 1951.  Preventive and Corrective Physical Education Stafford and Kelly, New York. The Ronald Press, 1968. | | | | |

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| **Semester - VI** | | | | |
|  | **DSE**  **THEORY III – THEROIRES OF MAJOR GAMES AND TRACK & FIELD – III**  **(Major Games: Basket ball, Cricket, Hockey and Kho-Kho)** | **T/P** | **Credits** | **Hours** |
| **T** | **4** | **4** |
| **Unit-I** | History of Track & Field: Track events, Throws, Jumps, Organizational set up in District,State and National level.  Shot Put : Fundamental skills: Grip, Placement of shot, initial stance, Glide, Releasing, Reserve Hammer Throw: Initial stance – rotation – Releasing and Follow through.  Javelin : Holding – Approach run – release – reverse. | | | |
| **Unit-II** | Long Jump : Fundamental Skills of long jump: Approach run, Take off, Flying Phase, Landing High Jump : Approach run, Take off, Flying phase – landing  Long Distance Running: Correct running style, proper arm and leg action., Running Tactics Rules and their interpretations – methods of officiating – Duties of official – Equipment and their Specification – Layout of the Track Events – Throws and Jumps. | | | |
| **Unit-III** | Origin, History and development of the game – International, National and State Level Organizations. Fundamental Skill – Lead Up Games – Various System of Play – Selection of Players. | | | |
| **Unit-IV** | Training: Warm-Up and Warm down – Technical Training – Tactical Training – Coaching Program. Layout of Playfield with all Measurement, Facilities and equipment and its specifications. | | | |
| **Unit -V** | * Rules and their Interpretation * Methods of Officiating * Duties of Officials | | | |
| **Books for References:**  Dr. Anil Sharma, O.P. Sharma Rules of Sports, Sports Publication, 4264/3 Ansari Road New Delhi – 2.  Conling David, Athletics, London Robert Hale 1980  Dr. P. Mariayyah Track & Field, Sports publication, Raja St. Coimbatore  Ken O. Bosen, “Track & Field Fundamental Techniques NIS Publications, Patiala. Doherty, J. Mennath, “Modern Track & Field”, Englewood cliffs, Prentice Hall. Inc., New  Jersey.  Wein Harat “The Science of Hockey” London Pelham Books, 1979 Tyson Frank “The Cricket Coaching Manual”, Calcutta, Rupa & Co, 1985 | | | | |

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|  | **DSE**  **PRACTICAL OF MAJOR GAMES II AND TRACK & FIELD III**  **(Major Games: Basket ball, Cricket, Hockey and Kho-Kho)** | **T/P** | **Credits** | **Hours** |
| **T** | **4** | **4** |
| **GAME**  General and specific conditioning exercise Fundamental Skills  Drills for developing the skills Team Tactics and Strategy System of Play  Standardized skill test Scouting of Performance Rules  Officiating  **ATHLETICS**  General and specific conditioning exercise Teaching of Skill  Practicing the Skills Equipments  Scouting of Performance Rules  Officiating techniques Practicing the Skills Equipments  Scouting of Performance Rules  Officiating techniques | | | | |

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