

# UNIVERSITY OF MUMBAI

## Certificate Course in Personal Fitness Training

(With Effect from the Year 2016-17)

### INTRODUCTION:

Health & Fitness Science is still in an infant stage in our country. But it has proved to be of vital importance for enhancing athletic performance as well as individual fitness irrespective of health barriers in scientific manner.

The course includes theoretical and practical knowledge of Health, Anatomy, Physiology, Fitness, Medicine, Nutrition and Psychology which influences decision regarding improvement of fitness and performance level of athletes. It also renders its influence on the activity level and fitness of individuals of all ages. The Certificate Course in Personal Fitness Training (CCPFT) offers knowledge and Skills including varied means of promoting the same on individual basis.

### OBJECTIVES:

1. To prepare professionals in Personal Fitness Training.
2. To enhance the quality of Physical Education Teachers through the value added course.
3. To understand the basic concept of Fitness Training.
4. To enable the learner to understand the basic structure and function of human body.
5. To acquire the knowledge regarding effect of exercise on the body as a whole.
6. To understand the Biomechanical aspect of Exercise.
7. To study the posture related deformities and corrective exercises.
8. To understand and learn practical aspects in exercise training.
9. To acquire the knowledge pertaining to the legal issues and documentation
10. To study the principles of training related to exercise.
11. To study and learn the anthropometry and fitness related tests.
12. To study the basics of Nutrition, weight management and safety measures.

**O \_\_\_\_ Title of the Course: Certificate Course in Personal Fitness Training**

**(CCPFT) O \_\_\_\_ ELIGIBILITY:**

A student for the admission of Certificate Course in Personal Fitness Training (CCPFT) must have at least completed his/her Higher Secondary Education (HSC i.e. 10+2) of Maharashtra State Board or any other equivalent board.

**O \_\_\_\_ DURATION OF PROGRAMME:**

The duration of Certificate Course in Personal Fitness Training shall be of 144 hours. The programme shall be conducted on regular/part time basis. The maximum duration for the completion is 6 months.

**O \_\_\_\_ INTAKE CAPACITY: Maximum 50 (for one batch)**

**O \_\_\_\_ FEES STRUCTURE:**

Rs. 24,000/- Course Fees.

Rs. 1,000/- Examination fee.

**O \_\_\_\_ STRUCTURE OF THE PROGRAMME:**

- Duration : 6 Months (maximum)
- Working Hours : 6 hours in a day
- Theory : 96 Hours
- Practical : 48 Hours
- Total Hours : 144 Hours
- 1 Credit : 12 Hours
- Total Credit : 12
- No. of Courses : 4 (each Course 50 Marks)
- Total Marks : 200 (Theory: 120 Marks + Practical: 80 Marks)

**• COURSE WISE CREDIT ASSIGNMENTS**

**Certificate Course in Personal Fitness Training (CCPFT)**

Course	Code	Hours	Marks (External)	Credit	Code	Hours	Marks (Internal)	Credit
Course I Anatomy and Physiology of Human Body	PFT 01	24	30	2	PFTP 01	12	20	1
Course II Principles of Kinesiology and Biomechanics	PFT 02	24	30	2	PFTP 02	12	20	1
Course III Principles and Theory of Personal Fitness Training	PFT 03	24	30	2	PFTP 03	12	20	1
Course IV Basic Nutrition, Weight Management, safety and Injury Management	PFT 04	24	30	2	PFTP 04	12	20	1
<b>Total</b>	--	<b>96</b>	<b>120</b>	<b>08</b>	--	<b>48</b>	<b>80</b>	<b>04</b>

• Total Credits = 12 (Theory 8 Credits + Practical 04 Credits)

• Total Marks = 200 (External 120 Marks + Internal 80 Marks)

## R\_\_\_\_\_ SCHEME OF EXAMINATION

### Standard of Passing the Examination

- The learner shall have to obtain a minimum of 50 % Marks in each course (i.e. 25 Marks) including theory and practical.
- The learner shall obtain minimum 50% Marks in aggregate.
- To pass the course minimum grade 'C' shall be obtained in each course.
- The following letter grades shall be assigned on the basis of marks obtained.

% of marks obtained by the Student	Grade points	Letter grade
70-100	7	O
60-69.99	6	A
55-59.99	5	B
50-54.99	4	C
Less than 49.99	3	F (Fail)

- The students failed in the examination shall have to reappear for the next examination (within 2 years) including theory and practical by paying examination fees.

### R\_\_\_\_\_ Nature of Theory Examination

- For each Course : 30 Marks
- Duration : 1 Hours
- Questions paper pattern:-
  1. There shall be 03 questions, each of 10 marks on each unit (per unit 1 question).
  2. All questions shall be compulsory with internal choice.

R\_\_\_\_\_ The following shall be the Syllabi including Theory and Practical for the various Courses of Certificate Course in Personal Fitness Training.

## COURSE - I ANATOMY AND PHYSIOLOGY OF HUMAN BODY

### UNIT I: PRINCIPLES OF ANATOMY

(9 hours)

1. Introduction to Human Anatomy and Energy System
2. Skeletal System and Muscular System
3. Respiratory System
4. Cardiovascular System

## **UNIT II: PRINCIPLES OF PHYSIOLOGICAL**

**(9 hours)**

1. Muscular System
2. Respiratory System
3. Cardiovascular System
4. Energy System

## **UNIT III: EXERCISE RELATED PHYSIOLOGICAL CHANGES**

**(9 hours)**

1. Muscular System
2. Respiratory System
3. Cardiovascular System
4. Energy System

## **UNIT IV: PRACTICAL EXERCISE TRAINING**

**(9 hours)**

1. Cardio/Aerobic Training (Continuous Training, Interval Training, Fartlek Training, Circuit Training and Aerobic Cross Training)
2. Resistance/Weight Training
3. Traditional Methods of Fitness Training
4. Thera ball Training

## **REFERENCES :**

1. Beashel, Paul & Taylor, John : Advance Studies in Physical Education and Sports, Thomas Nelson & Sons Ltd., U.K., 1996.
2. Brown M.C. & Sommer B.K. - Movement Education- Its Evaluation and Modern Approach, Adchison, wesely publication, London, 1978.
3. Crouch James E. - Essential Human Anatomy A Text - Lea & Febriger , Philladelphia, 1980.
4. Desai V., Sequeira, T. - Aids Prevention Education Programme : Workbook For Teachers in Secondary Schools of Mumbai, B.M.C. Public Health Dept., Mumbai, 2001.
5. Dr. Uppal A.K. & Dr. Gautam G.P. : Physical Education and Health, India, 2000.
6. Hay, James G & Reid J.G. - Anatomical and Mechanical Basis of Human Motion, Prentice hall, New Jersey, 1985.
7. Horne, John, Tomlinson D : Understanding Sports: An Introduction to the Sociological & Cultural Analysis of Sports, E & FN spon, London, 1999.
8. Jenson C.R. & Schultzer G.W. - Applied Kinesiology and Biomechnics, Mc Grow hill book Co. New York, 1984,
9. Lock Hurt and others - Anatomy of the human body, Feber & Feber Oxford University, 1975
10. Murgesh N. - Anatomy, Physiology and Health Education, Sathya, Chinnalapatti, 1990.
11. Pearce Evelyn - Anatomy and Physiology for Nurses, Oxford University, 1975.
12. Rasch & Bruke - Kinesiology and applied Anatomy, Lea Febriger, Philladelphia, 1978.
13. Rasch, Philip J. - Kinesiology and Applied Anatomy, Lea Febriger, Philladelphia, 1989.

14. Dr. Sathe. V., Principles of Anatomy, Physiology and Clinical Basis of Disease (International Edition), Narmada Prakashan, Nagpur., 1998.
15. Shaw, Dhananjay - Biomechanics and Kinesiology of Human Motion, Khel Sahitya Kendra, Delhi, 1998
16. Sidentop, Daryl - Introduction to Physical Education and Sports, 2<sup>nd</sup> Ed., Mayfield publishing Co., London, 1994.
17. Wells & Luttgens - Kinesiology - Scientific Bases of Human Motion - 6<sup>th</sup> Ed., Saunderdas College. , Philladaphia, 1976
- 18 ysdkoGs] Ogh-.y- & 'kjhj 'kkL=& jpuK o dk;Z] ck'khZ] 1994-
- 19 tks'kh] fot;k & O;k;kekps 'kjhj dzh;k 'kkL=] vfer cznlZ] ukxiwjj] 1995-
- 20 ok[kkj]fn-xks- & 'kjhj foKku o vkjksX; 'kkL=] dzhMkra=] iq.ks] 1992
- 21 oekZ] ds-ds- & 'kjhj jpuK rFkk 'kjhj dzh;k foKku] izdk'k cznlZ] yq/kh;kuk]1983
- 22 lkBs] foosd & xfr'kkL= vkSj LokLFk f'k{kk] ueZnk izdk'ku] ukxiwjj] 1995-
- 23 lkBs] foosd & xfr'kkL= vkf.k vkjksX; f'k{k.k] ueZnk izdk'ku] ukxiwjj] 1995-
- 24 lkBs] foosd & 'kjhj jpuK o dk;Z] ueZnk izdk'ku] ukxiwjj] 1995
- 25 MkW- lkBs foosd] 'kjhj jpuK] fdz;k o R;koj vk/kkjhr jksx] ueZnk izdk'ku] ukxiwjj] 1998
- 26 JhokLroj vHk;dqekj & 'kjhj O;k;ke dzh;kRed foKku ,oa fpdhRlk] lq;ksx] vejkorh] 1994-
- 27 fgysZdj] Jh-iw- & ekuo 'kjhj jpuK ,oa dzh;k foKku] Jh guqeku O;k;ke izlkjd eaMG] vejkorh-
- 28 xqlr] eatw] xqlr] egs'kpanz (vugoknd)& 'kkjhj vkSj 'kjhjdzh;k foKku] vkWDIQMZ ;qfuOgfIVh izsl] fnYyh]1980-

## COURSE - II

### PRINCIPLES OF KINESIOLOGY AND BIOMECHANICS

#### UNIT I: APPLIED AND STRUCTURAL KINESIOLOGY (9 hours)

1. Meaning, scope and importance of kinesiology in Health Fitness
2. Aim, objectives and need of kinesiology
3. Role of Kinesiological in Exercise and Sports
4. Kinesiological and movement analysis

#### UNIT II: PRICIPLES OF BIOMECHANICS (9 hours)

1. Balance and Stability

2. Applied Weights and Resistances
3. Motion (Newton's laws) and Levers: Classification
4. Application of Biomechanical Principles to Activity
  - Walking
  - Running
  - Lifting and Body Mechanics

### **UNIT III: POSTURAL DEFORMITIES AND PRINCIPLES OF FLEXIBILITY (9 hours)**

1. Postural Deformities (Types, Causes and Remedies & Prevention)
2. Definitions and Mechanics of Stretch and Flexibility (Stretch Reflex)
3. Types of Stretching
  - Static Stretching
  - Ballistic Stretching
  - Proprioceptive Neuromuscular Facilitation (PNF)
4. Factor Affecting Flexibility and Principles of Stretching

### **UNIT IV: PRACTICAL SPECIALISED EXERCISE TRAINING (9 hours)**

1. Flexibility Training
  - Active Stretch
  - Passive Stretch
  - Sports Specific Stretches
  - Stretches with Thera ball
2. Functional Training
3. Plyometric for Power and Agility
4. Sorts Yoga and Water Fitness

### **REFERENCES :**

1. ACSM. (1990). The Recommended Quantity and Quality of Exercise for Developing and Maintaining Cardiorespiratory and Muscular Fitness in Healthy Adults. *Medicine and Science in Sports and Exercise*. 22, 2, 265-274.
2. American College of Sports Medicine (1995). *ACSM's Guidelines for Exercise Testing and Prescription*. 5th ed. Media, PA: Williams & Wilkins.
3. American College of Sports Medicine. (1991). *Guidelines for Exercise Testing and Prescription*. (4th ed.) Philadelphia: Lea & Febiger.
4. American Council On Exercise. (1991). *Personal Trainer Manual*. San Diego: American Council on Exercise.
5. Beashel, Paul & Taylor, John : *Advance Studies in Physical Education and Sports*, Thomas Nelson & Sons Ltd., U.K., 1996.
7. Brown M.C. & Sommer B.K. – *Movement Education- Its Evaluation and Modern Approach*, Adchison, wesely publication, London, 1978.
8. Crouch James E. – *Essential Human Anatomy A Text* – Lea & Febriger , Philladelphia, 1980.
10. Desai V., Sequeira, T. – *Aids Prevention Education Programme : Workbook For Teachers in Secondary Schools of Mumbai*, B.M.C. Public Health Dept., Mumbai, 2001.
11. Dr. Uppal A.K. & Dr. Gautam G.P. : *Physical Education and Health*, India, 2000.

13. Hay, James G & Reid J.G. – Anatomical and Mechanical Basis of Human Motion, Prentice hall, New Jersey, 1985.
14. Horne, John, Tomlinson D : Understanding Sports: An Introduction to the Sociological & Cultural Analysis of Sports, E & FN spon, London, 1999.
15. Jenson C.R. & Schultzer G.W. – Applied Kinesiology and Biomechanics, Mc Grow hill book Co. New York, 1984,
16. Lock Hurt and others – Anatomy of the human body, Feber & Feber Oxford University, 1975
17. Murgesh N. – Anatomy, Physiology and Health Education, Sathya, Chinnalapatti, 1990.
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19. Rasch & Bruke – Kinesiology and applied Anatomy, Lea Febriger, Philladelphia, 1978.
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21. Dr. Sathe. V., Principles of Anatomy, Physiology and Clinical Basis of Disease (International Edition), Narmada Prakashan, Nagpur., 1998.
22. Shaw, Dhananjay – Biomechanics and Kinesiology of Human Motion, Khel Sahitya Kendra, Delhi, 1998
23. Sidentop, Daryl – Introduction to Physical Education and Sports, 2nd Ed., Mayfield publishing Co., London, 1994.
24. Wells & Luttgens – Kinesiology – Scientific Bases of Human Motion – 6th Ed.,
25. Saunderdas College. , Philladaphia, 1976
26. ysdkoGs] Ogh-,y- & 'kjhj 'kkL=& jpuk o dk;Z] ck'khZ] 1994-
27. tks'kh] fot;k & O;k;kekps 'kjhj dzh;k 'kkL=] vfer cznlZ] ukxiwj] 1995-
28. ok[[kkjdj]fn-xks- & 'kjhj foKku o vkjksX; 'kkL=] dzhMkra=] iq.ks] 1992
29. oekZ] ds-ds- & 'kjhj jpuk rFkk 'kjhj dzh;k foKku] izdk'k cznlZ] yq/kh;kukj]1983
30. lkBs] foosd & xfr'kkL= vkSj LokLFk f'k{kk] ueZnk izdk'ku] ukxiwj] 1995-
31. lkBs] foosd & xfr'kkL= vkf.k vkjksX; f'k{k.k] ueZnk izdk'ku] ukxiwj] 1995-
32. lkBs] foosd & 'kjhj jpuk o dk;Z] ueZnk izdk'ku] ukxiwj] 1995
33. MkW- lkBs foosd] 'kjhj jpuk] fdz;k o R;k;j vk/kkjhr jksx] ueZnk izdk'ku] ukxiwj] 1998
34. JhokLro] vHk;dqekj & 'kjhj O;k;ke dzh;kRed foKku ,oa fpdhRlk] lq;ksx] vejkorh] 1994-
- 35.
36. fgysZdj] Jh-iw- & ekuo 'kjhj jpuk ,oa dzh;k foKku] Jh guqeku O;k;ke izlkjd eaMG] vejkorh-
37. xqlr] eatw] xqlr] egs'kpanz (vuqoknd)& 'kkjhj vkSj 'kjhjdzh;k foKku] vkWDIQMZ ;qfuOgflVh izsl] fnYyh]1980-

## **COURSE – III**

### **PRINCIPLES AND THEORY OF PERSONAL FITNESS TRAINING**

#### **UNIT I: HEALTH APPRAISAL AND FITNESS TESTING (9 hours)**

1. Health Screening
2. Informed Consent
3. Risk Stratification
4. Documentation and Legal Issue

#### **UNIT II: EXERCISE PRINCIPLES (9 hours)**

1. Components of Exercise Prescription
2. Principles of Cardiorespiratory Endurance Exercise
3. Strength Training Principles
4. Flexibility Training

#### **UNIT III: ADVANCE TRAINING PRINCIPLES AND PROGRAMMING (9 hours)**

1. Basic and Advance Training Principles
2. Learning Your Body Type
3. Periodisation- Basic, Advanced and Competition Training Programming
4. Exercise Prescription and Scheduling
  - Exercise components
  - Strength Training Exercises (upper body and lower body)
  - Scheduling Principles

#### **UNIT IV: PRACTICAL TEST AND MEASUREMENT (9 hours)**

1. Standard Measurements (Height, Weight, Heart Rate and Blood Pressure)
2. Body Composition
3. Cardiorespiratory Endurance Tests (Field tests, Treadmill tests and Step tests)
4. Strength and Muscular Endurance Flexibility Test

#### **REFERENCES :**

- 1 ACSM. (1990). The Recommended Quantity and Quality of Exercise for Developing and Maintaining Cardiorespiratory and Muscular Fitness in Healthy Adults. *Medicine and Science in Sports and Exercise*. 22, 2, 265-274.
- 2 American College of Sports Medicine (1995). *ACSM's Guidelines for Exercise Testing and Prescription*. 5th ed. Media, PA: Williams & Wilkins.
- 3 American College of Sports Medicine. (1991). *Guidelines for Exercise Testing and Prescription*. (4th ed.) Philadelphia: Lea & Febiger.
- 4 American Council On Exercise. (1991). *Personal Trainer Manual*. San Diego: American Council on Exercise.
- 5 Beashel, P., & Taylor, J. (1996). *Advance Studies in Physical Education and*



- Sports*. U.K.: Thomas Nelson and Sons Ltd.
- 6 Bompas, T.O., & Carrera, M.C. (2005). *Periodization Training For Sports*. USA : Human Kinetics.
- 7 Bunn, J.W. (1968). *The Art of Officiating Sports*. New Jersey : Prentice-Hall, Inc; Englewood Cliffs.
- 8 Bunn, J.W. (1972). *Scientific Principles of Coaching*. New Jersey : Prentice-Hall Inc Englewood Cliff.
- 9 Chu, D.A. (1998). *Jumping Into Plyometrics Human Kinetics*. U.S.A : printed
- 10 Davis, K.L. (1996). *The Art of Sports Officiating*. London : Allyn and Bacon Boston ISBN.
- 11 Frank, W. (1999). *Sports Training Principles*. London : A & C Black Publishers Ltd.
- 12 Fuoss, D.E. and Troppmann, R.J. (1981). *Effective Coaching A Psychological Approach*. New York : Macmillan Publishing Co. A division Of Macmillan Inc.
- 13 Galloway, R.W. (1999). *Sports Training (Anatomy and Physiological Aspect)*. Delhi : Sports Publications.
- 14 Gummerson, T. (1992). *Sports Coaching and Teaching*. London : A and C Black Publisher Ltd.
- 15 Harre, D. (1982). *Principles of Sports Training* . Barlin :Sportver lag.
- 16 Bunn, Johan. W. : Art of Officiating Sports, Prentice hall, New Jersey, 1968
- 17 Bunn. W. : Scientific Principles of Coaching, Prentice Hall, New Jersey, 1972.
- 18 Davis, K.L. : The Art of Sport Officiating, Boston, Allyn and Bacon, 1996.
- 19 Fuoss, D.E. & Troppmann, R.J. : Effective Coaching, Mac Millan Publication, New York, 1985.
- 20 Govindarajulu, N. & Gupta, Rakesh : Layout & Marking in Track & Field, Friends Publication, New Delhi, 2004.
- 21 Gummaerson, Jony : Sports Coaching and Teaching, A & C Black, London, 1992.
- 22 Mall, Biru & Malhotra, G.P. : Training Manual – Football, SAI, Patiala,2003.
- 23 Sabok, Ralph J. : The coach, W.B. Sunderdas Co., Philadelphia,1979.
- 24 Sharma, O.P. : Teaching and Coaching Physical Education in School, Sports Publication, Delhi, 1994.
- 25 Sharma, P.D. : Officiating and Coaching, A.P. Publishers, Jalandhar.
- 26 Singh, H. & Singh, Tejinder : Training Manual, Hockey, SAI, Patiala,2002
- 27 Soni, V. & Sharma, N. : Training Manual-Cricect, SAI, Patiala,2002.
- 28 Tayler, Joe : How to be an Effective Coach, Manulife, Canada, 1975.
- 29 Two Experienced Professors : Officiating and Coaching, Prakash Brothers, Jalandar 1982,
- 30 Wade, Allen : F.A. Guide to Training and Coaching, Heinmann, London, 1967
- 31 vjksMk] ih-ds- % [ksG lapkyu ,oa izf'k{k.k] izdk'k cznlZ] yqf/k;kuk] 1976-
- 32 lqff{k;k] ,I-ih % fo|ky; iz'kklu ,oa laxBu] fouksn cqdl vkxzkl] 1992 -
- 33 'kkjhfd f'k{k.k vkf.k vkjksX; f'k{kd gLriwflRdk] bZ- 5oh rs 9oh] egkjk"V<sup>a</sup> jkT; ikB; iwflRdk fufeZrh eaMG] iq.ks-
- 34 ikaMs; y{ehdkar % 'kkjhfd f'k{kk ,oa la?kVu iz'kklu 3rd Ed ] izHkkr cqdl Xokyh;jj]1985-

35 iljhtk] ehuw % 'kkjhfd f{k{kk laxBu ,oa iz'kklu] LiksVZI ifCysd'kUI] ubZ fnYyh] 2004-

36 iljhtk] ehuw % 'kkjhfd f{k{kk dh fof/k;ka] LiksVZI~ ifCysds'kUI] ubZ fnYyh] 2004-

## **COURSE – IV**

### **BASIC NUTRITION, WEIGHT MANAGEMENT, SAFETY AND INJURY MANAGEMENT**

#### **UNIT I: BASIC NUTRITION MANAGEMENT (9 hours)**

1. Basic Nutrition
  - Macro Nutrient
  - Micro Nutrient
  - Fluid
2. Nutritional Supplements and Effect on performance
3. Nutrition Management
4. Estimating adequate daily Energy Intake

#### **UNIT II: WEIGHT MANAGEMENT (9 hours)**

1. Weight Related Term
2. Relation of Body Composition to Health
3. Body Fat Distribution Pattern and modifying Body Composition
4. Inappropriate Methods of Weight Loss and Female Athlete Triad

#### **UNIT III: SAFETY AND INJURY PREVENTION (9 hours)**

1. Potential Sources of Risk
2. Safety in The Fitness Centre
  - Creating a safe Environment
  - Equipment
  - Furniture and Fixture
  - Supplies and Small Equipment
3. Proper Documentation
4. Sports Injury
  - Tissue Injury
  - Tissue Reaction to Injury Inflammation and the Healing Process
  - Treatment
  - Follow-Up Treatment
  - Rehabilitation
  - Upper Extremity Condition
  - Lower Extremity Condition
  - Environmental Impact on Injuries

#### **Unit IV: PRACTICAL DIET AND EXERCISE WITH SPECIAL POPULATION (9 hours)**

1. Exercise with Special Population

- Hypertension, Diabetes Mellitus and Arthritis
  - Senior Exercise, Cardiac Rehabilitation and Hyperlipidaemia
  - Youth Exercise, Osteoporosis, Asthma and Obesity
  - Pregnancy (by Trimester) and Orthopaedic Injuries and Disorder
2. Calculation of Daily Calories requirement
  3. Menu Planning
  4. Designing Balance Diet for Sedentary and Sports people

#### REFERENCES :

- 1 Appenzeller, Otto and Atkinson Ruth.(1983). *Sports Medicine :Fitness Training, Injuries*. U.S.A : Urban and Schwarzenberg.
- 2 Bean, A. (2000). *The Complete Guide to Sports Nutrition (3<sup>rd</sup> Ed.)*. London : A & C Black.
- 3 Beashel, P.,& Taylor, J. (1996). *Advance Studies in Physical Education and Sports*. U.K.: Thomas Nelson and Sons Ltd.
- 4 Flink, H., Burgoon. L. & Milksky, A. (2006). *Practical Nutrition*. Boston Jones and Bartlet Publishers.
- 5 Kent, Michael.(1997). *Oxford Dictionary of Sports Science and Medicine*. Delhi : Friends publication.
- 6 Oakey Barry, et.al. (1986).*Sports Injuries*. Allahabad : A.h. Wheeler.
- 7 **Pande, P.K.(1989). *Know How Sports Medicine*. Jalandhar : A.P.Publisher.**
- 8 Pande, P.K., & Gupta, L.G.(1987). *Outline of Sports Medicine*. New Delhi : Jaypee Brother.
- 9 Prentice, Williams E. (1986).*Therapeutic Modalities in Sports Medicine*. New Jersey : Mosbay College Publication.
- 10 Reilly, Thomas.(1981). *Sports fitness and Sports injuries*. London : Fabiger and Fabiger.
- 11 Roy, Steven., & Irvin, Richard.(1983). *Sports Medicine*. New Jersey : Englewood cliffs, Prentice Hall.

#### R\_\_\_\_\_ STRUCTURE OF COURSE WISE INTERNAL ASSESSMENT

Course	Code	Practical	Marks
<b>Course I</b> Anatomy and Physiology of Human Body	PFTP 01	a Practical Exam and Viva-Voce on Unit IV b Project/Assignment	10 10
<b>Course II</b> Principles of Kinesiology and Biomechanics	PFTP 02	a Practical Exam and Viva-Voce on Unit IV b Project/Assignment	10 10
<b>Course III</b> Principles and Theory of Personal Fitness Training	PFTP 03	a Practical Exam and Viva-Voce on Unit IV b Project/Assignment	10 10
<b>Course IV</b> Basic Nutrition, Weight Management, safety and Injury Management	PFTP 04	a Practical Exam and Viva-Voce on Unit IV b Project/Assignment	10 10

## R \_\_\_\_\_ PROCEDURE OF COURSE WISE INTERNAL ASSESSMENT

### **Course I - Anatomy and Physiology of Human Body (20 Marks)**

- a) *Practical Examination and Viva- Voce (Unit IV)* (10 Marks): The Learner will be assessed by two examiners jointly on the basis of performance in practical examination and viva-voce based on Unit IV for 10 Marks.
- b) *Projects/Assignment* (10 Marks): The learner will be given project/assignment on Thera ball Training/Weight Training/Aerobic Cross Training and asked to prepare and submit the report in prescribed format of the same based on which the concern teacher will give marks out of 10.

### **Course II - Principles of Kinesiology and Biomechanics (20 Marks)**

- a) *Practical Examination and Viva- Voce (Unit IV)* (10 Marks): The Learner will be assessed by two examiners jointly on the basis of performance in practical examination and viva-voce based on Unit IV for 10 Marks.
- b) *Projects/Assignment* (10 Marks): The learner will be given project/assignment on Flexibility/Function/Plyometric/Sports Yoga and Water Fitness Training and asked to prepare and submit the report in prescribed format of the same based on which the concern teacher will give marks out of 10.

### **Course III - Principles and Theory of Personal Fitness Training (20 Marks)**

- a) *Practical Examination and Viva- Voce (Unit IV)* (10 Marks): The Learner will be assessed by two examiners jointly on the basis of performance in practical examination and viva-voce based on Unit IV for 10 Marks.
- b) *Projects/Assignment* (10 Marks): The learner will be given project/assignment on Testing Anthropometry/Health related Physical Fitness Variables and asked to prepare and submit the report in prescribed format of the same based on which the concern teacher will give marks out of 10.

### **Course IV - Basic Nutrition, Weight Management, safety and Injury Management (20 Marks)**

- a) *Practical Examination and Viva- Voce (Unit IV)* (10 Marks): The Learner will be assessed by two examiners jointly on the basis of performance in practical examination and viva-voce based on Unit IV for 10 Marks.
  - b) *Projects/Assignment* (10 Marks): The learner will be given project/assignment on Calculation of Daily Calories requirement /Menu Planning/Designing Balance Diet for Sedentary and Sports people and asked to prepare and submit the report in prescribed format of the same based on which the concern teacher will give marks out of 10.
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