KRISHNA VISHWA VIDYAPEETH, (DEEMED TO BE UNIVERSITY),

KRISHNA COLLEGE OF PHYSIOTHERAPY

KARAD, MAHARASHTRA.

MASTER OF PHYSIOTHERAPY (M. P. Th)

CBCS PATTERN SYLLABUS

M.P.Th - (SPORTS PHYSIOTHERAPY)

PROGRAMME CODE: 3207

RULES FOR EXAMINATION SCHEME LEADING TO

POST GRADUATE PHYSIOTHERAPY PROGRAMME
IN THE FACULTY OF PHYSIOTHERAPY
(Approved by the Board of Management)

MASTER OF PHYSIOTHERAPY (M. P. Th.)

PREAMBLE:-

The Department of Human Resource Development, Government of India, on the recommendation of the University Grants Commission (UGC) has accorded the status of a Deemed University to Krishna Vishwa Vidyapeeth, (Deemed To Be University), Karad for Faculty of Medicine, Dentistry. Physiotherapy Nursing, Allied Sciences and Pharmacy respectively.

The Degrees, Diploma and the Fellowship programmes of Krishna Vishwa Vidyapeeth, (Deemed To Be University), Karad shall have the same status as of those given by any Statutory University duly recognized by the University Grants Commission. (UGC).

The Master of Physiotherapy Programme is directed towards rendering training in Specialty discipline so as to enhance professional competence in order to fulfill requirement for Physiotherapy Education and Practice**.**

1. This shall apply to all the examinations leading to Post Graduate Physiotherapy namely Programmes offered: - Total Programmes offered: 10 Programmes.

Sr No	Programme Code	Programme Name
1.	3201	M.P.Th in Musculoskeletal Sciences
2.	3202	M.P.Th in Neuro Sciences
3.	3203	M.P.Th in Cardio Pulmonary Sciences
4.	3204	M.P.Th in Pediatric Neurology
5.	3205	M.P.Th in Community Health Sciences
6.	3206	M.P.Th in Oncology Physiotherapy
7.	3207	M.P.Th in Sports Physiotherapy
8.	3208	M.P.Th in Orthopedic Manual Therapy
9.	3209	M.P.Th in Obstetrics and Gynecology
10.	3210	M.P.Th in Geriatric Physiotherapy

SEMESTER WISE SUBJECTS:

Sr No	Course Code	Year	Semester	SUBJECT
1	3207-11	M.P.Th - I Year	I	1. Basic Sciences
2	3207-12			2. Basic Therapeutics
3	3207-21	M.P.Th - I Year	II	1. Advanced therapeutics in Specialty Subject
4	3207-22			2. Biostatistics and Research Methodology
5	3207-31	M.P.Th - II Year	III	1. General Physiotherapy in Specialty Subject – **Paper 1**
6	3207-32			2. Advances in Specialty Subject – **Paper 1**
7	3207-41	M.P.Th - II Year	IV	1. General Physiotherapy in Specialty Subject- **Paper 2**
8	3207-42			2. Advances in Specialty Subject – **Paper 2**

Duration: Master of Physiotherapy shall be a full time programme with duration of TWO academic years divided into FOUR semesters.

2. Eligibility for admission:

Applicant for admission to the programme, Master of Physiotherapy should have the Bachelor degree from I.A.P recognized institution or from the recognized university. Selection of candidate is strictly through Krishna PGAIET, which is conducted by Krishna Vishwa Vidyapeeth, (Deemed To Be University), Karad.

3. ELIGIBILITY FOR APPEARING FOR THE EXAM:

- The examination for the degree, Master of Physiotherapy shall be conducted twice in a academic year (i.e. Semester Pattern).
- Every student should present his / her dissertation at least three months prior to the fourth semester university examination. The acceptance of the dissertation by the examiners is important for the student's admission for the Written & Clinical (Practical) examination.
- Dissertation should be based on the Specialty Subject. A student who has submitted his / her dissertation once will not be required to submit a fresh dissertation if he / she re- appears for the examination in the same branch on a subsequent occasion, provided that the dissertation has been accepted by the examiners.

- The Degree of Master of Physiotherapy shall not be conferred upon a student unless he / she have passed in the Written, Practical and the Dissertation prescribed for the examination in accordance with the provision.
- The dissertation has been evaluated and approved AND
- Has passed both the headings i.e.

  (With minimum of 50%) in Theory and Practical including Internal Assessment for both.

4. GOALS OF THE M.P.TH PROGRAMME:

- The goal of training post- graduate candidate in the respective specialty is to enable him / her to function as a consultant in the respective Physiotherapy specialty. This requires a thorough knowledge of the fundamental and recent advances.
- He/she should be able to make logical decisions regarding patient management & adapt interventions independently.
- During this period he/she will be expected to acquire skills in teaching technology & gain experience in research methodology.
- He/she should practice Physiotherapy in respective specialty and maintain the highest regards for ethical aspect.
- The programme shall focus on clinical reasoning, problem solving and measurement of treatment outcome, emphasizing on the recent diagnostic & therapeutic trends and skill specific Physiotherapy.

5. OBJECTIVES OF THE PROGRAMME: -

At the end of the programme the candidate shall be able to:

- Acquire the in-depth knowledge of structure and function of human body related to the respective branch of specialty.
- Acquire the in-depth knowledge of movement dysfunction of human body & principles underlying the use of physiotherapeutic interventions for restoring movement dysfunction towards normalcy.
- Ability to demonstrate critically appraises recent physiotherapeutic and related medical literature from journals & adapts diagnostic & therapeutic procedures based on it.
- Ability to perform skill in Physical & functional diagnosis pertaining to patient under care.
- Ability to make clinical decision & select appropriate outcome measures based on the comprehensive knowledge of theoretical aspects of specialty.
- Expertise in evidence-based skill in the management of movement dysfunction.
- Expertise in health promotion & quality restoration of functional movement pertaining to specialty.
- Planning and implementation of treatment programme adequately and appropriately for all clinical

conditions related to respective specialty in acute and chronic stage, in intensive care, indoor and outdoor institutional care, independent practice, on fields of sports and community and during disaster or natural calamities.

- Proficiency in planning and executing Physiotherapy services and teaching technology skills.
- Develop managerial and administrative skills.
- Develop the knowledge of legislation applicable to compensation for functional disability & appropriate certification.

POSTGRADUATE PROGRAMME OUTCOMES

M.P.TH (Master of Physiotherapy)

The course is of two years duration (Divided into 4 Semesters) advanced learning programme in Physiotherapy with CBCS Pattern.

Total Specialties offered: 10 Specialties

1. M.P.Th In Musculoskeletal Sciences
2. M.P.Th In Neuro Sciences
3. M.P.Th In Cardio Pulmonary Sciences
4. M.P.Th In Pediatric Neurology
5. M.P.Th In Community Health Sciences
6. M.P.Th In Oncology Physiotherapy
7. M.P.Th In Sports Physiotherapy
8. M.P.Th In Orthopedic Manual Therapy
9. M.P.Th In Obstetrics And Gynecology
10. M.P.Th In Geriatric Physiotherapy

M.P.Th - IST YEAR INCLUDES TWO SEMESTERS NAMELY,

- **I - Semester:** It is common for all the specialties which include the two subjects Basic Sciences & Basic Therapeutics.
- **II - Semester:** Biostatistics and Research Methodology is a common subject for all specialties & Advanced Therapeutics in Specialty Subject is the second one.

M.P.Th – IIND YEAR INCLUDES TWO SEMESTERS NAMELY,

- **III - Semester:** It includes two subjects which are specialty specific namely, General Physiotherapy in Specialty Subject - Part I & Advances in Specialty Subject - Part I
- **IV - Semester:** It includes two subjects which are specialty specific namely, General Physiotherapy in Specialty Subject- Part II & Advances in Specialty Subject - Part II
- ***Dissertation:** An individual research project preferentially interventional study is mandatory to be completed before appearing for the IV - Semester examination.

M.P.Th (FIRST YEAR): I - SEMESTER

1. **BASIC SCIENCES (3207-11)**

COURSE OBJECTIVES:

- The student should be able to know the background of Physiotherapy profession, basic ethics and its principles.
- To understand and apply the principles of exercise physiology and nutrition
- To master various assessment tools, test.
- To obtain knowledge of Orthotics & Prosthetics.

COURSE OUTCOMES:

At the end of the course the student should be able to apply the basic principles and ethics of Physiotherapy profession, Biomechanics, Patho-mechanics and in depth Kinesiology of human body, all the assessments and clinical tests, diagnosis of various conditions, in depth knowledge of the Orthotics and Bio-engineering.

2. **BASIC THERAPEUTICS (3207-12)**

COURSE OBJECTIVES:

The student should be able to obtain detail knowledge with evidence base of all the Electrotherapeutic modalities, Electro-Diagnostic tests with its application for diagnosis and treatment of Physiotherapy conditions

COURSE OUTCOMES:

At the end of the course the student should have in depth knowledge of the Basic Electrotherapeutics, Physical And Functional Diagnosis, EMG / NCV and Radiological investigations.

M.P.Th (FIRST YEAR): II - SEMESTER

1. **ADVANCED THERAPEUTICS SPECIALITY SPECIFIC (3207-21)**

COURSE OBJECTIVES:

- To interpret various therapeutics used in the treatment of speciality specific conditions.
- To evaluate and generate a diagnosis and differential diagnosis of all related conditions related to speciality and its complications.
- Demonstrate condition specific various skills in the treatment.

COURSE OUTCOMES:

At end of the session the student will be able to learn the conditions pertaining to the speciality, the diagnostic test for the same. The students shall learn to make a correct diagnosis and also a differential diagnosis and learn the advanced techniques to treat the same.

2. **BIOSTATISTICS AND RESEARCH METHODOLOGY (3207-22)**

COURSE OBJECTIVES:

- To understand the statistical measures used for analysis and interpretation of research data.
- Enhanced training to apply the information on research design and their implementation
- To identify, read, critique research articles and understand and apply the principles of research to perform a guided research.

COURSE OUTCOMES:

- At the end of the course the student should have a sound knowledge regarding the basic concept of research, research designs, types of data, sampling methods, interpretation of result, and various statistical tests.
- The student will able to identify appropriate statistical technique reference, use of various software packages for analysis and data management. Interpretation of the results and its application in Physiotherapy.
- The student will be able to learn fundamental of reading and understanding research methods, design and statistics.
- Special emphasis is given to Biostatistics and Research methodology and for completing a scientific research project in the second year as per their elective subject.

M.P.Th (SECOND YEAR): III - SEMESTER

1. **GENERAL PHYSIOTHERAPY IN SPECIALTY SUBJECT – PAPER 1 (3207-31)**

COURSE OBJECTIVES:

- Evoke and interpret clinical signs and symptoms of speciality specific disorders & interpret various diagnostic tests, clinical and special investigations used in the diagnosis of the conditions.
- Management of patient, consultation, identifying the problem, derive a provisional diagnosis with differential diagnosis and to chalk out a treatment plan.
- Maintain a precise patient documentation.
- Discuss and develop a specific exercise prescriptions plan with their clinical use, and the sequence of treatment.

COURSE OUTCOMES:

- Be able to apply the knowledge for planning and evaluation of teaching methods in Physiotherapy.
- Be able to apply the knowledge on clinical education to spread awareness and guidance to common people about health and disease.
- Understand the pathophysiology of common conditions, their management and its effects on body systems.
- Assess patients' physical function, considering disease and treatment-related impairments.
- Design and implement evidence-based Physiotherapy interventions as per the health issues.

2. **ADVANCES IN SPECIALTY SUBJECT – PAPER 1 (3207-32)**

COURSE OBJECTIVES:

- Understand the application of the information regarding recent advances in Physiotherapy for patient care.
- Application and proper implementation of specific evidences available for assessment and management appropriate to the health conditions.

COURSE OUTCOMES:

- The students learn and excel in various aspects of Physiotherapy as per their speciality in theoretical and practical knowledge with a solid platform and tend to train them to be the best in the field.
- To analyse and undertake data for research purpose and its documentation for long life learning in Physiotherapy.
- To develop educational experience for proficiency in profession and promote Preventive and Rehabilitative aspect on the society.

M.P.Th (SECOND YEAR): IV - SEMESTER

1. **GENERAL PHYSIOTHERAPY IN SPECIALTY SUBJECT- PAPER 2 (3207-41)**

COURSE OBJECTIVES:

To equip Physiotherapy students with the knowledge and skills necessary to provide problem specific effective rehabilitation and supportive care for patients.

COURSE OUTCOMES:

- Recognize and manage potential complications specific to the condition.
- Demonstrate knowledge of protocol specific principles and their application in Physiotherapy practice.
- Communicate effectively with patients, their families, and the multidisciplinary team.
- Critically evaluate current research in the area of rehabilitation to inform clinical decision-making.

2. **ADVANCES IN SPECIALTY SUBJECT – PAPER 2 (3207-42)**

COURSE OBJECTIVES:

To provide students with an in-depth understanding of recent developments and emerging trends in the specialty subject, focusing on innovative diagnostic techniques, treatment modalities, and research breakthroughs.

COURSE OUTCOMES:

- Analyze cutting-edge research and its potential clinical applications.
- Evaluate novel diagnostic technologies and their impact on early detection and personalized treatment.
- Critically assess emerging advanced and targeted therapies.

- Explain advancements in Prevention strategies and Risk assessment.
- Interpret complex clinical trial data and their implications for patient care.
- Describe innovations and apply knowledge of recent advances to case studies and clinical scenarios.

END OF PROGRAMME:

After completion of PG (M.P.Th) Programme, with the above mentioned Programme features the Post-Graduates will be equipped with advanced knowledge in respective specialty related to Technical, Problem Solving and Scientific skills to practice with Evidence Based Physiotherapy Practice through firm decision making process in assessment and treatment, establish advance research hypotheses and undertake research works effectively within the healthcare sectors and community safely and efficiently inculcating effective communication skills.

TOTAL HOURS: MPTh

Semester	Subject	Theory	Theory Credit point	Practical	Practical Credit point	Total Credit point
I - MPTh						
I - Semester	Basic Sciences	100	7	100	7	14
	Basic Therapeutics	100	7	100	7	14
II - Semester	Advanced Therapeutics in Speciality	100	7	150	5	12
	Biostat & Research	100	7			7
II - MPTh						
III - Semester	General PT in Speciality **Paper - 1**	200	13	225	8	21
	Advances in Speciality **Paper - 1**	200	13	250	8	21
IV - Semester	General PT in Speciality **Paper - 2**	200	13	225	8	21
	Advances in Speciality **Paper - 2**	200	13	250	8	21
		1200	**80**	**1300**	**51**	**131**
		Total Hrs: 2500		**Total Credit point: 131**		

EXAMINATION SCHEME:

	Theory		Practical	IA	
				Theory	**Practical**
Sem. I	Basic Sciences (100 Marks)	Basic Therapeutics (100 Marks)	-	50 marks x 2 Subjects	-
Sem. II	Advanced Therapeutics in Speciality (100 Marks)	Biostatistics & Research Methodology (100 Marks)	Advanced Therapeutics in Speciality (250 Marks)	50 marks x 2 Subjects	50 Marks
Sem. III	General Physiotherapy in Speciality **Paper – 1** (100 Marks)	Advances in Speciality **Paper – 1** (100 Marks)	-	50 marks x 2 Subjects	
Sem. IV	General Physiotherapy in Speciality **Paper – 2** (100 Marks)	Advances in Speciality **Paper – 2** (100 Marks)	Specialty Practical (300 Marks)	50 marks x 2 Subjects	50 Marks
Total: 1850 marks					

EXAMINATION PATTERN:

THEORY: (ALL SEMESTERS)

Q1. 10 BAQ (All compulsory) — 10 x 5 =50 marks
Q2. 2 LAQ (All compulsory) — 2 x 25 = 50 marks
Total: 100 marks

***** INTERNAL ASSESSMENT: Out of 50 MARKS for each Subject**

PRACTICAL: (II & IV SEMESTER)

SEMESTER II PATTERN

1. Long Case (Specialty) — 100 marks
2. Short Case 1. (Assessment) — 50 marks
3. Short Case 2. (Management) — 50 marks
4. Spots — 50 marks

Total: 250 marks + IA: 50 marks = 300 Marks

SEMESTER IV PATTERN

1. Long Case (Specialty) — 100 marks
2. Short Case (Assessment) — 50 marks
3. Short Case (Management) — 50 marks
4. Dissertation Presentation — 50 marks
5. Microteaching — 50 marks

Total: 300 marks + IA: 50 marks = 350 Marks

MPTh - I: SEMESTER: I

COURSE: MPTh IN SPORTS PHYSIOTHERAPY

SUBJECT: BASIC SCIENCES

Subject	Theory	Credit	Practical	Credit	Total Credits
Basic Sciences	100	7	100	7	14

Sr. No	Content	Teaching Hours (200 Hrs.)		MK	DK	NK
		Didactic (100 Hrs.)	Practical (100 Hrs.)			
1.	**PRINCIPLES AND ETHICS:** a. Theoretical background of Physiotherapy profession.	5 hrs	-	MK		
	b.Professional sources in the community.					
	c.Principles and practice of physiotherapy in India.					
	d. Ethical background of physiotherapy.					
	e. Ethics of IAP & WCPT.Professional ethics.					
	f. Modified Referral ethics in the practice of Physiotherapy					
	g. Governing body of Physiotherapy Profession state & central level.					
2.	**EXERCISE PHYSIOLOGY AND NUTRITION:** a. Nutrition and physical performance.	15 hrs	15 hrs	MK		
	b. Energy transfer.					
	c. Systemic adaptation during exercise.					
	d. Physical performance.					
	e. Factors affecting physical performance.					
	f. Fatigue and lactate.					
	g. Training.					

	h. Fitness and testing.					
	i. Obesity.					
	j. Diabetes.					
	k. Applied exercise physiology.					
3.	**PATHOMECHANICS AND CLINICAL KINESIOLOGY:** Review of mechanical principles and applied biomechanics of human body.	10 hrs	5 hrs	MK		
4.	Review of various types of exercises, principles and its applications for joint mobility, muscle re-education, strengthening and endurance training.	15 Hrs	5 Hrs	MK		
5.	Posture, analysis of normal and abnormal posture, posture training.	5 hrs	10 hrs		DK	
6.	Gait, analysis of normal and abnormalgait, gait training.	5 hrs	15 hrs			NK
7.	ADL, assessment and training of ADL.	5 hrs	10 hrs		DK	
8.	Clinical assessment, clinical tests and diagnosis of: • Musculoskeletal conditions • Manual Therapy clinical reasoning • Sports conditions • Neurological conditions • Cardio-pulmonary conditions • Obstetrics and Gynecology conditions • Pediatric conditions • Geriatric conditions • Oncology conditions • Community Health conditions	10 hrs	15 hrs	MK		
9.	Measuring tools in therapeutics: Goniometry, accelerometer, pressure transducers, force plates, spondylometer, Body composition, anthropometric measurements, etc.	5 hrs	10 hrs	MK		
10.	ORTHOTICS, PROSTHETICS & BIOENGINEERING:	25 hrs	15 hrs	MK		
	a. Orthosis of spine.					
	b. Orthosis of upper limb.					
	c. Orthosis of lower limb.					
	d. AK and BK Prosthesis.					
	e.Prosthetic fitting andtraining.					
	f. Biomechanical principlesgoverning them.					

BASIC SCIENCES - RECOMMENDED BOOKS:

1. Ross and Wilson Anatomy and Physiology in Health and Fitness – Kathleen. J, Churchill Livingstone.
2. Samson Wright's Applied Physiology – Neil and Joel, Oxford press.
3. Principles of Anatomy – Harper Collins College Publications
4. Anatomy and Physiology for Physiotherapists – Mottram, Moffat, Blackwell Scientific
5. Atlas of Anatomy – Tank Patrick, Lippincot Williams
6. Surface and Radiological Anatomy – Halim A, CBS

REFERENCE BOOKS:

1. Clinical Kinesiology for the Physical therapist Assistants – Lippert L, Jaypee.
2. Brunnstrom's Clinical Kinesiology – Letimkuni W, Jaypee.
3. Clinical Kinesiology – Laura Weiss, Jaypee.
4. Joint Structure & Function – Levangie P, Norkin C, Jaypee.
5. Basic Biomechanics of the musculoskeletal system – Nordin M, Lippincot Williams.
6. Biomechanical Basis of Movement – Hamill J & Krutzen K M, Lippincot Williams.
7. Measurements of Joint Motion – Norkin C, F. A. Davis.
8. Principles of Mechanics & Biomechanics – Bell, Frank, Stanley Thornes Pvt. Ltd.
9. Basic Biomechanics – Hall, Susan J, McGraw hill.
10. Kinesiology – Oatis, Carol A, Lippincot Williams.
11. Applied Kinesiology – Robert Frost, North Atlantic Books.
12. Biomechanics of Spine – White and Punjabi, Lippincot Williams

MPTh - I: SEMESTER: I

COURSE: MPTh IN SPORTS PHYSIOTHERAPY

SUBJECT: BASIC THERAPEUTICS

Subject	Theory	Credit	Practical	Credit	Total Credits
Basic Therapeutics	100	7	100	7	14

Sr. No	Content	Teaching Hours (200 Hrs.)		MK	DK	NK
		Didactic (100Hrs)	Practical (100Hrs)			
1.	**Basic Electrotherapeutics:** Review the principles and applications of the following electrotherapy modalities and justify the effects and uses of it with evidence	25 hrs	25 hrs	MK		
	1. Short wave diathermy.					
	2. Microwave diathermy.					
	3. Ultrasonic therapy.					
	4. Ultraviolet radiation.					
	5. Infrared radiation.					
	6. Iontophoresis.					
	7. Electric stimulation.					
	8. D i - Dynamic currents.					
	9. Interferential therapy.					
	10. Cryotherapy.					
	11. TENS.					
	12. LASER Therapy.					
	13. Paraffin wax bath.					
	14. Hydrotherapy.					
	15. Hydro collator packs.					
	16. Contrast bath.					
	17. Traction.					
	18. Mechanical external compression therapy.					
	19. Fluidotherapy.					
	20. Phonophorosis.					
	21. Shock Wave Therapy					

3.	Pain and pain modulation.	5 hrs	5 hrs		DK	
4.	Conventional electro diagnosis.	5 hrs	5 hrs	MK		
	1) FG Test.					
	2) SD Curve.					
5.	Electrocardiogram.	10 hrs	10 hrs		DK	
6.	Echocardiography.	10 hrs	10 hrs			NK
7.	Physical & functional diagnosis.	25 hrs	25 hrs	MK		
	1. Clinical examination in general and detection of movement dysfunction.					
	2. Principles of pathological investigations and imaging techniques related to neuromuscular, skeletal and cardiopulmonary disorders with interpretation					
	3. Development screening development diagnosis, neurodevelopment assessment and motor learning-voluntary control assessment					
	4. Physical fitness assessment: • Cardiac efficiency tests and spirometry • Fitness test for sport					
	5. Electro diagnostics-EMG/NCV **A. Electromyography (EMG)** Electro-diagnosis, clinical and kinesiological electromyography and evoked potential studies. 1. Instrumentation. 2. Types of electrodes. 3. Cathode ray oscilloscope digital processing. 4. Electrical safety. 5. Artifacts. 6. Normal and abnormal motor action potential. 7. EMG Examination. a. Muscle at rest. b. Insertional activity. c. Minimum effort. d. Maximum effort. 8. Motor unit's potential in disease. • Motor neuron disease. • Hereditary motor neuron disease. • Poliomyelitis. • Muscular dystrophy.					

	• Inflammatory myopathies. • Congenital myopathies • Myotonia. • Metabolic myopathies. 9) Quantitative methods in EMG.					
	B. Nerve conduction studies (NCV): I. Motor and sensory conduction. II. Physiology of nerve conduction. III. General factors affecting nerve conduction. IV. Nerve stimulation. V. H wave. VI. F wave. VII. Entrapment syndromes. a) Carpel tunnel syndrome. b) EMG studies in Myasthenia gravis. c) EMG studies in Decremental studies Lambert myasthenia syndrome. d) Electro diagnosis in Radiculopathy. e) Peripheral neuropathies. - Nerve conduction changes in peripheral neuropathy. - EMG changes in peripheral neuropathy.					
8	Radiological investigation. 1) X – ray. 2) CT / MRI Scan. 3) Blood investigation (routine)	20 hrs	20 hrs	MK		

BASIC THERAPEUTICS - RECOMMENDED BOOKS:

1. Exercise Physiology, energy, nutrition and human performance – McArdle, Katch &Katch, Lippincot Williams.
2. Illustrated principles of exercise physiology – Axen. K, Kathleen. V, Prentice Hall.
3. Essentials of Exercise Physiology – Shaver Larry. G, Surjeet Publications.
4. Physiology of Sports and Exercise – Majumdar. P, New Central Book.
5. Exercise and the Heart – Froliecher, Victor. F, Elsevier.
6. Textbook of Work Physiology – Astrand and Rodahl, McGraw Hill.
7. Kinanthropometry and Exercise Physiology Laboratory manual tests, procedures anddata-Erston, Reilly, F & FN Spon.

REFERENCE BOOKS:

1. Communication Skills in Clinical Practice – Sethuraman K. R.
2. Handbook of Educational Technology – Elington Henry, Kogan Page.
3. Physical Therapy Administration & Management – Hickok, Robert J, Williams &Wilkins.
4. Clinical Decision making in Rehabilitation – Basmajian, John V, Churchill Livingstone.
5. Handbook of Clinical Teaching – Watts Nancy, Churchill Livingstone.
6. Physical Therapy Ethics by Gabard and Martin (Sep 2, 2010)
7. Management in Physical Therapy Practices by Catherine G. Page (Sep 23, 2009)
8. Physical Rehabilitation: Evidence-Based Examination, Evaluation, and Intervention byMichelle H. Cameron and Linda Monroe (Apr 5, 2007)
9. Physical Therapy Management by Ronald W. Scott and Christopher L Petrosino (Sep 1,2007)

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MPTh – I: SEMESTER: II

COURSE: MPTh IN SPORTS PHYSIOTHERAPY

SUBJECT: BIOSTATISTICS AND RESEARCH METHODOLOGY

Sr No.	Contents	TEACHING HOURS Theory (100 Hrs)	Must Know	Desirable to Know	Nice to Know
1	**Research methodology:** I. How to read critique research. II. Introduction to research: frame work: levels of measurement: variables III. Basic research concepts: validity and reliability. IV. Design, instrumentation and analysis for qualitative research. V. Design, instrumentation and analysis for quantitative research VI. Design, instrumentation and analysis for quasi-experimental research VII. How to write research proposal VIII. Ethics in research IX. Importance of software in research X. Importance of SPSS, PowerPoint, etc in research.	60 hrs	MK		

2	**Biostatistics:** I. Descriptive and inferential statistics II. Types of data qualitative andquantitative III. Frequency distributions IV. Describing data with graphs V. Describing data with averages modemedian mean VI. Describing variability variancestandard deviation etc VII. Normal distributions VIII. Interpretations of result IX. Hypothesis testing X. T tests XI. ANOVA XII. Probability XIII. Type I and type II errors XIV. Parametric and non-parametric tests XV. Simple statistical analysis using available software.	40 hrs	MK		

TEXT BOOKS FOR RESEARCH METHODOLOGY AND BIOSTATISTICS:

1. Research Methodology .Methods and Techniques C.R. Kothari New Age InternationalPublishers.2nd edition 2008
2. Rehabilitation Research: Principles And Applications By Elizabeth Domholdt(ElsevierScience Health Science Div, 2004)
3. Research Methods for clinical therapists by Hicks Carolyne, Churchill
4. Foundations of clinical Research by Portney & Watkins,Davis
5. Research methodology by Kothari New Age international
6. Research Methodology for health professionals by Goyal,Jaypee
7. Methods in Biostatistics By Mahajan,B.K Jaypee
8. Principles & practice of Biostatistics By Dixit ,J.V Bhanot

TEACHING TECHNOLOGY:

1. Public Power And Administration – Wilenski, Hale And Iremonger, 1986
2. Physical Therapy Administration And Management – Hickik Robert J
3. A Practical Guide for Medical Teachers : John A Dent& Ronald M Harden: ElsevierHealth Sciences: 2009
4. International Handbook of Medical Education : Abdul W Sajid, Christie H McGuire et al:Greenwood Press 1994
5. Principles Of Medical Education by. Tejinder Singh, Piyush Gupta,DaljitSingh.year: 2009. Edition: 3rd edition Publisher: Jaypee brothers.

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KRISHNA INSTITUTE OF MEDICAL SCIENCES
"DEEMED TO BE UNIVERSITY", KARAD

M.P.Th - I: ADVANCED THERAPEUTICS IN SPORTS PHYSIOTHERAPY

Sr no.	Topic	Teaching hours		Must know	Desirable to know	Nice to know
		Didactic (100 Hrs)	Practical's (150 Hrs)			
1	Causes & Mechanism of Sports Injuries, Prevention of Sports Injuries.	10	10	MK		
2	Common acute and overuse injuries of: • Shoulder girdle, Arm, Elbow, Forearm, Wrist & hand • Pelvis, hip, thigh, knee, leg, ankle & foot • Spine • Head • Injuries to Athletes in various age groups.	15	15	MK		
3	Pre-participation examination	5	20	MK		
4	Rehabilitation and Therapeutic Exercises: Rehabilitation in Sports, Clinical Evaluation phases of rehabilitation. (multidisciplinary approach) • Prehabiiltation • Dynamic Exercises • Plyometric Exercises • Isokinetic Exercises • Kinetic chain exercises	10	15	MK		

5	Foot Assessment in Sports	5	10	MK		
6	Production, Physiological effects, indications, contraindications and specific uses in sports of the following – a. Heat Therapy b. Hydrotherapy c. Electrotherapy d. Functional Bandages & Orthotic Aids e. Cryotherapy f. Manual Therapy.	10	10	MK		
7	Role of virtual reality in sports	2	10		DK	
8	Neuromuscular Training following different sport injuries	3	10	MK		
9	Physiological basis of sports massage and various categories and therapeutic applications	3	5	MK		
10	Use of Hydrotherapy in Sports	5	10	MK		
11	Functional Bandages and Orthotic Aids & Protective Equipment in	5	6	MK		

	Sports					
12	Biofeedback training, Mental coping strategies, Meditation	5	6	MK		
13	Stress management and relaxation training, Motivation and Performance in sports • Modelling Stress • Contemporary Stress Reduction Strategies. • Audience Stresses • Cognitive stress modeling	4	10			NK
14	Sports Psychology: • Role of Psychology in Dealing with Injuries. • Pre-competitive anxiety. • Aggression in sports. • Eating disorders. • Psychological preparation of elite athletes	5	3	MK		
15	Psychological aspect of doping • Banned drugs • Procedure of dope testing • Control of doping abuse	3			DK	
16	Basic Wheelchair skills • Assessment and Training. • Fundamentals of wheelchair Sports.	5	5	MK		

17	Exercises for special categories: • Diabetes and Exercise • Child and adolescent athlete's problems • Special problems of older athletes • Special concerns for handicapped athletes	5	5	MK		

KRISHNA INSTITUTE OF MEDICAL SCIENCES"DEEMED TO BE UNIVERSITY", KARAD

SEMESTER III

M.P.Th – II : GENERAL PHYSIOTHERAPY IN SPORTS PHYSIOTHERAPY PAPER - 1

GENERAL PHYSIOTHERAPY IN SPORTS PHYSIOTHERAPY (PAPER - 1)		
	Hours	Credits
Theory	200	13
Practical	225	8

Sr.No	Content	Teaching hrs. 425 Hrs		Must know	Desirable to know	Nice to know
		Didactic (200Hrs)	Practical (225Hrs)			
1	Introduction & Mechanical Principles in Kinesiology: Kinematics & Kinetics	25	25	MK		
2	Anatomical Concepts in Kinesiology and Aspects of Muscle Physiology	25	25	MK		
3	Basics in Exercise Physiology: Energy Transfer and expenditure for Physical activity Exercise in relation to: • Cardio Vascular System • Respiratory System • Skeletal System • Gastrointestinal Tract and Endocrine system.	50	65	MK		
4	Body composition • Various methods to estimate body composition • Kinoanthropometric evaluation	35	45	MK		

	in various athletic group • Application of surface anthropometry (the body profile) • Application of surface anthropometry. • Ultrasound assessment of fat. • Arm x ray assessment of fat. • Computed tomography assessment of fat.					
5	✓ Basic functional biomechanics Nature ofBiomechanics, ✓ Function of Biomechanics, Importance of Biomechanics in Sports, ✓ Introduction to analysis equipment, ✓ Pelvic mechanics and the Biomechanics of running, ✓ Gait analysis, ✓ Biomechanics of rowing, throwing, swimming, jumping and landing. ✓ Patho-mechanics and clinical Biomechanics of peripheral and spinal joints.	65	65	MK		

Books for references

Sr.no	Title of book
1.	Snell's Anatomy- 2 nd edition
2.	Textbook of physiology- Guyton – 2 nd edition
3.	Clinical Kinesiology and Anatomy- Lynn S. Lippert- 1 st edition
4.	Basic Biomechanics- Susan J Hall – 3 rd edition
5.	Kinesiology of musculoskeletal system- Carolyn Oatis- 1 st edition
6.	Exercise physiology nutrition, energy, and human performance- 2 nd edition
7.	Text book of Work Physiology Physiological basis of exercise William D. McArdle, Frank I. Katch, Victor L. Katch Astrand, P.-O. and Rodahl, K- 2 nd edition
8.	Brukner P. Brukner & Khan's clinical sports medicine. North Ryde: McGraw-Hill; 2012.- 3 rd edition.
9.	Bartlett R. Introduction to sports biomechanics: Analysing human movement patterns. Routledge; 2007 Oct 25.- 2 nd edition.
10.	Eston R, Reilly T. Kinanthropometry and exercise physiology laboratory manual: tests, procedures and data: volume two: physiology. Routledge; 2013 Mar 1.- 2 nd edition
11.	Astrand PO, Rodahl K, Dahl HA, Strømme SB. Textbook of work physiology: physiological bases of exercise. Human Kinetics; 2003.- 3 rd edition.
12.	D. Kulund The Injured Athlete Lippincott 1982 1 The Upper Extremity in Sports Medicine The Lower Extremity and Spine in Sports Medicine

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SEMESTER III

M.P.Th - II : ADVANCED PHYSIOTHERAPY IN SPORTS PAPER 1

ADVANCED PHYSIOTHERAPY IN SPORTS PAPER 1		
	Hours	Credits
Theory	200	13
Practical	250	8

Sr no	Contents	Teaching hours		Must Know	Desirable to know	Nice To know
		Didactic (200 hrs)	Practical (250 hrs)			
1	Emergency Medical Planning and cover for Sports Events:, athletic first aid, Treatment of collapsed athlete, Severe head injury, Spinal, Chest, Abdominal &Extremity injuries	25	25	MK		
2	Emergency care in sports and Cardio-Pulmonary Resuscitation: • Management of Cardiac arrest, Shockand Bleeding, • Splinting and Stretcher use, Acute asthma, Epilepsy, Drowning, Burns • Medical management of massparticipation. • Heat stroke and Heat illness.	25	35	MK		
3	Effect of Physical activity intervention in youth: Cardiac adaptations, Exercise and the skeleton, Exercise for growing bones	25	35	MK		
4	Movement Analysis: • Biomechanics of shoulder and shoulder girdle motion, elbow motion, wrist andhand motion.	50	60	MK		

	Isokinetic dynamometer, Kinesiological EMG, Electronic goniometry, Force platform, Videography					
5	Electromyography and Rehabilitation • Principles of EMG Rehab • Muscular tone, fatigue and neural influences • EMG in the evaluation of Sports Trauma	25	40	MK		
6	Isokinetics in Rehabilitation	25	25	MK		
7	Segmental Stabilization Concepts of Spine	25	30	MK		

Books for references

Sr.no	Title of Book
1.	Ellis, P. D., & Billings, D. M. (1980). Cardiopulmonary resuscitation:procedures for basic and advanced life support. CV Mosby. 1st edition.
2.	Safar, P. (1977). Advances in cardiopulmonary resuscitation (pp. 263-275). J. O. Elam (Ed.). New York: Springer. 2nd edition.
3.	Field, J. M., Gonzales, L., Hazinski, M. F., Ruple, J., Elling, B., & Drummonds, B. (2006). Advanced cardiovascular life support: provider manual (pp. 51-62). American Heart Association. - 2 nd edition.
4.	Scuderi, McCann Bruno: Sports Medicine – Principles of Primary Care Mosby
5.	Dvir Isokinetics: Muscle Testing, Interpretation and Clinical Applications W.B. Saunders 2004
6.	Jull Segmental stabilization of spine: Churchill Livingstone
7.	Mishra Clinical Neurophysiology B.I. Churchill Livingstone

KRISHNA INSTITUTE OF MEDICAL SCIENCES
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SEMESTER IV

M.P.Th - II : GENERAL PHYSIOTHERAPY IN SPORTS PHYSIOTHERAPY PAPER 2

GENERAL PHYSIOTHERAPY IN SPORTS PHYSIOTHERAPY PAPER 2		
	Hours	Credits
Theory	200	13
Practical	225	8

Sr.No	Content	Teaching hrs. 425 Hrs		Must know	Desirable to know	Nice to know
		Didactic (200 Hrs)	Practical (225 Hrs)			
1	Assessment & management of lower limb complex: Pelvis, hip, thigh, knee, leg, ankle and foot	30	35	MK		
2	Assessment & management of upper limb complex: Shoulder girdle, shoulder, arm, elbow, forearm, wrist and hand.	30	40	MK		
3	Assessment & management of spinal column: Cervical, thoracic and lumboscaral, Tests of neural tension	30	40	MK		
4	• Physical disability evaluation and disability diagnosis in sports • Assessment & management of Gait deviations	40	40	MK		
5	Physiological Basis and Principles of Training and Conditioning: • Principles of endurance and strength training • Recovery training intensities in	70	80	MK		

	heart rate. • Manipulation of training principles • Training sub-phases • Fundamentals that aid training and performance: Warm up and Cool down / Flexibility and stretching / Missing workouts / Overtraining					

Books for references

Sr.No	Title of book
1.	Clinical Sports Medicine. Peter Brukner, Karim Khan-2 nd edition
2.	Athletic and Sport Issues in Musculoskeletal Rehabilitation. David Magee, Robert Manske, James E Zachazewski- 1 st edition
3.	Pathology and Intervention in Musculoskeletal Rehabilitation. David J. Magee, James E. Zachazewski. – 2 nd edition
4.	DeLee J, Drez D, Miller MD. DeLee & Drez's orthopaedic sports medicine: principles and practice. Saunders/Elsevier; 2010.- 2 nd edition
5.	American College of Sports Medicine. ACSM's primary care sports medicine. Lippincott Williams & Wilkins; 2007.- 3 rd edition
6.	Kumbrink, B. (2014). K-taping: an illustrated guide-basics-techniques-indications. Springer.- 2 nd edition
7.	Amy Lademann.- Pilates and Conditioning for Athletes: An Integrated Approach to Performance and Recovery- Human Kinetics- 1 st edition
8.	Katherine Corp- Pilates for Beginners: Core Pilates Exercises and Easy Sequences to Practice at Home- 3 rd edition
9.	Hyde TE, Gengenbach MS, editors. Conservative management of sports injuries. Jones & Bartlett Learning; 2007.- 2 nd edition
10.	Madden C, Putukian M, McCarty E, and Young C. Netter's Sports Medicine E-Book. Elsevier Health Sciences; 2013 Nov 25.3 rd edition

KRISHNA INSTITUTE OF MEDICAL SCIENCES"DEEMED TO BE UNIVERSITY", KARAD

SEMESTER IV

M.P.Th - II : ADVANCED PHYSIOTHERAPY IN SPORTS PHYSIOTHERAPY PAPER 2

ADVANCED PHYSIOTHERAPY IN SPORTS PHYSIOTHERAPY PAPER 2		
	Hours	Credits
Theory	200	13
Practical	250	8

Sr no	Contents	Teaching hours 450 Hrs		Must to know	Desirable to know	Nice To know
		didactic 200 Hrs	Practical's 250 Hrs			
1	Sports specific injuries, with special emphasis onthe specific risk factor, nature of sports, kind of medical intervention anticipated and prevention with respect to individual sports: • Individual events: Field & Track • Team events: Hockey, Cricket, Football,etc • Contact and Non-contact sports • Water sports First Aid, Emergency medical skills and On field Management	65	60			

2	Nutrition in Sports: • Food : The ultimate drug • Energy requirement - Weight Loss &Weight Gain • Nutrients requirements and needs ofAthlete • Water and Electrolyte Loss and Replacement in Exercise / Fluid andenergy replacement in prolonged exercise. • Vitamins are Athlete's Needs, Megavitamin & Antioxidants • Nutritional Ergogenic Aids andSupplements • Sports Specific Nutrition: Sprinting, Distance Running, Cycling, Swimming, Weight Lifting & Power Sport and teamSports • Neutraceuticals	60	10	MK		
3	Specific illness in sports persons: Exercise induced Asthma; Anemia, Delayed onset musclesoreness (DOMS), Runner's high & exercise addiction. G.I.T. Diseases, Exercises and congestive heart failure,	20	45	MK		

4	Current concepts in obesity management • Childhood obesity etiology and role ofexercise • Obesity correlation with lipidogram • Intra-abdominal obesity hazards • Management of obesity	25	50	MK		
5	Misc. Topics • High Altitude Training • Sensitization • Acclimatization • Overtraining and burn out • Sports Diving, Hazards of underwater environment. • Special Aids to Athletic Performance: -MORA, Oxygen Inhalation, Sleep. • Exercise for mood enhancement &anxiety. • Aging and Exercise	10	30	MK		
6	Female Specific problems: Sports Amenorrhea,Injury to female reproductive tract, Menstrual Synchrony. Exercise in pregnancy and post partum	10	40	MK		
7	Administration, Management, Ethics and medicolegal issues in sports Sports Economics	10	15			NK

Books for references

Sr.no	Title of Book
1.	Scott RW. Legal aspects of documenting patient care. Jones & Bartlett Learning; 2000.- 1 st edition
2.	McKinney JB, Howard LC. Public administration: Balancing power and accountability. ABC-CLIO; 1998.- 2 nd edition
3.	Swisher LL, Hiller P, APTA Task Force to Revise the Core Ethics Documents. The revised APTA code of ethics for the physical therapist and standards of ethical conduct for the physical therapist assistant: theory, purpose, process, and significance. Physical therapy. 2010 May 1;90(5):803-24.- 3 rd edition
4.	Caine D, Maffulli N, Caine C. Epidemiology of injury in child and adolescent sports: injury rates, risk factors, and prevention. Clinics in sports medicine. 2008 Jan 1;27(1):19-50- 1 st edition
5.	Weinberg RS, Gould D. Foundations of Sport and Exercise Psychology, 7E. Human Kinetics; 2018 Nov 16.- 3 rd edition
6.	Harrelson and Andrews Physical Rehabilitation of Injured Athlete
7.	Andersen MB. Doing sport psychology. Human Kinetics; 2000.- 2 nd edition
8.	Ronald J.Maughan Nutrition In Sport Blackwell Science 2000 3
9.	Era Volinski Nutrition and exercise in Sports CRC Press, New York 2003 4
10	Jose Antonio & Jeffrey R. Stout Sports Supplements Lippincott Publications 2008
11	Scott RW. Legal aspects of documenting patient care. Jones & Bartlett Learning; 2000.- 1 st edition
12	McKinney JB, Howard LC. Public administration: Balancing power and accountability. ABC-CLIO; 1998.- 2 nd edition
13	Swisher LL, Hiller P, APTA Task Force to Revise the Core Ethics Documents. The revised APTA code of ethics for the physical therapist and standards of ethical conduct for the physical therapist assistant: theory, purpose, process, and significance. Physical therapy. 2010 May 1;90(5):803-24.- 3 rd edition

ONFIELD TRAINING - PRACTICALS: 65 Hours

1. On site emergencies
2. Assessment of training shoes
3. Biomechanical analysis and evaluation of various sports specific athletes
4. Sports first aid - Complete programme, Structured drills
5. Training programme evaluation
6. Nutritional evaluation
7. Psychological counseling
8. Attachment to teams, covering matches and tournaments and providing rehabilitation services to injured athletes onfield.
9. Field Training at various Stadiums.
10. Accompany sports teams for sporting competitions.