

GURU KASHI UNIVERSITY



**Master of Physiotherapy (M.P.T.)
in Sports Sciences**

Session: 2026-27

Faculty of Allied and Healthcare

PROGRAMME LEARNING OUTCOMES

Master of Physiotherapy (M.P.T)

A Postgraduate Degree in Physiotherapy is awarded to students who have demonstrated advanced competency-based learning outcomes corresponding to Level 6.5/7 of the National Higher Education Qualification Framework and NCAHP curriculum.

Element of the Descriptor	Programme Learning Outcomes relating to M.P.T
Knowledge and understanding	The graduates shall acquire advanced theoretical and clinical knowledge in their respective specialty areas, research methodology, evidence-based practice, advanced diagnostics, rehabilitation sciences, healthcare management, and contemporary physiotherapy interventions.
General, technical and professional skills required to perform and accomplish tasks	The graduates shall demonstrate advanced competency in specialized clinical assessment, rehabilitation planning, evidence-based intervention, critical clinical reasoning, teaching-learning methodologies, research implementation, healthcare leadership, and interdisciplinary collaboration.
Application of knowledge and skills	The graduates shall independently apply advanced physiotherapy knowledge and clinical expertise in specialty practice, rehabilitation research, patient management, academic training, and healthcare administration.
Generic learning outcomes	The graduates shall demonstrate advanced communication skills, leadership, mentorship, research aptitude, ethical professionalism, lifelong learning attitude, critical thinking, and innovation in healthcare practice.
Constitutional, humanistic, ethical, and moral values	The graduates shall practice with integrity, social accountability, professional ethics, inclusiveness, patient advocacy, empathy, and respect for human rights and dignity.

Employability and job-ready skills, and entrepreneurship skills and capabilities/qualities and mindset	The graduates shall develop advanced employability skills for clinical specialization, teaching, research, healthcare management, consultancy, entrepreneurship, and independent specialty practice.
Credit requirements	Successful completion of prescribed theory credits, clinical training, dissertation work, competency-based assessments, specialty practical examinations, and university evaluation requirements.
Entry requirements	Candidates possessing Bachelor of Physiotherapy (BPT) degree from a recognized institution and fulfilling eligibility requirements prescribed by the university/NCAHP guidelines.

SCHEME OF STUDY: MASTER OF PHYSIOTHERAPY (M.P.T.) in Sports Sciences M.P.T(S)

First Year M.P.T Examination Scheme

Component	Learning Outcomes
Advanced Knowledge	Acquire advanced knowledge in sports traumatology, sports medicine, exercise physiology, biomechanics, athletic conditioning, and sports rehabilitation sciences.
Clinical Competency	Demonstrate competency in sports injury assessment, athletic screening, rehabilitation planning, therapeutic exercise prescription, and injury prevention strategies.
Research Competency	Apply evidence-based sports physiotherapy principles and research methodology in sports rehabilitation practice.
Professional Attributes	Demonstrate ethical conduct, communication skills, teamwork, leadership, and athlete-centered care.

S.N o.	Course Code	Course Title	L	T	P	No. of Credits	Internal Examination		External Examination		Total Marks
							Theory	Practical	Theory	Practical	
1.	M.P.T(S)-101	Laws, Ethics, Administration & Educational Methodology (LEM)	6	0	0	6	50*	-	100	-	100
2.	M.P.T(S)-102	Research Methodology, Biostatistics & EBP(RMB)	6	0	0	6	50*	-	100	-	100
3.	M.P.T(S)-103	Biomechanics & Therapeutics (BCT)	6	0	0	6	50*	-	100	-	100
4.	M.P.T(S)-104	Sports traumatology (STT)	8	0	8	12	50*	50*	100	-	100
5.	M.P.T(S)-105	Skills Acquisition & Refinement (SAR-I)	0	0	16	8	-	50*	Non Creditable Marks		
6.	M.P.T(S)-106	Clinical Training (CT-I)	0	0	46	23	-	50*	Non Creditable Marks		
7.	M.P.T(S)-107	Dissertation (DSS-I)	0	0	6	3	-	50*	Non Creditable Marks		
	Grand Total		26	0	76	64	-	-	400		400

* Non Creditable Marks

The practical competencies of M.P.T(S)-104, shall be assessed through the Comprehensive Final University Practical Examination conducted at the end of the programme as prescribed by NCAHP.

Second Year M.P.T Examination Scheme

Component	Learning Outcomes
Advanced Specialty Practice	Demonstrate advanced expertise in sports rehabilitation, return-to-play protocols, performance enhancement, sports conditioning, and evidence-based sports physiotherapy interventions.
Clinical Decision Making	Apply advanced clinical reasoning and independent rehabilitation planning in sports physiotherapy practice.
Research and Innovation	Conduct dissertation research and critically evaluate contemporary evidence in sports physiotherapy.
Professional Development	Demonstrate leadership, teaching competency, mentorship, and lifelong learning attitude in sports physiotherapy practice.

S.N o.	Course Code	Course Title	L	T	P	No. of Credits	Internal Examination		External Examination		Total Marks
							Theory	Practical	Theory	Practical	
1.	M.P.T(S)-201	Exercise Physiology (EP)	6	0	0	6	50*	-	100	-	100
2.	M.P.T(S)-202	Concepts in sports medicine (SSM)	8	0	8	12	50*	50*	100	-	100
3.	M.P.T(S)-203	Recent advances and Evidence Based practice in Sports Physiotherapy (SRAEB)	8	0	8	12	50*	50*	100	-	100
4.	M.P.T(S)-204	Dissertation (DSS-II)	0	0	44	22	-	50*	-	-	-

5.	M.P.T(S)-205	Skills Acquisition & Refinement (SAR-II)	0	0	16	8	-	50*	Non Creditable Marks		
6.	M.P.T(S)-206	Clinical Training (CT-II)	0	0	40	20	-	50*	Non Creditable Marks		
	Practical										
7.	Long case=1	M.P.T(S)-104 M.P.T(S)-202 M.P.T(S)-203 M.P.T(S)-204								150	150
8.	Short case=2									150	150
9.	OSCE/ OSPE									100	100
10.	Dissertation									50	50
	Grand Total		22	0	116	80	-	-	300	450	750

The practical competencies of M.P.T(S)-104, M.P.T(S)-202, M.P.T(S)-203 and M.P.T(S)-204 shall be assessed through the Comprehensive Final University Practical Examination conducted at the end of the programme as prescribed by NCAHP.

First Year**COURSE CODE: M.P.T(S)-101****COURSE TITLE: Laws, Ethics, Administration & Educational Methodology-Theory****Credits: 6****Total Hours: 90****LEM 1.0 Subject Description**

This course is designed to provide postgraduate physiotherapy students with comprehensive knowledge of professional ethics, legal responsibilities, healthcare administration, educational methodology, and entrepreneurship relevant to advanced physiotherapy practice. The course emphasizes ethical decision-making, professional conduct, research ethics, institutional governance, healthcare management principles, quality assurance, communication skills, and educational strategies required for clinical teaching and leadership roles. It also develops competencies in curriculum planning, adult learning principles, assessment strategies, and administration of physiotherapy services. The course prepares students to function effectively as clinicians, educators, researchers, managers, and healthcare leaders while adhering to legal and ethical standards prescribed by national and international regulatory bodies.

LEM 1.0.1 Course Outcomes

At the completion of the course, the student will be able to:

1. Explain the historical evolution and principles of ethics applicable to healthcare professions. (K)
2. Demonstrate understanding of professional conduct and ethical responsibilities in physiotherapy practice. (KH)
3. Apply ethical principles in clinical practice, research, education, and administration. (P)

4. Discuss national and international ethical guidelines governing healthcare research. (KH)
5. Analyze informed consent procedures and ethical issues in vulnerable populations. (KH)
6. Explain the structure and functions of Institutional Ethics Committees. (K)
7. Evaluate ethical challenges and conflict-of-interest situations in professional practice. (KH)
8. Apply principles of healthcare management and administration to physiotherapy services. (P)
9. Demonstrate effective communication and leadership skills in healthcare settings. (SH)
10. Develop teaching-learning plans using contemporary educational methodologies. (P)
11. Formulate learning outcomes and assessment strategies for physiotherapy education. (P)
12. Explore entrepreneurship opportunities and professional development pathways in physiotherapy. (KH)

Competency Levels:

K – Knows

KH – Knows How

SH – Shows How

P – Performs Independently

LEM 1.0.2 Teaching Learning Methods

1. Interactive Lectures
2. Seminars
3. Group Discussions
4. Problem-Based Learning
5. Case-Based Learning
6. Self-Directed Learning
7. Journal Club Activities
8. Workshops
9. Role Play
10. Reflective Learning Exercises
11. Educational Technology Demonstrations
12. Assignments and Presentations

LEM 1.0.3 Assessment Methods

1. Multiple Choice Questions (MCQs)
2. Short Answer Questions

3. Long Answer Questions
4. Case-Based Discussions
5. Seminar Presentations
6. Assignments
7. Reflective Reports
8. Viva Voce
9. End Semester Examination

Unit I: Ethics and Professional Practice

Total Hours: 18

LEM 1.1 History and evolution of ethics

LEM 1.2 Helsinki Declaration and Nuremberg Code

LEM 1.3 Principles of ethics:

- Autonomy
- Beneficence
- Non-maleficence
- Justice

LEM 1.4 Professionalism in healthcare

LEM 1.5 Ethics in physiotherapy practice

LEM 1.6 Privacy, confidentiality and patient rights

LEM 1.7 Shared decision-making and informed consent

LEM 1.8 Equality, equity and justice in healthcare

Unit II: Research Ethics and Legal Framework

Total Hours: 18

LEM 2.1 ICMR ethical guidelines

LEM 2.2 Responsible conduct of research

LEM 2.3 Risk-benefit assessment

LEM 2.4 Informed consent process

LEM 2.5 Components of informed consent documentation

LEM 2.6 Special situations and proxy consent

LEM 2.7 Institutional Ethics Committee:

- Constitution
- Functions
- Review process

LEM 2.8 Research involving vulnerable populations

LEM 2.9 Conflict of interest:

- Definition
- Types
- Identification
- Management

LEM 2.10 Publication ethics and plagiarism

LEM 2.11 Authorship guidelines (ICMJE)

LEM 2.12 NCAHP Act

LEM 2.13 Consumer Protection Act

LEM 2.14 Rights of Persons with Disabilities Act

Unit III: Healthcare Administration and Management

Total Hours: 18

LEM 3.1 Principles of management

LEM 3.2 Healthcare administration

LEM 3.3 Planning and strategic management

LEM 3.4 Organizing and staffing

LEM 3.5 Financial management

LEM 3.6 Marketing of healthcare services

LEM 3.7 Leadership and supervision

LEM 3.8 Monitoring and controlling

LEM 3.9 Quality assurance in healthcare

LEM 3.10 Total Quality Management

LEM 3.11 Medical audit

LEM 3.12 Accreditation systems

LEM 3.13 International quality standards

LEM 3.14 Establishment and management of physiotherapy services

Unit IV: Communication and Educational Methodology

Total Hours: 18

LEM 4.1 Communication process

LEM 4.2 Types of communication

LEM 4.3 Written versus oral communication

LEM 4.4 Barriers to communication

LEM 4.5 Principles of effective communication

LEM 4.6 Education: concept, aims and objectives

LEM 4.7 Formal and informal education

LEM 4.8 Educational philosophies

LEM 4.9 Taxonomy of educational objectives

LEM 4.10 Adult learning theories

LEM 4.11 Learning styles and motivation

LEM 4.12 Teaching-learning process

LEM 4.13 Clinical teaching methods

LEM 4.14 Lesson planning and unit planning

LEM 4.15 Educational technology

LEM 4.16 Teaching aids

Unit V: Curriculum Planning and Entrepreneurship

Total Hours: 18

LEM 5.1 Intended Learning Outcomes

LEM 5.2 Tyler's Principles

LEM 5.3 Bloom's Taxonomy

LEM 5.4 Miller's Pyramid

LEM 5.5 Clinical Competence Framework

LEM 5.6 Dreyfus Model of Skill Acquisition

LEM 5.7 Assessment and evaluation methods

LEM 5.8 Curriculum planning

LEM 5.9 Programme evaluation

LEM 5.10 Entrepreneurship in physiotherapy

LEM 5.11 Opportunities in private practice

LEM 5.12 Healthcare consultancy

LEM 5.13 Startup development in rehabilitation services

LEM 5.14 Professional leadership and future trends

Recommended Books

1. Swisher LL, Page CG. Professionalism in Physical Therapy.
2. Purtilo RB, Jensen GM. Ethical Dimensions in Rehabilitation.
3. APTA Guide to Professional Conduct.
4. Basavanthappa BT. Nursing Administration.
5. Gupta SC. Fundamentals of Management.
6. Suresh K Sharma. Educational Technology and Teaching Strategies.
7. ICMR National Ethical Guidelines for Biomedical and Health Research.
8. NCAHP Act and Associated Regulations.
9. Consumer Protection Act of India.
10. UNESCO Handbook on Higher Education Teaching and Learning.

COURSE CODE: M.P.T(S)-102

COURSE TITLE: Research Methodology, Biostatistics & EBP-Theory

Credits: 6

Total Hours: 90

RMB 1.0 Subject Description

This course is designed to develop advanced competencies in research methodology, biostatistics, scientific inquiry, evidence-based practice, and

scholarly communication. It enables postgraduate physiotherapy students to formulate research questions, design appropriate research methodologies, critically appraise scientific literature, analyze quantitative and qualitative data, interpret statistical findings, and translate research evidence into clinical practice. The course also focuses on scientific writing, publication ethics, thesis preparation, and dissemination of research findings. The knowledge and skills acquired through this course will facilitate evidence-informed clinical decision-making and contribute to the advancement of physiotherapy practice and research.

RMB 1.0.1 Course Outcomes

At the completion of the course, the student will be able to:

1. Explain the principles and processes of scientific research. (K)
2. Formulate clinically relevant research questions and hypotheses. (KH)
3. Differentiate qualitative and quantitative research methodologies. (KH)
4. Select appropriate study designs for research problems. (P)
5. Apply principles of sampling and sample size estimation. (P)
6. Evaluate reliability, validity, responsiveness, and outcome measures. (KH)
7. Critically appraise published research literature. (P)
8. Apply evidence-based practice principles in clinical decision-making. (P)
9. Perform statistical analyses using appropriate biostatistical techniques.
(SH)
10. Interpret research findings and statistical outcomes accurately. (P)
11. Prepare scientific manuscripts, reports, abstracts, and dissertations. (P)

12. Demonstrate competency in scientific communication and publication processes. (P)

Competency Levels

K – Knows

KH – Knows How

SH – Shows How

P – Performs Independently

RMB 1.0.2 Teaching Learning Methods

1. Interactive Lectures
2. Seminars
3. Journal Club Discussions
4. Critical Appraisal Exercises
5. Research Proposal Development
6. Group Discussions
7. Computer-Assisted Statistical Analysis
8. Problem-Based Learning
9. Case-Based Learning
10. Workshops on Research and Scientific Writing
11. Self-Directed Learning

12. Literature Review Assignments

RMB 1.0.3 Assessment Methods

1. Multiple Choice Questions (MCQs)
2. Short Answer Questions
3. Long Answer Questions
4. Critical Appraisal Assignments
5. Research Proposal Preparation
6. Statistical Data Analysis Exercises
7. Seminar Presentations
8. Journal Review
9. Viva Voce
10. End Semester Examination

Unit I: Foundations of Research Methodology

Total Hours: 18

RMB 1.1 Introduction to research

RMB 1.2 Importance of research in physiotherapy

RMB 1.3 Types of research

RMB 1.4 Research process

RMB 1.5 Defining a research problem

RMB 1.6 Formulating research questions

RMB 1.7 Hypothesis formulation

RMB 1.8 Variables in research

RMB 1.9 Qualitative research designs

RMB 1.10 Quantitative research designs

RMB 1.11 Ethical considerations in research

RMB 1.12 Literature review and evidence synthesis

Unit II: Research Design and Measurement

Total Hours: 18

RMB 2.1 Study designs and classifications

RMB 2.2 Case study design

RMB 2.3 Case series

RMB 2.4 Cohort studies

RMB 2.5 Longitudinal studies

RMB 2.6 Pre-test and post-test designs

RMB 2.7 Time series designs

RMB 2.8 Repeated measures designs

RMB 2.9 Randomized controlled trials

RMB 2.10 Sampling techniques

RMB 2.11 Sample size calculation

RMB 2.12 Reliability and validity

RMB 2.13 Responsiveness and MCID

RMB 2.14 Outcome measures in rehabilitation research

Unit III: Evidence-Based Practice and Critical Appraisal

Total Hours: 18

RMB 3.1 Designing research methodology

RMB 3.2 Data collection methods

RMB 3.3 Reporting research findings

RMB 3.4 Sources of bias

RMB 3.5 Type I and Type II errors

RMB 3.6 Evaluating published literature

RMB 3.7 Levels of evidence

RMB 3.8 Principles of evidence-based practice

RMB 3.9 Asking clinical questions (PICO framework)

RMB 3.10 Searching scientific databases

RMB 3.11 Critical appraisal of evidence

RMB 3.12 Clinical practice guidelines

RMB 3.13 Clinical pathways

RMB 3.14 Clinical prediction rules

RMB 3.15 Translating evidence into clinical practice

Unit IV: Biostatistics

Total Hours: 18

RMB 4.1 Introduction to biostatistics

RMB 4.2 Descriptive statistics

RMB 4.3 Measures of central tendency

RMB 4.4 Measures of dispersion

RMB 4.5 Inferential statistics

RMB 4.6 Hypothesis testing

RMB 4.7 t-tests

RMB 4.8 Analysis of variance (ANOVA)

RMB 4.9 Multiple comparison tests

RMB 4.10 Parametric tests

RMB 4.11 Non-parametric tests

RMB 4.12 Correlation analysis

RMB 4.13 Regression analysis

RMB 4.14 Chi-square test

RMB 4.15 Statistical measures of validity and reliability

RMB 4.16 Factorial design analysis

RMB 4.17 Power analysis

RMB 4.18 Epidemiological measures:

- Rate
- Ratio
- Proportion
- Incidence
- Prevalence
- Relative Risk
- Odds Ratio

RMB 4.19 Application of statistical software

Unit V: Scientific Writing and Dissertation Preparation

Total Hours: 18

RMB 5.1 Scientific communication

RMB 5.2 Types of scientific documents

RMB 5.3 Research papers

RMB 5.4 Review articles

RMB 5.5 Conference papers

RMB 5.6 Thesis and dissertation writing

RMB 5.7 Project reports

RMB 5.8 Role of authors, guides, and co-authors

RMB 5.9 Structure of scientific manuscripts

RMB 5.10 Citation and referencing styles

RMB 5.11 APA style

RMB 5.12 MLA style

RMB 5.13 Abstract writing

RMB 5.14 Oral presentation of research

RMB 5.15 Poster presentation

RMB 5.16 Research report writing

RMB 5.17 Thesis structure and formatting

RMB 5.18 Dissertation planning and preparation

Recommended Books

1. Portney LG, Watkins MP. Foundations of Clinical Research: Applications to Practice.
2. Hicks CM. Research Methods for Clinical Therapists.
3. Domholdt E. Rehabilitation Research: Principles and Applications.
4. Jewell DV. Guide to Evidence-Based Physical Therapist Practice.
5. Mahajan BK. Methods in Biostatistics.

6. Daniel WW, Cross CL. Biostatistics: A Foundation for Analysis in the Health Sciences.
7. Katz DL. Clinical Epidemiology and Evidence-Based Medicine.
8. Greenhalgh T. How to Read a Paper: The Basics of Evidence-Based Medicine.
9. APA Publication Manual.
10. ICMJE Recommendations for the Conduct, Reporting, Editing, and Publication of Scholarly Work.

COURSE CODE: M.P.T(S)-103

COURSE TITLE: Biomechanics & Therapeutics-Theory

Credits: 6

Total Hours: 90

BCT 1.0 Subject Description

This course provides advanced knowledge of biomechanics, kinesiology, movement analysis, therapeutic exercise, electrotherapeutic interventions, and evidence-based rehabilitation techniques applicable to musculoskeletal physiotherapy practice. The course emphasizes biomechanical principles governing human movement, kinetic and kinematic analysis, gait assessment, ergonomics, therapeutic exercise prescription, electrodiagnostic procedures, and advanced physiotherapy interventions. Students will develop competencies in clinical reasoning, movement dysfunction analysis, selection of therapeutic techniques, and application of advanced rehabilitation technologies to optimize functional outcomes in patients with musculoskeletal disorders.

BCT 1.0.1 Course Outcomes

At the completion of the course, the student will be able to:

1. Explain advanced biomechanical principles governing human movement and function. (K)
2. Analyze kinetics and kinematics of normal and pathological movement patterns. (KH)
3. Interpret biomechanical assessment findings for clinical decision-making. (P)
4. Evaluate movement dysfunctions using advanced biomechanical tools. (SH)
5. Analyze gait and posture using quantitative and qualitative methods. (P)
6. Apply ergonomic principles in injury prevention and rehabilitation. (P)
7. Prescribe advanced therapeutic exercise programs based on biomechanical principles. (P)
8. Demonstrate proficiency in proprioceptive neuromuscular facilitation and functional re-education techniques. (SH)
9. Interpret electrodiagnostic investigations relevant to physiotherapy practice. (KH)
10. Apply electrotherapeutic modalities safely and effectively. (P)
11. Integrate evidence-based therapeutic interventions into musculoskeletal rehabilitation. (P)

12. Develop advanced clinical reasoning skills for differential diagnosis and treatment planning. (P)

Competency Levels

K – Knows

KH – Knows How

SH – Shows How

P – Performs Independently

BCT 1.0.2 Teaching Learning Methods

1. Interactive Lectures
2. Laboratory Demonstrations
3. Practical Workshops
4. Clinical Case Discussions
5. Movement Analysis Sessions
6. Video-Based Gait Analysis
7. Problem-Based Learning
8. Journal Club Activities
9. Simulation-Based Learning
10. Skill Demonstrations
11. Self-Directed Learning

12. Clinical Presentations

BCT 1.0.3 Assessment Methods

1. Multiple Choice Questions
2. Short Answer Questions
3. Long Answer Questions
4. Practical Demonstrations
5. Case-Based Discussions
6. Clinical Problem Solving Exercises
7. Assignments
8. Seminar Presentations
9. Viva Voce
10. End Semester Examination

Unit I: Foundations of Biomechanics

Total Hours: 18

BCT 1.1 Introduction to kinesiology and biomechanics

BCT 1.2 Biomechanics of musculoskeletal tissues

BCT 1.3 Mechanical properties of connective tissues

BCT 1.4 Principles of biomechanics

BCT 1.5 Force systems and mechanical loading

BCT 1.6 Levers and torque

BCT 1.7 Center of gravity and stability

BCT 1.8 Nature and importance of biomechanics in physiotherapy

BCT 1.9 Kinetics and kinematics of human movement

BCT 1.10 Introduction to biomechanical analysis

Unit II: Biomechanical Analysis of Human Movement

Total Hours: 17

BCT 2.1 Methods of kinetic investigation

BCT 2.2 Methods of kinematic investigation

BCT 2.3 Instrumentation in biomechanics

BCT 2.4 Isokinetic dynamometry

BCT 2.5 Kinesiological electromyography

BCT 2.6 Electronic goniometry

BCT 2.7 Force platform analysis

BCT 2.8 Videography and motion analysis

BCT 2.9 Upper extremity biomechanics:

- Shoulder complex
- Elbow joint
- Wrist and hand

BCT 2.10 Lower extremity biomechanics:

- Pelvis
- Hip
- Knee

- Ankle and foot

BCT 2.11 Spinal biomechanics

Unit III: Gait, Ergonomics and Functional Movement

Total Hours: 18

BCT 3.1 Normal gait cycle

BCT 3.2 Kinetic analysis of gait

BCT 3.3 Kinematic analysis of gait

BCT 3.4 Pathological gait patterns

BCT 3.5 Gait deviations and compensatory mechanisms

BCT 3.6 Functional movement analysis

BCT 3.7 Ergonomic principles

BCT 3.8 Manual handling techniques

BCT 3.9 Safe lifting techniques

BCT 3.10 Workspace design and ergonomics

BCT 3.11 Patient positioning

BCT 3.12 Body mechanics

BCT 3.13 Transfer techniques

Unit IV: Therapeutic Exercise and Manual Therapy Approaches

Total Hours: 19

BCT 4.1 Principles of therapeutic exercise

BCT 4.2 Dynamic exercises

BCT 4.3 Plyometric exercises

BCT 4.4 Isokinetic exercises

BCT 4.5 Kinetic chain exercises

BCT 4.6 Balance and coordination training

- BCT 4.7 Response of tissues to mechanical loading
- BCT 4.8 Biophysics of contractile tissues
- BCT 4.9 Biophysics of non-contractile tissues
- BCT 4.10 Functional assessment and re-education
- BCT 4.11 Clinical reasoning in musculoskeletal practice
- BCT 4.12 Maitland concept
- BCT 4.13 Kaltenborn concept
- BCT 4.14 Cyriax approach
- BCT 4.15 Mulligan concept
- BCT 4.16 McKenzie approach
- BCT 4.17 Proprioceptive Neuromuscular Facilitation (PNF)
- BCT 4.18 Hydrotherapy techniques
- BCT 4.19 Yoga in rehabilitation:
- Historical background
 - Asanas
 - Pranayama
 - Therapeutic applications

Unit V: Electrodiagnosis and Advanced Therapeutics

Total Hours: 18

- BCT 5.1 Principles of electrodiagnosis
- BCT 5.2 Strength-Duration Curve
- BCT 5.3 Electromyography:
- Technique

- Interpretation

BCT 5.4 Nerve conduction studies:

- Motor nerve conduction velocity
- Sensory nerve conduction velocity

BCT 5.5 Factors affecting nerve conduction

BCT 5.6 Interpretation of electrodiagnostic findings

BCT 5.7 Evoked potentials

BCT 5.8 H-reflex and F-wave studies

BCT 5.9 Visual, auditory and somatosensory evoked potentials

BCT 5.10 Superficial heating modalities

BCT 5.11 Deep heating modalities

BCT 5.12 Ultrasound therapy

BCT 5.13 Cryotherapy

BCT 5.14 Low-frequency currents

BCT 5.15 Diadynamic currents

BCT 5.16 Iontophoresis

BCT 5.17 High-voltage pulsed stimulation

BCT 5.18 TENS

BCT 5.19 Interferential therapy

BCT 5.20 Russian currents

BCT 5.21 LASER therapy

BCT 5.22 Advanced electrotherapeutics in tissue healing

BCT 5.23 Wound management

BCT 5.24 Scar and keloid management

BCT 5.25 Biofeedback applications

Recommended Books

1. Nordin M, Frankel VH. Basic Biomechanics of the Musculoskeletal System.
2. Hamill J, Knutzen KM. Biomechanical Basis of Human Movement.
3. Neumann DA. Kinesiology of the Musculoskeletal System.
4. Magee DJ. Orthopedic Physical Assessment.
5. Kisner C, Colby LA. Therapeutic Exercise: Foundations and Techniques.
6. Hall CM, Brody LT. Therapeutic Exercise.
7. O'Sullivan SB, Schmitz TJ. Physical Rehabilitation.
8. Prentice WE. Therapeutic Modalities in Rehabilitation.
9. Robinson AJ, Snyder-Mackler L. Clinical Electrophysiology.
10. Cameron MH. Physical Agents in Rehabilitation.
11. Basmajian JV. Biofeedback Principles and Practice.
12. Lehmann JF. Therapeutic Heat and Cold.

COURSE CODE: M.P.T(S)-104

COURSE TITLE: Sports Traumatology-Theory

Credits: 8

Total Hours: 120

ST 1.0 Subject Description

Sports Traumatology is a specialized subject designed to provide postgraduate physiotherapy students with advanced knowledge regarding the prevention, assessment, diagnosis, treatment, rehabilitation, and return-to-sport management of sports-related injuries. The course focuses on mechanisms of injury, tissue healing, sports medicine principles, acute injury management, rehabilitation protocols, athletic performance enhancement, injury prevention strategies, and evidence-based sports physiotherapy practice. Students will develop competencies necessary for working with recreational athletes, competitive athletes, and elite sports performers.

ST 1.0.1 Course Outcomes

At the completion of the course, the student will be able to:

1. Explain mechanisms and epidemiology of sports injuries. (K)
2. Assess acute and chronic sports-related injuries. (P)
3. Interpret clinical findings and sports-specific examination results. (P)
4. Design evidence-based rehabilitation programmes for athletes. (P)
5. Apply principles of sports medicine and injury prevention. (P)
6. Evaluate athletic performance and risk factors for injury. (P)
7. Develop return-to-play and return-to-sport strategies. (P)
8. Demonstrate competency in emergency sports injury management. (P)
9. Integrate sports science principles into rehabilitation. (P)
10. Demonstrate leadership within multidisciplinary sports medicine teams. (P)

ST 1.0.2 Teaching Learning Methods

1. Interactive Lectures
2. Sports Injury Workshops
3. Clinical Demonstrations
4. Field-Based Learning
5. Case-Based Discussions
6. Video Analysis
7. Simulation Training
8. Journal Clubs
9. Sports Event Exposure
10. Self-Directed Learning

ST 1.0.3 Assessment Methods

1. MCQs
2. SAQs and LAQs
3. Case Presentations
4. Practical Demonstrations
5. Sports Injury Management Scenarios
6. Viva Voce

7. Seminar Presentations

8. End Semester Examination

Unit I: Foundations of Sports Traumatology

Total Hours: 24

ST 1.1 Introduction to sports traumatology

ST 1.2 Epidemiology of sports injuries

ST 1.3 Mechanisms of injury

ST 1.4 Tissue healing in sports injuries

ST 1.5 Sports medicine team approach

ST 1.6 Classification of sports injuries

ST 1.7 Risk factors for injury

ST 1.8 Sports injury surveillance

ST 1.9 Sports-specific injury patterns

ST 1.10 Evidence-based sports injury management

Unit II: Acute Sports Injury Management

Total Hours: 24

ST 2.1 On-field assessment

ST 2.2 Emergency care in sports

ST 2.3 Acute soft tissue injuries

ST 2.4 Ligament injuries

ST 2.5 Muscle injuries

ST 2.6 Tendon injuries

ST 2.7 Fractures and dislocations

ST 2.8 Concussion management

ST 2.9 Catastrophic sports injuries

ST 2.10 Immediate rehabilitation principles

Unit III: Regional Sports Injuries

Total Hours: 24

ST 3.1 Shoulder injuries

ST 3.2 Elbow injuries

ST 3.3 Wrist and hand injuries

ST 3.4 Hip and groin injuries

ST 3.5 Knee injuries

ST 3.6 Ankle injuries

ST 3.7 Foot injuries

ST 3.8 Spinal injuries

ST 3.9 Overuse injuries

ST 3.10 Running-related injuries

Unit IV: Rehabilitation and Performance Enhancement

Total Hours: 24

ST 4.1 Rehabilitation principles

ST 4.2 Therapeutic exercise progression

ST 4.3 Neuromuscular training

ST 4.4 Plyometric rehabilitation

ST 4.5 Agility training

ST 4.6 Balance and proprioception

ST 4.7 Strength and conditioning

ST 4.8 Functional rehabilitation

ST 4.9 Performance enhancement

ST 4.10 Sports-specific rehabilitation

Unit V: Injury Prevention and Return to Sport

Total Hours: 24

ST 5.1 Injury prevention programmes

ST 5.2 Movement screening

ST 5.3 Functional testing

ST 5.4 Return-to-play criteria

ST 5.5 Return-to-sport decision making

ST 5.6 Load management

ST 5.7 Sports nutrition overview

ST 5.8 Environmental considerations

ST 5.9 Anti-doping awareness

ST 5.10 Emerging trends in sports physiotherapy

COURSE CODE: M.P.T(S)-104

COURSE TITLE: Sports Traumatology- Practical

Credits: 4

Total Hours: 120

Practical Competencies

Section A: Sports Injury Assessment

1. On-field athlete assessment
2. Emergency injury evaluation
3. Concussion screening
4. Regional sports examination
5. Functional assessment

Section B: Acute Injury Management

6. Immediate care procedures
7. Taping and strapping
8. Protective support techniques
9. Injury stabilization
10. Athlete monitoring

Section C: Rehabilitation Skills

11. Therapeutic exercise prescription
12. Neuromuscular training
13. Plyometric training
14. Agility training
15. Sports-specific rehabilitation

Section D: Performance Evaluation

16. Fitness assessment
17. Functional performance testing
18. Movement screening
19. Return-to-play assessment
20. Injury prevention programme design

Recommended Books

1. Brukner P, Khan K. Clinical Sports Medicine.
2. Prentice WE. Rehabilitation Techniques in Sports Medicine.
3. Magee DJ. Orthopedic Physical Assessment.
4. Bahr R, Maehlum S. Clinical Guide to Sports Injuries.
5. ACSM Guidelines for Exercise Testing and Prescription.
6. Reiman MP, Lorenz DS. Orthopedic Clinical Examination.

COURSE CODE: M.P.T(S)-105

COURSE TITLE: Skills Acquisition & Refinement (SAR-I)-Practical

Credits: 8

Total Hours: 240

SAR-I 1.0 Subject Description

Skills Acquisition and Refinement (SAR-I) is designed to facilitate the development of advanced clinical competencies required for Sports Physiotherapy practice. The course emphasizes acquisition of practical skills related to sports injury assessment, emergency management, athletic screening, rehabilitation planning, performance enhancement, injury prevention, sports-specific exercise prescription, and return-to-play decision making. Students will progressively develop advanced psychomotor, clinical reasoning, communication, and professional skills through supervised laboratory sessions, field exposure, simulation exercises, and competency-based assessments.

SAR-I 1.0.1 Course Outcomes

At the completion of the course, the student will be able to:

1. Demonstrate advanced competency in sports injury assessment. (P)

2. Perform comprehensive athlete screening and evaluation. (P)
3. Apply evidence-based sports rehabilitation techniques. (P)
4. Design sports-specific rehabilitation programmes. (P)
5. Demonstrate proficiency in taping and bracing techniques. (P)
6. Conduct athletic performance assessments. (P)
7. Implement injury prevention programmes. (P)
8. Apply return-to-play criteria in sports rehabilitation. (P)
9. Demonstrate effective communication with athletes, coaches, and sports medicine teams. (P)
10. Integrate evidence-based practice into sports physiotherapy management. (KP)

Competency Levels

K – Knows

KH – Knows How

SH – Shows How

P – Performs Independently

SAR-I 1.0.2 Teaching Learning Methods

1. Practical Demonstrations
2. Sports Field Training
3. Simulation-Based Learning

4. Workshops
5. Clinical Case Discussions
6. Athlete Assessment Sessions
7. Video Analysis
8. Peer-Assisted Learning
9. Journal Clubs
10. Reflective Learning

SAR-I 1.0.3 Assessment Methods

1. Objective Structured Clinical Examination (OSCE)
2. Skill Demonstration
3. Clinical Viva Voce
4. Logbook Assessment
5. Portfolio Assessment
6. Case Presentation
7. Direct Observation of Procedural Skills (DOPS)

SAR-I 1.0 Subject Description

Skills Acquisition and Refinement (SAR-I) is designed to facilitate the transition of postgraduate students from foundational clinical competence to advanced specialty practice in Musculoskeletal Physiotherapy. The course emphasizes

development of higher-order clinical skills, clinical reasoning, evidence-based decision-making, professional communication, advanced assessment procedures, therapeutic handling, and specialty-specific intervention techniques. Through supervised skill laboratories, case-based learning, simulation exercises, and competency assessments, students will progressively develop proficiency in advanced musculoskeletal physiotherapy practice.

SAR-I 1.0.1 Course Outcomes

At the completion of the course, the student will be able to:

1. Demonstrate advanced musculoskeletal assessment skills. (P)
2. Perform orthopedic special tests accurately and safely. (P)
3. Apply evidence-based clinical reasoning in patient management. (P)
4. Demonstrate proficiency in manual therapy techniques. (SH)
5. Integrate therapeutic exercise principles into rehabilitation planning. (P)
6. Interpret clinical and diagnostic findings effectively. (P)
7. Apply ergonomic and occupational assessment principles. (P)
8. Demonstrate professional communication and patient education skills.
(P)
9. Formulate comprehensive physiotherapy diagnoses. (P)
10. Demonstrate competency in outcome measurement and documentation. (P)

Students must be engaged in

- Teaching Assignment, Seminars, journal club & Case Studies etc

Locomotor disability Assessment content:**DISABILITY (PERMANENT PHYSICAL IMPAIRMENT) ASSESSMENT AND CERTIFICATION GUIDELINES & GAZETTE NOTIFICATION:**

Detail study of Government Gazette to be done: (The Gazette of India is regularly updated, and its publications can change over time. Refer the recent Gazette publications issued by the Government of India, from the official website) PWD Act 1995 and Rights of person with Disability Act 2016, to study in detail.

BLS and ACLS Training:

Course Title: Basics of Emergency Care and Life Support Skills (ECLS): Theory (L) Practical (P)

ECLS 1.0. Subject Description and instruction to teacher

Basic life support (BLS) is the foundation for saving lives following cardiac arrest. Fundamental aspects of BLS include immediate recognition of sudden cardiac arrest (SCA) and activation of the emergency response system, early cardiopulmonary resuscitation (CPR), and rapid defibrillation with an automated external defibrillator (AED). Initial recognition and response to heart attack and stroke are also considered part of BLS. The student is also expected to learn about basic emergency care including first aid and triage. The purpose of this course is to equip the students with the skill to save the life of a person in different emergency situation as first responder. The training should be provided using Mannequins and dummies and Videos presentations and Role plays should be also used to impart knowledge and skill besides the lecture - demonstrations.

ECLS 1.0.1. Course Outcomes:

After completion of this course the student shall be able to

1. Perform Opening and maintaining and patent airway: assessment and knowledge of airway maneuvers and adjuncts
2. Ventilate patients: Assessment and management of breathing with Mouth to mouth and mouth to mask
3. Administer basic life support skills including cardiopulmonary resuscitation

4. Provide first aid of simple and multiple system trauma such as • Controlling hemorrhage • Managing Burns and wounds • Response to effects of weapons of mass destruction • manually stabilizing injured extremities
5. Provide first aid to patients with medical emergencies like heart attack and stroke • Identifying signs of Stroke and heart attack and safe transfer after first aid without delay in transfer. • Manage general medical complaints seizures and animal bites (snake /dog bite)
6. Reassure patients and bystanders by working in a confident, efficient manner • Avoid mishandling and undue haste while working expeditiously to accomplish the task
7. Manage safe patient transport Entailing-Extrication of the victim, helmet removal and spine protection during transport.
8. Explain Roles, responsibilities and limitation of first responder.

Course Contents:

SECTION -A UNIT 1

ECLS 1.1. Emergent conditions and magnitude, Concept of golden hour, Duties and responsibilities of first responder

ECLS 1.2. Ethical issues and Gather information from observation, experience and reasoning. Identification of rapidly changing situations and adapt accordingly. Planning and organization of work. Scene safety. Dealing with emotional reactions family members and bystanders

ECLS 1.3. Well-being of first responder Personal protection

1. Steps to be taken against airborne and blood-borne pathogens
2. Personal protective equipment necessary for each of the following situations: Hazardous materials Rescue Operations Violent Scenes Crime scenes
3. Electricity, Water and ice
4. Exposure to blood-borne pathogens Exposure to airborne pathogens

UNIT 2

ECLS 2.1. Airway

1. Signs of inadequate breathing
2. Mechanism of injury to opening the airway
3. Steps in the head-tilt chin-lift
4. Steps in the jaw thrust
5. Taking out foreign body
6. Ensuring patent airway during seizures and vomiting.

ECLS 2.2. Ventilation

1. Of a patient with a mask or barrier device
2. Steps in providing mouth-to-mouth and mouth-to-stoma ventilation

ECLS 2.3. Circulation

1. Evaluate the cardiac status of the patient
2. Determine the need for and take necessary action to proper circulation
3. Steps for control of bleeding: Pressure bandage and tourniquet ECLS 2.4.
Clearing a foreign body airway obstruction

ECLS 2.5. CPR

1. Implications of cardiac arrest
2. Cardiopulmonary resuscitation (CPR)
 - i. How it works
 - ii. Steps
 - iii. When to stop CPR
3. Brief overview of AED Automated external defibrillator (only demonstration –no hands on)

SECTION -B UNIT 3

ECLS 3.1. Bleeding and Soft Tissue Injuries

1. Difference between arterial and venous bleeding
2. Stopping external bleeding

3. Identification of Internal bleeding
4. types and Functions of dressings and bandages
5. How to help a victim of burn injury ECLS 3.2. Injuries to Muscles and Bones
 1. Suspecting bony/spinal injury
 2. Splinting –materials used
 3. Importance of splinting

UNIT 4

ECLS 4.1 Medical Emergencies

ECLS 4.2 Identification of the patient steps in providing first aid to a patient with

- i. A general medical complaint –
- ii. Seizures
- iii. Chest-pain
- iv. Shortness of breath
- v. Exposure to heat
- vi. Including other medical complaints like allergy, diarrhea, fainting, low blood sugar, stroke
- vii. Drowning
- viii. Poisoning

ECLS 4.3 Transportation Importance of timely and proper transportation methods of transportation of victim from site of injury to ambulance.

Importance of spine protection methods of spine protection during transportation

ECLS 4.4 Disaster preparedness -. Preparedness and risk reduction Incident command and institutional mechanisms Resource management

Practicals

Student should practice on Mannequins and dummies and should be able to

- ECLS (P) 5.1. Provide Airway & Ventilation
- ECLS (P) 5.2. Perform Basic Life Support: CPR
- ECLS (P) 5.3. Perform Initial management of Thermal injury, electric injury
- ECLS (P) 5.4. Perform stabilizing injured extremity and wound management
- ECLS (P) 5.5. Demonstrate bandaging techniques to various body parts
- ECLS (P) 5.6. Demonstrate Extrication, Helmet removal and spine protection
- ECLS (P) 5.7. Demonstrate Stretcher use

Recommended text books for ECLS

Indian red cross : INDIAN FIRST AID MANUAL 2016 (7th edition) available at <https://www.indianredcross.org/publications/FA-manual.pdf>

Assessment Methods

1. Objective Structured Clinical Examination (OSCE)
2. Direct Observation of Procedural Skills (DOPS)
3. Case Presentation
4. Clinical Viva Voce
5. Logbook Assessment
6. Reflective Portfolio
7. Skill Demonstration

Disaster Management:

Course Title: Disaster Management (DM): Theory (L)

DM 1.0 Subject Description and instruction to teacher: The commission's goal is to emphasize the vital role physical therapists (physios) play in disaster management and contribute to national and global preparedness. To achieve this, it's essential to raise awareness among physiotherapists about national and international organizations and emphasize the crucial role physical therapists play in disaster management, particularly within Emergency Medical Teams. Also it may be noted that the acts, policies, gazettes are regularly updated, and its publications can change over time. The teachers and students should thus refer the recent publications issued on the official website

DM 1.0.1. Course Outcomes: After completion of this course the student shall be able to

1. Understand the crucial role physical therapists play in disaster management, particularly within Emergency Medical Teams.
2. Should be able to identify national and international organizations that play a vital role in disaster management
3. Should be able to identify the legal framework for disaster management in India and disaster prone areas.
4. Provide essential information to other physical therapists interested in disaster response work and to make them aware of national and international agencies already active in the field.
5. Promote global preparedness and support physical therapists in making a meaningful difference in disaster response and recovery efforts

Course Content: Disaster Management (DM): Theory (L)

DM 1.1. Definition of disaster and the hazards associated with disaster, Vulnerable groups in Disaster

DM 1.2. Definition of Advocacy, disability advocacy, Contingency planning wrt to disaster management, Hazard, Risk, Vulnerable groups

DM 1.3. History of involvement of Physiotherapists in rehabilitation efforts during emergencies

DM 1.4. National organisations who are involved in disaster preparedness and management strategies:

1. The legal framework for disaster management in India: Key takeaways of Disaster Management Act 2005, National Policy on Disaster Management 2009 and National Disaster Management Plan 2018

2. Different types of disasters managed in India, Epidemiologic surveillance and disease control, main goal of the National Disaster Management Authority, areas in India are most prone to disasters, Institutional structure for disaster management in India at various levels, Central Ministry that coordinates disaster management and leader of NDMA in India

3. Disaster Management Act of 2005 key take aways and its significance, Phases of Disaster management, Long term prevention measures, role of various stake holders in disaster management, role of community involvement in disaster management, challenges faced in disaster management in India

4. Prime minister's 10 point agenda and Community based and Technology driven approaches: Key policies and strategies

DM 1.5. International organisations who facilitate contributions of physiotherapists in disaster preparedness and management strategies. Role of physiotherapists in:

1. Disaster management within their own countries, benefits of rehabilitation provided following disasters

2. Prevention of a disaster

3. Preparedness for disaster with respect to essential locally appropriate preparedness for a disaster,

4. Identifying and connecting professional associations, health service providers and training institutions.

5. Developing international humanitarian response

6. Response to disaster: Required skills and knowledge and required actions and secure resources with respect to assessment, coordination, psycho-social support and advocacy

7. Recovery: with respect to planning of medical management and local capacity building and physiotherapy rehabilitation, advocacy

DM 1.6. The type and distribution of injuries caused by disasters, the type of hazards, common injuries that can lead to long-lasting or permanent disability.

DM 1.7. Clinical Practice in Response phase along with documentation (conservative and surgical), record management, data and research, informed consent and confidentiality, regulations and scope of practice, hand hygiene and infection control, communication, referral, discharge planning with respect to international management strategies.

DM 1.8. International Disaster Management Rehabilitation Response Plans and role of Physiotherapists with respect to: Systems in Place, Identifying Personnel, Facilities and Resources, Advocacy and Partnerships, Training and Capacity Building

DM 1.9. Elements to be considered “essential” components in any disaster education or training programme for health professionals as defined by Global Response Framework,

DM 1.10. The World Health Organization (WHO) : the lead UN agency in the health cluster and its emergency response framework and Humanitarian principles

Recommended websites for references: Disaster management

National Disaster Management Plan, 2016. A publication of the National Disaster Management Authority, Government of India. May 2016, New Delhi at www.mha.gov.in

www.wcpt.org/disaster-management.

COURSE CODE: M.P.T(S)-106

COURSE TITLE: Clinical Training (CT-I)-Practical

Credits: 23

Total Hours: 690

CT-I 1.0 Subject Description

Clinical Training-I provides structured supervised clinical exposure in Sports Physiotherapy and Sports Medicine settings. The course is designed to facilitate the integration of theoretical knowledge, practical skills, evidence-based practice, and professional behavior into clinical sports rehabilitation. Students will gain experience in athlete assessment, injury prevention, sports injury

management, performance enhancement, return-to-play decision making, sports event coverage, and interdisciplinary sports medicine practice.

CT-I 1.0.1 Course Outcomes

At the completion of the course, the student will be able to:

1. Independently assess sports-related injuries and athletic performance.
(P)
2. Formulate sports physiotherapy diagnoses based on clinical findings. (P)
3. Develop individualized sports rehabilitation programmes. (P)
4. Implement evidence-based rehabilitation interventions. (P)
5. Conduct athlete screening and injury risk assessment. (P)
6. Apply return-to-play and return-to-sport criteria. (P)
7. Demonstrate competency in sports event coverage and emergency care.
(P)
8. Work effectively within a multidisciplinary sports medicine team. (P)
9. Maintain professional documentation and clinical records. (P)
10. Demonstrate ethical and professional conduct in sports
physiotherapy practice. (P)

Competency Levels

K – Knows

KH – Knows How

SH – Shows How

P – Performs Independently

CT-I 1.0.2 Clinical Training Areas

Sports Injury Rehabilitation Clinic (Total Hours: 180)

CT 1.1 Assessment of acute sports injuries

CT 1.2 Assessment of chronic sports injuries

CT 1.3 Rehabilitation planning

CT 1.4 Functional assessment

CT 1.5 Progression of rehabilitation

CT 1.6 Return-to-play evaluation

CT 1.7 Documentation and reporting

CT 1.8 Outcome assessment

Sports Medicine and Orthopedic Unit (Total Hours: 120)

CT 1.9 Post-operative sports rehabilitation

CT 1.10 Ligament injury rehabilitation

CT 1.11 Tendon injury rehabilitation

CT 1.12 Fracture rehabilitation

CT 1.13 Joint preservation programmes

CT 1.14 Medical referral procedures

CT 1.15 Team-based management

CT 1.16 Athlete monitoring

Athletic Performance and Conditioning Laboratory (Total Hours: 120)

CT 1.17 Fitness assessment

CT 1.18 Aerobic fitness testing

CT 1.19 Anaerobic fitness testing

CT 1.20 Strength assessment

CT 1.21 Agility assessment

CT 1.22 Performance profiling

CT 1.23 Conditioning programme design

CT 1.24 Performance monitoring

Sports Event Coverage (Total Hours: 90)

CT 1.25 Pre-participation screening

CT 1.26 On-field assessment

CT 1.27 Emergency sports care

CT 1.28 Injury surveillance

CT 1.29 Athlete support services

CT 1.30 Event documentation

CT 1.31 Team communication

CT 1.32 Field-side decision making

Specialized Sports Physiotherapy Services (Total Hours: 90)

CT 1.33 Movement analysis

CT 1.34 Biomechanical assessment

CT 1.35 Injury prevention programmes

CT 1.36 Return-to-sport assessment

CT 1.37 Taping and bracing services

CT 1.38 Recovery management

CT 1.39 Sports-specific rehabilitation

CT 1.40 Athlete education

Academic and Professional Activities (Total Hours: 90)

CT 1.41 Case presentations

CT 1.42 Journal clubs

CT 1.43 Clinical conferences

CT 1.44 Sports medicine meetings

CT 1.45 Research discussions

CT 1.46 Clinical audits

CT 1.47 Reflective practice

CT 1.48 Professional development activities

Clinical Requirements

1. Minimum 50 complete athlete case records.
2. Minimum 20 detailed sports injury case presentations.
3. Participation in sports event coverage activities.
4. Maintenance of clinical logbook.
5. Participation in journal clubs and clinical audits.
6. Completion of athlete assessment portfolio.
7. Documentation of rehabilitation programmes and outcomes.

CT-I 1.0.3 Assessment Methods

1. Clinical Performance Evaluation
2. Case Presentation
3. Clinical Viva Voce
4. Logbook Assessment

5. Portfolio Assessment
6. Supervisor Evaluation
7. Professional Behaviour Assessment
8. Competency-Based Clinical Assessment

Recommended Books

1. Brukner P, Khan K. Clinical Sports Medicine.
2. Prentice WE. Rehabilitation Techniques in Sports Medicine.
3. ACSM Guidelines for Exercise Testing and Prescription.
4. Bahr R, Maehlum S. Clinical Guide to Sports Injuries.
5. Reiman MP, Lorenz DS. Orthopedic Clinical Examination.
6. Magee DJ. Orthopedic Physical Assessment.
7. Kisner C, Colby LA. Therapeutic Exercise: Foundations and Techniques.
8. Wilk KE, Reinold MM, Andrews JR. The Athlete's Shoulder.

COURSE CODE: M.P.T(S)-107

COURSE TITLE: Dissertation (DSS-I)-Practical

Credits: 3

Total Hours: 90

DSS-I 1.0 Subject Description

The Dissertation (DSS-I) course introduces postgraduate students to scientific research in Sports Physiotherapy and Sports Sciences. The course focuses on

identification of clinically relevant research problems, development of research proposals, literature review, research methodology, ethical considerations, and preparation of a dissertation protocol. Students will acquire competencies necessary to conduct independent research and contribute to evidence-based sports physiotherapy practice.

DSS-I 1.0.1 Course Outcomes

At the completion of the course, the student will be able to:

1. Identify clinically relevant research problems in Sports Physiotherapy. (P)
2. Conduct systematic and comprehensive literature reviews. (P)
3. Formulate research questions and hypotheses. (P)
4. Design appropriate research methodologies. (P)
5. Select suitable outcome measures and assessment tools. (P)
6. Prepare research protocols according to scientific standards. (P)
7. Develop ethics committee submissions. (P)
8. Present and defend research proposals effectively. (P)
9. Apply principles of scientific writing and research ethics. (P)
10. Demonstrate readiness for dissertation implementation. (P)

Competency Levels

K – Knows

KH – Knows How

SH – Shows How

P – Performs Independently

DSS-I 1.0.2 Teaching Learning Methods

1. Research Supervision Meetings
2. Research Methodology Workshops
3. Literature Review Sessions
4. Journal Clubs
5. Research Seminars
6. Proposal Development Workshops
7. Statistical Planning Sessions
8. Self-Directed Learning
9. Peer Review Activities
10. Research Presentations

DSS-I 1.0.3 Assessment Methods

1. Literature Review Assessment
2. Research Protocol Evaluation
3. Synopsis Presentation
4. Ethics Submission Review
5. Research Proposal Defense
6. Viva Voce

Module I: Research Problem Identification (Total Hours: 15)

DSS 1.1 Identification of research areas in sports physiotherapy

DSS 1.2 Selection of dissertation topic

DSS 1.3 Problem statement formulation

DSS 1.4 Feasibility assessment

DSS 1.5 Development of research objectives

DSS 1.6 Formulation of hypotheses

Module II: Literature Review (Total Hours: 25)

DSS 1.7 Literature search strategies

DSS 1.8 Database searching

DSS 1.9 Critical appraisal of literature

DSS 1.10 Evidence synthesis

DSS 1.11 Gap identification

DSS 1.12 Review writing

Module III: Research Methodology Development (Total Hours: 25)

DSS 1.13 Selection of study design

DSS 1.14 Sampling methods

DSS 1.15 Sample size estimation

DSS 1.16 Selection of outcome measures

DSS 1.17 Data collection procedures

DSS 1.18 Statistical planning

DSS 1.19 Research protocol preparation

Module IV: Ethics and Regulatory Requirements (Total Hours: 10)

DSS 1.20 Research ethics

DSS 1.21 Informed consent procedures

DSS 1.22 Ethics committee submission

DSS 1.23 Participant confidentiality

DSS 1.24 Research governance

Module V: Presentation (Total Hours: 15)

DSS 1.25 Synopsis writing

DSS 1.26 Research proposal presentation

DSS 1.27 Protocol defense

DSS 1.28 Expert review and revision

DSS 1.29 Final protocol submission

DSS 1.30 Dissertation progress reporting

DSS-I Deliverables

1. Approved dissertation topic.
2. Comprehensive literature review.
3. Completed research protocol.
4. Ethics committee application.
5. Approved synopsis presentation.
6. Dissertation progress report.

Recommended Books

1. Portney LG, Watkins MP. Foundations of Clinical Research: Applications to Practice.
2. Domholdt E. Rehabilitation Research: Principles and Applications.

3. Hicks CM. Research Methods for Clinical Therapists.
4. Greenhalgh T. How to Read a Paper.
5. Mahajan BK. Methods in Biostatistics.
6. ACSM Research Methods in Exercise Science.
7. APA Publication Manual.
8. ICMJE Recommendations for Scholarly Publications.

Second Year

COURSE CODE: M.P.T(S)-201

COURSE TITLE: Exercise Physiology-Theory

Credits: 6

Total Hours: 90

EP 1.0 Subject Description

Exercise Physiology is an advanced course designed to provide postgraduate physiotherapy students with an in-depth understanding of physiological responses and adaptations to exercise in healthy individuals, athletes, and patients with various musculoskeletal conditions. The course emphasizes cellular, cardiovascular, respiratory, neuromuscular, endocrine, and metabolic adaptations to physical activity and exercise training. It also focuses on exercise testing, fitness assessment, fatigue mechanisms, environmental physiology, and exercise prescription. The knowledge gained through this course will facilitate evidence-based exercise programming and rehabilitation planning in musculoskeletal physiotherapy practice.

EP 1.0.1 Course Outcomes

At the completion of the course, the student will be able to:

1. Explain physiological responses to acute and chronic exercise. (K)

2. Analyze cardiovascular and respiratory adaptations to exercise. (KH)
3. Interpret neuromuscular and metabolic responses during physical activity. (KH)
4. Evaluate energy systems involved in exercise performance. (P)
5. Assess physical fitness using standardized testing procedures. (P)
6. Explain mechanisms of fatigue and recovery. (KH)
7. Apply exercise physiology principles in rehabilitation and performance enhancement. (P)
8. Design evidence-based exercise programs for different populations. (P)
9. Evaluate environmental influences on exercise performance. (KH)
10. Interpret exercise testing results and prescribe appropriate interventions. (P)
11. Demonstrate competency in fitness assessment and exercise prescription. (SH)
12. Integrate exercise physiology principles into musculoskeletal rehabilitation. (P)

Competency Levels

K – Knows

KH – Knows How

SH – Shows How

P – Performs Independently

EP 1.0.2 Teaching Learning Methods

1. Interactive Lectures
2. Seminars
3. Laboratory Demonstrations
4. Practical Exercise Testing Sessions
5. Case-Based Learning
6. Journal Club Discussions
7. Fitness Assessment Workshops
8. Problem-Based Learning
9. Self-Directed Learning
10. Research Article Reviews

EP 1.0.3 Assessment Methods

1. Multiple Choice Questions
2. Short Answer Questions
3. Long Answer Questions
4. Practical Demonstrations

5. Exercise Prescription Assignments

6. Case Presentations

7. Seminar Presentations

8. Viva Voce

9. End Semester Examination

Unit I: Fundamentals of Exercise Physiology

Total Hours: 18

EP 1.1 Introduction to exercise physiology

EP 1.2 Homeostasis and exercise

EP 1.3 Cellular physiology of exercise

EP 1.4 Skeletal muscle structure and function

EP 1.5 Muscle fiber types

EP 1.6 Neuromuscular adaptations to exercise

EP 1.7 Bioenergetics and energy transfer

EP 1.8 ATP production and utilization

EP 1.9 Aerobic and anaerobic metabolism

EP 1.10 Physiological basis of exercise performance

Unit II: Cardiovascular and Respiratory Responses to Exercise

Total Hours: 18

EP 2.1 Cardiovascular physiology during exercise

EP 2.2 Cardiac output and exercise

EP 2.3 Blood pressure regulation

EP 2.4 Peripheral circulation during exercise

EP 2.5 Respiratory physiology during exercise

EP 2.6 Pulmonary ventilation

EP 2.7 Gas exchange mechanisms

EP 2.8 Oxygen transport

EP 2.9 VO_2 Max

EP 2.10 Cardiovascular adaptations to training

EP 2.11 Respiratory adaptations to training

Unit III: Metabolic and Endocrine Responses to Exercise

Total Hours: 18

EP 3.1 Energy systems in exercise

EP 3.2 Carbohydrate metabolism

EP 3.3 Fat metabolism

EP 3.4 Protein metabolism

EP 3.5 Hormonal regulation during exercise

EP 3.6 Endocrine responses to training

EP 3.7 Fluid and electrolyte balance

EP 3.8 Thermoregulation

EP 3.9 Nutritional considerations in exercise

EP 3.10 Exercise and body composition

EP 3.11 Obesity and metabolic health

Unit IV: Exercise Testing, Fitness Assessment and Fatigue

Total Hours: 18

EP 4.1 Principles of exercise testing

EP 4.2 Aerobic fitness assessment

EP 4.3 Anaerobic fitness assessment

EP 4.4 Strength testing

EP 4.5 Endurance assessment

EP 4.6 Flexibility evaluation

EP 4.7 Functional capacity testing

EP 4.8 Physical activity assessment

EP 4.9 Exercise tolerance testing

EP 4.10 Mechanisms of fatigue

EP 4.11 Recovery physiology

EP 4.12 Overtraining syndrome

Unit V: Applied Exercise Physiology in Rehabilitation

Total Hours: 18

EP 5.1 Principles of exercise prescription

EP 5.2 Exercise programming

EP 5.3 Exercise progression

EP 5.4 Exercise physiology in musculoskeletal rehabilitation

EP 5.5 Exercise for chronic pain conditions

EP 5.6 Exercise and aging

EP 5.7 Exercise in occupational health

EP 5.8 Environmental physiology:

- Heat
- Cold
- Altitude

EP 5.9 Exercise for health promotion

EP 5.10 Physical activity guidelines

EP 5.11 Evidence-based exercise prescription

EP 5.12 Contemporary advances in exercise physiology

Recommended Books

1. Powers SK, Howley ET. Exercise Physiology: Theory and Application to Fitness and Performance.
2. McArdle WD, Katch FI, Katch VL. Exercise Physiology: Nutrition, Energy and Human Performance.
3. Kenney WL, Wilmore JH, Costill DL. Physiology of Sport and Exercise.
4. Brooks GA, Fahey TD, Baldwin KM. Exercise Physiology: Human Bioenergetics and Its Applications.
5. ACSM's Guidelines for Exercise Testing and Prescription.
6. Heyward VH. Advanced Fitness Assessment and Exercise Prescription.
7. Ehrman JK, Gordon PM, Visich PS, Keteyian SJ. Clinical Exercise Physiology.
8. Kisner C, Colby LA. Therapeutic Exercise: Foundations and Techniques.
9. Brukner P, Khan K. Clinical Sports Medicine.
10. ACSM Resource Manual for Guidelines for Exercise Testing and Prescription.

COURSE CODE: M.P.T(S)-202

COURSE TITLE: Concepts in Sports Medicine- Theory

Credits: 8

Total Hours: 120

CSM 1.0 Subject Description

Concepts in Sports Medicine provides advanced knowledge regarding medical, physiological, biomechanical, nutritional, psychological, and rehabilitation principles applicable to sports participation and athletic performance. The course focuses on sports medicine team approaches, athlete screening, medical conditions in sport, sports nutrition, environmental physiology, doping control, sports psychology, and evidence-based management of athletic populations. Students will develop competencies necessary for safe participation, injury prevention, performance enhancement, and comprehensive athlete management.

CSM 1.0.1 Course Outcomes

At the completion of the course, the student will be able to:

1. Explain fundamental concepts and principles of sports medicine. (K)
2. Perform athlete screening and risk assessment procedures. (P)
3. Evaluate physiological and medical factors influencing athletic performance. (KH)
4. Apply sports nutrition principles in athlete management. (P)
5. Analyze environmental influences on athletic participation. (KH)
6. Demonstrate understanding of sports psychology principles. (KH)
7. Apply anti-doping regulations and ethical principles in sport. (P)
8. Develop injury prevention and athlete health promotion programmes. (P)
9. Integrate multidisciplinary approaches into sports medicine practice. (P)

10. Apply evidence-based sports medicine principles in physiotherapy management. (P)

Competency Levels

K – Knows

KH – Knows How

SH – Shows How

P – Performs Independently

CSM 1.0.2 Teaching Learning Methods

1. Interactive Lectures
2. Case-Based Learning
3. Athlete Screening Workshops
4. Seminars
5. Journal Clubs
6. Sports Field Exposure
7. Problem-Based Learning
8. Expert Lectures
9. Group Discussions
10. Self-Directed Learning

CSM 1.0.3 Assessment Methods

1. MCQs

2. Short Answer Questions
3. Long Answer Questions
4. Seminar Presentations
5. Case Presentations
6. Assignments
7. Viva Voce
8. End Semester Examination

Unit I: Foundations of Sports Medicine (Total Hours: 24)

CSM 1.1 History and evolution of sports medicine

CSM 1.2 Sports medicine team

CSM 1.3 Athlete health and wellness

CSM 1.4 Pre-participation evaluation

CSM 1.5 Medical screening of athletes

CSM 1.6 Risk assessment in sports

CSM 1.7 Epidemiology of sports injuries

CSM 1.8 Athlete monitoring systems

CSM 1.9 Sports participation guidelines

CSM 1.10 Evidence-based sports medicine

Unit II: Medical Conditions in Athletes (Total Hours: 24)

CSM 2.1 Cardiovascular considerations in sport

CSM 2.2 Respiratory conditions in athletes

CSM 2.3 Exercise-induced asthma

CSM 2.4 Endocrine and metabolic disorders

CSM 2.5 Female athlete triad

CSM 2.6 Relative Energy Deficiency in Sport (RED-S)

CSM 2.7 Infectious diseases in sport

CSM 2.8 Neurological conditions in athletes

CSM 2.9 Medical emergencies in sport

CSM 2.10 Athlete safety considerations

Unit III: Sports Nutrition and Environmental Physiology (Total Hours: 24)

CSM 3.1 Principles of sports nutrition

CSM 3.2 Energy requirements of athletes

CSM 3.3 Hydration strategies

CSM 3.4 Nutritional supplements

CSM 3.5 Weight management in sport

CSM 3.6 Heat-related illness

CSM 3.7 Cold-related injuries

CSM 3.8 Altitude physiology

CSM 3.9 Travel and performance

CSM 3.10 Recovery nutrition

Unit IV: Sports Psychology and Performance (Total Hours: 24)

CSM 4.1 Sports psychology principles

CSM 4.2 Motivation and performance

CSM 4.3 Stress management

CSM 4.4 Anxiety in athletes

CSM 4.5 Psychological responses to injury

CSM 4.6 Mental skills training

CSM 4.7 Athlete burnout

CSM 4.8 Team dynamics

CSM 4.9 Communication in sport

CSM 4.10 Psychological readiness for return-to-sport

Unit V: Ethics, Doping and Athlete Welfare (Total Hours: 24)

CSM 5.1 Ethics in sports medicine

CSM 5.2 Anti-doping regulations

CSM 5.3 World Anti-Doping Code

CSM 5.4 Therapeutic Use Exemptions

CSM 5.5 Doping control procedures

CSM 5.6 Athlete rights and responsibilities

CSM 5.7 Safeguarding in sport

CSM 5.8 Athlete welfare

CSM 5.9 Legal considerations in sport

CSM 5.10 Contemporary issues in sports medicine

COURSE CODE: M.P.T(S)-202

COURSE TITLE: Concepts in Sports Medicine – Practical

Credits: 4

Total Hours: 120

Practical Competencies

Section A: Athlete Screening and Evaluation (24 Hours)

1. Pre-participation physical examination
2. Medical screening procedures
3. Injury risk assessment
4. Fitness profiling
5. Athlete monitoring

Section B: Sports Nutrition Assessment (24 Hours)

6. Dietary assessment
7. Hydration assessment
8. Body composition analysis
9. Nutritional counselling
10. Recovery strategies

Section C: Environmental and Medical Monitoring (24 Hours)

11. Heat stress assessment
12. Hydration monitoring
13. Emergency response planning
14. Medical risk evaluation
15. Athlete safety procedures

Section D: Sports Psychology Applications (24 Hours)

16. Motivation assessment
17. Stress management techniques
18. Athlete counselling
19. Goal-setting strategies
20. Return-to-sport psychological readiness

Section E: Anti-Doping and Athlete Welfare (24 Hours)

21. Doping awareness programmes
22. Therapeutic use exemption documentation
23. Ethical case discussions
24. Athlete welfare programmes
25. Safeguarding procedures

Recommended Books

1. Brukner P, Khan K. Clinical Sports Medicine.
2. McArdle WD, Katch FI, Katch VL. Exercise Physiology.
3. ACSM Guidelines for Exercise Testing and Prescription.
4. Maughan RJ. Sports Nutrition.
5. Weinberg RS, Gould D. Foundations of Sport and Exercise Psychology.
6. World Anti-Doping Agency (WADA) Guidelines.

COURSE CODE: M.P.T(S)-203

COURSE TITLE: Recent Advances and Evidence-Based Practice in Sports Physiotherapy-Theory

Credits: 8

Total Hours: 120

RAEBP 1.0 Subject Description

This course is designed to provide postgraduate students with comprehensive knowledge of contemporary developments, emerging technologies, advanced rehabilitation concepts, and evidence-based clinical practices in Sports Physiotherapy. The course emphasizes critical appraisal of current literature, sports performance technologies, regenerative rehabilitation, sports analytics, injury surveillance systems, return-to-sport decision making, digital health, wearable technology, and contemporary rehabilitation strategies. Students will develop the ability to integrate research evidence into clinical practice and optimize athlete care through innovative and scientifically validated approaches.

RAEBP 1.0.1 Course Outcomes

At the completion of the course, the student will be able to:

1. Critically evaluate current evidence in sports physiotherapy. (P)
2. Interpret systematic reviews, meta-analyses, and clinical practice guidelines. (KH)
3. Apply evidence-based decision-making in athlete management. (P)
4. Evaluate emerging rehabilitation technologies in sports medicine. (KH)
5. Utilize wearable technologies and sports analytics in clinical practice. (P)
6. Integrate regenerative rehabilitation concepts into athlete care. (KH)

7. Develop advanced return-to-sport strategies using contemporary evidence. (P)
8. Analyze sports performance data for injury prevention and rehabilitation. (P)
9. Implement tele-rehabilitation and digital health strategies in sports physiotherapy. (P)
10. Demonstrate leadership in translating research evidence into sports rehabilitation practice. (P)

Competency Levels

K – Knows

KH – Knows How

SH – Shows How

P – Performs Independently

RAEBP 1.0.2 Teaching Learning Methods

1. Interactive Lectures
2. Journal Clubs
3. Critical Appraisal Workshops
4. Case-Based Learning
5. Problem-Based Learning
6. Research Seminars

7. Sports Technology Demonstrations
8. Student Presentations
9. Expert Lectures
10. Self-Directed Learning

RAEBP 1.0.3 Assessment Methods

1. MCQs
2. Short Answer Questions
3. Long Answer Questions
4. Journal Critique
5. Evidence Appraisal Assignment
6. Seminar Presentation
7. Case-Based Discussion
8. Viva Voce
9. End Semester Examination

Unit I: Evidence-Based Sports Physiotherapy (Total Hours: 24)

RAEBP 1.1 Principles of evidence-based practice

RAEBP 1.2 Hierarchy of evidence

RAEBP 1.3 Systematic reviews and meta-analysis

RAEBP 1.4 Clinical practice guidelines

RAEBP 1.5 Critical appraisal of research

RAEBP 1.6 Research translation into practice

RAEBP 1.7 Outcome measures in sports rehabilitation

RAEBP 1.8 Sports injury surveillance systems

RAEBP 1.9 Athlete monitoring frameworks

RAEBP 1.10 Contemporary sports physiotherapy models

Unit II: Advances in Sports Rehabilitation (Total Hours: 24)

RAEBP 2.1 Contemporary rehabilitation frameworks

RAEBP 2.2 Tendon rehabilitation advances

RAEBP 2.3 Ligament rehabilitation advances

RAEBP 2.4 Cartilage rehabilitation concepts

RAEBP 2.5 Regenerative rehabilitation

RAEBP 2.6 Blood flow restriction training

RAEBP 2.7 Neuromuscular rehabilitation

RAEBP 2.8 Motor control approaches

RAEBP 2.9 Recovery science

RAEBP 2.10 Advanced exercise prescription

Unit III: Technology and Innovation in Sports Physiotherapy (Total Hours: 24)

RAEBP 3.1 Wearable technologies

RAEBP 3.2 Motion analysis systems

RAEBP 3.3 GPS-based athlete monitoring

RAEBP 3.4 Force plate technology

RAEBP 3.5 Virtual reality applications

RAEBP 3.6 Augmented reality in rehabilitation

RAEBP 3.7 Artificial intelligence in sports medicine

RAEBP 3.8 Digital health technologies

RAEBP 3.9 Tele-rehabilitation

RAEBP 3.10 Remote athlete monitoring

Unit IV: Performance Enhancement and Return to Sport (Total Hours: 24)

RAEBP 4.1 Contemporary performance assessment

RAEBP 4.2 Load monitoring

RAEBP 4.3 Training load management

RAEBP 4.4 Fatigue monitoring

RAEBP 4.5 Recovery optimization

RAEBP 4.6 Return-to-play frameworks

RAEBP 4.7 Return-to-sport testing

RAEBP 4.8 Psychological readiness assessment

RAEBP 4.9 Injury prevention strategies

RAEBP 4.10 Precision athlete management

Unit V: Emerging Trends and Future Directions (Total Hours: 24)

RAEBP 5.1 Precision rehabilitation

RAEBP 5.2 Personalized athlete care

RAEBP 5.3 Big data in sports medicine

RAEBP 5.4 Sports genomics

RAEBP 5.5 Contemporary pain science

RAEBP 5.6 Athlete wellness programmes

RAEBP 5.7 Value-based sports healthcare

RAEBP 5.8 International consensus statements

RAEBP 5.9 Future trends in sports physiotherapy

RAEBP 5.10 Innovations in sports rehabilitation

COURSE CODE: M.P.T(S)-203

COURSE TITLE: Recent Advances and Evidence-Based Practice in Sports Physiotherapy – Practical

Credits: 4

Total Hours: 120

Practical Competencies

Section A: Evidence-Based Practice Skills (24 Hours)

1. Literature searching
2. Critical appraisal of research articles
3. Clinical guideline implementation
4. Evidence synthesis
5. Outcome measure selection

Section B: Sports Technology Applications (24 Hours)

6. Wearable technology utilization
7. GPS athlete monitoring
8. Motion analysis systems
9. Force plate assessment
10. Digital performance tracking

Section C: Advanced Rehabilitation Techniques (24 Hours)

11. Blood flow restriction training

12. Neuromuscular rehabilitation
13. Motor control retraining
14. Recovery monitoring
15. Contemporary exercise prescription

Section D: Return-to-Sport Assessment (24 Hours)

16. Functional performance testing
17. Return-to-play assessment
18. Return-to-sport decision making
19. Psychological readiness evaluation
20. Athlete monitoring systems

Section E: Clinical Application and Research Translation (24 Hours)

21. Evidence-based case management
22. Sports rehabilitation programme design
23. Clinical guideline-based intervention planning
24. Technology-assisted rehabilitation
25. Research-to-practice implementation

Recommended Books

1. Brukner P, Khan K. Clinical Sports Medicine.

2. Bahr R, Clarsen B, Derman W. IOC Manual of Sports Injuries.
3. Cook CE. Orthopedic Manual Therapy: An Evidence-Based Approach.
4. ACSM Guidelines for Exercise Testing and Prescription.
5. Latest International Consensus Statements on Return-to-Sport.
6. Current Clinical Practice Guidelines in Sports Physiotherapy.
7. Recent Systematic Reviews and Meta-Analyses in Sports Rehabilitation.
8. World Physiotherapy Sports Physical Therapy Resources.

COURSE CODE: M.P.T(S)-204

COURSE TITLE: Dissertation (DSS-II)-Practical

Credits: 22

Total Hours: 660

DSS-II 1.0 Subject Description

Dissertation (DSS-II) is the culmination of postgraduate research training in Sports Physiotherapy. The course provides an opportunity for students to conduct independent scientific research in areas related to sports injury prevention, sports rehabilitation, exercise science, athletic performance, sports medicine, and evidence-based sports physiotherapy. Students are expected to implement approved research protocols, collect and analyze data, interpret findings, prepare a dissertation, and disseminate research outcomes. The course aims to develop advanced research competencies and promote evidence generation in sports physiotherapy practice.

DSS-II 1.0.1 Course Outcomes

At the completion of the course, the student will be able to:

1. Conduct independent research in Sports Physiotherapy. (P)

2. Implement approved research protocols effectively. (P)
3. Collect, manage, and analyze research data. (P)
4. Apply appropriate statistical techniques for data analysis. (P)
5. Interpret research findings scientifically. (P)
6. Relate study findings to existing evidence and clinical practice. (P)
7. Prepare a dissertation according to university guidelines. (P)
8. Present and defend research findings effectively. (P)
9. Demonstrate competency in scientific writing and publication. (P)
10. Translate research outcomes into sports physiotherapy practice.
(P)

Competency Levels

K – Knows

KH – Knows How

SH – Shows How

P – Performs Independently

DSS-II 1.0.2 Teaching Learning Methods

1. Research Supervision Meetings
2. Independent Research Activities
3. Statistical Analysis Workshops

4. Journal Clubs
5. Research Seminars
6. Scientific Writing Sessions
7. Research Progress Presentations
8. Dissertation Review Meetings
9. Peer Learning Activities
10. Self-Directed Learning

DSS-II 1.0.3 Assessment Methods

1. Research Progress Evaluation
2. Dissertation Review
3. Statistical Analysis Assessment
4. Scientific Writing Assessment
5. Dissertation Presentation
6. Dissertation Submission
7. Dissertation Viva Voce
8. External Evaluation

Module I: Research Implementation (Total Hours: 120)

DSS 2.1 Finalization of research protocol

DSS 2.2 Participant recruitment

DSS 2.3 Baseline athlete assessment

DSS 2.4 Informed consent procedures

DSS 2.5 Pilot testing

DSS 2.6 Standardization of procedures

DSS 2.7 Quality assurance measures

DSS 2.8 Research documentation

DSS 2.9 Progress monitoring

DSS 2.10 Protocol adherence

Module II: Data Collection and Management (Total Hours: 180)

DSS 2.11 Athlete screening

DSS 2.12 Data collection procedures

DSS 2.13 Intervention monitoring

DSS 2.14 Performance testing

DSS 2.15 Follow-up assessments

DSS 2.16 Outcome measure administration

DSS 2.17 Data coding

DSS 2.18 Data entry

DSS 2.19 Database management

DSS 2.20 Data validation

Module III: Statistical Analysis (Total Hours: 120)

DSS 2.21 Data organization

DSS 2.22 Data cleaning

DSS 2.23 Statistical software application

DSS 2.24 Descriptive analysis

DSS 2.25 Inferential analysis
DSS 2.26 Hypothesis testing
DSS 2.27 Interpretation of results
DSS 2.28 Graphical presentation
DSS 2.29 Tabular presentation
DSS 2.30 Statistical reporting

Module IV: Dissertation Writing (Total Hours: 180)

DSS 2.31 Introduction chapter
DSS 2.32 Review of literature
DSS 2.33 Methodology chapter
DSS 2.34 Results chapter
DSS 2.35 Discussion chapter
DSS 2.36 Conclusion and recommendations
DSS 2.37 Reference management
DSS 2.38 Formatting and editing
DSS 2.39 Dissertation compilation
DSS 2.40 Final manuscript preparation

Module V: Research Dissemination and Defense (Total Hours: 60)

DSS 2.41 Abstract preparation
DSS 2.42 Scientific poster preparation
DSS 2.43 Oral presentation skills
DSS 2.44 Manuscript preparation
DSS 2.45 Journal submission process
DSS 2.46 Dissertation presentation
DSS 2.47 Viva voce preparation

DSS 2.48 Dissertation defense

DSS 2.49 Incorporation of corrections

DSS 2.50 Final submission

Dissertation Requirements

1. Completion of approved dissertation research.
2. Maintenance of dissertation logbook.
3. Submission of periodic progress reports.
4. Completion of data collection and analysis.
5. Submission of dissertation in prescribed format.
6. Presentation before departmental review committee.
7. Successful completion of dissertation viva voce.
8. Preparation of a manuscript suitable for publication.

Recommended Books

1. Portney LG, Watkins MP. Foundations of Clinical Research: Applications to Practice.
2. Domholdt E. Rehabilitation Research: Principles and Applications.
3. Hicks CM. Research Methods for Clinical Therapists.
4. Greenhalgh T. How to Read a Paper.
5. Mahajan BK. Methods in Biostatistics.

6. ACSM Research Methods in Exercise Science.
7. APA Publication Manual.
8. ICMJE Recommendations for Scholarly Publications.
9. CONSORT Statement Guidelines.
10. STROBE Statement Guidelines.

COURSE CODE: M.P.T(S)-205

COURSE TITLE: Skills Acquisition & Refinement (SAR-II)-Practical

Credits: 8

Total Hours: 240

SAR-II 1.0 Subject Description

Skills Acquisition and Refinement (SAR-II) is an advanced competency-based practical course designed to enhance expertise in Sports Physiotherapy. The course emphasizes independent clinical decision-making, advanced sports rehabilitation, athlete monitoring, performance optimization, return-to-play assessment, injury prevention, and evidence-based sports medicine practice. Through supervised practical training, simulation exercises, athlete management, and clinical reasoning activities, students will develop advanced professional competencies required for contemporary sports physiotherapy practice.

SAR-II 1.0.1 Course Outcomes

At the completion of the course, the student will be able to:

1. Demonstrate advanced competency in sports injury management. (P)
2. Apply advanced rehabilitation strategies for athletic populations. (P)
3. Design individualized performance enhancement programmes. (P)

4. Conduct return-to-play and return-to-sport assessments. (P)
5. Utilize athlete monitoring systems and performance analytics. (P)
6. Implement evidence-based injury prevention programmes. (P)
7. Demonstrate leadership within sports medicine teams. (P)
8. Apply advanced clinical reasoning in complex sports cases. (P)
9. Integrate technology into sports rehabilitation practice. (P)
10. Independently manage athletes across various stages of rehabilitation. (P)

Competency Levels

K – Knows

KH – Knows How

SH – Shows How

P – Performs Independently

SAR-II 1.0.2 Teaching Learning Methods

1. Advanced Skill Demonstrations
2. Sports Field Training
3. Athlete Management Workshops
4. Simulation-Based Learning
5. Case-Based Discussions

6. Performance Analysis Sessions
7. Clinical Conferences
8. Journal Clubs
9. Peer Learning Activities
10. Reflective Practice

SAR-II 1.0.3 Assessment Methods

1. Objective Structured Clinical Examination (OSCE)
2. Direct Observation of Procedural Skills (DOPS)
3. Clinical Case Presentation
4. Skill Demonstration
5. Clinical Viva Voce
6. Portfolio Assessment
7. Logbook Evaluation

Students must be engaged in

- Teaching Assignment, Seminars, journal club & Case Studies etc

COURSE CODE: M.P.T(S)-206

COURSE TITLE: Clinical Training (CT-II)-Practical

Credits: 20

Total Hours: 600

CT-II 1.0 Subject Description

Clinical Training-II provides advanced supervised clinical exposure in Sports Physiotherapy and Sports Medicine settings. The course is designed to facilitate independent clinical decision-making, athlete management, sports injury rehabilitation, performance enhancement, return-to-play assessment, and multidisciplinary collaboration. Students are expected to demonstrate competency in the management of complex athletic injuries, performance optimization programmes, and evidence-based sports physiotherapy practice.

CT-II 1.0.1 Course Outcomes

At the completion of the course, the student will be able to:

1. Independently assess and manage sports-related injuries. (P)
2. Formulate evidence-based sports rehabilitation programmes. (P)
3. Conduct advanced athlete performance assessments. (P)
4. Implement return-to-play and return-to-sport protocols. (P)
5. Apply injury prevention strategies across various sports. (P)
6. Demonstrate competency in sports event coverage. (P)
7. Utilize athlete monitoring and performance analysis systems. (P)
8. Function effectively within multidisciplinary sports medicine teams. (P)
9. Demonstrate leadership and professional accountability. (P)
10. Maintain high standards of clinical documentation and communication. (P)

Competency Levels

K – Knows

KH – Knows How

SH – Shows How

P – Performs Independently

CT-II 1.0.2 Clinical Training Areas

Advanced Sports Rehabilitation Clinic (Total Hours: 180)

CT 2.1 Complex sports injury assessment

CT 2.2 Advanced rehabilitation planning

CT 2.3 Post-surgical rehabilitation

CT 2.4 Tendon rehabilitation

CT 2.5 Ligament rehabilitation

CT 2.6 Cartilage injury rehabilitation

CT 2.7 Functional progression

CT 2.8 Outcome assessment

Sports Medicine and Orthopedic Services (Total Hours: 120)

CT 2.9 Athlete medical screening

CT 2.10 Sports medicine consultations

CT 2.11 Multidisciplinary case management

CT 2.12 Medical referral procedures

CT 2.13 Athlete monitoring

CT 2.14 Return-to-sport planning

CT 2.15 Recovery management

CT 2.16 Clinical documentation

Sports Performance and Conditioning Unit (Total Hours: 100)

CT 2.17 Performance assessment

CT 2.18 Strength and conditioning programmes

CT 2.19 Load monitoring

CT 2.20 Speed and agility development

CT 2.21 Endurance conditioning

CT 2.22 Recovery optimization

CT 2.23 Athlete profiling

CT 2.24 Performance analytics

Sports Event Coverage (Total Hours: 80)

CT 2.25 Pre-event preparation

CT 2.26 On-field assessment

CT 2.27 Emergency sports care

CT 2.28 Injury surveillance

CT 2.29 Team support services

CT 2.30 Field-side rehabilitation

CT 2.31 Athlete management

CT 2.32 Event documentation

Academic and Professional Activities (Total Hours: 120)

CT 2.33 Case presentations

CT 2.34 Journal clubs

CT 2.35 Clinical conferences

CT 2.36 Sports medicine meetings

CT 2.37 Research discussions

CT 2.38 Clinical audits

CT 2.39 Reflective practice

CT 2.40 Professional development activities

Clinical Requirements

1. Minimum 75 complete athlete case records.
2. Minimum 40 detailed sports injury case presentations.
3. Participation in sports event coverage activities.
4. Maintenance of clinical logbook.
5. Participation in journal clubs and clinical audits.
6. Completion of athlete performance portfolio.
7. Documentation of rehabilitation outcomes and return-to-sport decisions.

CT-II 1.0.3 Assessment Methods

1. Clinical Performance Evaluation
2. Case Presentation
3. Clinical Viva Voce
4. Logbook Assessment
5. Portfolio Assessment
6. Supervisor Evaluation
7. Professional Behaviour Assessment
8. Competency-Based Clinical Assessment

Recommended Books

1. Brukner P, Khan K. Clinical Sports Medicine.

2. Bahr R, Clarsen B, Derman W. IOC Manual of Sports Injuries.
3. ACSM Guidelines for Exercise Testing and Prescription.
4. Prentice WE. Rehabilitation Techniques in Sports Medicine.
5. Joyce D, Lewindon D. High-Performance Training for Sports.
6. Reiman MP, Lorenz DS. Orthopedic Clinical Examination.