



Savitribai Phule Pune University

Department of Physical Education

and all affiliated

Physical Education colleges

Syllabus for

Master of Physical Education

(M.P.Ed.)

Semester and Credit System

(July 2017)

SAVITRIBAI PHULE PUNE UNIVERSITY
Department of Physical Education & affiliated Colleges
Master of Physical Education (M.P.Ed.) – Semester & Credit System
(Revised from July, 2017)

Structure of the course

Objectives

- 1 To develop highly skilled scholars in the field of Physical Education.
- 2 To master the competencies and skills needed to become professional Physical Education and sport resource person.
- 3 To be sensitive about emerging issues in Physical Education & sports.
- 4 To develop in the students an inquiring mind & ability to employ reasoning, rational thinking, critical thinking in the problems & issues relating to the field.
- 5 To provide opportunity for creativity, self expression & provide information on continued professional growth.

Admission requirements:

A candidate who has passed any one of B.Ed (Phy.Edu), B.P.Ed, B.P.E. (4 years), H.D.Ed., D.P.Ed i.e. courses recognized by NCTE & UGC is considered eligible for admission to this course. Examination of Savitribai Phule Pune University or any other statutory university recognized by this university will be eligible for admission to M. P. Ed. Provided candidate fulfills all the other conditions required in the admission procedure. Admission will be given on the basis of merit based on regulations of state government and Savitribai Phule Pune University.

Duration of the program:

The duration of the master's degree program will be of two academic years divided in four semesters. However, in case of failures, the student can complete the program in the 5th /6th semester, whichever is applicable.

General Instructions :

1. The M. P. Ed. program consists of **four semesters** spread over **two academic years and 80 credits (20 credits / semester)**.
2. The entire program will be evaluated for a total of **2000 marks i.e. 80 credits**.
3. A student has to successfully complete 80 credits (5x4 = 20 credits per semester) in a minimum of two years.
4. A student can choose all the 20 courses in the Admitted Institute OR 18 courses in Admitted Institute and 02 courses in any other Department/s OR Institute/College as interdisciplinary courses to complete his M.P.Ed. Courses.
5. One credit will be equivalent to 15 clock hours of student-teacher contact per semester.
6. The syllabus of the open course may be prepared by the teacher of the Department/Institute which will be approved by the Departmental/Institute committee before the open course is offered by Department/Institute for the respective semester.
7. Details of the theoretical and practical components of each semester are given in the structure of the program.
8. Internal evaluation will follow Continuous Comprehensive Evaluation procedures. Internal evaluation should be done on every credit of each course or minimum two per course as decided by the teacher concerned.

Rules & Regulations

The M.P.Ed. degree will be awarded to a student who completes a total of 80 credits (5 x 4 = 20 credits per semester) in a minimum of two years taking 05 courses per Semester.

Each paper will be of 4 credits, the evaluation of which will be decided by the teacher. 04 credits Course will have 100 marks.

A student may take a minimum of 72 credits and a maximum of 80 credits in his / her Department/Institute.

In case a student wishes to take all courses from the Department/Institute of registration he / she can also do so.

Eligibility for registering for courses other than the Department/Institute of registration will be decided by the Department/Institute.

Each course will have

1. 50 % of marks as semester end examination
2. 50 % marks for internal assessment

Each core unit will have an Internal (continues) assessment of 50 % of marks and a teacher may select a minimum of two of the following procedures:

- Written Test
- Term Paper
- Mid Term Test
- Journal / Lecture / Library Notes
- Seminar Presentation
- Short Quizzes
- Assignments
- Extension Work

- ❖ To pass a student shall have to get minimum aggregate 30% marks in each head of passing (i.e. Internal assessment and semester end examination) and minimum aggregate 40% marks in each course.
- ❖ Revaluation of the semester end exam answer scripts but not of Internal assessments paper according to Ordinance No. 134 A & B.
- ❖ Internal assessment answer book may be shown to the students Concerned but not the semester - end examination answer scripts.
- ❖ While marks will be given for all examinations, they will be converted into grades. The Semester end and final grade sheets and transcripts will have only grades and grade-points average.
- ❖ To pass a student shall have to get minimum aggregate 40% marks (E and above on grade point scale) in each course.
- ❖ The system of evaluation will be as follows: Each assignment/ test will be evaluated in terms of marks. The marks for separate assignment and the final (semester end) examination will be added together and converted into a grade and later grade point average. Results will be declared for each semester and the final examination will give total marks, grades, grade point average.

<u>Marks</u>	<u>Grade</u>	
80 to 100	O : Outstanding	10
70 to 79	A + : Excellent	09
60 to 69	A : Very Good	08
55 to 59	B+ : Good	07
50 to 54	B : Above Average	06
45 to 49	C : Average	05
40 to 44	P : Pass	04
00 to 39	F : Fail	00
--	Ab : Absent	00

The formula for conversion of Grade point average (GPA) into the final grade

09.00	-	10.00	-	O
08.50	-	08.99	-	A+
07.50	-	08.49	-	A
06.50	-	07.49	-	B+
05.50	-	06.49	-	B
04.25	-	05.49	-	C
04.00	-	04.24	-	P
00.00	-	03..99	-	F

$$\text{GPA} = \frac{\text{Total Amt. Of Grade Points Earned} \times \text{Credits hrs. for each course}}{\text{Total Credit Hours}}$$

- ❖ If a student misses an internal assessment examination he/she will be given second chance with permission of the teacher concerned.
- ❖ Students who have failed and who have been absent for the entire course may reappear at the semester-end exam. Their internal marks will not change. S/he can also repeat during the 5th / the 6th semester whichever is applicable.
- ❖ The description for each of the grades will be as follows:

<u>Grades</u>	<u>Proposed Norms</u>
O : Outstanding	Excellent Analysis of the topic, (80% and above) Accurate knowledge of the primary material, wide range of reading, logical development of ideas, originality in approaching the subject, neat and systematic organization of content, elegant and lucid style.
A+ : Excellent	Excellent Analysis of the topic, (70 to 79%) Accurate knowledge of the primary material, acquaintance with seminal publications, logical development of ideas, Neat and systematic organization of content, effective and clear expression

A : Very Good	Good analysis and treatment of the topic (60 to 69%) Almost Accurate knowledge of the primary material, acquaintance with seminal publication, logical development of ideas, fair and systematic organization of content, effective and clear expression.
B+ : Good	Good analysis and treatment of the topic (55 to 59%) Basic knowledge of the primary material, logical development of ideas, neat and systematic organization of content, effective and clear expression.
B : Above Average	Some important points covered (50 to 54%) Basic knowledge of the primary material, logical development of ideas, neat and systematic organization of content, good language or expression.
C : Average	Some points discussed (45 to 49%) Basic knowledge of the primary material, some organization, acceptable language or expression.
P : Pass	Any two of the above (40 to 44%)
F : Fail	None of the above (00 to 39%)

- ❖ There will be an evaluation of each course by the students at the end of every semester.

Academic integrity and Plagiarism

It is the Department/Institute task to encourage ethical scholarship and to inform students and staff about the institutional standards of academic behavior expected of them in learning, teaching and research. Students have a responsibility to maintain the highest standards of academic integrity in their work. Students must not cheat in examination or other forms of assessment and must ensure they do not plagiarize.

The Department/Institute has adopted the following definition of Plagiarism:

Plagiarism is the act of misrepresenting as one's original work, the ideas, interpretations, words of creative works of another. These include published and unpublished documents, designs, music, sound, image, photographs, computer codes and ideas gained through working in a group. These ideas, interpretations, words or works may be found in print and / or electronic media.

The following are the examples of plagiarism where appropriate acknowledgement or referencing of the author or source does not occur:

- ❖ Direct copying of paragraphs, sentences, a single sentence or significant part of a sentence;
- ❖ Direct copying of paragraphs, sentences, a single sentence or significant part of a sentence with an end reference but without quotation marks around the copied text;
- ❖ Copying ideas, concepts, research results, computer codes, statistical tables, designs, images, sounds or text or any combination of these;
- ❖ Paraphrasing, summarization or simply rearranging another person's words, ideas, etc without changing the basic structure and/or meaning of the text;
- ❖ Offering an idea or interpretation that is not one's own without identifying whose idea or interpretations it is;
- ❖ A 'cut and paste' of statements from multiple sources;
- ❖ Presenting as independent, work done in collaboration with others;
- ❖ Copying or adapting another student's original work into a submitted assessment item.

List of the courses offered by the Department/Institute

Compulsory Courses :

- Research in Physical Education and Sports
- Science of Sports Training.
- Sports Biomechanics and Kinesiology
- Measurements and Evaluation in PE & Sports.
- Research and Statistics
- Exercise Physiology
- Yoga Science
- Sports Management
- Sports Psychology
- Professional Preparation & Curriculum Design
- Fitness & Conditioning (Practical)
- Yoga (Practical)
- Measurement & Evaluation (Practical)
- Course related practical work (Practical)
- Specialization I (Practical)
- Dissertation (Practical)

Optional Courses:

- Sports Nutrition
- Health Education
- Pedagogy of Physical Education
- Value and Environmental Education
- Education Technology in Physical Education
- Sports Medicine
- Health & Fitness Management
- Adapted Physical Education
- Sports Journalism and Mass Media Communication Technology
- Recreation & Leisure Time Management
- Philosophical & Sociological bases of PE
- Open course

SEMESTER – I

All Courses compulsory:

- **PE – 101 : Fitness & Conditioning (Practical)**
- PE – 102 : Research in Physical Education and Sports
- PE – 103 : Science of Sports Training
- PE – 104 : Sports Biomechanics and Kinesiology
- PE – 105 : Measurement & Evaluation in PE & Sports

SEMESTER – II

All Courses compulsory:

- **PE – 201 : Yoga (Practical)**
- **PE – 202 : Measurement & Evaluation (Practical)**
- PE – 203 : Research and Statistics
- PE – 204 : Exercise Physiology
- PE – 205 : Yoga Science

SEMESTER – III

Compulsory Courses:

- **PE – 301 : Course related Practical Work (Practical)**
- PE – 302 : Sports Management
- PE – 303 : Sport Psychology

Optional Courses: (any two of the following)

- PE – 304 : Sports Nutrition
- PE – 305 : Health Education
- PE – 306 : Pedagogy of Physical Education
- PE – 307 : Value and Environmental Education
- PE – 308 : Education Technology in Physical Education
- PE – 309 : Open course

SEMESTER – IV

Compulsory Courses:-

- **PE – 401 : Dissertation**
- **PE – 402 : Specialization I (Practical)**
- PE – 403 : Professional Preparation & Curriculum Design

Optional Courses:- (any two of the following)

- PE – 404 : Sports Medicine
- PE – 405 : Health and Fitness Management
- PE – 406 : Adapted Physical Education
- PE – 407 : Sports Journalism and Mass Media Communication Technology
- PE – 408 : Recreation & Leisure time management
- PE – 409 : Philosophical & Sociological Basis of PE
- PE – 410 : Open course

External Examination Evaluation pattern

	Type of Questions	Number of questions	Marks
I	Multiple choice questions based on higher order thinking skills	Minimum 2 questions on each Credit	1*10= 10
II	Questions based critical thinking or ability to apply knowledge or Analytical/evaluative questions	1 out of 2 questions on each Credit	5*4= 20
III	Essay type question based on ability to expound a theme at length with discrimination & justification	Any 2 out of 4 questions given on each Credit	10*2= 20
		Total	50

PE-101, PE-201, PE-202, PE-301 & PE-402 Evaluation to be done during Internship in the respective semester.

PE – 101 : Fitness & Conditioning (Practical)

Credit – 1 : a) Warm up Routines & Cooling down routines

b) Endurance training :

- continuous method,
- repetition method,
- Fartlek training
- Interval method

Credit – 2 : Weight training exercises :

- Own body weight Exercises
- dumbbell exercises,
- barbell exercises,
- machine exercises
- Resistance band exercises
- Medicine ball Exercises

Credit – 3 :

- Strength/Swiss ball exercises
- Kettelbell exercises
- Suspended belt exercises
- Circuit training
- Cross Training
- Flexibility training-static training, PNF training

Credit – 4 :

- Speed and agility drills
- Plyometric drills
- SAQ drills
- complex training

Departmental committee should plan and display internal and external evaluation structure to the students at the beginning of the semester.

PE – 102 : Research in Physical Education & Sports

Credit – 1 : Basics of Research

- a) Meaning, Definition, Need and Importance of Research in Physical education and Sports
- b) Nature and Characteristics of Research and Areas of research in Physical education & Sports
- c) Formulating Research Problem, sources and steps in locating research problem
- d) Review of Related Literature – Need and Importance, Sources, Steps in Literature Search, and Evaluating Literature Sources
- e) Analyzing, Organizing, and Reporting the Literature and Writing references

Credit – 2 : Types of Research

- a) Types of Research (Introduction): Action Research, Fundamental Research, Applied Research
- b) Methods of Research in Physical Education:
 - Historical Research: Historical generalizations in Physical Education, Sources of Data, Internal & external criticism
 - Experimental Research
 - Descriptive Research: Causal comparative study, Correlation study, Analytical study, Normative study Developmental Research, Case study, Job analysis, Observation research etc.
- c) Presenting Perspectives of Research:
Application Perspective, Objective Perspective & Mode of Enquiry Perspective
- d) Qualitative, Quantitative & Mixed Research Approach
 - Difference between Qualitative & Quantitative Research
 - Procedure in Qualitative Research
 - Methods of analysing qualitative data
 - Way of mixing methods

Credit – 3 : Experimental Research

- a. Experimental and Control Group
- b. Experimental Designs: Pre-experimental Design, True Experimental Design, Quasi experimental Design & Factorial Experimental Design
- c. Controlling Variables: Independent & Dependent Variables, Confounding Variables, Controlling Variable
- d. Experimental validity: Threats to internal & external validity

Credit – 4 : Hypothesis, Data Collection Tools & Research Proposal

- a) Hypothesis: Meaning, Definition, Types, and Formulation
- b) Sampling: The concept of Population, The concept of Sample, Types & Techniques of Sample
- c) Tools of Data Collection: Psychomotor test, Questionnaire, Opinionnaire, Interview, Observation, Rating Scale etc. Validity & Reliability of Data collection tools
- d) Ethical Issues in Research: Scientific Dishonesty, Issues of Copyright, Researchers Responsibility, Working with Faculty, and Protecting Human Participants
- e) Presenting the Research Proposal: Title, Introduction, Statement of Problem, Significance, Objectives of the study, Hypothesis, Assumptions, Delimitations, Limitations, Operational Definitions, Populations, Sampling & Procedure of the study

Books for Reference :

- ✓ Best, J. W., Kahn, J. V. (2011) **Research in Education, 10th edn** New Delhi : Prentice Hall of India (P) Ltd.
- ✓ Thomas, J. R., Nelson, J. K., & Silverman, S. J. (2005) **Research Methods in Physical Activity, 5th edn** Human Kinetics, United States of America
- ✓ Clarke, D. H. & Clarke, H. H. (1984) **Research Processes in Physical Education, 2nd edn** United States of America : Prentice-Hall, Inc., New Jersey
- ✓ Johnson, B. & Christensen, L. (2008) **Educational Research, 3rd edn** United States of America, Sage Publications, Inc., California.
- ✓ Gay, & Airasian., (1976) **Educational Research : competencies for Analysis and Applications**, Pearson Education, Inc., Upper Saddle River, New Jersey

PE – 103 : Science of Sports Training

Credit – 1 : Sports Training

- a) Definition & meaning of sports training, coaching & conditioning
- b) Aims & Characteristics of sports training
- c) Principles of sports training

Credit – 2 : Training Means & Methods

- a) Development of health related fitness parameters
 - i. Strength & Endurance – forms, characteristics, principles and means & methods
 - ii. Flexibility – forms, means & methods.
- b) Development of skill related fitness parameters
 - i. Speed – forms, means & methods
 - ii. Agility and Power - Methods
 - iii. Coordinative abilities - methods
- c) Psychological/mental training

Credit – 3 : Training Load & Planning

- a) Training load – features, principles & adaptation
- b) Overload – causes, symptoms & tackling of overload
- c) Training cycles (Micro, Meso & Macro cycles)
- d) Short-term & long-term training plans
- e) Designing Sports Training program
- f) Periodization -Types of Periodization

Credit – 4 : Preparing for Competition

- a) Talent identification, its need & importance
- b) Sports talent identification procedures in India
- c) Sports skill – phases of skill acquisition
- d) Technique - characteristics & methods.
- e) Tactics & Strategies – definition, methods of tactical training
- f) Competition planning & preparation – importance, frequency of competition and main & Build-up competition.

Books for Reference :

- ✓ Singh, H. (1991). **Science of Sports Training**. New Delhi: DVS publication
- ✓ Uppal. A. K. (2001). **Principles of Sports Training**. New Delhi: Friends publication
- ✓ Bompa, T. O., Haff, G. G. (2009). **Periodization: Theory and Methodology of Training** (5th Ed.). Champaign Il: Human Kinetics
- ✓ Foran, Bill, (2001). **High-Performance Sports Conditioning**. Champaign Il: Human Kinetics.
- ✓ Baechle, T. R., Erale, R. W. (2008). **Essentials of Strength Training and Conditioning**. (3rd Ed.). Champaign Il: Human Kinetics.
- ✓ Dick, F. W. (2006). **Sports Training Principles** (4th Ed.). New Delhi: Friends Publication.

PE – 104 : Sports Biomechanics and Kinesiology

Credit – 1 : External Forces:- Its effect on the body & its movement

- a) Linear, Angular & General Motion
 - Distance, Displacement, Speed, Velocity, and Acceleration
- b) Application of Newton's Laws of Motion
- c) Centripetal & Centrifugal Forces
- d) Planes and Axes of Human Motion, Joint Actions
- e) Simple Mathematics to Calculate Linear Motion & Centrifugal Force

Credit – 2 : a) Force, Friction, Pressure

- b) Work, Power & Energy
- c) Moment of Force & Inertia
- d) Levers
- e) Simple Mathematics to Calculate Kinetic & Potential Energy, Impact, Elasticity and Force

Credit – 3 : a) Freely falling bodies, Projectile, momentum & Impulse

- b) Stability- static & Dynamic
- c) Spin, Rebound, Impact & Elasticity
- d) Fluid Mechanics, Air & Water resistance – Buoyancy – Magnus Effect – Bernoulli Principle

Credit – 4 : a) Meaning, definition, Need & Importance of sports biomechanics.

- b) Organization of mechanics, Basic dimensions & units of measurement used in mechanics
- c) Analysis of Motor Skill – Movement analysis, Kinesiological analysis (Anatomical, Mechanical, and Biomechanical).
- d) Qualitative & Quantitative tools for biomechanical analysis
- e) Analysis of fundamental skills and sports skills

Book for Reference :

- ✓ McGinnis, P., M. (2005) **Biomechanics of Sport and Exercise,2nd edn.** Human Kinetics, United States of America.
- ✓ Hamilton, N. & Luttgens, K. (2002) Kinesiology **Scientific Basis of Human Motion,10th edn.** The McGraw Hill Companies, Inc., United States of America
- ✓ Hay, J. G. (1978) **The Biomechanics of Sports Techniques,2nd edn.:** Prentice-Hall, Inc. New Jersey, United States of America.
- ✓ Bunn, J. W. (1972) **Scientific Principles of Coaching,2nd edn.:** Prentice-Hall, Inc. New Jersey, United States of America.
- ✓ Carr, G. (2004) **Sport Mechanics for Coaches,2nd edn.** Human Kinetics, United States of America.
- ✓ Chapman, A., E. (2008) **Biomechanical Analysis of Fundamental Human Movements.:** Human Kinetics, United States of America.
- ✓ Thompson, C., W. & Floyd, R., T. (2001) **Manual of Structural Kinesiology,14th edn. :** McGraw-Hill Companies, New York.
- ✓ Yobu, A. (2008) **Sports Biomechanics. :** New Delhi. Friends Publications.
- ✓ Knudson, D. (2003) **Fundamentals of Biomechanics.** Kluwer Academic/Plenum Publishers, United States of America
- ✓ Grimshaw, P., Lees, A., Fowler, N. & Burden, A. (2007) **Sport and Exercise Biomechanics.** Taylor and Francis Group, U., K., & U., S., A.
- ✓ Uppal, A. K. & Lawrence, V. (2004) **Kinesiology in Physical Education & Exercise Science,** Friends Pub. India.
- ✓ Bartlett, R. (2009) **Introduction to Sports Biomechanics Analysing Human Movement Patterns,2nd edn. :** Routledge, Taylor and Francis Group.
- ✓ Blazavich, A. (2008) **Sports Biomechanics The Basics: Optimising Human Performance.** A & C Black Publishers Ltd. U.,K.
- ✓ Ackland, T., Elliott, B., and Bloomfield, J. (2009) **Applied Anatomy and Biomechanics in sport** United States Human Kinetics.

PE – 105 : Measurement & Evaluation in PE & Sports

- Credit – 1 :**
- a) Concept of Test, Measurement & Evaluation. Importance of Evaluation in Physical Education & Sports
 - b) Approaches to Evaluation
 - c) Domains of Human Performance – Cognitive, Affective, & Psychomotor
 - d) Classification of Test – Written Test and Psychomotor Test
 - e) Criteria of Test Selection – Scientific Authenticity (Validity, Reliability, Objectivity, Norms, Relevance), Administrative Feasibility and Educational Application.
- Credit – 2 :**
- a) Construction & Standardization of; – Knowledge Test, Psychomotor Test, Questionnaire, Opinionnaire, and Rating Scale
 - b) Establishing Scientific Authenticity of Test
 - c) Norms and Standards – Types of Norms, Procedure of Norms Development.
 - d) Grading and Steps involved in the process of Grading.
 - e) Procedure of Psychomotor Test Administration
- Credit – 3 :**
- a) Meaning and Assessment of GMA, HRPF, SRPF, Motor Fitness, Motor Educability.
 - Test Batteries – AAHPERD Youth Fitness Test, JCR, FITNESSGRAM, ACSM Fitness Test, Oregon Motor Fitness Test, EURO Fit Test, Canada Fitness Test, Mc. Cloy's General Motor Ability Test, Methany Johnson Test
 - Test Items for measuring – Cardio Respiratory Endurance, Muscular Strength & Muscular Endurance, Flexibility, Speed Agility, Power, Balance, and Co-ordination.
 - b) Measurement of skill of Various Sports and Games.
 - Test Items and Batteries for – Badminton, Tennis, Basketball, Volleyball, Soccer, Hockey, etc.

- Credit – 4 :**
- a) Fitness Assessment of Special-Needs Population and Older Adults
 - b) Techniques for Physical Activity Assessment
 - c) Evaluating Body Composition: Body Density and Percent Body Fat, Anthropometric Assessment (BMI, Body Circumference), Skinfold Assessment, Bioelectrical Impedance Method, Under Water Weighing
 - d) Anthropometric Measurement and Somatotyping

Book for Reference

- ✓ Clarke, H. David and Clarke Harison, H. (1987). **Application of Measurement to Physical Education**. Englewood-cliffs, Parentice Hall, Inc.
- ✓ Welk, G. (2002) **Physical Activity Assessments for Health- Related Research** United States Human Kinetics
- ✓ Miller, T. (2012) **NSCA’s Guide to Tests And Assessments** United States, Human Kinetics
- ✓ Baumgartner, T. & Jackson, A. (1995) **Measurement for Evaluation in Physical Education and Exercise Science** United States of America, Wm C B Communication,
- ✓ Morrow, J., Jackson, A., Disch, J., and Mood, D. (2005). **Measurement and evaluation in Human Performance** United States of America Human Kinetics.
- ✓ Kansal, D. K. (2008). **Textbook of Applied Measurement Evaluation & Sports Selection**. Sports and Spiritual Science Publication. New Delhi.
- ✓ Scott, M. & French, E. (2009). **Measurement and Evaluation in Physical Education**. Sports Educational Technologies. New Delhi.
- ✓ Hoffman, J. (2006). **Norms for Fitness, Performance, and Health**. Human Kinetics. USA
- ✓ Tomchuk, D. (2011). **Companion Guide to Measurement and Evaluation for Kinesiology**. Jones & Bartlett Learning. London UK
- ✓ Johnson, J. (2012). **Postural Assessment**. Human Kinetics. USA
- ✓ Safrit, M., & Wood, T. (1995). **Introduction to Measurement in Physical Education and Exercise Science** (3 edn). WCB McGraw Hill. USA.

PE – 201 : Yoga (Practical)

A. ASANAS:

Sr.no	Name of Asana	Sr.no	Name of Asana
1	Pavanmuktasana	20	Ushtrasana
2	Naukasana	21	Baddha –padmasana
3	Viparitakarani	22	Uttanamandukasana
4	Sarvangasana	23	Chakrasana (Sideward)
5	Matsyasana	24	Chakrasana (Backward)
6	Halasana	25	Virkshasana
7	Bhujangasana	26	Tadasana
8	Shalabhasana	27	Padahastasana
9	Dhanurasana	28	Utkatasana
10	Vakrasana	29	Parvatasana
11	Ardha-Matsyendrasana	30	Vajrasana
12	Paschimatanasana	31	Padmasana
13	Supta Vajrasanai	32	Siddhasana
14	Yoga Mudra	33	Swastikasana
15	Simhasana	34	Shavasana
16	Gomukhasana	35	Makarasana
17	Matsyendrasana	36	Brahmamudra
18	Mayurasana	37	Kukkutasana
19	Uttana Kurmasana		

B. PRANAYAMA

1. Anuloma-viloma
2. Suryabhedana
3. Ujjayi
4. Shitali

C. BANDHAS AND MUDRA

1. Jalandhara Bandha
2. Uddiyana Bandha
3. Jivha Bandha
4. Mula Bandha

D.KRIYAS

1. Jala Neti
2. Nauli
- 3, Kapalabhati
4. Trataka

Departmental committee should plan and display internal and external evaluation structure to the students at the beginning of the semester.

PE – 202 : Measurement & Evaluation (Practical)

Credit – 1 : Anthropometric Measurement –

- i. General Body Measurement: Body weight, Stature Height, Sitting Height
- ii. Skeletal Diameters: Biacromial Diameter, Humerus Bicondylar Diameter, Wrist Diameter, Femur Bicondylar Diameter
- iii. Circumference: Chest Circumference, Upper Arm Circumference, Thigh Circumference
- iv. Length: Arm length, Leg length
- v. Skinfold Measurement

Credit – 2 : Health Related Physical Fitness –

- i. C. V. Endurance : Beep test, Run/walk test, Step test,
- ii. Muscular strength & Endurance: 1 RM, Pull Ups, Modified pull Ups, Flexed Arm Hang, Push Ups, Modified Push Ups Bent Knee Sit Ups, Curl-Up Test , Handgrip Strength Test
- iii. Flexibility: Sit & Reach, Trunk & Neck Extention, Shoulder Flexibility, Shoulder lift, Shoulder & Wrist Elevation, Trunk rotation, Goniometer.
- iv. Body Composition: WHR, BMI, Digital body fat Monitor, skinfold measurements.

Physiological Test – Heart rate, Respiratory rate, VO_2 max

Credit – 3 : Skill Related Physical Fitness –

- i. Speed: 10 stride test, 40m multiple sprint test, 400m Drop off test, 50m. Dash, 30m. Flying test
- ii. Agility: Shuttle run, SEMO Agility run, Dodging run test, 505 Agility test, Zig Zag run test, Side step test, Illinois Agility Run test
- iii. Balance: Stork stand, Bass stick test, Bass test of dynamic balance
- iv. Reaction time: Ruler drop test, Hand reaction time, Foot reaction time test
- v. Power: SBJ, Vertical Jump, Medicine ball throw
- vi. Co-ordination: Wall Catch test, Wall Volley

Credit – 4 : Sports Skill Test –

- i. Basket Ball: Nelson-Johnson, AAHPERD, SAI & Knox
- ii. Foot Ball: AAHPERD, McDonald & SAI Soccer test
- iii. Volley Ball: Brady, Russell-Lange & AAHPERD Volley ball skill test
- iv. Badminton: Miller wall volley badminton test, Service test

Psychological Test – Paper pencil Test.

Departmental committee should plan and display internal and external evaluation structure to the students at the beginning of the semester.

PE – 203 : Research & Statistics

Credit – 1 : Basics of Statistics:

- a) Meaning & Definition of statistics, Need and Importance of Statistics in Research in Physical Education and Sports
- b) Nature & Types of Statistics
- c) Concept of Parametric & non-parametric statistics
- d) Parameter & Statistics
- e) Graphical Representation of Data: Line, Pie, and Bar Diagram, Histogram, Frequency polygon & Curve

Credit – 2 : Descriptive Statistical Measures and its Interpretation

- a) Concept of Measures of central tendency and its Interpretation: Mean, Median, Mode
- b) Concept of Measures of Dispersion and its Interpretation: Range, Mean Deviation, Quartile Deviation, Standard Deviation & Variance
- c) Parametric & non-parametric Descriptive statistical tools
- d) Calculation and Interpretation of Standard Scores: z-score, T-score, Percentiles, Deciles, & Quartiles
- e) Normal Probability Curve (NPC) & Characteristics of it, Normality & Normal distribution, Non-normal distribution, Interpretation of Normal Distribution, Applications of NPC, Kurtosis, Skewness

Credit – 3 : Inferential Statistics

- a) Concept of Inferential Statistical Measures
- b) Central limit theorem & Standard Error of Mean
- c) Interpretation of Correlation Coefficient Significance of the Correlation Coefficient & Coefficient of Determination
- d) Measures of Relationship & its Interpretation: Scatter gram, Spearman's rank order correlation Coefficient, Person's Product Movement Correlation Coefficient
- e) Liner regression equation with two variables
- f) Parametric tools : Calculating t-test (one sample, paired, & independent) & one way ANOVA, Introduction & interpretation of

MANOVA, ANACOVA & MANCOVA, Introduction & interpretation of Post-hoc test

- g) Testing Null Hypothesis, Degrees of freedom, Level of significance, Type I&Type II error, Standard Error of the Mean, Standard Error of the difference between Means
- h) Non-Parametric tools: Introduction& interpretation of Chi-square, Cross tab technique, Mann Whitney 'U' test, Kruskal -Wallis 'H' test, Wilcoxon 'T' testetc.

Credit – 4 : Data analysis & Report Writing

- a) Introduction to Statistical Software – Excel and SPSS
- b) Computer Data processing: The computer data entry, data organization and data mining
- c) Analyzing the data on MS Excel to find Descriptive & Inferential Statistics
- d) Analyzing the data on SPSS to find Descriptive & Inferential Statistics
- e) Interpretation of Parametric Tools – One Sample, Paired, & Independent Sample't' Test, One way & N way ANOVA, and Post-hoc Test
- f) Interpretation of Non-Parametric Tools – Chi-square, Cross tab technique, Mann Whitney 'U' test, Kruskal -Wallis 'H' test, Wilcoxon 't' test etc
- g) Writing Research Report: : Chapterization, Writing and citation of references, Interpretation of Data, Writing Conclusion and Recommendations, Rules of Typography
- h) Reporting Research: Thesis/Dissertation, Research Article, Oral/Poster Presentation, and Abstract

Book for Reference

- ✓ Best, J. W., Kahn, J. V. (2011) **Research in Education,10th edn** New Delhi : Prentice Hall of India (P) Ltd.
- ✓ Thomas, J. R., Nelson, J. K., & Silverman, S. J. (2005) **Research Methods in Physical Activity,5th edn** Human Kinetics, United States of America
- ✓ Clarke, D. H. & Clarke, H. H. (1984) **Research Processes in Physical Education,2nd edn** United States of America : Prentice-Hall, Inc., New Jersey
- ✓ Johnson, B. & Christensen, L. (2008) **Educational Research,3rd edn** United States of America, Sage Publications, Inc., California.
- ✓ Gay, & Airasian., (1976) **Educational Research : competencies for Analysis and Applications**, Pearson Education, Inc., Upper Saddle River, New Jersey
- ✓ Verma, J. P. (2012). **Statistical Methods for sports and physical education**. New Delhi : Tata McGraw Hill Education (P) Ltd.
- ✓ Verma, J. P. (2009) **A Text Book on Sports Statistics** New Delhi : Sports Publications.
- ✓ Vincent, W., J. & Weir, J. P. (2012) **Statistics in Kinesiology 4th edn:** Human Kinetics, United States of America.
- ✓ Kinnear, P., R. & Gray, C., D. (2011) **IBM SPSS Satistics 18 Made Simple.:** Psychology Press, New York.
- ✓ Huizingh, E. (2007) **Applied Statistics with SPSS.:** SAGE Publications Ltd.,Witney, Great Britain.
- ✓ Aldrich, J., O. & Rodriguez, H, M. (2013) **Building SPSS Graphs to Understand Data.:** SAGE Publications Ltd., United States of America.

PE – 204 : Exercise Physiology

- Credit – 1 :**
- a) Introduction to exercise & sport physiology, its importance and role
 - b) Structure & function of exercising muscle
 - c) Neural control for exercising muscle
 - d) Neuromuscular adaptations to exercise and training
- Credit – 2 :**
- a) Energy metabolism and basic energy systems
 - b) Measuring Energy expenditure at rest and during exercise.
 - C) Fatigue
 - d) Hormonal regulation to exercise
- Credit – 3 :**
- a) Metabolic adaptation to training
 - (i) Aerobic Training (ii) Anaerobic Training (iii) Resistance training
 - b) Cardiovascular system and its control
 - c) Respiratory system and its regulation
 - d) Cardiovascular and respiratory adaptation to training.
- Credit – 4 :**
- a) Exercise in hot and cold environments :Thermoregulation
 - b) Exercise & training at Altitude
 - c) Body Composition & Nutrition for Sport
 - d) Physiological assessment & evaluation of performance determining factors

Books for Reference :

- ✓ Wilmore, J H and Costill, D L (2004) Physiology of Sport and Exercise. Champaign, Illinois: Human Kinetics
- ✓ McArdle, W.D., Katch, F.I. and Katch, V.L. (2007). Exercise Physiology, Energy, Nutrition and Human Performance. Baltimore: Lippincott, Williams & Wilkins
- ✓ Mathew, D.K. and Fox, E.L.(1976). Physiology basis of Physical Education and athletics. Philadelphia: UBS company
- ✓ Powers, S K and Howley, E T (2004) Exercise Physiology: Theory and Application to Fitness and Performance. New York: McGraw-Hill.
- ✓ Marieb Elaine N. (1984). Human Anatomy and Physiology (3rd Ed.). Cal:The Benjamin Cumming
- ✓ Pearce Evelyn. (1992). Anatomy and physiology for nurces, calcutta: Oxford university press.

PE – 205 : Yoga Science

Credit – 1 :

- Concept & History of Yoga
- Anatomy & Physiology of Yogic exercises

Credit – 2 : Traditional Yoga

- Literature of Yoga (Yoga sutra, Gita, hathapradipika etc.)
- Vital points of the body & Panchikarana prakriya
- Limbs Of Yoga
- Kumbhkas:- Meaning & types
- Asthang Yoga (awakening of the Kundalini, Nada, chakra, Pratyahara, Dharna, Dhyana, Samadhi)
- Mudras & Bandhas
- Satkarma & Siddhis

Credit – 3 : Yoga & Mental Health

- Mental health & Hygeine: Yogic & Medical perspectives
- Yoga & Modern psychology, Concept of normality.
- Emotional Disorders, Conflicts, Frustration
- Personal & interpersonal adjustments through yoga
- Yamas. Niyamas,Asanas & Pranayams : its contribution to Physical & Mental health.
- Prayer- Its significance in yogic Practices

Credit – 4 : Yoga Health & Fitness

- Meaning, Yoga dimensions of health related fitness
- Role of Nostril dominance in Brain function & activity
- Scientific reasoning behind the Various Asanas.
- Mechanism of Yoga , Diet for preventive & Curative aspects of health

Book for Reference :

- ✓ Aayenger, B. K. (2005). **Yog Deepika**, Orient Longman Pvt. Ltd. Mumbai
- ✓ Swami, S.S. (2008). **Asana, Pranayam, Mudra Bandha**, Bhargava Bhushan Press, Varanasi
- ✓ Aayenger, B. K. (20010). **Light on the Yoga Sutras of Patanjali**, Orient Longman Pvt. Ltd. Mumbai
- ✓ Aayenger, B. K. (2008). **Light on Yoga**, Orient Longman Pvt. Ltd. Mumbai
- ✓ Aayenger, B. K. (2008). **Light on Pranayama**, Orient Longman Pvt. Ltd. Mumbai
- ✓ Gore M.M., **Anatomy & Physiology of Yogic Practices**, Kanchan prakashan
- ✓ Ross K., **The Mannual Of Yoga**, Rupa & Co.
- ✓ Swami Kuvalayananda, **Yogic Therapy –Its basic Principles and Methods**, CHEB New Delhi

PE – 301 : Course Related Practical Work (Practical)

Departmental committee should design and approve the Syllabus for the Course related practical work with details of internal and external evaluation

PE – 302 : Sports Management

Credit – 1 :

- a) Introduction to Sports Industry / Sports Business
- b) Concept of Sports Management (Def, Meaning, Principles, Functions, Modern concepts or models)
- c) Historical Aspects of Sports Management
- d) Professional Sports and Amateur Sports (Characteristics/ Competition structures)

Credit – 2 :

- a) Introduction to Sports Finance
- b) Sports Event Staging
- c) Sponsorship, Marketing, Merchandising of Sports.
- d) Public Relation and Communication with Press and Media

Credit – 3 :

- a) Organizational structure of Sports at different levels (School, Colleges, Universities, National Sports Federations, SAI, Private Clubs)
- b) Management of Sports and Physical education program at School, Colleges, Universities (Planning of Unit plan and Yearly plan of intercollegiate and intramural program, Fitness Testing)
- c) Management of Private Sports Club

Credit – 4 :

- a) Eligibility Criteria of Players for All India University competition.
- b) Purchase Procedure of Sports Equipments and stock Keeping of Sports equipments.
- c) Sports Facility development

Book for Reference:

- ✓ Bucher & Krotee. (2002). ***Management of physical education & Sports.*** NY:McGrawHill Co.
- ✓ Park, Zanger, Quarterman. (1998). ***Contemporary sports management.*** IL: Human Kinetics
- ✓ Lussier & Kimball. (2004). ***Sports management- Principles, application & skill development.***

- ✓ Ohio:Thomson South Western.
- ✓ Jerry Solomon. (2002). ***An insider's guide to managing sporting events.***
IL:Human Kinetics.
- ✓ Ammon & Southall. (2004). ***Sports facility management: Organizing events & mitigating risks.***
- ✓ USA:Fitness information technology.
- ✓ Lavay, French & Anderson. (1997). ***Positive behavior management strategies for physical educators.*** IL: Human Kinetics
- ✓ Kamlesh.M.L. ***Management concepts in physical education and sports***
- ✓ Edward F. Voltmer. ***The organization and administration of Phy.Edn.***
- ✓ Roy. S.S. ***Sports management***

PE – 303 : Sports Psychology

Credit – 1 : Introduction to Sports Psychology & Personal Science

- a) Introduction
 - Meaning and Development and Current status of Sports Psychology
 - Importance of Sports Psychology
- b) Personal Science
 - Personality - Meaning, traits & relation with Sports Performance
 - Motivation – Meaning, Types and Techniques
 - Emotions – Meaning, Types and its influence on Sports Performance

Credit – 2 : Competition Basics & Preparation

- a) Competition Basics
 - Psychological Profiling: Definition & Characteristics, Advantages / Uses of Profiling
 - Goal Setting: Definition, Types of Goals – Outcome, Performance & Process, Strategies for Goal Setting.
 - Focus
 - Self-Confidence: Definition, Developing Self Confidence.
- b) Competition Preparation
 - Characteristics of Player Pre-During_post Competition
 - Pre-During-Post Competition Psychological Preparation

Credit – 3 : Player Problems & Solutions

- Spectators : Types, Effects and Solutions
- Anxiety, Arousal & Stress : Types, Sources and Effects
- Relaxation and Management Techniques, Social Support
- Bio-feedback & Neuro-Feedback, Gratitude Practices

Credit – 4 : Group Dynamics & Inter-personal Relationship

- a) Group Dynamics, Group Cohesion : Forming
- b) Leadership in Sports – Types and Theories.
- c) Aggression – Types and Theories
- d) Coach – Athlete Relationship

Book for Reference :

- ✓ Morris, T., & Summers, J. (2004). **Sport Psychology: Theory, Applications and Issues.** WILEY. Singapore.
- ✓ Shaw, D. F., Gorely, T., & Corban, R. M. (2005). **Instant Notes : Sport and Exercise Psychology.** BIOS Scientific Publishers T&F Group. UK
- ✓ Burton, D., & Raedeke, T. (2008). **Sport Psychology for Coaches.** Human Kinetics. USA.
- ✓ Thatcher, J., Day, M., & Rahman, R. (2011). **Sport and Exercise Psychology.** Learning Matters. UK
- ✓ Kalmesh, M. L. (2009) **Educational Sports Psychology** M/S Friends Publications [India]
- ✓ Burton, R. (2009). **Sports Psychology: Motivation, Participation & Performance.** Sports Educational Technologies. New Delhi.
- ✓ Bhatt, A. H. (2010). **Psychology in Sports.** Sports Publication. New Delhi.
- ✓ Jarvis, M. (2010). **Sports Psychology A students handbook.** Friends Publications [India]

PE – 304 : Sports Nutrition

Credit – 1 : Sports nutrition

- Introduction & Guidelines
- Impact of Science and Technology
- Digestion Process
- Nutritional Disorders

Credit – 2 : a) Body Fuels

- Carbohydrates, Fat/Lipids, Proteins, Vitamins & Minerals

b) Role of Water (Dehydration & Re hydration over hydration) & Fiber

c) Appropriate Diet Before, during & after the Competition

d) Caloric values of food items & Preparation of a Diet chart for a player/athlete

Credit – 3 : a) Energy systems

b) Cardiovascular integration & O₂ Utilization for Exercise

c) Muscle anatomy & Physiology

Credit – 4 : a) Body composition & Weight Management

b) Energy Balance

c) Fluids & temperature regulation

d) Nutritional Assessment

Book for Reference :

- ✓ Meltzer, S., & Fuller, C. (2005). **The Complete Book of Sports Nutrition: A Practical Guide to Eating for Sport**. New Holland Publishers. London
- ✓ Fink, H., Burgoon, L., & Mikesky, A. (2006). **Practical Applications in Sports Nutrition**. Jones and Bartlett. USA
- ✓ Williams (2005). **Nutrition for Health, Fitness, & Sport** (7edn) Mc Graw Hill Publication. Newyork
- ✓ Pande P.K. (2010). **Outline of Sports Medicine**, New Delhi Jaypee Bros

- ✓ Pande, P. (2005). **Sports Medicine – curious queries**. KSK. New Delhi
- ✓ Manore M and Thompson J. (2000). **Sport Nutrition for Health and Performance**. Human Kinetics, Windsor,
- ✓ Mark Kern, (2005) **Sports Nutrition**, Tayloy & Francis
- ✓ Carolyn D. Berdanier, (1998) **CRC Desk Reference for Nutrition**, CRC Press.
- ✓ Judy A. Driskell & Ira Wolinsky (2006), **Sports Nutrition**, friends Pub. New Delhi.
- ✓ James Groff, (2000) **Advanced Nutrition and Human metabolism**, Wadsworth.

PE – 305 : Health Education

Credit – 1 :

- a. Concept of Health-definition, new philosophy of health, dimensions of health, Determinants of Health.
- b) Responsibility for health -individual, community, state & international responsibility
- c) Indicators of Health-twelve indicators, levels of health care, Health Care Systems in India
- d) Health Education-Definition, changing concept of HE, aims & Objectives: of HE, role of health care providers, Approaches to Health Education,
- e) Contents of Health Education, Principles of HE and need & importance of HE
- f) Health Communication: Methods and Aids

Credit – 2 :

- a) Nutrition
 - i. Proximate Principles,
 - ii. Balance diet,
 - iii. Malnutrition
- b) School Health services & Programme,
 - i. Aspects,
 - ii. Role of the P.E.Teacher,
 - iii. Principal and Doctor
- c) Occupation and Health
- d) Pollution and Health

Credit – 3 :

- a) Substance use, abuse, reasons for abuse, effects of drugs on body-route of administration, distribution, dosage, expectation of user, frequency
- b) Alcohol-reasons, consequences, alcoholism and related problems
- c) Tobacco-effects of smoking, reasons for smoking, second hand

smoking, preventing tobacco use

- d) Inhalants, designer drugs, marijuana, cocaine, prevention of drug abuse, legal approach, educational approach, community approach, treatment & rehabilitation

Credit – 4 :

- a) Pathogens-virus, bacteria, rickettsiae, fungi, protozoa, helminthes, stages of disease, protection against disease
- b) Communicable diseases-chickenpox, influenza, Tuberculosis, Typhoid, Cholera, Hepatitis,H1N1
- c) Malaria, Chikungunya, Dengue syndrome, STDs, AIDS
- d) Non-communicable diseases-hypertension, stroke, rheumatic heart diseases, diabetes

Books for Reference :

- ✓ Greene, W.H., Simon-Morton, B.G.(1984). **Introduction to Health Education**. NY: Macmillan Publishing Company
- ✓ Anspaugh, D.J., Ezell, G. (1995)/ **Teaching today's health** (4th Ed). Boston: Allyn & Bacon
- ✓ Park, K. (2007). **Park's textbook of Preventive & social medicine** (19th Ed). India: Banarasisdas Bhanot Publishers

PE – 306 : Pedagogy of Physical Education

Credit – 1 : Systematic improvement in teaching skills

- a. Science & Art of teaching – Teaching, Learning, & Pedagogy, appropriate practices-goals & feedback, conceptual orientation in Pedagogy, Pedagogy for physical activity
- b. Stages of skill development in teaching, sources of help, expert PE teacher
- c. Effective teacher-how are they identified? Active teachers, contextual variations of active teaching
- d. What teachers do in PE? What students do in PE? Effective PE teaching

Credit – 2 : Assessing and improving teaching

- a. Assessment model, on-site assessment of teaching, steps in assessment process
- b. Task system-ecology of PE, important concepts in ecological framework
- c. Interpersonal skills in PE teaching – teacher-student interaction skills, effective communication skills
- d. Legal, ethical & moral issues in teaching, promoting self growth in PE
- e. Strategies for content development-factors affecting program level planning, differing visions of good in PE

Credit – 3 : Developing effective units of instructions

- a. Determining entry & exit levels, end of unit objectives, practical factors related to unit planning, constructing unit plan, writing instructional objectives
- b. Generic instructional strategies-guided practice, independent practice, monitoring student performance
- c. Instructional format-active teaching, task teaching, teaching through questioning, peer teaching, cooperative learning
- d. Self-instructional formats-contracts, PSI, providing effective instruction for mainstream students

Credit – 4 : Measuring teaching & its outcomes

- a. Traditional methods for assessing teaching-intuitive judgment, eyeballing, anecdotal records, checklists, rating scale
- b. Systematic observation records-event recording, duration recording, interval recording, group time sampling, self recording
- c. Combining observation techniques, important decisions in developing observation strategies, building observation system
- d. What to observe, training observers, calculating reliability of observation data, examples of observation system

Books for Reference :

- ✓ Siedentop, D. (1991). **Developing teaching skills in Physical Education**. Ca:Mayfield Publishing company
- ✓ Mosston, M., Ashworth, S. (1994). **Teaching Physical Education** (4th Ed). NY: Macmillan College Publishing Company
- ✓ Kelly, L.E., Nelograno, V.J. (2004). **Developing the Physical Education curriculum**. Champaign, IL: Human Kinetics
- ✓ Hopple, C.J. (2005). **Elementary Physical Education teaching & assessment-A practical guide**. Champaign IL: Human Kinetics
- ✓ Rink, Judith. (1985). **Teaching Physical Education for learning**. Times Mirror/Mosby College Publications
- ✓ Silverman,S.J., Ennis, C. (2003).**Student Learning in Physical Education**, Second Edition. IL: Human Kinetics
- ✓ Tinning, Richard. (2010).**Pedagogy and human movement: theory, practice & research**. UK: Routeledge

PE – 307 : Value and Environmental Education

Credit – 1 : Introduction to Value Education.

- Values: Meaning, Definition, Concepts of Values. Value Education: Need, Importance and Objectives. Moral Values: Need and Theories of Values. Classification of Values: Basic Values of Religion, Classification of Values.

Credit – 2 : Value Systems

- Meaning and Definition, Personal and Communal Values, Consistency, Internally consistent, internally inconsistent, Judging Value System, Commitment, Commitment to values.

Credit – 3 : Environmental Education

- Definition, Scope, Need and Importance of environmental studies., Concept of environmental education, Historical background of environmental education, Celebration of various days in relation with environment, Plastic recycling & prohibition of plastic bag / cover, Role of school in environmental conservation and sustainable development, Pollution free eco- system.

Credit – 4 : Rural Sanitation, Urban Health, Natural Resources and related environmental issues:

- Rural Health Problems, Causes of Rural Health Problems, Points to be kept in Mind for improvement of Rural Sanitation, Urban Health Problems, Process of Urban Health, Services of Urban Area, Suggested Education Activity, Services on Urban Slum Area, Sanitation at Fairs & Festivals, Mass Education.
- Water resources, food resources and Land resources, Definition, effects and control measures of: Air Pollution, Water Pollution, Soil Pollution, Noise Pollution, Thermal Pollution Management of environment and Govt, policies, Role of pollution control board.

REFERENCE:

- Miller T.G. Jr., Environmental Science (Wadsworth Publishing Co.)
Odum. E.P. Fundamentals of Ecology (U.S.A.: W.B. Saunders Co.) 1971.

Rao, M.N. & Datta, A.K. Waste Water Treatment (Oxford & IBH Publication Co. Pvt. Ltd.)1987

Townsend C. and others, Essentials of Ecology (Black well Science)

Heywood, V.H. and Watson V.M., Global biodiversity Assessment (U.K.: Cambridge University Press), 1995.

Jadhav, H. and Bhosale, V.M. Environmental Protection and Laws (Delhi: Himalaya Pub. House), 1995.

Me Kinney, M.L. and Schoel, R.M. Environmental Science System and Solution (Web enhanced Ed.) 1996.

Miller T.G. Jr., Environmental Science (Wadsworth Publishing Co.)

PE – 308 : Education Technology in Physical Education

Credit – 1 : Nature and Scope

- Educational technology-concept, Nature and Scope. Forms of educational technology: teaching technology, instructional technology, and behaviour technology; Transactional usage of educational technology: integrated, complementary, supplementary stand-alone (independent); programmed learning stage; media application stage and computer application stage.

Credit – 2 : Systems Approach to Physical Education and Communication

- Systems Approach to Education and its Components: Goal Setting, Task Analysis, Content Analysis, Context Analysis and Evaluation Strategies; Instructional Strategies and Media for Instruction. Effectiveness of Communication in instructional system; Communication - Modes, Barriers and Process of Communication.
- Instructional Design: Concept, Views. Process and stages of Development of Instructional Design. Overview of Models of Instructional Design; Instructional Design for Competency
Based Teaching: Models for Development of Self Learning Material.

Credit – 3 : Audio Visual Media in Physical Education

- Audio-visual media - meaning, importance and various forms Audio/Radio: Broadcast and audio recordings - strengths and Limitations, criteria for selection of instructional units, script writing, pre-production, post-production process and practices, Audio Conferencing and Interactive Radio Conference. Video/Educational Television: Telecast and Video recordings Strengths and limitations, Use of Television and CCTV in instruction and Training, Video Conferencing, SITE experiment, countrywide classroom project and Satellite based instructions. Use of animation films for the development of children's imagination.

Credit – 4 : New Horizons of Educational Technology

- Recent innovations in the area of ET interactive video - Hypertext, video-texts, optical fiber technology - laser disk, computer conferencing, etc. Procedure and

organization of Teleconferencing/Interactive video-experiences of institutions, schools and universities. Recent experiments in the third world countries and pointers for, India with reference to Physical education. Recent trends of Research in Educational Technology and its future with reference to education.

REFERENCE:

Amita Bhardwaj, New Media of Educational Planning".Sarup of Sons, New Delhi-2003

Bhatia and Bhatia. The Principles and Methods of Teaching (New Delhi : Doaba House),1959.

Communication and Education, D. N. Dasgupta, Pointer Publishers

Education and Communication for development, O. P. Dahama, O. P. Bhatnagar, Oxford Page 68 of 71IBH Publishing company, New Delhi

Essentials of Educational Technology, Madan Lai, Anmol Publications

K. Sampath, A. Pannirselvam and S. Santhanam. Introduction to Educational Technology (New Delhi: Sterling Publishers Pvt. Ltd.): 1981.

Kochar, S.K. Methods and Techniques of Teaching (New Delhi, Jalandhar, Sterling Publishers Pvt. Ltd.), 1982

Kozman, Cassidy and kJackson. Methods in Physical Education (W.B. Saunders Company Philadelphia and London), 1952.

PE – 309 : Open Course

The Facility of open course provides for presentation of a faculty member's current research or specialized academic interest. The title and syllabus will be framed by the faculty member. The course will be given on approval by the Departmental Committee

PE – 401 : Dissertation

The facility of dissertation provides for student's interest in doing research on a topic of his/her choice. The topic and the plan of the dissertation is decided in consultation with the Faculty member and is executed on approval by the Departmental committee. Every candidate must follow all the guidelines given in the research report format given in the appendix of this document.

Departmental committee should plan and display internal and external evaluation structure to the students at the beginning of the semester.

PE – 402 : Specialization I (Practical)

The candidate has to opt for one of the options listed below.

1. Kabaddi
2. Kho-Kho
3. Volleyball
4. Basketball
5. Hockey
6. Football
7. Handball
8. Soft ball
9. Cricket
10. Table Tennis
11. Badminton
12. Tennis
13. Wrestling
14. Boxing
15. Judo
16. Taekwondo
17. Mallakhamb
18. Netball
19. Korfbal
20. Athletics
21. Gymnastics
22. Swimming

Departmental committee should design and approve the Syllabus for the specialization with details of internal and external evaluation.

PE – 403 : Professional Preparation & Curriculum Design

Credit – 1 :

- a) Meaning, Criteria & Evolution of profession
- b) A professional & professionalism in Physical Education & sports
- c) Physical Education as a profession, career opportunities in PE.
- d) Legal regulation of profession

Credit – 2 : Organizational socialization: Factors affecting beginning teachers

- a) Career development of teachers- model of teacher development
- b) Workplace condition (WPC)
- c) Induction into teaching- reality shock, washout effect, isolation, marginalization of Physical Education, workload & role conflict, interaction with colleagues, support for beginning teachers
- d) Strategies for beginning teachers- mentoring, resources, reflection, network, reading, conferences & workshops, visiting teachers, video resources, committee work ,supervising student-teachers, presentations

Credit – 3 : In-service teaching

- a) Growth on the job-in service concept
- b) Self appraisal & parameter influencing self appraisal
- c) Guiding principles & professional relations
- d) Qualifications & duties, responsibilities & job profiles of school Physical Education teachers, directors of Physical Education in colleges & university

Credit – 4 :

- a) Meaning, importance & fundamental principles of curriculum planning
- b) Process of Curriculum Development-
- c) Implementing the Physical Education curriculum
- d) Curriculum/program evaluation

Books for Reference :

- ✓ Kiran Sandhu (2004). **Professional preparation and career development in Physical Education and sports.** New Delhi: Friends publication.
- ✓ Kiran Sandhu (2004). **Trends and developments in Professional preparation in Physical Education and sports.** New Delhi: Friends publication.
- ✓ Kirk, D., Macdonald, D., & O'Sullivan, M.(2013). **The handbook of Physical Education.** London: Sage Publications
- ✓ Silverman, S.J., & Ennis, C. D. (Ed) (1996). **Student learning in physical education (2nd ed).** Champaign, IL: Human Kinetics
- ✓ Buchor, C. A. & Wuest, D. A. (1987). **Foundations of Physical Education and sports.** St. Louis: Times mirror / Mosby college publication.
- ✓ Graham, G. () **Teaching children physical education (2nd ed).** Champaign, IL: Human Kinetics
- ✓ Kelly, L. E. & Melograno, V. J. (2004). **Developing the Physical Education curriculum.** Champaign: Human Kinetics.
- ✓ Pangrazi, R.P. & Dauer, V. P. (1995). **Dynamic Physical Education for elementary school children (11th Ed.).** Boston: Allyn and Bacon.
- ✓ Pangrazi, R.P. & Dauer, V. P. (1985). **Dynamic Physical Education curriculum & instruction for secondary school student.** Minnesoty: Burgess publishing company.
- ✓ Lombardo, B. & Wuest, D. (1994). **Curriculum & instruction the secondary school Physical Education experience.** St. Louis: Mosby
- ✓ Kasat, G. & Karmarkar, A. K. (1996). **Professional preparation in Physical Education and sports.** Amravati: Kasat
- ✓ Barrow, H. M. (1983). **Man & movement (3rd Ed.).** Philadelphia: Lea & Febiger.

PE – 404 : Sports Medicine

- Credit – 1 :** a) Introduction- History, concept, aim & objectives and need & Importance
b) Role of Physician, Athlete trainer and coaches
c) Team Medical Care – Concept & approaches.

Credit – 2 : Injury and Tissue Response :

- Micro & macro trauma
- Tissue response to stress
- Inflammation and different steps of wound Healing
- Overuse Trauma.
- Common regional injuries & their management (head, neck, face, thorax, abdomen, Pelvis, Upper & lower limbs)

Credit – 3 : Therapeutic Modalities & Rehabilitation

- Hydrotherapy, Cryotherapy
- Thermotherapy
- Diathermy, Infra-red, Ultra sound, Ultra violet, Inter Ferential Therapy (IFT)
- Contrast & Paraffin bath
- RICE, Cryokinetics, Hydro collator packs, Sauna, Steam bath
- Therapeutic Massage – History, benefits & different Techniques
- Approach to rehabilitation

Credit – 4 : a) Inactivity Problems & Management

- Low back problems & their management
- Pregnancy & exercise
- Common old age problems (Arthritis, Heart disease)

- b) Doping – History, Definition, Classification of Methods, Signs & Symptoms, Procedure, Use & Abuse of Drugs

- c) Athletic Nutrition – Brief account of Macro & Micro Nutrients,
- Water intake & fluid balance.
 - Guidelines to prepare a diet plan for players and its caloric need.

Book for Reference :

- ✓ Roy, S. & Irvin, R. (1983). **Sports Medicine**, Prentice hall. USA
- ✓ Pande P.K. (2010). **Outline of Sports Medicine**, New Delhi Jaypee Bros.
- ✓ Michael Hutson, (2001).**Sports injuries recognition & management** , Oxford University Press
- ✓ Govindarajulu, N. (2006). **Sports Medicine**, Friends Publication. New Delhi
- ✓ Ronald P. Pfeiffer & Brant Mangus , **Concepts of Athletic Training**, Jones & Bartlett Pub. 2nd Ed. 1993
- ✓ Meltzer, S., & Fuller, C. (2005). **The Complete Book of Sports Nutrition: A Practical Guide to Eating for Sport**. New Holland Publishers. London
- ✓ Fink, H., Burgoon, L., & Mikesky, A. (2006). **Practical Applications in Sports Nutrition**. Jones and Bartlett. USA
- ✓ Williams (2005). **Nutrition for Health, Fitness, & Sport** (7edn) Mc Graw Hill Publication. Newyork
- ✓ Pande, P. (2005). **Sports Medicine – curious queries**. KSK. New Delhi
- ✓ Beck, M. (1999). **Theory and Practice of Therapeutic Massage** (3edn) Melady-Delmar. New York.
- ✓ Findlay, S. (2010). **Sports Massage**. Human Kinetics. USA.
- ✓ Johnson, J. (2009). **Soft Tissue Release**. Human Kinetics. USA
- ✓ Fritz, S. (1995). **Fundamentals of Therapeutic Massage**. Mosby. USA

PE – 405 : Health and Fitness Management

Credit – 1 :

- a) Introduction to a Positive Health Lifestyle
 - Understanding wellness
 - Fitness concerns and needs in India
- b) Principles of Physical Fitness
 - Concept & Components of physical fitness (Health & Motor skill related)
 - Personal physical fitness programs
 - General principles of training

Credit – 2 :

- a) Cardiovascular Endurance and Fitness (aerobic exercise)
 - Introduction to heart structure & Cardiac cycle
 - Energy production and system
 - Aerobic exercise prescription & programs
 - Benefit/risk factors
- b) Muscular Strength/Endurance
 - Principles and development of muscular strength and muscular endurance
 - Weight training programs and alternatives

Credit – 3 :

- a) Flexibility
 - Factors influencing flexibility
 - Flexibility related to health and wellness
 - Measurement & Development of flexibility
- b) Body Composition :
 - Concept and assessment

Credit – 4 :

- a) Development of Individualized Fitness Program
 - Exercise prescription
 - 2. Individualized workout
- b) Nutrition

- Basic nutritional information
 - b. Determining caloric intake and expenditure
 - c. Meal planning and diets
- c) Weight Management
- Weight loss/gain and body composition
 - b. Weight management and lifestyle
- d) Stress Management
- Stress related disease and disorders
 - b. Stress and physical exercise

Book for Reference :

- ✓ Bates, M. (2008). **Health Fitness Management**. Human Kinetics. USA.
- ✓ Werner V.K. Hoeger, (2007). **Fitness and Wellness**, Wadsworth, Thomas learning
- ✓ Fahey, T., Insel, P., & Roth, W. (1997). **Fit & Well**. Mayfield. USA
- ✓ Heyward, V. (2006). **Advanced Fitness Assessment and Exercise Prescription**. Human Kinetics. USA
- ✓ Bouchard, C., Shephard, R.J., Stephens, T., Sutton, J.R., and McPherson, B.D. (Eds) (1990). **Exercise fitness and health** Human Kinetics. USA.
- ✓ Hoffman, R. and Collingwood, T.(2008). **Fit for Duty**, Human Kinetics. USA.
- ✓ Gordon Edlin,(2010) **Health & Wellness**, Jones and Bartlett Pub. Massachusetts

PE – 406 : Adapted Physical Education

Credit – 1 : An Introduction to Adapted Physical Education

- a. Meaning, Need and Importance of Adapted Physical Education and Sports
- b. Purpose, Aims and Objectives of Adapted Physical Education and Sports
- c. Program organization of Adapted Physical Education and Sports
- d. Adapted Sports-Para Olympics
- e. Test, Measurement and Evaluation in Adapted Physical Education

Credit – 2 : Development of Individual Education Program (IEP)

- a. The student with a disability
- b. Components and Development of IEP
- c. Principles of Adapted Physical Education and Sports
- d. Role of Physical Education teacher
- e. Teaching style, method and approach in teaching Adapted Physical Education

Credit – 3 : Developmental Considerations of an Individual

- a. Motor development
- b. Perceptual Motor development
- c. Early childhood and Adapted Physical Education

Credit – 4 : Individual with unique need and activities

- a. Behavioral and Special learning disability
- b. Visual Impaired and Deafness
- c. Health Impaired students and Physical Education
- d. HRPF and its development for Individual with unique need
- e. Role of games and sports in Adapted Physical Education

Books for Reference :

- ✓ Winnick, J. P. (2005). **Adapted Physical Education and Sports**. Human Kinetics (4th Edition).
- ✓ Pangrazi, R.P. and Dauer, V. P. (1998). **Dynamics Physical Education for Elementary School Children**. (12th Edition). Allyn and Bacon Publishing.
- ✓ Emes, C., & Velde, B. (2005). **Practicum in Adapted Physical Activity**. Human Kinetics. USA.
- ✓ Lieberman, L., & Houston-Wilson, C. (2009) **Strategies for Inclusion: A Handbook for Physical Educators**. Human Kinetics. USA.
- ✓ Beverly, N. (1986). **Moving and Learning**. Times Mirror/Mosby College Publishing.
- ✓ Cratty, B.J. **Adapted Physical Education in the Mainstream**. (4th Edition) Love Publishing Company.
- ✓ Houser, L.D. **Integrated Physical Education-A guide for the elementary classroom teacher**.

PE – 407 : Sports Journalism and Mass Media Communication

Technology

Credit – 1 : Introduction

- Meaning and Definition of Journalism, Ethics of Journalism - Canons of journalism- Sports Ethics and Sportsmanship - Reporting Sports Events. National and International Sports News Agencies.

Credit – 2 : Sports Bulletin

- Concept of Sports Bulletin: Journalism and sports education - Structure of sports bulletin - Compiling a bulletin - Types of bulletin - Role of Journalism in the Field of Physical Education: Sports as an integral part of Physical Education - Sports organization and sports journalism - General news reporting and sports reporting.

Credit – 3 : Mass Media

- Mass Media in Journalism: Radio and T.V. Commentary - Running commentary on the radio - Sports expert's comments. Role of Advertisement in Journalism. Sports Photography: Equipment- Editing — Publishing.

Credit – 4 : Report Writing on Sports and Journalism

- Brief review of Olympic Games, Asian Games, Common Wealth Games World Cup, National Games and Indian Traditional Games. Preparing report of an Annual Sports Meet for Publication in Newspaper. Organization of Press Meet.
- Sports organization and Sports Journalism - General news reporting and sports reporting. Methods of editing a Sports report. Evaluation of Reported News. Interview with and elite Player and Coach.

Book for Reference :

- Ahiya B.N. (1988) Theory and Practice of Journalism: Set to Indian context Ed3. Delhi : Surjeet Publications
- Ahiya B.N. Chobra S.S.A. (1990) Concise Course in Reporting. New Delhi: Surjeet Publication
- Bhatt S.C. (1993) Broadcast Journalism Basic Principles. New Delhi. Haranand Publication

Dhananjay Joshi (2010) Value Education in Global Perspective. New Delhi: Lotus Press.

Kannan K (2009) Soft Skills, Madurai: Madurai: Yadava College Publication

Mohit Chakrabarti (2008): Value Education: Changing Perspective, New Delhi: Kanishka Publication,.

Padmanabhan. A & Perumal A (2009), Science and Art of Living, Madurai: Pakavathi Publication

Shiv Khera (2002), You Can Win, New Delhi: Macmillan India Limited.

Varma A.K. (1993) Journalism in India from Earliest Times to the Present Period. Sterling publication Pvt. Ltd.

Venkataiah. N (2009) Value Education,- New Delhi: APH Publishing Corporation. 43

PE – 408 : Recreation & Leisure time Management

Credit – 1 : a) Fundamentals of Recreation

- Concept & Meaning of Recreation
- Need & Importance
- Principles & Theories of Recreation & Play

Credit – 2 : a) Therapeutic Recreation (Theoretical and philosophical foundations of therapeutic recreation, behavioral, therapeutic use of activity; recreative interaction-intervention techniques)

- b) Recreation for the life –span (role of recreation and leisure on human development and its impact on healthy fetal development from conception until death. Examination of the diverse, multicultural perspectives on recreation and leisure)

Credit – 3 : a) Recreational Sports Programs and Administration Organization and administration of intramural sports on elementary, secondary, college, and university levels. Program planning, facilities, equipment and financing of intramural sports and Leisure activity program.

b) Program for different Category

- Men / Women
- Child / Youth/ adult/ Old age
- Physically/ mentally challenged

c) Recreational Facilities and Area Design

Credit – 4 : a) Current Issues in Recreation

- Recent research and management developments in recreation
- Latest trends in recreation and Leisure time management
- Employment opportunities and procedures for employment.

- b) Practical (Conducting & organizing recreation & leisure time activity program for any of the above mentioned categories.)

Book for Reference :

- ✓ Human Kinetics (eds) (2006). **Introduction to Recreation and Leisure**. Human Kinetics. USA.
- ✓ Cordes, & Ibrahim (1996). **Applications in Recreation & Leisure**. MOSBY. USA.
- ✓ Chelladurai, P. (2006). **Human Resource Management in Sport and Recreation**. Human Kinetics. USA.
- ✓ Hoffman, R. & Collingwood, T. (2010). **Fit for Duty** , Human Kinetics. USA.
- ✓ Gordon, S. & Garrett, W. (1993). **Sports and Exercise in Midlife** American academy of orthopedic surgeons. USA.
- ✓ Bucher, & Wuest,(2010). **Foundations of Physical Education, Exercise science and Sport** Tata McGraw Hill India.
- ✓ Smith, R.And Austin, D. **Inclusive and special Recreation: Opportunities for persons with Disabilities**. Human Kinetics. USA.
- ✓ Human Kinetics (eds)(2010). **Dimensions of Leisure for Life**. Human Kinetics. USA.

PE – 409 : Philosophical & Sociological Basis of PE

Credit – 1 : Developing Philosophic skills

- a. What is Philosophy?
- b. Idealism, Realism, Pragmatism, Naturalism and Existentialism
- c. Objectives of Physical Education and Sports.
- d. Developing personal Philosophic skills.
- e. Improving life through our profession (Practical Applications)

Credit – 2 : Values and Ethical issues in Sports

- a. Concepts of moral development and stages of development.
- b. Ethics in Sports
- c. Growing Ethical crises in sports.
- d. Making sound Ethical decisions.

Credit – 3 : What is Sociology?

- a. Introduction to Sports Sociology (Nature, Scope Def, Meaning, Importance and Historical perspective)
- b. Relationship between Sports and Socializing Institutions (Family, Schools and educational systems)
- c. National and International Integration through Sports (Sports and Nationalism-Sport's role in the making of Nation)
- d. Sports and Women(Pre Independence, After Independence, Current Status, Social Barriers, Schemes for improving the Participation of Women by Govt)
- e. Sports and Religion, Culture

Credit – 4 : Sports, Globalization and its Social Impacts

- a. What is a Globalization and Characteristics of Global sport
- b. Sports and Politics, Sponsorship, Media, Economy
- c. Sport and Violence
- d. Social Impacts of International Sports events

Book for Reference:

- ✓ Kretchemar R, (1994) **Practical Philosophy of Sport**. U.S.A: Human Kinetics.
- ✓ Bucher, (1992) **Foundations of Physical Education**. (1st Indian Edition) New Delhi: B. I. Publication
- ✓ Lumpkin, (1998) **Physical Education and Sports: A Contemporary Introduction**. U.S.A: McGraw Hill Companies.
- ✓ Hardman K, Green K, (2005) **Physical Education Essential Issues** London. SAGA.
- ✓ Shields D, Bredemeir B, (1995) **Character Development and Physical Activity**. U.S.A; Human Kinetics.
- ✓ Dawn P, (2002) **Gender and Physical Education**. U.S.A, Routledge.
- ✓ Ziegler, E.F. (2007) **An Introduction to Sports and Physical Education Philosophy**. Delhi: Sp Educational Techno.
- ✓ Jain R, (2002) **Sports Sociology** New Delhi: Jain Media Graphics.
- ✓ Bhupindar S, (2004) **Sports Sociology – An Indian Perspective**. New Delhi: Friends Publication.
- ✓ Sharma S, (2004) **Sociological foundations in Physical Education and Sports**. New Delhi: Friends Publication.
- ✓ Jarvie G, (2006) **Sports, Culture and Society An Introduction**. New York: Routledge.
- ✓ Cashmore E (2000) **Sports Culture An A – Z Guide**. New York: Routledge.

PE – 410 : Open Course

The Facility of open course provides for presentation of a faculty member's current research or specialized academic interest. The title and syllabus will be framed by the faculty member. The course will be given on approval by the Departmental Committee

Appendix A

Research Report Format Guidelines for M.P.Ed.

The student should use the following guidelines for thesis/dissertation.

- ✓ **Language:** English and Marathi are acceptable. If candidate is writing in English then Quotations in languages other than English must require a translation and if Marathi then quotations in language other than Marathi must require a translation. Thesis written in Marathi Language must have two abstracts, one in Marathi and other one in English and for Dissertation/thesis written in English Language must have abstract in English only.
- ✓ **Paper:** The thesis must be printed on good quality, A4 Size (8.27" x 11.69"), white paper (Executive bond) on both sides of the paper. Photographs and other special figures or tables may be printed on photographic quality paper. Oversize or undersize pages (e.g., maps/Drawings) can be included but will not be bound into the thesis—they will be placed in a pocket at the back of the thesis.
- ✓ **Margins:** Left-hand margins should be 38 mm (1.5") wide, to facilitate binding. All other margins should be well defined at approximately 25 mm (1"). Text alignment should be justified.
- ✓ **Font:** For the main body of the text, a standard, easily legible, 12-point font is preferred (e.g., Times New Roman) although for some font styles (e.g., Arial or Helvetica) 11-point may be acceptable. For Marathi a 16-point font is preferred (eg. Shree lipi). Condensed type is not acceptable. Chapter titles and section (sub) headings may be in a different style and should stand out clearly from the text. Text styles and title/(sub)heading styles should be consistent throughout the thesis, except that 11 or 12-point font consistent with the thesis text may be used in the table of

contents. The thesis must be printed in black ink; printing should be laser or better quality.

Title	Marathi	English
Chapter Heading	16/18 Bold	14 Bold
Headings	16 Bold	14 Bold
Sub Headings	14 Bold	12 Bold
Body Text	14	12

- ✓ **Page Numbers:** All pages must be numbered in sequence. There must be no missing, blank, or duplicate pages.
 - The page numbers in the preliminary material are to be in lower case Roman numerals, centered at the bottom of the page, except for the title page, which is not numbered. Minimum font size is 12-point and must be consistent throughout the text.
 - The page numbers in the main part (all text pages) are to be numbered consecutively with Arabic numerals.
 - Placement of page numbers is as follows: Assign page numbers for the first page of each chapter, bibliography, and title page but do not print the number. Number should be placed ½ inch from top of page and aligned with right margin.
- ✓ **Line Spacing:** 1.5 for text; exceptions are noted below.
- ✓ **Printing:** Preliminary pages to be printed on one side of the page and Body of the Thesis on both sides of the pages. Every new chapter should start on right hand side page.
- ✓ **Table of Contents:** The thesis must contain a complete table of contents. Individual entries (titles, headings, etc.) that extend onto more than one line should be single-spaced; line spacing of 1.5 should be maintained between entries. For clarity, chapter titles and (sub) headings should be in 12point font regardless of their font size in the main body of the text. Page numbers listed in the table of content should be aligned at the right-hand side of the page.

- ✓ **List of Illustrations/Figures and/or Tables** (if applicable): Individual entries (titles, captions, etc.) that extend onto more than one line should be single-spaced, but line spacing of 1.5 should be maintained between entries. The lists should include any material inserted in a back pocket.
- ✓ **Abstract:** The thesis must contain an abstract. This should occupy a single page, and may be single-spaced, if necessary. There should be no illustrations or footnotes. Students are advised that, due to space limitations shorten abstract to minimum 350 words.
- ✓ General sequence to be followed in the research dissertation is as follows:
 - Title Page
 - Certificate of the Guide
 - Statement/Declaration by the Candidate
 - Acknowledgement (Not more than TWO pages)
 - Abstract
 - Table of Contents
 - List of Tables(if applicable)
 - List of Figures(if applicable)
 - Body of Thesis
 - Bibliography
 - Appendix (If Applicable)
 - Vita(optional)

Appendices and other Supplementary Material

- ✓ **General:** Appendices may include survey forms, or any other supplementary material excluding data. Content and format should be in accordance with discipline practice.
- ✓ **Copyright Permission:** Where a thesis includes copyrighted material (e.g., publications), copyright permission letters should be included as a separate appendix. Reprints may be included in the appendices, provided copyright permission is obtained.