

**TAMIL NADU PHYSICAL EDUCATION AND  
SPORTS UNIVERSITY**

**Melakottaiyur, Chennai – 127**



**M.Sc. SPORTS COACHING**

**REGULATION AND SYLLABUS 2018-19**

  
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**DEPARTMENT OF ADVANCED TRAINING AND  
COACHING**

**TAMIL NADU PHYSICAL EDUCATION AND SPORTS UNIVERSITY  
CHENNAI**

**DEPARTMENT OF ADVANCED SPORTS TRAINING AND COACHING**

**M.SC., SPORTS COACHING (REGULAR)**

CHOICE BASED CREDIT SYSTEM (CBCS)  
SUBJECT MATTER AND EVALUATING SYSTEM

**NORMS RULES AND REGULATIONS**

**1. PREAMBLE**

The Master of Sports Coaching M.Sc., (Sports Coaching) programme is meant for candidates desirous of pursuing Master degree in Sports Coaching and for preparing a professional and scientific support for the sports person by the Sports Coaches.

**2. REGULATION**

The syllabus is for three year M.Sc., Degree programme under CBCS system – Regular will be implemented from the academic year 2018-19 onwards.

**3. ELIGIBILITY FOR ADMISSION**

Candidates shall be admitted to the M.Sc., degree in Sports Coaching in he/she produces satisfactory evidence to the effect that he/she has successfully completed any degree examinations or its equivalent approved by the syndicate of the Tamil Nadu Physical Education and Sports University, Chennai in addition to that he/she has to pass the diploma /P.G. diploma in sports coaching from SAI/NIS/TNPESU/ LNIPE or its equivalent approved by the syndicate of Tamil Nadu Physical Education and Sports University

#### 4. SCHEME OF SELECTION

Entrance Examination will be conducted and those who are qualified will be admitted for the Master degree programme. The test will objective types of 50 questions will carry one mark each questions. Those who are securing more than 50% marks will qualify to admit in the M.Sc programme. The Rank list will be prepared accordingly. Maximum number of seats will be restricted to 15 students.

#### 5. COURSE OF STUDY

M. Sc., (Sports Coaching), Programme shall be of duration of two Academic years with four semesters. A student should complete.

M. Sc., (Sports Coaching) Programme within four years after registration. The total working days of each semester shall be 90 days exclusive of the period of the admission and examination etc., the medium of Instruction and examination shall be English.

#### 6. SEMESTERS

An academic year is of two semesters.

First Semester - July to November

Second Semester - December to April

In each semester, the courses are taught for 18 weeks with each week having 5 working days.

#### 7. CHOICE BASED CREDIT SYSTEM (CBCS)

The CBCS in MSc, (Sports Coaching) programme would have the following components and the minimum credit requirements for each component to be completed in two years are.

<b>Core subject</b>	-	<b>40 Credits</b>
<b>Core Practical</b>	-	<b>20 Credits</b>
<b>Discipline specific Elective</b>	-	<b>16credits</b>
<b>Ability Enhancement compulsory course(AECC)</b>	-	<b>02 Credits</b>
<b>Extra curricular</b>	-	<b>06 Credits</b>
<b>skill Enhancement course</b>	-	<b>04 Credits</b>
<b>Generic elective</b>	-	<b>8 credits</b>
<b>Thesis</b>	-	<b>6 Credits</b>
<b>Total</b>	-	<b>102 Credits</b>

**8. COURSE WEIGHT**

Course will be designed with weight age depending upon the content, duration and specialization.

**9. MARKS/CREDIT DISTRIBUTION**

**I Semester**

	Subject code		L	C	Int	Ext	Total
I - Core - Theory		Science of Sports Training	4	4	25	75	100
		Anatomy and Exercises Physiology	4	4	25	75	100
Discipline Specific Elective		Specified sports -Theory	4	4	25	75	100
		Choose any one of the subject from the odd semester pool	4	4	25	75	100
II - Core – Practical		Specific Sports – Practical	10	5	25	75	100
III - Ability Enhancement Course		Sports Communication	2	2	25	75	100
Total Credit/ marks					23		600

**II SEMESTER**

	Subject code		L	C	Int	Ext	Total
I - Core – Theory		Sports Medicine & Nutrition	4	4	25	75	100
		Exercise Psychology	4	4	25	75	100
		Specified sport – Theory	4	4	25	75	100
Discipline Specific Elective		Choose any one of the subject from the even semester pool	4	4	25	75	100
II - Core Practical		Specified Sports Practical	10	5	25	75	100
III - Skill Enhancement Course (SEC) Co curricular activities		Fundamentals of Information and Technology (FIT)	2	2	25	75	100
		Sports stadia/ Industrial visit		2			
Total Credits/ marks				25			600

**III SEMESTER**

	Subject code		L	C	Int	Ext	Total
Core - Theory Discipline		Kinesiology & Bio – Mechanics	4	4	25	75	100
		Specific sports - Theory	4	4	25	75	100
Specific Elective		Choose any one of the subject from the odd semester pool	4	4	25	75	100
II - Core Practical		Specific Sports Practical	10	5	25	75	100
III - Generic Electives		List enclosed	4	4	25	75	100
Skill Enhancement Course (SEC)		Human rights	2	2	25	75	100
Co- curricular		Village placement Programme		2			
Total Credits/ Marks				25			600

**IV SEMESTER**

	Subject code		L	C	Int	Ext	Total
CORE PAPER		Research Methodology and Statistics in Advanced Training and Coaching	4	4	25	75	100
		Test and measurement in Training and Coaching	4	4	25	75	100
		Choose any one of the subject from the even semester pool	4	4	25	75	100
Discipline Specific Elective							
Core Practical		Specific sports practical	10	5	25	75	100
Generic elective		List enclosed	4	4	25	75	100
Co curricular		Disaster management		2	--	--	---
Thesis			6	6	25	75	100
Total credit / Marks				29			600

**CREDIT AND MARKS ABSTRACT**

SEMESTER	CREDITS	TOTAL MARKS
I	23	600
II	25	600
III	25	600
IV	29	600
<b>Grand Total</b>	<b>102</b>	<b>2300</b>

**CREDIT ABSTRACT**

<b>Semester – Credits Subject</b>	<b>I</b>	<b>II</b>	<b>III</b>	<b>IV</b>	<b>Total Credit</b>
Core –Theory	12	12	8	8	40
Core – Practical	5	5	5	5	20
Specific Elective	4	4	4	4	16
Ability Enhancement compulsory course (AECC)	2	-	-	-	02
Skill enhancement course	-	2	2	-	04
Generic elective	-	-	4	4	08
Co curricular	-	2	2	2	06
Thesis	-	-	-	6	06
<b>Grand Total</b>	<b>23</b>	<b>25</b>	<b>25</b>	<b>29</b>	<b>102</b>

**MARKS ABSTRACT**

<b>Semester – Credits Subject</b>	<b>I</b>	<b>II</b>	<b>III</b>	<b>IV</b>	<b>Total Credit</b>
Core –Theory	300	300	200	200	1000
Core – Practical	100	100	100	100	400
Specific Elective	100	100	100	100	400
Ability Enhancement compulsory course (AECC)	100	--	-	-	100
Skill enhancement course	-	100	100	-	200
Generic elective	-	-	100	100	200
Co curricular	-	-	-	--	--
Thesis	-	-	-	100	100
<b>Grand Total</b>	<b>600</b>	<b>600</b>	<b>600</b>	<b>600</b>	<b>2400</b>

**GENERIC ELECTIVE PAPER**

1. Doping in Sports
2. Strength and Conditioning
3. Philosophy of Sports Coaching
4. Age group training
5. Implementation of training programme

**DISCIPLINE SPECIFIC ELECTIVE**

ODD SEMESTER	EVEN SEMESTER
Testing of Players fitness	Talent Identification and Sports Pedagogy
Women Participation in Olympic Movement	Sports Forensic Science
Requirement of the sports and games	Careers in the sports Industries
Science of sports Kinanthropometry	Environment and Nutrition of the player

**10. ASSESSMENT**

Assessment of the students is consists of continuous Internal Assessment (CIA) and End Semester Examination (ESE). The ratio between CIA and ESE will normally be 25:75.

**11. CONTINUOUS INTERNAL ASSESSMENT (CIA)**

The CIA marks shall be awarded based on the following:

THEORY	MARKS
Best Scores of two test out of three test	20
Model Exam	20
Seminar	05
Attendance	05
Total	50

50 percentage of CIA marks will be taken for scoring.

### 13. END SEMESTER EXAMINATION (ESE)

Except in the case of internship and exclusively practical/field placement courses, the ESE will consist of a written examination of three hours duration for a maximum score of 75. Practical examination for 75 marks will be conducted with external examiner during Even semester of all the three years.

### 14. EVALUATION

The following procedure will be followed for evaluation

- a) The answer scripts are evaluated by internal/external examiners
- b) Theory papers : Duration Three Hours – External

Part A ( 10 x 2 )	- 20 (Question Type)
Part B ( 5 x 5 )	- 25 (Either or Type)
Part C ( 3 x 10 )	-30 (Essay type – 3 Question)

<b>Total</b>	<b>75 Marks</b>
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For a pass in each paper, the candidate is required to secure at least 50% in semester examination.

### 15. ATTENDANCE

Attendance is compulsory minimum of 80%. If the attendance is less than between 80% to 70%, he has to move to the next year but he is not allowed to write the examination provided he has to complete the shortage of attendance in the next academic session and allow to write the examination in the next semester. If any student is Less than 70% he has redo the course.

### 16. THESIS

Every student who is studying M.Sc., Sports Coaching Programme has to submit the thesis in the prescribed format by the Department of Advanced Training and coaching before May 31<sup>st</sup> of every final academic year.

### 17. The Award of Grades is as follows

MARKS	GRADE	DESCRIPTION	GRADE POINTS
90 and above	S	Superior	9.0 - 10.0
80 to 89	A	Very Good	8.0 - 8.9
70 to 79	B	Good	7.0 - 7.9
60 to 69	C	Very Fair	6.0 - 6.9
50 to 59	D	Satisfactory	5.0 - 5.9
Less than 50	F	Failure	

If a student has any grievance relating to his/her CIA, he/she may, within seven working days of the declaration of the Score/thereof, prefer an appeal through his/her class advisor to appeal committee, which will consist of the HOD, class Advisor and course teacher. The Appeals committee will review/peruse the student's records work. Any appeal should be made along with an appeal fee of Rs.1000/-per paper. The decision of the appeals committee shall be final.

### 16 CAREER OPPORTUNITIES

This course will support scientific support to the coaches for high level performance. It enables the coaches higher performance for their trainees and gives moral support by the sports sciences. These include roles as coach educators and sport development officers in national organizations, community groups and sporting federations, managerial and development roles skills trainer, exercise scientists, and sports officers.

### 17 FURTHER STUDY

Doctoral studies will opportunities exist here in Tamil Nadu Physical Education and Sports University, Chennai, in areas of Sports Coaching and teaching faculty.

**SEMESTER I****SCIENCE OF SPORTS TRAINING****UNIT-I**

Sports Training –Definition –Aim –Characteristic- Sports Performance: Definition- Model Structure- Factors- Performance Structure- Performance Capacity – Training Structure- General Principles Of Sports Training –Training Load- Definition –Load- Load And Adaptation- Super Compensation –Over Load –Means And Methods Of Sports Training –Symptoms Of Over Load –Recovery.

**Unit-II**

Development of Motor Qualities- Strength its Development –Speed its Development- Endurance its Development –Flexibility its Development –Coordinative Ability and its Development.

**Unit-III**

Techniques Skill- Style-Acquisition Process - Training Implication – Motor Coordinative –Aim Of Technique In Sports-Motor Learning –Phases Of Motor Learning –Implication– Relearning –Transfer of Motor Learning - Method Of Technique Training –Teaching Procedure - Tactics: Aim Of Tactics – Tactical Action – Structure of Tactical Action – Phases of Tactical Action –Training For Tactics –Tactical Knowledge- Tactical Skill- Tactical Skill – Tactical Abilities –Principle of Tactical Preparation –Strategy- Aim And Objective.

**Unit-IV**

Periodisation : Single-Double-Triple-Pre-Season Competition –off Season- Long Term Plan- Micro,Mesco,Macro Cycle- Schedules –Step Involved In Preparation of Schedule. Planning: Importance –Principles-Types—Performance-Load Indices-Formulation of Plan-Control of Sports Training –Training Session- Principles of Teaching –Long Term Training Process - Diet For Different Seasons –

**UNIT -V**

Talent Identification-- Principles of Talent Identification- Preparation for Competition In General –Psychological Preparation-Individual Differences-Requirement-Doping- Classification Of Doping –Drugs-Effects Motor Development-Growth and Development- Principles –Stages-General Behaviour and Development-Training Implications-

**REFERENCE**

- 2.Singh.H.(1995) `` SPORTS TRAINING, GENERAL THEORY AND METHOD" ; New Delhi  
DVS Publications.
- 3.Cart.E.Klafs,Daniel .D.Arnhelm,(1994) ``MODERN PRINCIPLES OF ATHLETIC  
TRAINING ", C.V Mosphy Company, St.Louis
- 4.Bunn,J.N(1996) `` SCIENTIFIC PRINCIPLES OF COACHING" Prentice Hall, New Jerssy:  
Engle Wood Cliffs.
5. Jensen, C,R. And Fisher, A.G (2000) `` Scientific Basic Of Athletic Conditioning".  
Philadelphia.

## ANATOMY AND EXERCISE PHYSIOLOGY

### UNIT-I

Anatomy – definition – importance in sports - Location –Plans And Axes- Fundamental Movements – Auxiliary Movements-Analysis of Sports Movements- Muscular Analysis of Movements at different Joints – Muscular Analysis of Movement of Walking - Running - Jumping.

### UNIT-II

Muscular System- Structure And Functions of Skeletal Muscle – Mechanism of Muscular Contraction –Role of Fast And Slow Twitch Fibres- Types of Muscular Contraction – Adaptation and Muscular Skeletal System to Training –Concept Of Muscle Fibres Types and its importance in Sports Performance.

### UNIT-III

Cardio Muscular System – Heart –Structure - Functions – - stroke volume - Cardiac Cycle- cardiac out put - training – physiological response to the training – adaptation

### UNIT-IV

– Mechanism Of Respiratory System –Principle Of Gas Exchange- Transport Of Oxygen And Carbon Di-Oxide In The Blood And Body-Regulation Of Respiration – Adaptation Pf Respiratory System To The Training –High Altitude Training – Physiological Responses At High Altitude- Acclimatization- Recent Trends In Altitude Training.

### UNIT-V

Endocrine system – nervous system – skin - Creatinine bodies- Introduction of Hormones – Nature and Mechanism of Hormones Bio-Energetics-Genetic- Anaerobic Energy Release Pathway-Mechanics of Regulation of Body Temperatures -Heat And Cold Acclimatization.

Reference books:

1. Principles of Anatomy & psychology: Harper Collins pub.
2. Human Physiological work capacity by Shepard: Cambridge University
3. Sports psychology by E.L. Fox W.B. Sauders Co., Philaphia.
4. A Study of Bioenergetics by F.M.Harald: W.H. Freeman & Co
5. Olympic Book of Sports Madicine by Dirixet.al., Blackwell publications London.

**SPECIFIED SPORTS THEORY**

## SEMESTER II - SPORTS MEDICINE & NUTRITION

### UNIT-I

Definition And Scope Of Sports Medicine –History-Development-Aimand Objective – Olympic Movement-Roles And Activities Of IOC And IOC Medical Committee, Role Of Sports Medicine In General Population And Mass Fitness – Sports Medical Evaluation – Performance Diagnostics –Safety And Hygiene-First Aid Management-Care Of Athlete Training And Competition –Creation Rhythm-Travel And Acclimatization.

### UNIT-II

Injuries-Types Of Injuries –Conclusion –Fracture-Types –Laceration- Abrasion- Dislocation-Sports Specific Injuries- Jogging and Running-Weight Training –Swimming And Diving-Combat Sport, Racket Sport-Field Game –Head Injury-Cardio Pulmonary Resuscitation- Spine Injury-Injury Management.

### UNIT-III

Women In Sports –Biological Factors Affecting Sports Performance-Anatomical Physiological, Biochemical-Psychological, Sociological And Genetics-Hormonal Change In The Menstrual Cycle Due To Physical Stress-Special Problem- Delayed Menarchy, Athletic Amenorrhea- Athletic Triad And Anemia- Exercise During Pregnancy.

### UNIT-IV

General Principle Of Physiotherapy-Massage And Its Importance-Principle-Types Indication – Contradictions Of Massage-Sauna-Steam Bath-Doping- Definition- Classification-Advantages Disadvantages-IOC Rules-WADA .

### UNIT-V

Nutritional –Classification ,Sources – Requirements Of Carbohydrate – Fat-Proteins For Sports Person –Vitamin –Minerals-Natural-Supplement-Pre Game Meal-Composition Of Meal-Timing-Carbohydrate Loading .

### Reference:

1. Physiology of Sports, T. Reilly. N. Secher, P . Snell C. Williams.
2. Exercise physiology, William D. MC.Ardle, Frank, I katch, Victor. L. Katch
3. The physiological Basis of Physical Education and Athletics Edward L. Fox. , Richard, W. Bowere, Mexi L. Foss.
4. Stawish and Lyle J.Micheli
5. Sports Medicine by Richard H. Strauss.

## EXERCISE PSYCHOLOGY

### UNIT-I

Introduction to Sports Psychology-Definition-Importance of Sports Psychology-  
Branches of Psychology-Development of Sports Psychology in India and Abroad-  
Dimension of Human Behaviour.

### UNIT-II

Learning and its Definition -Concept of Motion Learning -Acquisition of Motor Skills-  
Theories of Learning -Law- of Learning -Transfer of Training- Application in Sports -  
Learning Curves - Phenomenon of Plateau in Motor Learning -Causes- Remedies.

### UNIT-III

Essential Process-Meaning -Psychophysiology of Emotion-Optimal Arousal in  
Emotional Aspects -Theories Application-Pre Competition Anxiety- Aggression in  
Sports-Motivation and Arousal -Self Efficacy -Peak Performance and Flow-Techniques  
of Motivation.

### UNIT-IV

Meaning and Definition of Personality -Concept of Athletic Personality -Psycho-  
Diagnostic in Sports -Types and Functions of Psychological Traits- Meaning and  
Importance of Psycho Regulation -Relaxation Techniques -Role of Imagery.

### UNIT-V

Nature and Scope of Psychological Dimension -Nature, Types of Sports Performance-  
Sports aims and importance of Psychological Research in Sports-Nature - Current Areas  
Of Research In Sports Psychology.

### Reference:

1. Hon Thelma (2002) Advanced in Sports psychology Human kinetic publisher
2. Mideffer, Robert. M 1992 Motivation in sports and exercise Human kinetic Books
3. Weiberg and Gould 2002 Sports and exercise physiology. Illinois - Human Kinetics
4. Gill Diane (1996) Psychological dimension of sports Human kinetic publisher
5. Suinn, Richard, M.P. (1982) Psychology in Sports.

## SPECIFIED SPORTS THEORY

**SEMESTER III**  
**KINESIOLOGY AND BIOMECHANIS**

**UNIT-I**

Fundamental And Auxiliary Movement In Kinesiology-Definition And Explanation Of Various Fundamentals And Auxiliary Movements-Major Morale Of The Body And Their Actions- Posture And Its Importance- Structure Of Motor Action- Cyclic-Cyclic And Movement Combination –Movement Practices-Kinesiological Analysis Of Basic Movement –Walk-Running-Jumping-Throwing-Catching.

**UNIT-II**

Forms of Motion- Reference System-Geometrical Law- Chronological Aims of Motion- Linear Kinematics-Definition of Terms In Linear Motion –Displacement-Speed- Relativity-Acceleration-Distance Speed-Free Body Diagram And Resolution of Vectors- Uniform Acceleration Motion-Projectile Motion And Its Importance ,Reference to The Sports .Linear Kinetics-Definition-Kinetic Energy –Potential Energy-Strain Energy- Newton's Law Of Motion –Newton's Law of gravitation.

**UNIT-III**

Concept of force –Types and Effect of force- Fluid Mechanism-Friction- Impact and Elasticity-Angular Kinematics- Definition of terms of Angular Motion Viz., Angular Distance –Angular Displacement-Angular Speed- Angular Velocity-Angular Acceleration- right thumb Rule And Resolution of Angular Vectors –Angular Kinetics- Definition –Angular Motion –Eccentric Force Concept –Moment of Inertia- Angular Momentum- Transfer of Momentum –Lever –Equilibrium.

**UNIT-IV**

Investigation Procedure Volume-Mass-Moment of Inertia-Measurement Techniques- Cadaver Studies – Computation Techniques- Reaction Change-Mathematical Technique- Segmentation Method-Imaging Measurement Techniques- Non cinematography Techniques- Use of Goniometry In Sports-Computer Simulation –Limitation of Human Motor Apparatus.

**UNIT-V**

Biomechanical Principles and Reflection –Movement-Style and Technique- Motor Abilities and Its Biomechanical Reflections-Max Strength. F max Index Exp Strength Force-Velocity Relationship-Ss Index T max Index –Speed Ability- Biomechanical

Principles of -Action And Reaction-Conservation of Angular Momentum-Optimum Path of Acceleration -Optimum Tendency in Acceleration -Coordination Partial Impulse.

Reference:

1. Bunn. J.W., Scientific Principles of Coaching
2. Dyson, G.H.G. The Mechanics of Athletics
3. Grieve and Miller. Technique for the analysis of human movement
4. Hay and Reid. Anatomy and mechanical aspects of human motion
5. Hochmuth, Biomechanics of athletics movements
6. James Hay. Text Book of Kinesiology
7. Miller, D. I and Welson. R.C Biomechanics of sports
8. Rai, Ramesh Biomechanics - Mechanical aspects of Human Motion

## SPECIFIC SPORTS THEORY

**SEMESTER IV****RESEARCH METHODOLOGY AND STATISTICS IN ADVANCED TRAINING  
AND COACHING****UNIT-I**

Research Problem and Variables – Meaning –Definition of Research Qualities of Good Research – Characteristics of Scientific Research. Formulation of The Title-Statement of The Problem –Delimitations And Limitations – Hypothesis in Different Forms – Operational Definition –Significance of The Study .Internal and External Validity- Independent and Dependent Variables –Comparative, Relationship and Effect Studies.

**UNIT-II**

Area of Research and Experimental Design – Training Methods- Examine Physiology – Nutritional Aspect-Sports –Sports Psychology- Biomechanical Aspects- Measurement And Evaluation –Writing.

**UNIT-III**

Statistics- Definition, Aims-Scope-Limitation- Collection Of Statistical Data- Primary And Secondary Data-Sampling-Principles- Meaning-Characteristics-Merits And Demerits Of Sampling –Classification And Tabulation Data-Diagram Representation –Bar-Pie Diagram- Frequency Distribution- Measure Of Central Tendency-Measurement Of Variability.

**UNIT-IV**

Probability-Meaning-Random Variable-Bionomical Distribution-Normal Distribution- Principles Of Normal Curve(Distribution)-Properties Of Normal Curve-Std Normal Curve-Condition For Normality-Correlation-Bivariable Data-Meaning And Its Causation –Method Of Studying Correlation Through Scatter’s Diagram-Correlation Coefficient Its Computation From Upgraded (Kart Pearson’s Coefficient Of Correlation)And Its Interpretation And Preparation-Rank Correlation And Its Co-Efficient.

**UNIT-V**

Test Of Significance-Testing Hypothesis-Level Of Significance- Degree Of Freedom Are Tailed And Two Tailed Tests-Sampling Distribution Of T And F (Without Proof) – Assumption And Condition Of Validity-Test Of Significance For Large Sample-Test Of Significance Of Small Sample-Differences Of Mean –Variations-Correlation Coefficient – ANOVA-Sum Of Squares , One Way Analysis Of Variances, Pair wise Comparison Among Mean (Scheff’s Test)Two Way Analysis Of Variance, Analysis Of Covariance

## Reference:

1. S.P. Gupta: Statistical Methods
2. Vems J, Prakash: A Text Book of Sports Statistics
3. David H. Clark's. H. Harrison Clark: Research process in Physical Education.

## **TEST AND MEASUREMENT IN ADVANCED TRAINING AND COACHING**

### **Unit - I:-**

**Meaning of measurement & evaluation** – inter relationship of measurement & evaluation – Basic principle of measurement & Evaluation – Need for Selecting appropriate measurement & evaluation in Coaching –Criteria for selecting Measurement & Evaluation – Technical standards – Objectivity, Reliability, Validity, Norms – Administrative consideration: Equipment, time, money, utility, facility, feasibility.

### **UNIT - II:- Test of Physical Performance**

Speed, Agility, Balance, Strength, endurance, flexibility, California perceptual motor ability, and Generality of components, Test of Physical Fitness: Basic Fitness test AAHPER Youth fitness test – Physical fitness index, National Physical Efficiency Tests. Indian Motor Fitness Test, Test for High School and college men, Kraus Weber Test.

**UNIT - III:- Motor Fitness Test :** J.C.R. Test – Origin Motor fitness Test- California Motor Fitness Test – Motor Ability Test – Barrow motor ability Test – carpenter motor ability test- scott motor ability Test – Latchaw motor ability test.

### **UNIT IV:- Motor Educability Test**

OPNA Balance motor educability test – Johnson Metheny motor ability test – Cardio – Vascular Test: Callageher & Brouha Harvard step for secondary boys – Tuttle pulse ratio test, Schneider Cardio – vascular test – postural test – IOWA postural test – Woodruff body alignment posture test – foot print angel test.

### **UNIT - V:- Test of Specific Sports Skills**

Badminton – Miilar wall Volly test- French short service test – Basket ball – Knox basketball test, Leilich Basket ball Test – Hockey – Field Hockey Test, Friedal Field Hockey test – Soccer – Warner Soccer skill test – AAPHER Football skill test – Tennis test, Broer- Miller Forehead, backhand drive test, Volleyball – LIBA – STAUFF Test, Brady Volleyball test.

### **Reference books:**

1. Nilgose, Erle: Evaluation in Health Education and Physical Education”, New York, McGra-Eill Book Co., Inc.
2. Cureton, Thomas K. Physical Fitness Appraise and Guidance – ST.Luis, The mosby company, 1947.
3. Bovard Jhon F. Frederich We., Hagman, Parecia E., “Test and Measurement in Physical Education” Philadelphia, W.B., Souners Company, 1949.
4. Campell, W.R. and Tauker, N.M., “An Introduction to Test and Measurement in Physical Education”, London, C. Bellk & Sons LTD., 1967.

**GENERIC ELECTIVE PAPER****DOPING IN SPORTS****UNIT - I**

Doping - WADA - NADA - meaning - Definition - importance -

**UNIT - II**

Classification - stimulant - meaning - benefits - harmful effect - Narcotics - meaning - benefits - harmful effect

**UNIT - III**

Classification - Anabolic steroid - meaning - benefits - harmful effect - Diuretics - meaning - benefits - harmful effect

**UNIT - IV**

Classification - beta - blockers -- meaning - benefits - harmful effect -  
Blood doping - method -types - benefits - harmful effects

**UNIT - V**

Classification of drugs - certain restriction - Alcohol - Marijuana - Local Anesthetics -  
Cortico steroids

## STRENGTH AND CONDITIONING

### UNIT-I

Strength - definition - types - max. strength - explosive strength - power - strength endurance - 1 RM - means and methods of developing strength - factors determining strength - benefits pre cautions - recovery .

### UNIT-II

Health Related Conditioning : (HRC) Definition -Meaning -Aims-Objective-Importance Of HRC -Conditioning For Fitness -Wellness-Performance Related- Conditioning- Exercises For General Conditioning -Specific Conditioning-Physical Activity - Benefits for Mental Health-Bones and Joints -Muscles-Heart-Vascular system-Metabolism. Classification Of Physical Exercises --Preparatory Exercises-Competitive Exercises - Special Exercises- Conditioning Around The Clock -Warm-Up-Exercises- Cool down Exercises.

### UNIT-III

Analysis Of Exercises -Purpose-Importance-Expectations-Methods-Benefits-Structural Analysis Of Exercises -Space-Time-Force. Types Of Muscles Force-Warm-Up Exercises Structure -Motor Co-Ordination-Guide For Rhythm Sense Development.

### UNIT-IV

Simplified Muscle Map-Axis Of Rotation-Exercises-Target Heart Rate Calculation-Warm-Up-Aerobic-Anaerobic Training -Relationship Of Energy Regeneration And Various Activities-Dominant Energy Supply System- Activity Intensity And Energy System - Advantageous Of Aerobic And Anaerobic Exercises.

### UNIT-V

Physiological Effects of Aerobic Training-Anaerobic Endurance Development Programme Short Interval-Long Interval -Strength Development-Flexibility Pre Stretching Guidelines-Exercises Leadership-Major Anterior-Posterior Bones And Joints- Major Posterior Muscles.

## Reference:

1. Metzinger Miklo's Exercise and conditioning , international coaching course ,  
Sigmund Freud University, Hungary.
2. Singh H. Science of Sports Training, DVS publications, New Delhi
3. Beachle, T.R: Earle , R.W. Essentials of strength Training and conditioning NSCA,  
2000
4. Micheal Kent: The Oxford Dictionary of Sports Science and Medicine , Oxford  
University press. Inc New York 1994.

## PHILOSOPHY OF SPORTS COACHING

### UNIT - I

Coaching philosophy - coach - coaching - art - science - technique - skill - style- secret of successful coaching

### UNIT - II

Effective practices - knowledge - what makes coach - functional activities of coach - who is coach - teacher - trainer - motivator - disciplinarian - scientist - social worker

### UNIT - III

Coaching skill practice - coaching method - coaching path way - - Long Term Athlete Development (LTAD) - development model

### UNIT - IV

Performance development - Performance management - coaching process - planning principles

### UNIT - V

Long term training conception - legal responsibilities - General Methodology psychological preparation

### REFERENCES:

1. Coaching Manual I & II FIVB
2. Football Coaching -1, (1983), BLV Veriagsgesellschaft, Munich

## AGE GROUP TRAINING

### Unit-I

Age Group Training – Meaning and Importance – Criteria for Age Group Training-Parents Support – Laws to Necessity- Development of Phase - Learning Process.

### Unit-II

Under-6 - Under-8 - Criteria for Age Group Training – Technical –Tactics - Physical Conditioning — Environment - Parents Supports – Psychological Preparation.

### Unit-III

Under-8 - Under-10 - Criteria for age Group Training – Technical –Tactics - Physical Conditioning — Environment - Parents Supports – Psychological Preparation.

### Unit-IV

Under-12 - Under-14 - Criteria for Age Group Training – Technical –Tactics - Physical Conditioning — Environment - Parents Supports – Psychological Preparation.

### Unit-V

Under-16 - Under-18 - Under-20 - Criteria for age Group Training –Technical – Tactics - Physical Conditioning — Environment - Parents Supports – Psychological Preparation.

## IMPLEMENTATION OF TRAINING PROGRAMME

### UNIT - I

Training - aim - need - importance - different training programme - training effect - seasonal participation - off season - pre season - in - season

### UNIT - II

Off - season training phase -- endurance based - strength based - power based - training- means - methods - duration - training - intensity - volume - repetition- effects

### UNIT - III

Pre season training phase -- endurance - longer slower interval training - shorter longer interval training - aerobic energy system -strength - power - speed - flexibility - agility - means - methods - duration - intensity - volume - repetition - recovery - training schedule - effects

### UNIT - IV

In season training phase - endurance - shorter faster interval training - power - strength - speed - flexibility - agility -- means - methods - duration - intensity - volume - repetition - recovery

### UNIT - V

Training session - warm up - technique and skill - fitness work - effects of fatigue - cool down - length of training session - time between session - individual training session - purpose - programme

**DISCIPLINE SPECIFIC ELECTIVE - ODD SEMESTER****TESTING OF PLAYERS FITNESS****UNIT - I**

Test - aim - importance - need - meaning - criteria for test - measurement - need - placement - importance - validity - Reliability - objectivity - norms - administrative feasibility

**UNIT - II**

Aerobic power - field test - cooper test - Harvard step test - beep test - lab test - maximal oxygen uptake test - Astrand Rhyming test - Physical working capacity 170- recommendation

**UNIT - III**

Anaerobic alactic power - muscular strength field test - 1RM - lab test - cable tensiometry - dynamometry - computer assisted iso kinetic method - recommendation

**UNIT - IV**

Power and alactic work capacity - field test - standing broad jump - vertical jump - 40yds sprint - lab test - 10 sec bicycle sprint - macariakalamen power test - recommendation

**UNIT - V**

Anaerobic lactic power - field test - 400 mts run - lab test - 60 sec bicycle sprint - recommendation - flexibility - sit and reach test - bend and reach test - body composition test - recommendation

## Reference :

1. Reilly .T and Thomas " A motion analysis of work rate in differencnt positional role on professional football play , Journal of Human movement studies Vol.- 2 1976
2. Sinclair david" Human growth after birth, Oxford medical pub: London 1978.
3. Universal Gym Machine training Manual 1978, Appendix - B
4. Australian representative, Journal of sports Med. 1977
5. Saltin. B et.al , Intermittent Exercise physiology Karger, Basel 1976.

## WOMEN PARTICIPATION IN THE OLYMPIC MOVEMENT

### UNIT - I

Participation of women in the Olympics -mission-first women participate in Olympics- first Indian women participate in Olympics- education and training for women

### UNIT - II

Women at the Olympic games- the roll of the women sports commission & responsibilities- Olympic solidarity women and sports programme

### UNIT - III

Changing role of women in the Olympic games- IOC-World conference on women in sports- IOC-women and sports awards- sporting edge secrets

### UNIT - IV

Struggle for gender equality in the Olympics- promotion of women in sport-advancing women in sport platform- hidden gender: women's sport in developing nations

### UNIT - V

Key dates in the history of women in the Olympic movement- monitoring and evaluation- statistics: women in leadership- the international Olympic committee executive board members by gender- national Olympic committee executive board member by gender- Inter National & National federation by gender

## REQUIREMENTS OF THE SPORTS AND GAME

### UNIT - I

Physique - height - weight - anthropometry - definition - aim - importance - Body mass index

### UNIT - II

Physical fitness - strength - speed - endurance - flexibility - co ordinative abilities - energy system - other factors

### UNIT - III

Endurance - aerobic power - anaerobic capacity - high intensity work - anaerobic capacity and power

### UNIT - IV

Strength and power -power - functional strength - strength and power link with endurance - anaerobic power - muscle requirement and synchronisation

### UNIT - V

Speed - muscular power - reaction time - simple - complex - technique - agility - flexibility

**SCIENCE OF SPORTS KINANTHROPOMETRY****UNIT-I**

Kin anthropometry - meaning-definition - difference between Kinanthropometry and Anthropometry- application of Kin Anthropometry in Sports-Scope of Kinanthropometry - physical adaptation- Body mass& weight-body density-Body fat percentage- fat mass& fat free mass- Body Mass Index

**Unit-II**

Kin Anthropometry and Sports Performance-Endo Morphy- MesoMorphy-EctoMorphy-physical growth, maturation & performance-strength training and Physical Adaptation during growth-Benefits and risk of strength training

**Unit-III**

Physical Activity and Body Composition in young adults-Anthropometry of Elite mountain climbers-Physical Adaptation During expeditions at High Altitude

**Unit-IV**

Role of Kinanthropometry - Body Composition and Somato Type - Sports Performance- Waist Hip Ratio - Definition - Concept - Measurement of Skinfolds-Purpose-Methods- Location of Skin fold sites

**Unit-V**

Estimation of Muscle Mass - Regional Muscularity- Estimation of Skeletal Mass- Anthropometric assessment-Sprint Performance - Strength Assessment- Goniometric Aspects of Movements-Assessment of Postures

**DISCIPLINE SPECIFIC ELECTIVE - EVEN SEMESTER****TALENT IDENTIFICATION AND SCIENCE PEDAGOGIC****UNIT - I: -**

Talent Identification: Nature - Importance - profiling - one dimensional talent - on esport - multisport talent - prediction of success.

**UNIT - II: -**

Identifying Physiological attributes - physical elements of talents - importance of attributes - vision assessing physical attributes - physical differences.

**UNIT - III:-**

Recognizing physiological skills - mental skills - motivational personality aspects - sporting the intangibles parenting and coaching the talented sportsman - participating stages - sampling years - specializing year - perfection year - parental involvement - testing the talent - recruiting and scouting.

**UNIT - IV:-**

Science of pedagogic: Definition - importance - Sports - significance - possibility and necessity if education - training - skills - ability and proficiency in teaching and training - organic development - reaction time and age - optional periods for development conditional and co coordinative abilities.

**UNIT - V:-**

Scientific system of approach - model - task analysis of different sports - methods of instructions - teaching and coaching philosophy - assessment - self evaluation.

**Reference books:**

1. Sports Talents: How to identify and develop outstanding sportsman: Jim Brwon: Human Kinetics.
2. Identifying Exceptional Talent: 1999. George tech sports Medical and Performance new letter.
3. Sands, Williams, and J.R. Mc Neal. 1999. Body size and sprinting character - stics of 1998 National to Athletes, Technique.
4. Bollettieri, Nick 1999. Identifying Talent. Audiotape United States Professional Tennis Association Convention Tape International.
5. Andras. S. Science of Pedagogy ICC International coaching course, Semmelweis Univ. Hungary.

## Sports Forensic Science

### UNIT - I

psychology- definition – meaning – branches – sports psychology – meaning – forensic psychology – meaning – definition – importance – child psychology – meaning – important factors –

### UNIT - II

cyber security - meaning - importance -security measures – players identity - players profile – protection of players data – preventive care – post traumatic measures

### UNIT - III

sports administration - meaning - importance – principles – planning – effective mechanism – man power – financial viability –potential resources – skill in marketing - organisation - various committees

### UNIT - IV

Accounting - justice delivery system – technical method – financial fraudulences - ledger - bills – legal aspects of forensic accounting – substantive law – valuation - economic damages – internal auditing – means – methods

### UNIT - V

Forensic Management - - - doping - latest development in foreign countries – India - forensic investigation – supplements – drugs – toxicologist – advanced mechanism to investigate – chemical substance -forensic psychology – psychophysiological – neurocognitive psychological crimes –child psychology - Nano technology- advanced level of infrastructure – equipment – theoretical - practical knowledge - technological applications - food technology – food safety – food quality – sports persons- forensic food analysis

## CAREERS IN THE SPORTS INDUSTRIES

### UNIT-1

Sports industries - meaning - aim - importance - business - manufacture - representatives - Sporting goods - store manager - sales person - team dealer - retail dealer .

### UNIT - II

pro sports franchises - Olympic Games Coordination - Relations with other organizations - finance - marketing - finance - legal affairs - technology - operations - communications - medical staff

### UNIT - III

Health and Fitness - jobs and sports careers - Athletic Trainer - Physical Therapist - Medical Assistant - Sports Medicine Aide -Assistant Athletic Trainer - Physical Therapy Assistant -Sports Massage Therapist -Sports and Fitness Nutritionist - Strength and Conditioning Coach - Exercise Physiologist - Sports Physician -Sports Psychologist - Kinesiotherapist - coach - assistant coach - athletic director - physical education instructor - athletic programme development director - sports information director

### UNIT-IV

sports writing job - broadcasting career - sports-related Internet sites, - publications, and sports channels on television. - sports jobs:- Sports caster - Sports News Reporter - Television Sports Producer - Radio Sports Producer - Internet Sports Producer -Sports Writer - Sports Photographer - Sports Talk Show Host - Sports Columnist -Sports Television Talent Director - Editor-Publisher - Sports Journalism - Sports Announcer/Commentator - Sports Radio Show cast - -

### UNIT-V

sports jobs in schools - professional sports teams - big businesses - opportunities - pro sports organizations:- Physical Education (P.E.) Teacher - Strength and Conditioning Coach - Scout - Team President - General Manager - Business Manager - Director of Minor League Operations - Marketing Director - Promotion Director - Director of Community Relations - Ticket Operations Manager - Traveling Secretary - Executive Director - Stadium Manager - Sports Events Coordinator - Equipment Manager - Scoreboard Operator - Public Address Announcer - Youth Program Director Jobs - Youth Staff Jobs - Recreational Manager Jobs - Performance management Certification - Digital marketing Certification

## ENVIRONMENT AND NUTRITION OF THE PLAYER

### UNIT -I

Environment - aim - importance - hot condition - cold conditions - high altitude - acclimatisation - body composition - physique - short term - long term

### UNIT - II

Exercise in hot conditions - environment - WBGT index - air temperature - radiant temperature - humidity - air movement player - physique - body composition - age - sex - acclimatisation - clothing - fluid replacement - 8 point guide to summer training

### UNIT - III

Exercise in cold conditions - environment - stress - air temperature - high wind - humidity - air movement - player - physique - vasoconstriction - magnitude of the player - endurance fitness - body composition - age - sex - clothing - fluid replacement

### UNIT - IV

Nutrition - aim - importance - need - objective - balanced diet - calories - dietary intake - carbohydrate - fat - protein - vitamins - minerals - growth and development

### Unit - V

Pre game meal - composition of meal - timing of the meal - carbohydrate loading fluid replacement - during training - dietary intake after the game - list of - carbohydrate - fat - protein