

MANGALORE UNIVERSITY
Department of Physical Education
Master of Physical Education (M.P.Ed.)

MDS 405: SPORTS TECHNOLOGY (Elective)

Number of credits :	3	Number of hours :	3	Marks :	Internal	- 30	External	-
							1	70
Objectives / Learning Outcomes								
At the end of the course the student should understand • Meaning, purpose, advantages and applications of Sports Technology. • The current application of advanced technology for better performance in sports. • Monitoring and training technology and materials technology to enhance sport performance. • The current and future impact of technology on sports materials • Ethics of using advanced technology in the fields of sports.								

Unit I: Sports Technology

- Meaning and definition of Sports Technology.
- Purpose, advantages and applications of Sports Technology.
- General Principles and purpose of instrumentation in sports, Workflow of instrumentation and business aspects.
- Technological impacts on sports.

Unit II: Science of Sports Materials

- Adhesives - Nano glue, Nano moulding, technology, Nano turf.
Foot wear production, Factors and application in sports, constraints.
- Foams- Polyurethane, Polystyrene, Styrofoam, closed- cell and open-cell foams, Neoprene, Foam.
- Smart Materials – Shape Memory Alloy (SMA), Thermo chromic film, High-density modeling foam.
- Playing Equipment: Balls, Bat, Stick, Racquets, Clothing and shoes: Types, Materials and Advantages.

Unit III: Surfaces of Playfields

- Modern surfaces for playfields, construction and installation of sports surfaces. Types of materials – synthetic, wood, Polyurethane.
- Artificial turf.
- Modern technology in the construction of indoor and outdoor facilities. Technology in manufacture of modern play equipment.

- Use of computer and software in Match Analysis and Coaching.

Unit IV: Modern equipment and Training Gadgets

- Measuring equipment: Throwing and Jumping Events. Protective equipment: Types, Materials and Advantages. Sports equipment with Nano technology, Advantages.
- Basketball: Ball Feeder, Mechanism and Advantages. Cricket: Bowling Machine, Mechanism and Advantages, Tennis: Serving Machine, Mechanism and Advantages, Volleyball: Serving Machine Mechanism and Advantages.
- Lighting Facilities: Method of erecting Floodlit and measuring luminous. Video Coverage: Types, Size, Capacity, Place and Position of Camera in Live coverage of sporting events.

Note: Students should be encouraged to design and manufacture improvised sports testing equipment in the laboratory/workshop and visit sports technology factory/sports goods manufacturers.

REFERENCE:

- Charles J.A. Crane, F.A.A. and Furness, J.A.G. (1987) "Selection of Engineering Materials" UK: Butterworth Heiremann.
- Finn, R.A. and Trojan P.K. (1999) "Engineering Materials and their Applications" UK: Jaico Publisher.
- John Mongilo, (2001), "Nano Technology 101 "New York: Green wood publishing group. Walia, J.S. Principles and Methods of Education (Paul Publishers, Jullandhar), 1999.
- Kochar, S.K. Methods and Techniques of Teaching (New Delhi, Jullandhar, Sterling Publishers Pvt. Ltd.), 1982.
- Kozman, Cassidy and Jackson. Methods in Physical Education (W.B. Saunders Company, Philadelphia and London), 1952.