

**UNIVERSITY OF MUMBAI**

**No. UG/05 of 2016-17**

**CIRCULAR:-**

The Principals of the affiliated Colleges in Arts and the Heads of recognized Institutions concerned are hereby informed that the recommendation made by Ad-hoc Board of Studies in Physical Education at its meeting held on 5<sup>th</sup> February, 2016 has been accepted by the Academic Council at its meeting held on 11<sup>th</sup> March, 2016 **vide** item No. 4.13 and subsequently approved by the Management Council at its meeting held on 11<sup>th</sup> March, 2016 **vide** item No.7 and that in accordance therewith, in exercise of the powers conferred upon the Management Council under Section 54 (1) and 55 (1) of the Maharashtra Universities Act, 1994 and the Ordinances 6308 and 6309 and Regulations 9016, 9017, 9018, 9019, and 9020 and the syllabus as per the Credit Based Semester and Grading System for the Certificate Course in Personal Fitness Training has been introduced, which is available on the University's web site ([www.mu.ac.in](http://www.mu.ac.in)) and that the same has been brought into force with effect from the academic year 2016-17.

REGISTRAR

MUMBAI – 400 032

12<sup>th</sup> May, 2016

To,

The Principals of the affiliated Colleges in Arts and the Heads of Recognized Institutions concerned.

**A.C/4.13/11.03.2016**

**M.C/07/11.03.2016**

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No. UG/05 -A of 2016

MUMBAI-400 032

12<sup>th</sup> May, 2016

Copy forwarded with Compliments for information to:-

- 1) The Dean, faculty of Arts,
- 2) The Professor-cum-Director, Institute of Distance & Open Learning (IDOL)
- 3) The Director, Board of College and University Development,
- 4) The Co-Ordinator, University Computerization Centre,
- 5) The Controller of Examinations.

REGISTRAR

...P.T.O.

**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, Fitness Sciences and Exercises Sciences.
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 Principles of Exercise Sciences practically applied to 16 Fitness Goals as basis of 8 general categories of Training Techniques.
7. To understand the Biomechanical aspect of Exercise.
8. To study the posture related deformities and corrective exercises.
9. To understand and learn practical aspects in exercise training.
10. To acquire the knowledge pertaining to the legal issues and documentation
11. To study the principles of training related to exercise.
12. To study and learn the anthropometry and fitness related tests.
13. To study the basics of Nutrition, weight management and safety measures.

6308 Title of the Course: Certificate Course in Personal Fitness Training (CCPFT)

6309 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.

R 9016 DURATION OF PROGRAMME:

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

R 9017 INTAKE CAPACITY: Maximum 50 (for one batch)

R 9018 FEES STRUCTURE:

Rs. 24,000/- Course Fees.  
Rs. 1,000/- Examination fee.

9019 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>	--	96	120	08	--	48	80	04

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

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

R 9019 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.

- > 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 9070 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 and Pilates

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. Brown M.C. & Sommer B.K. - *Movement Education- Its Evaluation and Modern Approach*, Adchison, wesely publication, London, 1978.
6. Crouch James E. - *Essential Human Anatomy A Text - Lea & Febriger*, Philladelphia, 1980.
7. Hatfield Frederick C, *Guide to Fitness*, International Sports Science Association, USA, 2006.
8. Hay, James G & Reid J.G. - *Anatomical and Mechanical Basis of Human Motion*, Prentice hall, New Jersey, 1985.
9. Horne, John, Tomlinson D : *Understanding Sports: An Introduction to the Sociological & Cultural Analysis of Sports*, E & FN spon, London, 1999.
10. Jenson C.R. & Schultzer G.W. - *Applied Kinesiology and Biomechanics*, Mc Grow hill book Co. New York, 1984,
11. Lock Hurt and others - *Anatomy of the human body*, Feber & Feber 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. Sidentop, Daryl - *Introduction to Physical Education and Sports*, 2<sup>nd</sup> Ed., Mayfield publishing Co., London, 1994.
15. लेकावळे, व्ही.एल. - *शरीर शास्त्र- रचना व कार्य*, बार्शी, १९९४
16. जोशी, विजया - *व्यायामाचे शरीर क्रीया शास्त्र*, अमित ब्रदर्स, नागपूर, १९९५
17. वर्मा, के.के. - *शरीर रचना तथा शरीर क्रीया विज्ञान*, प्रकाश ब्रदर्स, लुधीयाना, १९८३
18. साठे, विवेक - *गतिशास्त्र और स्वास्थ्य शिक्षा*, नर्मदा प्रकाशन, नागपूर, १९९५.
19. श्रीवास्तव, अभयकुमार - *शरीर व्यायाम क्रीयात्मक विज्ञान एवं चिकीत्सा*, सुयोग, अमरावती, १९९४.
20. हिलेकर, श्री.पू. - *मानव शरीर रचना एवं क्रीया विज्ञान*, श्री हनुमान व्यायाम प्रसारक मंडळ, अमरावती.

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)
  - Contraction- Relaxation
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 and Pilates
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. Brown M.C. & Sommer B.K. – Movement Education- Its Evaluation and Modern Approach, Adchison, wesely publication, London, 1978.
6. Hatfield Frederick C. (2006). Guide to Fitness, International Sports Science Association, USA.
7. Jenson C.R. & Schultzer G.W. – Applied Kinesiology and Biomechanics, Mc Grow hill book Co. New York, 1984,
8. Rasch, Philip J. – Kinesiology and Applied Anatomy, Lea Febriger, Philladelphia, 1989.
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10. साठे, विवेक – गतिशास्त्र और स्वास्थ्य शिक्षा, नर्मदा प्रकाशन, नागपूर, १९९५.
11. साठे, विवेक – गतिशास्त्र आणि आरोग्य शिक्षण, नर्मदा प्रकाशन, नागपूर, १९९५.
12. हिलेकर, श्री.पू. – मानव शरीर रचना एवं क्रीया विज्ञान, श्री हनुमान व्यायाम प्रसारक मंडळ, अमरावती.

### 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.
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9. Frank, W. (1999). *Sports Training Principles*. London : A & C Black Publishers Ltd.
10. Fuoss, D.E. & Troppmann, R.J. : *Effective Coaching*, Mac Millan Publication, New York, 1985.
11. Hatfield Frederick,C (2006). *Guide to Fitness*, International Sports Science Association, USA,.
12. Wade, Allen : F.A. *Guide to Training and Coaching*, Heinmann, London, 1967

**COURSE – IV**

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

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

1. Basic Nutrition
  - Macro Nutrient
  - Micro Nutrient
  - Fluid
2. Nutritional Supplements and Effect on performance

- 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 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.
- Appenzeller, Otto and Atkinson Ruth.(1983). *Sports Medicine :Fitness Training, Injuries*. U.S.A : Urban and Schwarzenberg.
- 6 Bean, A. (2000). *The Complete Guide to Sports Nutrition (3rd Ed.)*. London : A & C Black.
- 7 Flink, H., Burgoon. L. & Milksky, A. (2006). *Practical Nutrition*. Boston Jones and Bartlett Publishers.
- 8 Kent, Michael.(1997). *Oxford Dictionary of Sports Science and Medicine*. Delhi : Friends publication.
- 9 Hatfield Frederick, C. (2006). *Guide to Fitness, International Sports Science Association, USA.*
- 10 Oakey Barry, et.al. (1986).*Sports Injuries*. Allahabad : A.h. Wheeler.
- 11 Pande, P.K.(1989). *Know How Sports Medicine*. Jalandhar : A.P.Publisher.
- 12 Pande, P.K., & Gupta, L.G.(1987). *Outline of Sports Medicine*. New Delhi : Jaypee Brother.
- 13 Prentice, Williams E. (1986).*Therapeutic Modalities in Sports Medicine*. New Jersey : Mosby College Publication.
- 14 Reilly, Thomas.(1981). *Sports fitness and Sports injuries*. London : Fabiger and Fabiger.
- 15 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)

- 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.
- 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.