ਗੁਰੂ ਨਾਨਕ ਦੇਵ ਯੂਨੀਵਰਸਿਟੀ, ਅੰਮ੍ਰਿਤਸਰ
(ਇਕੱਤਰਤਾਵਾਂ ਸ਼ਾਖਾ)

(Established by State Legislature Act No. 21 of 1969 and Accredited at "A" grade level by NAAC and awarded "University with Potential for Excellence" status by UGC)

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ਨੰ.: 526 – 31 / ਐਮ
ਮਿਤੀ: 09-02-2016

ਮੁਖੀ,
ਸਪੋਰਟਸ ਮੈਡੀਸਨ ਐਂਡ ਫਿਜ਼ਿਓਥਰੈਪੀ,
ਗੁਰੂ ਨਾਨਕ ਦੇਵ ਯੂਨੀਵਰਸਿਟੀ,
ਅੰਮ੍ਰਿਤਸਰ ।

ਵਿਸ਼ਾ: ਸੈਸ਼ਨ 2015-16 ਤੋਂ ID Course in Physiotherapy ਅਤੇ Master in Physiotherapy (Sports) (CBCEGS) ਸਮੈਸਟਰ ਦੂਜਾ ਅਤੇ ਚੌਥਾ ਦੇ ਪੇਪਰ ਕੋਡ ਦੀ ਤਬਦੀਲੀ ਕਰਨ ਸਬੰਧੀ ।

ਸ਼੍ਰੀਮਾਨ ਜੀ,

ਸੂਚਿਤ ਕੀਤਾ ਜਾਂਦਾ ਹੈ ਕਿ ਸਮੱਰਥ ਅਧਿਕਾਰੀਆਂ ਦੇ ਹੋਏ ਆਦੇਸ਼ਾਂ ਅਨੁਸਾਰ ਸੈਸ਼ਨ 2015-16 ਤੋਂ ID Course in Physiotherapy ਅਤੇ Master in Physiotherapy (Sports) (CBCEGS) ਸਮੈਸਟਰ ਦੂਜਾ ਅਤੇ ਚੌਥਾ ਦੇ ਪੇਪਰਾਂ ਦੇ ਕੋਡ ਨਾਲ ਨੱਥੀ ਅਨੁਸਾਰ ਬਦਲ ਦਿੱਤੇ ਗਏ ਹਨ ਅਤੇ ਇਸ ਸੋਧ ਨੂੰ ਯੂਨੀਵਰਸਿਟੀ ਵੈਬਸਾਇਟ ਤੇ ਵੀ ਅੱਪਲੋਡ ਕਰ ਦਿੱਤਾ ਗਿਆ ਹੈ ਜੀ ।

9.2.16
ਉਪ-ਰਜਿਸਟਰਾਰ (ਇਕੱਤਰਤਾਵਾਂ)
ਵਾਸਤੇ ਰਜਿਸਟਰਾਰ

ਉਪਰੋਕਤ ਦਾ ਉਤਾਰਾ ਹੇਠ ਲਿਖਿਆ ਨੂੰ ਜਾਣਕਾਰੀ ਲਈ ਭੇਜਿਆ ਜਾਂਦਾ ਹੈ ਜੀ:-

1. ਪ੍ਰੋਫੈਸਰ ਇੰਚਾਰਜ (ਪ੍ਰੀਖਿਆਵਾਂ)
2. ਉਪ-ਰਜਿਸਟਰਾਰ (ਕਾਰਜ ਸੰਚਾਲਨ)
3. ਸਿਸਟਮ ਮੈਨੇਜਰ (ਕੰਪਿਊਟਰ ਸੈਕਸ਼ਨ ਕੰਟਰੋਲਰ ਦਫਤਰ)
4. ਸਹਾਇਕ ਰਜਿਸਟਰਾਰ (ਪ੍ਰੀਖਿਆ ਸ਼ਾਖਾ - III)
5. ਕੰਪਿਊਟਰ ਸੈਕਸ਼ਨ AM-III (ਇਕੱਤਰਤਾਵਾਂ ਸ਼ਾਖਾ)

8.2.16

9/02/2016

INTERDISCIPLINARY COURSE

PHYSIOTHERAPY

MPS–051: PHYSIOLOGY OF EXERCISE AND NUTRITION

Credits: 3-0-0

UNIT–I

Nutrition: Carbohydrates, Fats, Proteins, Vitamins, Minerals and Water, Nutrition for Physical Performance, Energy transfer in Body, Fatigue.

UNIT–II

Effect of Exercise in Cardio Vascular System, Effect of Exercise on Respiratory System.

UNIT–III

Effect of Exercise in Musculo Skelton System. Effect of Exercise in Digestive System.

References:

1. Mc Ardle, Katch, Katch: Exercise Physiology Edition IV.
2. Era Volinski: Nutrition and Exercise in Sports –CRC Press, New York.
3. George A. Brooks, Thomas D. Fahey: Exercise Physiology – Human Bioenergetics and its Applications 1984, John Wiley & Sons, New York.
4. Astrand & Rodahl: Text Book of Work Physiology, McGraw Hill.
5. Fox and Mathews – The Physiological Basis of Physical Education and Athletics – Holt Sounders.
6. Erston and Reilly – Kinanthropometry and Exercise Physiology Laboratory Manual Tests, Procesdures and Data – F & FN Spon Madras.
7. Rowland – Developmental Exercise Physiology – Human Kinetics.
8. Clarke – Exercise Physiology – Prentice Hall.
9. S. Koley – Exercise Physiology: A Basic Approach – Friends Publications.

INTERDISCIPLINARY COURSE

PHYSIOTHERAPY

MPS–052: ASSESSMENT AND MANAGEMENT IN PHYSIOTHERAPY

Credits Hours: 3

UNIT–I

1. Importance of assessment & management of injuries, Methods of assessment & management.
2. Evaluation of Physical Fitness.
3. Musculoskeletal screening.

UNIT–II

1. Assessment of injuries of lower limb complex: Pelvis, hip, thigh, knee, leg, ankle, foot and their management.
2. Assessment of injuries of upper limb complex: Shoulder girdle, shoulder, arm, elbow, forearm, wrist, hand and their management.

UNIT–III

1. Assessment of injuries of spinal column: Cervical, thoracic and lumboscaral and their management.

References:

1. Norkin & White: Measurement of Joint Motion – A Guide to Goniometry - F.A. Davis.
2. Dvir: Isokinetics: Muscle Testing, Interpretation and Clinical Applications, W.B. Saunders.
3. Reed: Sports Injuries – Assessment and Rehabilitation, W.B. Saunders.
4. Lillegard, Butcher & Rucker: Handbook of Sports Medicine: A symptom – Oriented Approach, Butterworth & Heinemann
5. Baker: The Hughston Clinic Sports Medicine Book, Williams & Wilkins.

(IV)

MASTER IN PHYSIOTHERAPY (SPORTS) (SEMESTER SYSTEM)
(Under Credit Based Continuous Evaluation Grading System)

* The credits earned by a candidate in practical and dissertation during different semesters will be evaluated at the end of the 4th semester and the grade will be determined accordingly.

* A candidate shall be required to maintain minimum of 5.62 SGPA at the end of each semester. A student getting 'C' or lower grade in any course in this discipline will be treated as having failed in that course and shall have to repeat the core/elective courses/or repeat/opt. another course in lieu of interdisciplinary/outside department course with approval of Board of Control, and will have to obtain at least 'C+' grade in that course within specified period as per the prevailing rules. The weights of 'C' and lower Grades will not be counted in SGPA or CGPA (according to syndicate proceeding, dated: 24.5.2010, Para No. 34).

** Interdisciplinary/Optional Course: to be offered from outside the department.

Semester – II:

Course No.	C/E/I/A	Course Title	L	T	P	Total Credits
Core Courses						
MPS551	C	Applied Para Clinical Sciences	4	–	–	4
MPS552	C	Biomechanics	4	–	–	4
MPS553	C	Physiotherapy Methods	4	–	–	4
MPS554	C	Sports Traumatology	4	–	–	4
Audit Courses						
MPP561	A	Clinical Training–II	–	–	6	6
MPD562	A	Dissertation	–	–	8	8
Elective Course (2 Credits)						
	E	Elective Course	2	–	–	2

* List of Elective Courses

Sr. No.	*Course Code*	*Course Title*
1.	MPS690	Evidence Based Practice in Allied Health Sciences
2.	MPS691	Women Health and Exercise

MASTER DEGREE IN SPORTS PHYSIOTHERAPY (SEMESTER SYSTEM)
(Under Credit Based Continuous Evaluation Grading System)

Semester – III:

Course No.	C/E/I/A	Course Title	L	T	P	Total Credits
Core Course						
MPS601	C	Sports Physiotherapy Methods	4	–	–	4
MPS602	C	Kinanthropometry	4	–	–	4
MPS603	C	Exercise Physiology & Nutrition	4	–	–	4
MPS604	C	Non–Traumatic Medical Conditions of Athletes	4	–	–	4
Audit Courses						
MPP611	A	Clinical Training III	–	–	6	6
MPD612	A	Dissertation	–	–	8	8
Interdisciplinary/Optional Course (2 Credits)						
	I	Interdisciplinary/Optional Course	2	–	–	2

Semester – IV:

Course No.	C/E/I/A	Course Title	L	T	P	Total Credits
Core Courses						
MPS651	C	Sports Psychology	4	–	–	4
MPS652	C	Applied Exercise Physiology	4	–	–	4
MPS653	C	Medical Aspects of Sports Medicine	4	–	–	4
MPS654	C	Current Concepts in Sports Medicine	4	–	–	4
MPS661	C	Clinical Training (including clinical training in previous semesters)	–	–	24	24
MPS662	C	Dissertation (including Research Work done in previous semesters)	–	–	24	24

MASTER IN PHYSIOTHERAPY (SPORTS) (SEMESTER–II)
(Under Credit Based Continuous Evaluation Grading System)

MPS551: Applied Para Clinical Sciences

L	T	P
4	0	0

UNIT – 1

Pathology:

1. Inflammation and repair
2. "Failed" healing responses
3. Regional considerations of Inflammation & repair of soft tissue injuries.

UNIT – II

Pharmacology:

1. Principles of drug action.
2. Basic pharmacokinetics and Pharmacodynamics.
3. The use of drugs in various musculoskeletal disorders.

UNIT – III

Radiology:

1. Basics of radiology including ultrasonography CT & MRI scanning
2. Imaging of the head and neck.
3. Imaging of spine.
4. Imaging of pelvis, hip and thigh.
5. Imaging of Patello Femoral Joint & Knee joint.
6. Imaging of the lower leg, foot and ankle.

References:

1. The Pharmacological basis of Therapeutics – Goodman and Gilman – MacMillan.
2. Pharmacology and Pharmacotherapeutics – Satoskar & Bhandarkar – Popular Publications – Bombay.
3. Davidsons – Principles and Practice of Medicine– Edward – Churchill Livingstone.
4. Systems of Orthopedics – Apleys – Butterworth Heinmann.
5. Outline of Orthopedics – Adams – Churchill Livingstone.
6. Outline of Fractures – Adams – Churchill Livingstone.
7. Tureks – Orthopedics – Weinsteil & Buckwalter – Lippincott Publications.
8. Text Book of Radiology – Sutton D. – Churchill Livingstone.

MASTER IN PHYSIOTHERAPY (SPORTS) (SEMESTER–II)
(Under Credit Based Continuous Evaluation Grading System)

MPS552: Biomechanics

L	T	P
4	0	0

UNIT – I

1. Nature and importance of Biomechanics in Sports Physiotherapy.
2. Principle of Biomechanics.
3. Introduction to biomechanical analysis. Recruitment & techniques – Isokinetic dynamometer, kinesiological EMG, electronic goniometer, force platform, videography.

UNIT – II

1. Biomechanics of shoulder and shoulder girdle motion, elbow motion, wrist and hand motion.
2. Biomechanics of pelvic motion, hip motion, knee motion, ankle & foot motion
3. Biomechanics of spinal motion.

UNIT – III

1. Gait analysis
2. Biomechanics of rowing, throwing, swimming, jumping and landing, running and other sports.

References:

1. James G. Hay – The Biomechanics of Sports Techniques, Prentice Hall.
2. Brunnstrom – Clinical Kinesiology, F.A. Davis.
3. Luttgens K., Hamilton N.: Kinesiology – Scientific Basis of Human Motion 9th Edi, 1997, Brown & Benchmark.
4. Kreighbaum E., Barthels K.: Biomechanics – A Qualitative approach for studying Human Motion, 2nd edi. 1985, MacMillan.
5. Rasch and Burk: Kinesiology and Applied Anatomy, Lee and Fabiger.
6. White and Punjabi – Biomechanics of Spine – Lippincott.
7. Norkin & Levangie: Joint Structure and Function – A Comprehensive Analysis – F.A. Davis.
8. Kapandji: Physiology of Joints Vol. I, II & III, W.B. Saunders.
9. Northrip et al: Analysis of Sports Motion: Anatomic and Biomechanics perspectives, W.C. Brown Co., IOWA.
10. Leveac B.F.: Basic Biomechanics in Sports and Orthopedic Therapy, C.V. Mosby.
11. De Boer & Groot: Biomechanics of Sports, CRL Press, Florida.
12. Basmajian – Muscle alive – Williams & Wilkins.
13. Nordin & Frankel – Basic Biomechanics of Muscular Skeletal Systm – Williams & Wilkins.
14. Bartlet – Introduction to Sports biomechanics – F & FN Spon Madras.

MASTER IN PHYSIOTHERAPY (SPORTS) (SEMESTER–II)
(Under Credit Based Continuous Evaluation Grading System)

MPS553: Physiotherapy Methods

L	T	P
4	0	0

UNIT – I ***Rehabilitation and Therapeutic Exercises***

1. Define Rehabilitation, Goals and Objectives of Rehabilitation in Sports, Clinical Evaluation phases of rehabilitation. (multidisciplinary approach)
2. Prehabilitation
3. Modern concepts in rehabilitation.
4. Definition, details of effects and uses of therapeutic exercises.
   a. Dynamic Exercises
   b. Plyometric Exercises
   c. Isokinetic Exercises
   d. Manipulative Techniques
   e. Kinetic chain exercises

UNIT – II ***Mobilization and Strengthening Techniques***

1. Factors affecting the joint range of motion prevention of stiffness, methods of joint mobilization.
   a. Testing for tightness and contracture of soft–tissue structures.
   b. Techniques of mobilizing the various joints of the body.
2. Types of Muscle Contractions and Muscle work, Strength of Muscle Contraction in terms of Motor units, Group action of muscles and its implication in designing an exercise program.
   a. Causes of muscle weakness. Prevention of disuse atrophy, Principles of treatment to increase muscle strength and function.
   b. Techniques of strengthening with respect to regional consideration.
   c. Various methods of progressive resisted exercise.
   d. Aquatic therapy in sports.

UNIT – III

1. Neuromuscular Training: Neuromuscular control, methods for improving neuromuscular control, proprioception and Kinesthetic sensation following different sport injuries.
2. Principles and application of neuromuscular facilitation techniques including PNF in sports.
3. Health club & fitness: Concept, group therapy
4. Physical Therapy and law: Medico legal aspects of physiotherapy, liability, negligence, malpractice, licensure, work man compensation
5. Morale and Ethics: Ethical Analysis of moral problem, ethical issues in physiotherapy

Practicals:

1. The students will undergo clinical training in the Health Centre on various apparatus of physical medicine. This training will constitute major part of the practical examination.
2. Clinical attachments in Physiotherapy wing of NSNIS, Patiala & JN Stadium, New Delhi and other centers of Sports Authority of India.

References:

1. Sinha A.G.: Principle and Practices of Therapeutic Massage – Jaypee Brothers, New Delhi
2. Gardiner M. Dena: The Principles of Exercise Therapy – CBS Publishers, Delhi.
3. Kisner and Colby: Therapeutic Exercises – Foundations and Techniques, F.A. Davis.
4. Basmajian John V.: Therapeutic Exercise, Williams & Wilkins.
5. Thomson et al – Tidy's Physiotherapy: Butterworth – Heinmann.
6. Wood & Baker: Beard's Massage, W.B. Saunders.
7. Kendall: Muscles – Testing and Function – Williams & Wilkins
8. Daniels and Worthinghams: Muscle Testing – Techniques of Manual Examination, W.B. Saunders.
9. First Aid to Injured: St. John's Ambulance Association.
10. William E. Prentice: Rehabilitation Techniques – Mosby.
11. Werner Kuprian: Physical Therapy for Sports, W.B. Saunders.
12. Norkin & White: Measurement of Joint Motion – A Guide to Goniometry – F.A. Davis.
13. Andrea Bates and Norm Hanson: Aquatic Exercise Therapy, W.B. Saunders.
14. Dvir: Isokinetics: Muscle Testing, Interpretation and Clinical Applications, W.B. Saunders.
15. Hartley: Practical Joint Assessment, A Sports Medicine Manual, upper and lower quadrants, C.V. Mosby.
16. Kennedy: Mosby's Sports Therapy Taping Guide.
17. Malone: Orthopeadic and Sports Physical Therapy, C.V. Mosby.
18. Albert: Eccentric Muscle Training in Sports and Orthopeadics, W.B. Saunders.
19. Voss et al – Proprioceptive Neuromuscular Facilitation – Patterns & Techniques – Williams & Wilkins.

MASTER IN PHYSIOTHERAPY (SPORTS) (SEMESTER–II)
(Under Credit Based Continuous Evaluation Grading System)

MPS554: Sports Traumatology

L	T	P
4	0	0

UNIT – I

1. Pre–participation examination
2. Causes & Mechanism of Sports Injuries, prevention of sports injuries
3. Common acute and overuse injuries of:
   a. Shoulder girdle, Shoulder, Arm, Elbow, Forearm, Wrist & hand
   b. Pelvis, hip, thigh, knee, leg, ankle & foot
   c. Spine
   d. Head

UNIT – II

1. Sporting emergencies & first aid
2. Cardio pulmonary Resuscitation; Shock management, Internal and External bleeding, Splinting, Stretcher use–Handling and transfer, Management of Cardiac arrest, Acute asthma, epilepsy, drowning, burn, Medical management of mass participation. Heat stroke and Heat illness.

UNIT – III

Sports specific injuries, with special emphasis on the specific risk factor, nature of sports, kind of medical intervention anticipated and prevention with respect to individual sports

a. Individual events: Field & Track
b. Team events: Hockey, Cricket, Football
c. Contact and Non–contact sports
d. Water sports

Clinical Training

1. Students will undergo Field Training with Sportsmen of the University.
2. They will attend Sports medicine clinic in the Health Centre.
3. Field Training at National Institute of Sports at Patiala & JN Stadium, New Delhi and other centers of Sports Authority of India.
4. The students will accompany sports teams for National sporting competitions.
5. No student will refuse clinical attachment even during the vacations.

References:

1. Morris B. Mellion: Office Sports Medicine, Hanley & Belfus.
2. Richard B. Birrer: Sports Medicine for the primary care Physician, CRC Press.
3. Torg, Welsh & Shephard: Current Therapy in Sports Medicine III – Mosby.
4. Zulunga et al: Sports Physiotherapy, W.B. Saunders.
5. Brukner and Khan: Clinical Sports Medicine, McGraw Hill.
6. Reed: Sports Injuries – Assessment and Rehabilitation, W.B. Saunders.
7. Gould: Orthopaedic Sports Physical Therapy, Mosby.
8. C. Norris: Sports Injuries – Diagnosis and Management for Physiotherapists, Heinmann.
9. D. Kulund: The Injured Athlete, Lippincott.
10. Nicholas Hershman: Vol. I The Upper Extremity in Sports Medicine.
    Vol. II The Lower Extremity and Spine in Sports Medicine.
    Vol. III The Lower Extremity and Spine in Sports Medicine.
    Mosby.
11. Lee & Dress: Orthopaedic Sports Medicine – W.B Saunders.
12. K. Park: Preventive and Social Medicine – Banarsi Dass Bhanot – Jabalpur..
13. Fu and Stone: Sports Injuries: Mechanism, Prevention and Treatment, Williams and Wilkins.
14. Scuderi, McCann, Bruno: Sports Medicine – Principles of Primary Care, Mosby.
15. Lars Peterson and Per Renstron: Sports Injuries – Their prevention and treatment, Dunitz.

MASTER IN PHYSIOTHERAPY (SPORTS) (SEMESTER–II)
(Under Credit Based Continuous Evaluation Grading System)

MPS690: Evidence Based Practice in Allied Health Sciences (Elective)

L	T	P
2	0	0

UNIT – I

1. Introduction to evidence– based complementary medicine
2. Evidence–based health care
3 .Evidence–based practices
4. Evidence–based decision making and management

UNIT – II

1. Types of evidence
   a. Definition of evidence
   b. Forms of evidence
   c. Randomized controlled trials
   d. Case–control studies
   e. Cohort studies

UNIT – III

1. Applying the evidence
   a. Pathways, guidelines and protocols
   b. Future directions for clinical effectiveness
2. Evaluation of effectiveness and efficiency of the process

References:

1. Martin Dawes, Philip Davies, and Alistair Gray, Evidence–Based Practice: A Primer for Health Care Professionals. Elsevier Publication.
2. Albert R. Roberts and Kenneth R. Yeager, Evidence–Based Practice Manual: Research and Outcome Measures in Health and Human Services, Oxford University Press.
3. Allen Rubin, Practitioner's Guide to Using Research for Evidence–Based Practice. John Willey & Sons Publication.
4. Domhnall MacAuleyThomas M Best, Evidence–based Sports Medicine. BMJ Books.
5. Kathryn Refshauge and Elizabeth Gass, Musculoskeletal Physiotherapy: Its Clinical Science and Evidence–Based Practice. Churchill Livingstone.
6. Allen Rubin, Statistics for Evidence–Based Practice and Evaluation. Cengage learning.
7. Bernadette Melnyk, Ellen Fineout–Overholt, Evidence–Based Practice in Nursing and Healthcare: A Guide to Best Practice, Lippincott Williams & Wilkins.

MASTER IN PHYSIOTHERAPY (SPORTS) (SEMESTER–II)
(Under Credit Based Continuous Evaluation Grading System)

MPS691: Women Health and Exercise (Elective)

L	T	P
2	0	0

UNIT – I

1. Gender difference in muscle morphology
2. Diagnosis and Treatment of Urinary Incontinence and Prolapse
3. Anemia

UNIT – II

1. Hypertension in Women
2. Bone health: assessment and treatment of osteopenia and osteoporosis
3. Evaluation and Treatment of Common Musculoskeletal Complaints

UNIT – III

1. Exercise for the childbearing year
2. Exercise for adolescence
3. Exercise for the older woman

References:

1. Nadya Swedan (2001): Women's Sports Medicine and Rehabilitation. An Aspen Publication.
2. Mary Lloyd Ireland & Aurelia Nattiv (2002): The Female Athlete. Saunders Publication.
3. Cardozo L and Staskin D (2006): Textbook of Female Urology and Urogynaecology (2nd edn). London: Isis Medical Media Ltd.
4. Mantle J, Haslam J and Barton S (2004): Physiotherapy in Obstetrics and Gynaecology. (2nd Ed.) London: Butterworth–Heinemann.
5. Sapsford R, Markwell S and Bullock–Saxton J (1998): Women's Health: A Textbook for Physiotherapists. London: WB Saunders Company Ltd.
6. Bo, K., Berghmans, L.C.M., Van Kampen, M., Morkved, S. (2007). Evidence–Based Physical Therapy for the Pelvic Floor: Bridging Science and Clinical Practice. London: Churchill Livingstone.

MASTER DEGREE IN SPORTS PHYSIOTHERAPY (SEMESTER–IV)
(Under Credit Based Continuous Evaluation Grading System)

MPS651: Sports Psychology

L	T	P
4	0	0

UNIT – I

1. ***History and current status of Sports Psychology.***

2. ***Personality Assessment and Sports Personality:***
   a. Theories of personality
   b. Personality assessment

3. ***Attention and Perception in Sports:***
   a. Attention
   b. Perception

4. ***Concentration Training in Sports:***
   a. Basic principles of concentration
   b. Concentration training
   c. Concentration awareness exercises

5. ***Motivational Orientation in Sports:***
   a. Athlete's needs of motivation
   b. Motivational inhibitors
   c. Motivational techniques

UNIT – II

1. ***Pre–competitive Anxiety:***
   a. Source of PCA
   b. Effect of PCA on performance

2. ***Relaxation Training:***
   a. Definition
   b. Types of relaxation trainings
      i) Progressive muscle relaxation
      ii) Breathing exercises
      iii) Yognidra
      iv) Transcendental meditation

3. ***Aggression in Sports:***
   a. Theories of aggression
   b. Management of aggression

4. ***Role of Psychology in Dealing with Injuries.***

5. ***Eating Disorders:***
   a. Etiology of eating disorders
   b. Types of eating disorders
   c. Complications of eating disorders

6. **Goal setting.**

UNIT – III

1. Psychological aspect of doping
2. Psychological preparation of elite athletes
   a. Concept of psychological preparation
3. Biofeedback training
4. Mental imagery
5. Stress management
   a. Principles of Stress Management
   b. Stress Management techniques
6. **Group Behaviour and Leadership:**
   a. Nature of group behaviour and group.
   b. Types of group.
   c. Educational implication of group behaviour.
   d. Meaning of leadership, types of leadership quality of leadership, training and functioning of leadership.
7. **Emotion:**
   a. Meaning of emotion.
   b. Characteristics of emotion.
   c. Meaning of controlling and training of emotions and its importance.
   d. Contribution of sports to emotional health.
   e. Meaning of sentiment, its type, importance and formation.

Practicals:

1. Students will undergo practical training at Sports Psychology Lab at GNDU Campus, Amritsar.
2. Sports Psychology Lab. at National Institute of Sports, Patiala and JN Stadium, New Delhi of Sports Authority of India.

References:

1. Morgan and King: Introduction to Psychology – Tata McGraw Hill.
2. Suinn: Psychology in Sports: Methods and Applications, Surjeet Publications.
3. Grafiti: Psychology in Contemporary Sports, Prentice Hall.
4. Basmajian: Biofeedback.
5. Sanjiv P. Sahni: Handbook of Sports Psychology – A Comprehensive Manual of Mental Training.

MASTER DEGREE IN SPORTS PHYSIOTHERAPY (SEMESTER–IV)
(Under Credit Based Continuous Evaluation Grading System)

MPS652: Applied Exercise Physiology

L	T	P
4	0	0

UNIT – I

1. ***Body Composition***

a. Composition of Human Body.
b. Somatotyping.
c. Techniques of Body Composition Analysis.

2. ***Aging and Exercise***

a. Aging and Physiological function.
b. Exercise and Longevity.
c. Coronary Heart Disease and Exercise.
d. Exercise Stress Testing for Diagnosis of CHD.
e. Exercise prescription for healthy aged.
f. Exercise prescription for sedentary adults.
g. Cost and benefits of exercise prescription in Osteoporosis.

UNIT – II

1. ***Temperature Regulation***

a. Heat Balance.
b. Methods of Assessing Heat Balance.
c. Effects of Climate.
d. Effects of Exercise on Temperature Regulation.
e. Limit of Tolerance of Heat.
f. Acclimatisation.
g. Avoidance in Heat illness during exercise.
h. Exercises in cold.

2. ***Misc. Topics***

a. High Altitude Training.
b. Sports Diving, Hazards of underwater environment.
c. Special Aids to Athletic Performance:– MORA, Oxygen Inhalation, Sleep.
d. Sex and performance.
e. Assessment of Age.
f. Muscle tissue fibre typing and its significance.
g. Exercise for mood enhancement & anxiety.

UNIT – III

Physiological Basis and Principles of Training and Conditioning

a. Principles of endurance and strength training
   i. Recovery training intensities in heart rate
   ii. Manipulation of training principles
   iii. Training sub–phases

b. Fundamentals that aid training and performance
   i. Warm up and Cool down
   ii. Flexibility and stretching
   iii. Missing workouts
   iv. Overtraining

c. Analysis of Training

Practicals:
Students will undergo laboratory and on field training in exercise physiology.

References:

1. Mc Ardle, Katch, Katch: Exercise Physiology Edition IV.
2. Era Volinski: Nutrition and exercise in Sports – CRC Press, New York.
3. George A. Brooks, Thomas D. Fahey: Exercise Physiology – Human Bioenergetics and its applications 1984, John Wiley & Sons, New York.
4. Astrand & Rodahl: Text Book of Work Physiology, McGraw Hill.
5. Fox and Mathews – The Physiological Basis of Physical Education and Athletics – Holt Saunders.
6. Erston and Reilly – Kinanthropometry and Exercise Physiology Laboratory Manual Tests, Procedures and Data – F & FN Spon Madras.
7. Rowland – Developmental Exercise Physiology – Human Kinetics.
8. Clarke – Exercise Physiology – Prentice Hall.

MASTER DEGREE IN SPORTS PHYSIOTHERAPY (SEMESTER–IV)
(Under Credit Based Continuous Evaluation Grading System)

MPS653: Medical Aspects of Sports Medicine

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UNIT – I

1. ***Exercise and Common Pulmonary Conditions***
   a. Exercise induced bronchial obstruction
   b. Exercise in chronic airway obstruction
   c. Air pollution and exercise
2. ***Exercise and Cardiac Conditions***
   a. Exercise prescription for heart disease
   b. Exercise in primary prevention in ischemic heart disease
   c. Exercise for secondary prevention of ischemic heart disease

UNIT – II

1. ***Doping in Sports***
   a. Banned drugs
   b. Procedure of dope testing
   c. Control of doping abuse
2. ***Diabetes and Exercise***
   a. Exercise in diabetic patients
   b. Exercise as a method of control of diabetes

UNIT – III

1. ***Exercises for special categories***
   a. Child and adolescent athlete's problems
   b. Special problems of older athletes
   c. Special concerns for handicapped athletes
2. ***Misc. Conditions***
   a. Hazards of cold water
   b. Exercise for mood enhancement
   c. Vitamins and exercise
   d. Spinal deformity and sports
   e. Time zone shift and sleep deprivation problems
   f. Exercise in pregnancy and post partum

References:

1. Morris B. Mellion: Office Sports Medicine, Hanley & Belfus.
2. Richard B. Birrer: Sports Medicine for the primary care Physician, CRC Press.
3. Torg, Welsh & Shephard: Current Therapy in Sports Medicine III – Mosby.
4. Zulunga et al: Sports Physiotherapy, W.B. Saunders.
5. Brukner and Khan: Clinical Sports Medicine, McGraw Hill.
6. Reed: Sports Injuries – Assessment and Rehabilitation, W.B. Saunders.
7. Gould: Orthopaedic Sports Physical Therapy, Mosby.
8. C. Norris: Sports Injuries – Diagnosis and Management for Physiotherapists, Heinmann.
9. D. Kulund: The Injured Athlete, Lippincott.
10. Nicholas Hershman: Vol. I The Upper Extremity in Sports Medicine.
    Vol. II The Lower Extremity and Spine in Sports Medicine.
    Vol. III The Lower Extremity and Spine in Sports Medicine.
    Mosby.
11. Lee & Dress: Orthopaedic Sports Medicine – W.B Saunders.
12. K. Park: Preventive and Social Medicine – Banarsi Dass Bhanot – Jabalpur..
13. Fu and Stone: Sports Injuries: Mechanism, Prevention and Treatment, Williams and Wilkins.
14. Scuderi, McCann, Bruno: Sports Medicine -- Principles of Primary Care, Mosby.
15. Lars Peterson and Per Renstron: Sports Injuries – Their prevention and treatment, Dunitz.

MASTER DEGREE IN SPORTS PHYSIOTHERAPY (SEMESTER–IV)
(Under Credit Based Continuous Evaluation Grading System)

MPS654: Current Concepts in Sports Medicine

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UNIT – I

1. ***Segmental Stabilization Concepts of Spine***
   a. Muscle function in spinal stabilization
   b. Contribution of various muscles to spinal stabilization
   c. Local Muscle dysfunction in Low back pain
   d. Principles of clinical management of deep muscle system for segmental stabilization
2. ***Emergency Medical Planning and cover for Sports Events***
3. ***Exercise for growing bones***
4. ***Effect of Physical activity intervention in youth***

UNIT – II

1. ***Precision heart rate training***
   a. Heart rate monitoring and training
   b. Training in heart zones
   c. Precision heart rate training for specific sports
   d. Multi Activity training
   e. Monitoring of training effects
2. ***Current concepts in obesity management***
   a. Childhood obesity etiology and role of exercise
   b. Obesity correlation with lipidogram
   c. Intra–abdominal obesity hazards
   d. Management of obesity

UNIT – III

1. ***Electromyography and Rehabilitation***
   a. Principles of EMG Rehab
   b. Muscular tone, fatigue and neural influences
   c. EMG in the evaluation of Sports Trauma
2. **Current concepts in comprehensive physical examination for the instabilities of knee.**
3. **Current concepts in tendinopathies.**
4. **Current concepts in plasma rich platelet therapy in sports**

Seminars and Groups Discussions:
It will be mandatory for the students to conduct seminars on the latest trends in sports medicine & sports physiotherapy.

References:

1. Mallarkey: Managing Obesity, Adis Publications
2. Burke: Precision Heart rate training, Human Kinetics Jull: Segmental Stabilization of Spine3.
3. Mishra: Clinical Neurophysiology, B.I. Churchill Livingstone.