SCHEME OF EXAMINATION

&

SYLLABI

OF

MASTER OF PHYSIOTHERAPY

(NEUROLOGY)

(Two Years Programme)

Guru Gobind Singh Indraprastha University
KASHMERE GATE, DELHI

W.E.F. Academic Session 2008-2009

Guru Gobind Singh Indraprastha University, Delhi

MASTER OF PHYSIOTHERAPY (MPT)

(NEUROLOGY)

FIRST YEAR

COURSE CODE	COURSE NAME	L	T/P	YEARLY CREDITS*
MPT (N) 101	Basic sciences & Biomechanics	3	--	6
MPT (N) 102	Research Methodology& Biostatistics	3	--	6
MPT (N) 103	Neurological Disorders-I	4	--	8
MPT (N) 104	Physiotherapy Assessment & Goal planning-I	3	--	6
MPT (N) 105	Neurological Physiotherapy Management -I	3	--	6
	PRACTICALS			
MPT (N) 151	Neurological physiotherapy Assessment & Management	--	6	6
MPT (N) 152	P.T. Clinics / Symposia / Presentation.**		12	12
	Total	16	18	50

* Yearly Credits have been calculated by multiplying the Semester-wise credits by two for theory papers.
** NUES stands for Non University Examination Subject.

Guru Gobind Singh Indraprastha University, Delhi

MASTER OF PHYSIOTHERAPY (MPT)

(NEUROLOGY)

SECOND YEAR

COURCE CODE	COURSE NAME	L	T/P	YEARLY CREDITS*
MPT (N) 201	Pedagogy in Physiotherapy Education	2	--	4
MPT (N) 202	Administration, Management & Ethical issues	2	--	4
MPT (N) 203	Neurological Disorders-II	4	--	8
MPT (N) 204	Physiotherapy Assessment & Goal Planning –II	3	--	6
MPT (N) 205	Neurological Physiotherapy Management –II	3	--	6
	PRACTICALS			
MPT (N) 251	Neurological Physiotherapy Assessment and Management	--	6	6
MPT (N) 252	P.T. Clinics/ Symposia / Presentation**	--	8	8
MPT (N) 253	Dissertation	--		8***
	Total	14	14	50

* Yearly Credits have been calculated by multiplying the Semester-wise credits by two for theory papers.

** NUES stands for Non University Examination Subject.

*** The contact hours for dissertation would depend on the subject hence the credits have directly been shown in the final column.

Total Credits of the Programme are –

Every student will be required to register themselves for all courses of the programme and shall also be required to take up examination to all courses; however a student shall be entitled to the award of the degree if he or she is able to earn a total of 100 credits.

First Year

Basic Sciences & Biomechanics

Course code MPT (N) 101 L-3 T/P - 0 CREDITS-6

Objective:

On completion of the study of this subject the student should be able to:

- Comprehend the structure & function of parts of the nervous system in relevance to Physiotherapy
- Correlate the knowledge gained, in understanding the neurological dysfunction

Following are the topics to be included:

Basic Sciences:

1. Introduction to nervous system, embryonic development, functions & general principles of nervous system nervous system.
2. Neuron & Neuroglia.
3. Synapse- definition, properties, Electrical signals & its transmission- Ion channels, Resting membrane potential, graded potential, Generation of action Potential, Propagation of nerve impulses.
4. Nerve fiber- Definition & properties, myelination, Reaction of degeneration & its clinical application.
5. Formation of spinal nerve, peripheral nerve, dermatomes, myotomes, sclerotomes & its clinical application.
6. Regeneration & repair of nervous tissue. Concept of Neural Plasticity.
7. Sensory and Motor Pathways.
8. Parts of nervous system – Structure, function and its clinical application.
9. Autonomic Nervous System

Basic Biomechanics:

1. Basic concepts definition, description, classification, practical application of force, equilibrium friction, levers, springs and pulleys.
2. Mechanical properties of connective tissue viscoeleasticity, creep and stress relaxation, rate dependent properties, stress and strain curves. Brief mention of specialized tissues Bones, tendons, ligaments, cartilage.
3. Mech. properties of muscular tissue length tension relationship, MB contraction types factor affecting ms function.
4. Biomechanics of Spine
5. Kinetics and kinematic analysis of normal posture.
6. Kinetics and kinematic analysis of normal Gait.
7. Pathological Gait

References:

S. No.	*Title*
1	Synopsis of Surgical Anatomy
2	Gray's Anatomy-
3	Grants – Methods of Anatomy
4	Clinical Anatomy for Medical Students
5	Textbook of Medical Physiology
6	Snell's Neuroanatomy: Richard Snell
7	Shepherd, Gordon- Synaptic Organization of the brain, 4th Edition
8	Textbook of Human anatomy: Inderbir Singh
9	Hutchinson's – Clinical Methods of Medicine
10	Netter's Atlas of human Neurosciences: Feltan, David L.
11	Central nervous System: Brodal, Per
12	Clinical neurophysiology: Balon, Robert W.
13	Textbook of Clinical Neuroanatomy: Singh, Vishram
14	Clinical Kinesiology
15	Kinesiology – Scientific Basis of Human Motion, Brown & Benchmark
16	Kinesiology and Applied Anatomy,
17	Biomechanics of Spine
18	Physiology of Joints
19	Clinical Neurophysiology (Mishra V.K.).
20	Anatomy and Imaging of the cranial nerves: Leblanc, Andre
21	Biomechanics – A Qualitative approach for studying Human Motion
22	Joint Structure and Function - A Comprehensive Analysis -
23	Analysis of Sports Motion: Anatomic and Biomechanics perspectives
24	Human Neuroanatomy by Carpenter M. B, Williams & Wilkins, Baltimore, 1983
25	Atlas of Neuroanatomy: Warner, Joseph J.
26	The neural basis of motor control by Black I., Churchill , Living stone 1987
27	Abnormal postural reflex activity caused by Brain Lesions Bobath B., Aspen publications, Rockville, 1897
28	Clinical kinesiology by Brunstrom
29	Anatomy of the Central Nervous System: Poddar S.
30	Basic Neurological Life Support: Corbett, James J.
31	Human Anatomy: Regional and Applied: Chaurasia B.D.
32	Textbook of Pain: Wall P.D.
33	Bonica's Management of pain: Losser J.D.
34	Advances in Neurology: Brain Plasticity: Freund, Hans-Joachim
35	Clinical Biomechanics of the spine: White, Augustus

Research Methodology & Biostatistics

Course code MPT (N) 102 L-3 T/P - 0 CREDITS-6

Objective:

On completion of the study of this subject the student should be able to:

- Enumerate the steps in Physiotherapy research process
- Acquire skills of reviewing literature, formulating a hypothesis, collect data, writing research proposal etc
- Describe the importance & use of biostatistics for research work

Following are the topics to be included:

SECTION I

RESEARCH METHODOLOGY

1. Research in physiotherapy

- Introduction
- Research for Physiotherapist: Why? How? And When?
- Research – Definition, concept, purpose, approaches
- Internet sites for Physiotherapist

2. Research Fundamentals

- Define measurement
- Measurement framework
- Scales of measurement
- Pilot Study
- Types of variables
- Reliability & Validity
- Drawing Tables, graphs, master chart etc

3. Writing a Research Proposal, Critiquing a research article

- Defining a problem
- Review of Literature
- Formulating a question, Operational Definition
- Inclusion & Exclusion criteria
- Forming groups
- Data collection & analysis
- Results, Interpretation, conclusion, discussion
- Informed Consent
- Limitations

4. Research Design

- Principle of Designing
- Design, instrumentation & analysis for qualitative research
- Design, instrumentation & analysis for quantitative research
- Design, instrumentation & analysis for quasi-experimental research
- Design models utilized in Physiotherapy

5. Research Ethics

- Importance of Ethics in Research
- Main ethical issues in human subjects' research
- Main ethical principles that govern research with human subjects
- Components of an ethically valid informed consent for research

SECTION II

BIOSTATISTICS

1. Biostatistics

- Introduction
- Definition
- Types
- Application in Physiotherapy

2. Data

- Definition
- Types
- Presentation
- Collection methods

3. Measures of central value

- Arithmetic mean, median, mode. Relation ship between them
- Partitioned values- Quatertiles, Deciles, Percentiles
- Graphical determination

4. Measures of Dispersion

- Range
- Mean Deviation
- Standard Deviation

5. Normal Distribution Curve

- Properties of normal distribution
- Standard normal distribution
- Transformation of normal random variables.
- Inverse transformation
- Normal approximation of Bioaxial distribution.

6. Correlation analysis

Bivariate distribution:

- Scatter Diagram
- Coefficient of correlation
- Calculation & interpretation of correlational coefficient
- T-test, Z-test, P-value

7. Regression analysis

- Lines of regression
- Calculation of Regression coefficient

8. Sampling

- Methods of Sampling
- Sampling distribution
- Standard error
- Types I & II error

9. Probability (in Brief)

10. Hypothesis Testing

- Null Hypothesis
- Alternative hypothesis
- Acceptance & rejection of null Hypothesis

Level of significance

11. Parametric & non parametric tests

Chi square test

Mann-Whitney U test

Wilcoxon Signed test

Kruskal-Wallis test

Friednam test

T-test/student T test

Analysis of variance

References:

Sr. No.	***Title***
1	Research for physiotherapists
2	Handbook of research Methodology
3	Introduction to research in Health Sciences
4	Elements of research in Physical Therapy
5	Physical Therapy Research
6	Methods in Biostatistics: For Medical students and research workers
7	An Introduction to biostatistics
8	Research Methodology: Kumar
9	Research Methology: Kothari, C.P.
10	Methods in Biostatistics: Mahajan B.K.

Neurological Disorders I

Course code MPT (N) 103 L-4 T/P - 0 CREDITS-8

Objective:

On completion of the study of this subject the student should be able to:

- Correlate the clinical manifestations to the organ of dysfunction of the nervous system
- To understand the conservative & surgical management of the Neurological conditions as relevant to Physiotherapy.

Section I
Neurological disorders

Introduction, etiology, Path physiology,
Clinical presentation, conservative management & complications of the following clinical conditions:

1. Congenital & hereditary Disorders
2. Disorders of cerebral circulation
3. Head Injury
4. Spinal Cord Injury
5. Disorders of Peripheral nerves
6. Disorders of cranial nerves
7. Disorders of muscles

Investigations

Orientation and Introduction, Physical basis, normal result & common abnormal responses, (in brief)

1. Skull X ray

2. Computerized Tomography
3. Magnetic Resonance Imaging
4. Intracranial Pressure monitoring
5. Evoked Potentials
6. EMG/ NCV
7. Lumbar puncture
8. Common Laboratory tests in Neurological disorders

Section II
Neurosurgical disorders

1. General Principles of neurosurgery
2. Disorders of CSF Fluid & circulation
3. Cerebral malformations
4. Spasticity management
5. Surgical repair of peripheral Nerves
6. Muscle lengthening/ Release
7. Management of an unconscious Patient
8. ICU management of a neurologically ill patient

References:

Sr. No.	*Title*
1	Case book of Neurology, Kay Richard
2	Adams & victor's manual of Neurology, Victor Morris
3	Brain & Bannister's clinical Neurology Brannister Roger
4	Harrison's principles of internal medicine: Kasper D.L.
5	Advances in Neurology: Gordin, Ariel
6	Neurology in Clinical Practices Vol. I & II
7	Human nervous systems, Barre Murray L
8	Electro diagnosis in diseases of nerve and muscles by Kimuraj J., F.A. Davis, Philadelphia
9	Neurosurgery: the science basic of clinical
10	Merritts Neurology: Rawland, Lewis P.
11	Imaging of the spine & spinal cord
12	Neurosurgery: The Science basic of clinical
13	Spinal cord diseases: diagnosis
14	Management of Peripheral Nerve Problems: Allan H O, George E.
15	Surgery of spinal trauma
16	Paraplegia and Tetraplegia by Brombley, Churchill Livingstone, Edinburgh, 1991
17	Spinal cord medicine
18	Neurology of the new born
19	Neurologic disease in women

20	Management of peripheral nerve problems Omellium, George E
21	Advances in neurology Gordin, Ariel
22	Advances in neurology Pourmand, Rahman
23	Neurology in clinical practice. Vol. I,II Bradley Walter, C
24	Peripheral Neuropathy Cross, Didier
25	Movement Disorders: Marsden C.D.
26	Procedures and Monitoring for the critically ill: Shoemaker & William C.
27	Neurology of the elderly: Godwin- Asten R.
28	Neurodegenerative diseases: Calne, Donald F.B.
29	Neuroimaging I: Basic Sciences: Bigler, Erind
30	Neuroimaging I: Clinical Application: Bigler, Erind

Physiotherapy Assessment & Goal planning-I

Course code MPT (N) 104 L-3 T/P - 0 CREDITS-6

Objective:

On completion of the study of this subject the student should be able to

- Perform thorough Physiotherapy assessment & list deficiencies
- Design individualized goals for the patient
- Rationalize the outcome of the assessment
- Document systematic, meaningful, accurate written records of the patient

Physiotherapy assessment to be taught for the conditions covered in the subject Neurological Disorders I (Code MPT (N) 103)

1. Review of General assessment
2. Assessment of Higher mental functions
3. Neurodevelopment assessment
4. Pain assessment
5. Sensory assessment
6. Assessment of Tone, flexibility, tightness
7. Motor Control assessment
8. Muscle Length Testing
9. Postural assessment
10. Limb length measurement
11. Range of Motion
12. Balance assessment
13. Coordination assessment

14. Reflex Testing
15. Cranial nerve testing
16. Nerve Tension testing
17. EMG/ NCV report reading & analysis
18. Clinical Gait assessment
19. Functional assessment
20. Physical disability evaluation (in brief)

References:

Sr. No.	***Title***
1	Rehabilitation of people with Spinal cord injury
2	Essentials of in patient rehabilitation
3	Physical Rehabilitation: Assessment and Treatment by O'Sullivan, F.A. Davis, Philadelphia , 1994
4	Adams & victor's manual of Neurology, Victor Morris
5	Dejong's the neurologic examination
6	Practical evidence based physiotherapy
7	The neural basis of Motor control by Black I., Churchill, Livingstone, 1987
8	Handbook of Neurological Rating Hemdon, Robert M
9	Cash' TB for Neurology for Physiotherapists, 1/e Ind by Downie
10	Textbook of Rehabilitation by Sunder
11	Early diagnosis and Therapy in Cerebral palsy: Sherzer Altred L
12	Daniels and Worthingham's muscle testing
13	Practical neurology: Biller,Jose
14	Neurological Differential diagnosis,John Pattern
15	Clinical Neurodynamics: Shacklack, Michael
16	Bickerstaff's Neurological examination: Spillance, John
17	Electrodiagnosis in disease of muscle: Kumara ,Jun

18	Technique of the neurological examination: De Meyer,William E.
19	Technique of Neurological Examination: Stephen L
20	Chronic Pain Evaluation: Rucker,Karan S.
21	Practical EMG: Johnson W, Erncol
22	Gait Analysis: Cottricchia, Mark E
23	Disability evaluation: Delisa, Joel A.E.
24	Bate's guide to history taking and physical examination
25	Handbook of pain assessment: Turk, Dennis C
26	Clinical Electrophysiology: Macker, Lynn
27	Gait Analysis Perry,Jacuelin
28	Spinal Cord Disease: Diagnosis and management Engler G.L.

Neurological Physiotherapy Management- I

Course code MPT (N) 105 L-3 T/P - 0 CREDITS-6

Objective:

On completion of the study of this subject the student should be able to

- To formulate a rationalized physiotherapy treatment plan for the patient
- Implement physiotherapy treatment
- Compare & contrast the outcome of various physiotherapy treatment approaches
- Document the status of the patient as written records

Following are the topics to be included but not limited to:

Review of Basic Techniques:

1. Stretching
2. Strengthening
3. Passive movements
4. Active exercise training
5. Assisted Resisted Exercise training
6. Resisted exercise training
7. Postural Re-education
8. Electrotherapy Modalities

Physiotherapy management for the conditions covered in the subject Neurological Disorders I (Code MPT (N) 103)

1. Theories of Motor Control

2. Theories of Motor learning

Advanced Physiotherapy Treatment approaches:

1. Neurodevelopment technique
2. Bo bath
3. Vojta
4. Brunnstrom
5. PNF
6. Rood's Approach
7. Pain management
8. Gait Training
9. Wheelchair Prescription
10. Biofeedback
11. Hydrotherapy
12. Relaxation technique
13. Pediatric Neurophysiotherapy
14. Geriatric Neurophysiotherapy
15. Assistive Technologies and its role in Neurorehabilitation
16. Prosthetics and Orthotics in Neurorehabilitation
17. Wheelchair skills- Basic

References:

Sr. No.	*Title*
1	Functional Neurorehabilitation: Beriner, Julie
2	Neuro – Rehabilitation by Farber, W.B. Saunders,
3	Neurological Physiotherapy Edward Susan
4	Neuro – Rehabilitation: Principles and practice Taly,A.B.
5	Neuro – Rehabilitation:opt Caur,Janet
6	Neurolgical rehabilitation: Umphred, Darcy, A.
7	Cash's textbook of neurology by Downie
8	Motor control: Theory and Practice: Shumway- Cook & Anne
9	Handbook of neurological rehabilitation Greenwood,R.J
10	Neuroscience for rehabilitation: Cohen.Helen
11	Starting Again: Davies,Patricia M.
12	Physical medicine and rehabilitation secrets by O' Young
13	Tidy's Physiotherapy, 13/e, 2003 by Porter
14	Stroke Therapy: Fisher, Marc
15.	Geriatric physical therapy: Lewis, Carole B.
16.	Physical Medicine and Rehabilitation: Borenstein, David G.

17.	Early diagnosis and therapy in Cerebral Palsy: Scherzer, Alfred L.
18	Human Walking: Rose, Gessica
19.	Comprehensive Aquatic therapy: Cohen, Helen
20	Amputation and prosthetics: May, Bella J.
21	Stroke Rehabilitation: Focus, Rohest
22	Rehabilitation of Traumatic Brain injury: Cameron, M.H.
23	Adult hemiplegia: Evaluation and Treatment: Bloch, Joseph I.
24	Hand Rehabilitation: Cipriano, Joseph J.
25	Gait disorders of aging: Masdeu, Joseph C.
26.	Physiotherapy and the growing child: Burns, Scozanne
27	Physical therapy for children: Campbell, Maggie
28	Spinal Cord Inury Rehabilitation: Hommell, Karen Whalley
29	Physiotherapy in Stroke management: Harrison, Marie, N.A.
30	Textbook of Cerebral palsy and Motor Delay: Sophia Levitt
31	Human movement: An introduction: Trew, marion
32	Aquatic Exercise Therapy: Barr, Murray
33	Clayton's Electrotherapy: Forster A.
34	Electrotherapy: Evidence based practice: Shiela kitchen

Neurological Physiotherapy Assessment & Management (Practical)

Course code MPT (N) 151 L-0 T/P - 6 CREDITS-6

Objective:

On completion of the study of this subject the student should be able to

- Perform a thorough physiotherapy assessment & plan individualized physiotherapy goals for neurological Conditions covered in the first year.
- Apply Effective physiotherapy treatment techniques, compare & contrast the efficacy of different treatment approaches
- Communicate the status of the patient with other rehabilitation team members & patient's attendants.

Following are the topics to be included -

Practical Training in the Physiotherapy assessment & treatment for conditions covered in the First year-

Physiotherapy assessment

1. Review of General assessment
2. Assessment of Higher mental functions
3. Neurodevelopment assessment
4. Pain assessment
5. Sensory assessment

6. Assessment of Tone, flexibility, tightness
7. Motor Control assessment
8. Muscle Length Testing
9. Postural assessment
10. Limb length measurement
11. Range of Motion
12. Balance assessment
13. Coordination assessment
14. Reflex Testing
15. Cranial nerve testing
16. Nerve Tension testing
17. EMG/ NCV report reading & analysis
18. Clinical Gait assessment
19. Functional assessment
20. Physical disability evaluation (in brief)

Advance Physiotherapy Treatment approaches

1. Neurodevelopment technique
2. Bo bath
3. Vojta
4. Brunnstrom
5. PNF
6. Rood's Approach
7. Pain management
8. Gait Training
9. Biofeedback
10. Hydrotherapy
10. Relaxation technique
11. Wheelchair Prescription
12. Pediatric Neurophysiotherapy
13. Geriatric Neurophysiotherapy

14. Assistive Technologies and its role in Neurorehabilitation
15. Prosthetics and Orthotics in Neurorehabilitation
16. Wheelchair skills- Basic

Practical Examination-

- Practical examination will be divided into two parts:

1) Two long Cases
2) One short Case

CLINICS, SYMPOSIA, PRESENTATION & COMPUTER FUNDAMENTALS

Course code MPT (N) 152 L-0 T/P-12 CREDITS-12

Course objective: The student will learn approach to patient, collection of demographic data, art of history taking and bedside/ OPD/ on-field manners in relation to the patient. The student will be posted in the department of Physiotherapy & the sports clubs/ organizations/ teams associated with the hospital and he/ she will do the assessment of the patients visiting the respective destinations.
Students will be taught the basic fundamentals of computer science and information technology, helping them in carrying out research and penning the dissertation.

Examination

There will be no university examination. The students will be awarded marks on the basis of his/ her attendance & performance during clinical postings at the destinations attached with institute.

NEUROLOGICAL DISORDERS

Second Year
Pedagogy in Physiotherapy education

Course code MPT (N) 201 L-2 T/P - 0 CREDITS-4

Objective:

On completion of the study of this subject the student should be able to

- Understand the Dynamics of teaching & learning
- Plan effective teaching sessions in Physiotherapy

Following are the topics to be included but not limited to:

1. **Education**

Introduction

Educational Philosophy- Idealism Naturalism, Pragmatism

Aims of Education

Functions of Education

Formal, informal and non-formal Education

Agencies of Education

Current issues and Trends in Higher Education

Issue of quality in Higher Education

Autonomy and Accountability

Privatization of Education

2. Concept of Teaching and Learning

Meaning and scope of Educational Psychology

Meaning and Relationship between teaching and learning

Learning Theories

Dynamics of behavior

Individual differences

3. Curriculum

Meaning and concept

Basis of curriculum formulation

Framing objectives for curriculum

Process of curriculum development and factors involved.

Evaluation of curriculum

4. Method and techniques of teaching

Lecture

Demonstration

Discussion

Seminar

Assignment

- Project
- Case Study

5. Planning for teaching

- Bloom's taxonomy of instructional objectives
- Writing instructional objectives in behavioral terms
- Unit planning
- Lesson planning

6. Teaching aids

- Types of teaching aids
- Principles of selection, preparation and use of audio-visual aides

7. Measurement and Evaluation

- Nature of educational measurement: meaning, process, types of tests
- Construction of an achievement test and its analysis
- Standardized test
- Introduction of some standardized tools, important tests of intelligence, aptitude, and personality.
- Continuous and comprehensive evaluation

8. Guidance and counseling

- Meaning & concepts of guidance and counseling
- Principles of guidance and counseling

9. Awareness PROGRAMME

- Awareness and guidance to the common people about health and disease

References:

Sr. No.	*Title*
1	Developing a Pedagogy of Teacher education: Understanding teaching and learning about teaching.
2	Handbook of Technological pedagogical content knowledge (TPCK) for educators
3	Language, Culture and community in Teacher education.
4	*Studying Teacher Education* The Report of the AERA Panel on Research and Teacher Education
5	Reframing Sociocultural Research on Literacy Identity, Agency, and Power
6	Education of the masses: A Quest for Pedagogy
7	Pedagogy and Learning with ICT
8	Changing Mins: Pedagogy of Hope

9	Treatise on Pedagogy
10	Choral Pedagogy
11	Developing teaching Skills: Siedentop, Daryl

Administration, Management & Ethical Issues

Course code MPT (N) 202 L-2 T/P - 0 CREDITS-4

Objective:

On completion of the study of this subject the student should be able to

- Understand the basic issues of Management & Administration
- Practice as an informed professional on Legal & ethical issues

SECTION I

Management

Management:

Introduction

Evolution of management

Functions of management

Management process – planning, organization, direction, controlling
Decision-making.

Personnel management:

Staffing

Recruitment selection

Performance appraisal

Collective bargaining

Job satisfaction

Marketing:

Market segmentation

Channels of distribution

Promotion

Consumer behavior

Total Quality Management:

Basics of quality management

Quality control

Quality assurance PROGRAMME in hospitals & medical audit

International quality system.

SECTION II

Administration, Legal Ethical Issues

Hospital as an organization - Functions and types of hospitals
Roles of Physical therapist, Physical therapy Director, Physiotherapy supervisor, Physiotherapy assistant, Physiotherapy aide, Home health aide, Volunteer.

Rules of Professional Conduct.

- Legal responsibility
- Code of ethics
- Functions of Physiotherapy associations
- Role of the International Health Agencies
- Standards of practice for physiotherapists
- Liability and obligations in the case of medical legal action
- Law of disability & discrimination
- Confidentially of the Patient's status
- Consumer protection law, health law, MCI, DCP

References

Sr. No.	*Title*
1	Human Resource Management by NK Singh
2	Organizational Behaviour by Archana Tyagi
3	Public Power & Administration by Wilenski, Hale & Iremonger
4	Physical Therapy Administration & Management by Hickik Robert J

5	Management Principles for physiotherapists by Nosse Lorry J.
6	Managerial accounting for hospital
7	Hospital: planning, design & management: Kunders, G.D.
8	Medical ethics & consumer protection act
9	Health economics in development
10	Marketing Management by T.N. Chhabra & S.K. Grover
11	Hospital Administration by Dr. S.L. Goel & Dr. R. Kumar
12	Principles and Practice of Management by LM Prasad
13	Quality Management by Bedi
14	Handbook of human resource management
15	Personnel /Human Resource Management by Decenzo Robbins
16	Management of Hospital: Goel, S.L.
17	Healthcare System and management: Goel, S.L.
18	Documenting physical therapy: Baeten, Angla
19	Managerial and supervisory principles in therapist: Nosse, Larry, J.
20	Textbook of Healthcare ethics: Loeuy, Erich H
21	Legal aspects of documenting: Scott, Ronald

Neurological disorders II

Course code MPT (N) 203 L-4 T/P - 0 CREDITS-8

Objective:

On completion of the study of this subject the student should be able to

- Correlate the clinical manifestations to the organ of dysfunction of the nervous system
- To understand the conservative & surgical management of the Neurological conditions as relevant to physiotherapy.

Following are the topics to be included but not limited to:

Section I

Neurological disorders

Introduction, epidemiology of disease pattern, Path physiology, Clinical presentation, conservative management & complications of the following clinical conditions:

1. Degenerative disorders
2. Movement disorders
3. Autoimmune disorders
4. Infectious disorders of nervous system
5. Balance disorders
6. Disorders of spine & spinal cord
7. Metabolic & Nutritional disorders
8. Disorders of nervous system due to drugs & chemical agents
9. Tumors
10. Epilepsy
11. RSD
12. Brief outline on Psychiatric disorders

Section II

Neurosurgical disorders

Orientation and General principles of Neuro surgery

1. Intracranial abscess
2. Malformations of spine & spinal cord
3. Surgeries for disc disorders
4. Decompression surgeries for tumors
5. Stereotactic surgery
6. Image guided frameless stereotaxy
7. Psychosurgery

References:

Sr. No.	*Title*
1	Physical Medicine and Rehabilitation Secrets by O'Young
2	Adams & victor's manual of Neurology

3	Brain & Bannister's clinical Neurology
4	Motor neuron Disease: Biology: Leigh, P.N.
5	Human Neuroanatomy by Carpenter M.B., Williams & Wilkins, Baltimore, 1983
6	Neurosciences for rehabilitation by Cohel
7	Electro diagnosis in diseases of nerve and muscles by Kimuraj J., F.A. Davis, Philadelphia
8	Neurosurgery: the science basic of clinical
9	Movement disorders volume I,.II, III Marsen,David C
10	Epilepsy 100 elementary principles
11	Brain's disease of the nervous system, Donaghy.Michael
12	Motor Neuron Disease Kund,Ralph W
13	Adult Hemiplegia: Evaluation and Treatment by Bo both B. Heinemann, London, 1983
14	Surgery of spinal trauma
15	Paraplegia and Tetraplegia by Brombley, Churchill Livingstone, Edinburgh, 1991
16	Spinal cord medicine
17	Neurology of the new born
18	Neurologic disease in women
19	Advances in neurology
20	Peripheral Neuropathy
21	Fundamentals of neurologic disease Davis, Larry E.
22	Neurobehavioural disorders:Vinken P.J.
23	Neurological Disorders: Course and Treatment: Brandt, Thomas
24	Movement Disorders in Neurology: Joseph, Anthony B.
25	Textbook of Clinical Neurolog: Goetz, C.G.
26	Psychiatry: Geldern Michael
27	Movement Disorder: Marsden C.D.

Physiotherapy Assessment & Goal planning -II

Course code MPT (N) 204 L-3 T/P - 0 CREDITS-6

Objective:

On completion of the study of this subject the student should be able to

- Perform thorough Physiotherapy assessment & list deficiencies

- Design individualized goals for the patient
- Rationalize the outcome of the assessment
- Document systematic, meaningful, accurate written records of the patient

Physiotherapy assessment to be taught for the conditions covered in the subject Neurological Disorders II (Code MPT (N) 203) -

1. Review of General assessment
2. Pain assessment
3. Sensory and motor assessment
4. Assessment of Tone, flexibility, tightness
5. Muscle Length Testing
6. Postural assessment
7. Limb length measurement
8. Range of Motion
9. Balance assessment
10. Coordination assessment
11. Reflex Testing
12. Cranial nerve testing
13. Nerve Tension testing
14. EMG/ NCV report reading & analysis
15. Clinical Gait assessment
16. Functional assessment
17. Environmental assessment

References:

Sr. No.	*Title*
1	Physical Medicine and Rehabilitation by Brammer
2	Complete guide to feet reflexology
3	Neurologic intervention for physical therapist
4	Clinical exercise testing and prescription
5	Physiotherapy ed 2003 by Tidy
6	Differential diagnosis in Physical therapy, 1995 by Goodman
7	Rehabilitation of movement ed. 1998 by Brooke
8	Neurological rehabilitation: Taly A.B.
9	Neurological Rehabilitation ed. 2002 by Umphead
10	Rehabilitation of people with Spinal cord injury
11	Essentials of in patient rehabilitation
12	Physical Rehabilitation: Assessment and Treatment by O'Sullivan, F.A. Davis, Philadelphia , 1994
13	Neuro – Rehabilitation by Farber, W.B. Saunders,
14	Physical therapy of the low back
15	Practical evidence based physiotherapy
16	The neural basis of Motor control by Black I., Churchill, Livingstone, 1987
17	Physical Therapy management of Parkinson's disease by Turnbull Gerode I., Churchill, Livingstone, 1994
18	Cash' TB for Neurology for Physiotherapists, 1/e Ind by Downie

19	Textbook of Rehabilitation by Sunder
20	Neuro rehabilitation by Carr
21	Technique of Neurological Examination: Stephen L
22	Clinical Electrophysiology: Macker, Lynn
23	Gait Analysis: Perry,Jacuelin
24	Handbook of pain assessment: Turk, Dennis C
25	Chronic Pain Evaluation: Rucker,Karan S.
26	Dejong's the neurologic examination: Cole, Marilyn B
27	Bickerstaff's Neurological Examination
28	Practical E.M.G.: Johnson,W.Erncol
29	Multiple Sclerosis: Diagnosis: Burckardt's, Peter
30	Understanding Balance: Tristan D.M., Roberts

Neurological Physiotherapy Management- II

Course code MPT (N) 205 L-3 T/P - 0 CREDITS-6

Objective:
On completion of the study of this subject the student should be able to

- To formulate a rationalized treatment plan for the patient
- Implement physiotherapy treatment
- Compare & contrast the outcome of various treatment approaches
- Document the status to the patient as written records

Following are the topics to be included but not limited to:

a. Physiotherapy management for the conditions covered in the subject Neurological Disorders II (Code MPT (N) 203)

b. Advanced Treatment approaches

- Neural mobilization technique
- Balance & Coordination training
- Vestibular training
- Cognitive and Perceptual disorders
- Environmental modifications
- Muscle energy techniques
- Group exercises
- Wheelchair skills- Advanced

References:

Sr. No.	*Title*
1	Functional Neurorehabilitation: Berner, Julie
2	Neurological Rehabilitation: Umphred, Darcy, A.
3	Neurological Rehabilitation: Taly, A.B.
4	Motor control theory and practice: Shumway- cook & Anne
5	Electro diagnosis in diseases of nerves
6	Stroke Therapy: Fisher, Marc
7	Human walking: Rose, Jessica
8	Stroke Rehabilitation: Focus, Rohert
9	Rehabilitation of the Spne: liebensor, Craiq
10	Proprioception, Neuro Muscular Facilitation Techniques by Knot M. and Voss, Harper and Row, New York, 1972
11	Stroke Rehabilitation By Laidler, Capman And Hall, London, 1986
12	Physical Rehabilitation Assessment and Treatment by O'Sullivan, F.A. Davis, Philadelphia, 1994
13	Neuro- Rehabilitation by Farber, W.B. Saunders
14	Edward,Susan neurological Rehabilitation
15	Martin,Suzzane, Tiink Neurological intervention
16	Physiotherapy practice in Residential settings: Niz, Jennifer
17.	Understanding Balance: Roberts, Tristan, D.M.
18.	Physical Medicine and Rehabilitation: Delisa, Joel A

Neurological Physiotherapy Assessment & Management (Practical)

Course code MPT (N) 251 L-0 T/P - 6 CREDITS-6

Objective: On completion of the study of this subject the student should be able to

- Perform a through physiotherapy assessment & plan an individualized goals for neurological Conditions covered in the second year.
- Apply Effective physiotherapy treatment techniques, compare & contrast the efficacy of different treatment approaches
- Communicate the status to the patient with other rehabilitation team members & patient's attendants

Practical Training in the Physiotherapy assessment & treatment for conditions covered in the second year.

Physiotherapy assessment

1. Review of General assessment
2. Pain assessment
3. Sensory assessment
4. Assessment of Tone, flexibility, tightness
5. Motor Control assessment
6. Muscle Length Testing
7. Postural assessment
8. Limb length measurement
9. Range of Motion
10. Balance assessment
11. Coordination assessment
12. Reflex Testing
13. Cranial nerve testing
14. Nerve Tension testing
15. EMG/ NCV report reading & analysis
16. Clinical Gait assessment
17. Functional assessments

Advanced Treatment approaches

- Neural Mobilization
- Balance & Coordination training
- Vestibular training
- Cognitive and Perceptual disorders
- Communication Disorders
- Learning Disorders
- Environmental modifications
- Group exercises

- Physiotherapy in home setting
- Muscle energy technique
- Wheelchair Skills: Advanced

CLINICS, SYMPOSIA, PRESENTATION & COMPUTER FUNDAMENTALS

Course code MPT (N) 252 L-0 T/P-8 CREDITS-8

Course objective: The student will learn approach to patient, collection of demographic data, art of history taking and bedside/ OPD/ on-field manners in relation to the patient. The student will be posted in the department of Physiotherapy & the sports clubs/ organizations/ teams associated with the hospital and he/ she will do the assessment of the patients visiting the respective destinations.
Students will be taught the basic fundamentals of computer science and information technology, helping them in carrying out research and penning the dissertation.

Examination

There will be no university examination. The students will be awarded marks on the basis of his/ her attendance & performance during clinical postings at the destinations attached with institute.

Dissertation

Course code MPT (N) 253 CREDITS-8

Student will select a topic in his/her area of interest, in consultation with a supervisor/Guide qualified for the purpose as recommended by the council/University, and carry out an independent dissertation, which will involve making research proposal, conduct of the work as per the documented methodology, statistical analysis, dissertation writing. The work will build on the knowledge acquired through study of research methodology and Biostatistics. Each candidate shall submit three type written copies of a dissertation and it should be submitted well in advance before the date of written, oral, clinical and practical examination, Acceptance of the dissertation by the examiners should be a pre-condition to sit in the annual examination.

Evaluation of the dissertation will be done by the examiner (s) appointed by Vice Chancellor of the University.

RECOMMENDED JOURNALS

1. Clinical Kinesiology
2. Physical Therapy (APTA, America)
3. Journal of Indian Association of Physiotherapy
4. Journal of Rehabilitation Research and Development
5. Archives of Physical Medicine and Rehabilitation
6. Journal of Pediatric Orthopaedics
7. Physiotherapy (CSP, London)
8. Pediatric Physical Therapy
9. American Journal of Physical Medicine and Rehabilitation
10. Physiotherapy (Canada).
11. Journal of neurological Sciences
12. Physiotherapy Theory and Practice
13. Journal of Biomechanics
14. Australian Journal of Physiotherapy
15. American Journal of Sports Exercises

The list of recommended books and journals are suggestions and must be taken as a helpful guide for reading. Students are encouraged to refer to other books and study material and not to limit themselves to the study material listed above.