AC – 28/03/2025
Item No. – 6.2 (N) (6a) Sem. IV

As Per NEP 2020

University of Mumbai

Syllabus for Basket of OE Vertical 3	
Faculty of Science	
Board of Studies in Physics	
Second Year Programme	
Semester	**IV**
Title of Paper	**Credits**
Physics in Sports – I	**2**
From the Academic Year	**2025-26**

Title of Paper - Physics in Sports – I

Sr. No.	Heading	Particulars
1	**Description of the course :** **Including but Not limited to :**	Introduction, relevance, Usefulness, Application, interest, connection with other courses, demand in the industry, job prospects etc.
2	**Vertical :**	Open Elective
3	**Type :**	Theory / Practical
4	**Credit**:	**2 credits** (1 credit = 15 Hours for Theory or 30 Hours of Practical work in a semester)
5	**Hours Allotted :**	**30 Hours**
6	**Marks Allotted**:	**50 Marks**
7	**Course Objectives**: (List some of the course objectives) After successful completion of this course students will be able to: **1)** Know the basic physics behind sports and games. **2)** Know about the laws that applicable in events. **3)** Apply the laws in sports equipment's	
8	**Course Outcomes**: (List some of the course outcomes) After successful completion of this course the learner will be able to: **1)** Understand and explain the basic Concept of Physics. **2)** Understand the importance of the theory behind the preparation of equipment **3)** Explain the conservation of angular momentum and torque, laws of floatation, Archimedes principle.	
9	**Modules**:- Per credit One module can be created	
	Module 1: Unit-I: Concepts of Physics (15 Lectures)	
	Concept of Velocity, Momentum, Force, Action and Reaction, Damping, Friction. Rotation circular motion, gravitation, projectile -, Catch and Throws, thrust and pressure, Range conservation of angular momentum and torque, laws of floatation, Archimedes principle. Shooting.	
	Module 2: Unit-II: Physics of Instruments (15 Lectures)	
	Bats, Inflated Balls - Tennis, Table Tennis, Basketball, Football. Hard Balls - Cricket Ball, Bowling Ball, Soft (Woollen Ball), Javelin, discus, Carrom and shot put.	

<table>
<tr><td>10</td><td colspan="2">Reference Books:
1. The Physics of Sports A Textbook By David R. Heskett
2. Concepts in physics by H C Verma
3. The physics of sports science Projects, Robert Gardner, Enslow Publishers</td></tr>
<tr><td>11</td><td>Internal Continuous Assessment: 40%</td><td>External, Semester End Examination 60% Individual Passing in Internal and External Examination</td></tr>
<tr><td>12</td><td>Continuous Evaluation through:
Quizzes, Class Tests, presentation, project, role play, creative writing, assignment etc.(at least 3)</td><td></td></tr>
<tr><td>13</td><td colspan="2">Format of Question Paper: for the final examination
Format of Question Paper for OE: External – 30 Marks (2 Credits)
Internal – 20 Marks
Question Paper Format for 30 Marks
Duration: One Hour
<table>
<tr><td>Unit -I
(15Marks)</td><td>Q:1 A) Attempt any TWO 10Marks
i) Theory
ii) Theory
iii) Theory
iv) Theory
B) Attempt any One 05 Marks
i) Problem
ii) Problem</td></tr>
<tr><td>Unit -II
(15Marks)</td><td>Q:2 A) Attempt any TWO 10Marks
i) Theory
ii) Theory
iii) Theory
iv) Theory
B) Attempt any One 05 Marks
i) Problem
ii) Problem</td></tr>
</table></td></tr>
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Sd/- **Sd/-** **Sd/-**

Sign of the BOS Chairman
Dr. T.N. Ghorude
Board of Studies in Physics

Sign of the
Offg. Associate Dean
Dr. Madhav R. Rajwade
Faculty of Science & Technology

Sign of the
Offg. Dean
Prof. Shivram S. Garje
Faculty of Science & Technology