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

POST GRADUATE - MASTER OF PHYSIOTHERAPY (02 YEARS)
M.P.Th IN NEURO SCIENCES
PROGRAMME CODE: 3202

AIM:

The Master of Physiotherapy (specialty) Programme is directed towards rendering competency in knowledge and skills related to advance physiotherapeutic skills especially related to specialty Clinical fields to enhance professional Physiotherapy Practice, Education and Research, in line with global standards.

COURSE OUTLINE:

The Masters degree in Physiotherapy is a two year full time programme consisting of classroom teaching, self academic activities and clinical postings, with self directed evidence based practice. In the first year theoretical basis of physiotherapy is refreshed along with research methodology, biostatistics & teaching technology. The students are rotated in all areas of clinical expertise including their specialty during this period. They are required to choose their study for dissertation and submit a synopsis. During the second year the students will be posted in their area of specialty. They are required to complete and submit their dissertation. The learning program includes seminars, journal reviews, case presentations, case discussions and classroom teaching. Some of the clinical postings may be provided at other reputed centers in the country in order to offer a wider spectrum of experience. The students are encouraged to attend conferences, workshops to enhance their knowledge during the course of study. University examinations are held at the end of first year and at the end of second year.

COURSE OUTCOME:

This course promotes the development of skills, knowledge and attributes of a reflective, evidence-based practitioner with special attributes to enhance his / her career in a better way as per the society needs.

ELIGIBILITY FOR ADMISSION:

1. He/she has passed the Bachelor of Physiotherapy recognized by any Indian University with

pass marks (50%).

2. Admission to Master of Physiotherapy course shall be made as per the rules by the competent authority. Entrance test will be conducted by KIMSDU as per the rules by competent authority.

OBJECTIVES:

At the completion of this course, the student should be -

1. Be able to do a physical therapy diagnosis using a frame work of ICF that is to identify the impairment of body structure, body function, environmental and personal factors and to address the activity limitations and participations restrictions and able to execute all routine physiotherapeutic procedures with clinical reasoning & evidence based practice.
2. Able to be a prominent member of the multidisciplinary team and treat all the conditions which need physiotherapeutic procedures.
3. Able to provide adequate knowledge about the treatment procedures and its benefit.
4. Able to transfer knowledge and skills to students as well as young professionals.
5. Able to perform independent physiotherapy assessment and treatment for patients.
6. To plan and implement need based physiotherapy interventions for all clinical conditions related to respective specialty in acute, chronic cases, critical care, independent practice including health promotion and prevention.
7. Able to undertake independent research in the field of physiotherapy.
8. Learn multidisciplinary practice skills.
9. Able to practice and assess patient independently.
10. Able to practice in his / her specialty area with advanced knowledge and skills.
11. Able to take up physiotherapy teaching assignments independently for undergraduate teaching programme.
12. Able to prepare project proposal with selected research design and interpret the evaluated outcome measures (using sound data processing techniques and statistical methods).

SPECIALTIES OFFERED:

1. MPT in Musculoskeletal Sciences
2. MPT in Neurosciences
3. MPT in Cardio Pulmonary Sciences
4. MPT in Community Health
5. MPT in Pediatric Neurology

ASSESSMENT:

Two exams will be conducted in theory and practical at the end of first and final academic years. The Attendance and progress report scrutinized and certified by the Head of the Department and Head of the Institution to be submitted to the university with the exam form for both first & second year examination.

YEAR WISE SUBJECTS:

MPT - I YEAR

1. Basic Sciences.
2. Basic Therapeutics.
3. Advanced Therapeutics - As per specialty (5 Specialties.)
4. Research Methodology & Biostatistics.

MPT – II YEAR SPECIALTIES: (2 SUBJECTS IN EACH SPECIALITY)

1. General Physiotherapy - As per specialties (5 Specialties.)
2. Advances in Physiotherapy - As per 5 Specialties.

1. MPT in Musculoskeletal Sciences.
2. MPT in Neurosciences.
3. MPT in Cardio Pulmonary Sciences.
4. MPT in Community Health.
5. MPT in Pediatric Neurology.

3202 - M.P.Th IN NEURO SCIENCES

M.P.Th - I Year

1. **3202 - 11: BASIC SCIENCES**
2. **3202 - 12: BASIC THERAPEUTICS**
3. **3202 - 13: ADVANCED THERAPEUTICS IN NEURO SCIENCES**
4. **3202 - 14: BIOSTATISTICS AND RESEARCH METHODOLOGY**

M.P.Th - II Year

1. **3202 - 21: GENERAL PHYSIOTHERAPY IN NEURO SCIENCES**
2. **3202 - 22: ADVANCES IN NEURO SCIENCES**

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

KRISHNA COLLEGE OF PHYSIOTHERAPY.

3202- M.P.Th IN NEURO SCIENCES.

3202-11: BASIC SCIENCES.

SYLLABUS:

Sr. No	Content	Teaching Hours		Must know	Desirable to know	Nice to know
		Didactic (98 Hrs)	Practical (82 Hrs)			
1. 1.	PRINCIPLES AND ETHICS: a. Theoretical background of physiotherapy profession.	10 Hrs	-	MK		
	b. Professional sources in the community.					
	c. Principles and practice of physiotherapy in India.					
	d. Ethical background of physiotherapy.					
	e. Ethics of IAP & WCPT. Professional ethics.					
	f. Modified Referral ethics in the practice of Physiotherapy					
	g. Governing body of Physiotherapy Profession state & central level.					
2.	EXERCISE PHYSIOLOGY AND NUTRITION: a. Nutrition and physical performance.	15 Hrs	5 Hrs	MK		
	b. Energy transfer.					
	c. Systemic adaptation during exercise.					
	d. Physical performance.					
	e. Factors affecting physical performance.					

	f. Fatigue and lactate.					
	g. Training.					
	h. Fitness and testing.					
	i. Obesity.					
	j. Diabetes.					
	k. Applied exercise physiology.					
3.	PATHOMECHANICS AND CLINICAL KINESIOLOGY: Review of mechanical principles and applied biomechanics of human body.	25 Hrs	10 Hrs	MK		
4.	Review of various types of exercises, principles and its applications for joint mobility, muscle re-education, strengthening and endurance training.			MK		
5.	Posture, analysis of normal and abnormal posture, posture training.	5 Hrs	5 Hrs		DK	
6.	Gait, analysis of normal and abnormal gait, gait training.	5 Hrs	15 Hrs			NK
7.	ADL, assessment and training of ADL.	3 Hrs	10 Hrs		DK	
8.	Measuring tools in therapeutics.	5 Hrs	15 Hrs		DK	
9.	ometer, pressure transducers, force plates, spondylometer, anthropometric and etc.	5 Hrs	10 Hrs	MK		
10.	ORTHOTICS, PROSTHETICS & BIOENGINEERING:	25 Hrs	12 Hrs	MK		
	a. Orthosis of spine.					
	b. Orthosis of upper limb.					
	c. Orthosis of lower limb.					
	d. AK and BK Prosthesis.					
	e. Prosthetic fitting and training.					
	f. Biomechanical principles governing them.					

3202-12: BASIC THERAPEUTICS.

SYLLABUS:

Sr. No	Content	Teaching Hours		Must know	Desirable to know	Nice to know
		Didactic (80 Hrs)	Practical (80 Hrs)			
1.	Basic exercises	5 Hrs	10 Hrs			
2.	**Basic Electrotherapeutics:** Review the principles and applications of the following electrotherapy modalities and justify the effects and uses of it with evidence	25 Hrs	25 Hrs	MK		
	1. Short wave diathermy.					
	2. Microwave diathermy.					
	3. Ultrasonic therapy.					
	4. Ultraviolet radiation.					
	5. Infrared radiation.					
	6. Iontophoresis.					
	7. Faradic stimulation.					
	8. Dynamic currents.					
	9. Interferential therapy.					
	10. Cryotherapy.					
	11. TENS.					
	12. LASER Therapy.					
	13. Paraffin wax bath.					
	14. Hydrotherapy.					
	15. Hydro collator packs.					
	16. Contrast bath.					
	17. Traction.					
	18. Mechanical external compression therapy.					
	19. Fluidotherapy.					
	20. Phonophorosis.					
3.	Pain and pain modulation.	5 Hrs	5 Hrs		DK	
4.	Conventional electro diagnosis.	5 Hrs	5 Hrs	MK		
	1) FG Test.					
	2) SD Curve.					
5.	Electrocardiogram.	2 Hrs	3 Hrs		DK	

6.	Echocardiography.	2 Hrs	2 Hrs			NK
7.	Physical & functional diagnosis.	20 Hrs	20 Hrs	MK		
	1. Clinical examination in general and detection of movement dysfunction.					
	2. Principles of pathological investigations and imaging techniques related to neuromuscular, skeletal and cardiopulmonary disorders with interpretation					
	3. Development screening development diagnosis, neurodevelopment assessment and motor learning-voluntary control assessment					
	4. Anthropometric measurements					
	5. Physical fitness assessment by					
	i. Range of motion					
	ii. Muscle strength, endurance and skills					
	iii. Body consumption					
	iv. Cardiac efficiency tests and spirometry					
	v. Fitness test for sport					
	6. Electro-diagnosis, clinical and kinesiological electromyography and evoked potential studies. Biophysical measurements, physiotherapy modalities techniques and approaches, Electro diagnosis, conventional methods, electromyography sensory and motor nerve conduction velocity studies, spinal and somato-sensory evoked potentials					
	Radiological investigation.	16 Hrs	10 Hrs	MK		
	1) X – Ray.					
	2) CT / MRI Scan.					
	3) Blood investigation (routine)					

3202-13: ADVANCED THERAPEUTICS IN NEURO SCIENCES.

SYLLABUS:

Sr no.	Topic	Teaching hours		Must know	Desire to know	Nice to know
		Didactic (25 Hrs)	**Practical's (100 Hrs)**			
1.	Neuro specific electrotherapeutic modalities: a. EMG biofeedback b. Gait Analyzers c. Pressure Biofeedback	5 Hrs	20 Hrs			
2.	Investigations specific to Neurological disorders. a. Advanced electrotherapeutic modalities	5 Hrs	20 Hrs (5 Hrs + 15 Hrs)			
	b. Advanced electro diagnostics: EMG/NCV					
	1) Instrumentation.					
	2) Types of electrodes.					
	3) Cathode ray oscilloscope digital processing.					
	4) Electrical safety.					
	5) Artifacts.					
	6) Normal and abnormal motor action potential.					
	7) EMG Examination.					
	1. Muscle at rest.					
	2. Insertional activity.					
	3. Minimum effort.					
	4. Maximum effort.					
	5. Motor units potential in disease.					

	I. Motor neuron disease.					
	II. Hereditary motor neuron disease.					
	III. Poliomyelitis.					
	IV. Muscular dystrophy.					
	V. Inflammatory myopathies.					
	VI. Congenital myopathies					
	VII. Myotonia.					
	VIII. Metabolic myopathies.					
	6. Quantitative methods in EMG.					
3	Nerve conduction studies.	5 Hrs	15 Hrs			
	I. Motor and sensory conduction.					
	II. Physiology of nerve conduction.					
	III. General factors affecting nerve conduction.					
	IV. Nerve stimulation.					
	V. H wave.					
	VI. F wave.					
	VII. Entrapment syndromes.					
	VIII. Carpel tunnel syndrome.					
	IX. EMG studies in Myasthenia gravis.					
	X. EMG studies in Decremental studies Lambert myasthenia syndrome.					
	XI. Electro diagnosis in Radiculopathy.					

4	Peripheral neuropathies.	5 Hrs	10 Hrs			
	I. Nerve conduction changes in peripheral neuropathy.					
	II. EMG changes in peripheral neuropathy.					
5	Various Neuro physiological approaches with special emphasis to Neuronal Plasticity.	3 Hrs	25 Hrs			
6	Clinical decision making in relation to common neurological problems of UMN / LMN lesions.	2 Hrs	10 Hrs			

3202-14: BIOSTATISTICS AND RESEARCH METHODOLOGY.

SYLLABUS:

Sr No.	Contents	TEACHING HOURS (100 Hrs)	Must Know	Desirable to Know	Nice to Know
1	**Research methodology:** I. How to read critique research. II. Introduction to research: frame work: levels of measurement: variables III. Basic research concepts: validity and reliability. IV. Design, instrumentation and analysis for qualitative research. V. Design, instrumentation and analysis for quantitative research VI. Design, instrumentation and analysis for quasi-experimental research VII. How to write research proposal VIII. Ethics in research IX. Importance of software in research X. Importance of SPSS, PowerPoint, etc in research.	60 Hrs	MK		
2	**Biostatistics:** I. Descriptive and inferential statistics II. Types of data qualitative and quantitative III. Frequency distributions IV. Describing data with graphs V. Describing data with averages mode median mean VI. Describing variability variance standard deviation etc VII. Normal distributions VIII. Interpretations of r	40 Hrs	MK		

	IX. Hypothesis testing X. T tests XI. ANOVA XII. Probability XIII. Type I and type II errors XIV. Parametric and non-parametric tests XV. Simple statistical analysis using available software.				

3202-21: GENERAL PHYSIOTHERAPY IN NEURO SCIENCES

SYLLABUS:

Sr.no	Content	Teaching Hrs.		Must know	Desirable to know	Nice to know
		Didactic (350 Hrs)	Practical (350 Hrs)			
1.	Patho-mechanics of various Neurological disorders: Special emphasis to – Etiology, Risk factors & Disease progression.	75 Hrs	75 Hrs	MK		
2.	Screening of Neurological disorders based on Patho-mechanism. a. CNS b. PNS c. ANS	75 Hrs	75 Hrs	MK		
3.	Basis for Therapeutic decision making a. Neuro anatomy and neuro physiology b. Normal sequential behavior and physiological changes throughout the developmental arc. c. Motor control, theories of motor control and motor development & principles of motor learning. d. Reflex maturation – neuro physiological basis. e. Basic evaluation tools in neurology. f. Movement dysfunction secondary to UMN Lesion, LMN Lesion, cerebellum & basal ganglion lesions. g. Musculoskeletal treatment concept applied to neurology. Adverse neural tissue tension	25 Hrs	10 Hrs	MK		

	test in upper & lower limb. h. Physiotherapy management for sensory - motor dysfunction, tonal disorders & bladder dysfunction.					
4.	Long term consequences of various Neurological disorders on various systems. - Neuro physiological abnormalities.	25 Hrs	25 Hrs	MK		
5.	Neurological Disability evaluation in detail secondary to illness: a. Brain injury b. Spinal cord injury c. Peripheral Nerve injury	25 Hrs	15 Hrs	MK		
6.	Physiotherapy assessment & Management of Miscellaneous conditions a. Wound healing in diabetes mellitus, leprosy, pressure sores b. Obesity c. Burns d. HIV e. Skin conditions f. Diabetes mellitus g. Malignancy	50 Hrs	75 Hrs	MK		
7.	National & International health programs for Neurological Physiotherapy interventions.	10 Hrs	-	MK		
8.	Professional marketing strategies – Entrepreneurship a. Specialty clinics b. Independent Practice c. Joining organizations d. Groups e. NGO f. Specialty references	15 Hrs	-		DK	
9.	Management strategies of various Neurological disorders	25 Hrs	50 Hrs	MK		

10.	Preventative physiotherapy in Neurological disorders and team approach	25 Hrs	25 Hrs	MK		

3202-22: ADVANCES IN NEURO SCIENCES.

SYLLABUS:

Sr.No	Contents	Didactic (400HRS)	Practical (600HRS)	Must Know	Desirable to know	Nice to know
1.	Neuro physiological concepts: based on neuro physiotherapeutic techniques such as Bobath/ NDT, Brunnstrom, Roods, PNF, Vojta, MRP& MFR.	50 HRS	100 HRS	MK		
2.	Neurological assessment and management of following Adult Neurological conditions like: a. Stroke b. Infections of nervous system such as meningitis, encephalitis, GBS, Bulbar polio, parasitic infection and HIV. c. Demyelinating diseases of nervous system d. Degenerative and metabolic diseases of nervous system e. Diseases and disorders of spinal cord f. Disorders of peripheral nervous system g. Disorders of cranial nerves h. Diseases and disorders of muscles i. Traumatic brain injury in adult	125 HRS	100 HRS	MK		

	j. Traumatic spinal cord injury k. Space occupying lesions l. Vestibular disorders m. Disorders of special senses n. Disorders of speech, language, perception and somatosensory cognitive impairments. o. Developmental disorders of nervous system. p. Medical, surgical & physiotherapy intervention in disturbances of CSF circulations q. Compressive myelopathies					
3.	Movement disorders in detail	75 HRS	100 HRS	MK		
4.	Tonal disorders - in detail including neuro pathology, assessment, conservative management and rehabilitation measures	50 HRS	100 HRS	MK		
5.	Early diagnosis and its significance in neuro rehabilitation for the following conditions a. Stroke b. Compressive myelopathies c. Neurogenic pain	25 HRS	100 HRS	MK		
6.	Patients, parents (care takers) and physiotherapists in neuro rehabilitation (3P's)	25 HRS	10 HRS		DK	

7.	Walking school in neuro rehabilitation	25 HRS	40 HRS			NK
8.	Cognitive rehabilitation	25 HRS	50 HRS	MK		

BOOKS OF NEURO PHYSIOTHERAPY:

1) Textbook of clinical neuro anatomy by Vishram singh (Elsevier2007)
2) Clinical Neuro anatomy for Medical Students by Richard S Snell, 5th Edition(Lippincott Williams & Wilkins,2001)
3) NeurophysiologybyRHSCarpenter,4thedition(Arnold2003)
4) PathophysiologyofthemotorsystemsPrinciplesandClinicalpresentationsbyCHristopher M. Fredericks and Lisa K. Saladin (F.A. Davis Company 1996)
5) Brain'sdiseasesofthenervoussystembyJohnWalton,12thedition(OxfordUniversity press)
6) AphysiologicalapproachtoclinicalneurologybyJamesW.LanceandJamesG.McLeod,3rd edition (Butterworth's1981)
7) Muscle and its diseases: An outline primer of basic science and clinical methods by Irwin M. Siegel(Yearbookmedicalpublishers1986)
8) NeurosciencefundamentalforrehabilitationbyLaurieLundyEkman(W.BSaunders1998)
9) Illustrated neurology and neuro surgery by Kenneth Lindsay and Ian Bone (Churchill Livingston,2004)7.BasicneurologybyJohnGilroy(Elsevier)
10) Hand book of neurologic rating scales by Robert M.Herndon, 2nd edition , (Demos publications 2005) 2. Bickerstaff's neurological examination in clinical practice by John Spillane,6thedition(Blackwellsciencelimited1996)
11) PhysicalrehabilitationlaboratorymanualFocusonfunctionaltrainingbySusanBOSullivan and Thomas J Schmitz.(F.A. Davis Company)
12) ThedevelopmentoftheinfantyoungchildNormalandAbnormalbyR.S.Illingworth,9th edition (Churchill Livingstone1996)
13) FunctionalMovementReeducation–Acontemporarymodelforstrokerehabilitationby Susan Ryerson and KatHrynLevit(ChurchillLivingstonandElsevier,1997)
14) Pediatric Physical Therapy, Jan Stephen Tecklin, 3rd (1999) and 4th (2008) editions, Lippincott Williams &Wilkins.
15) NeurophysiologybyRHSCarpenter,4thedition(Arnold2003)
16) Pathophysiology of the motor systems: Principles and Clinical presentations by

Christopher
M. Fredericks and Lisa K. Saladin (F.A. Davis Company 1996)

17) Brain'sdiseasesofthenervoussystembyJohnWalton,12thedition(OxfordUniversity press)
18) AphysiologicalapproachtoclinicalneurologybyJamesW.LanceandJamesG.McLeod,3rd edition (Butterworth's1981)
19) NeurosciencefundamentalforrehabilitationbyLaurieLundyEkman(W.BSaunders1998)
20) Illustrated neurology and neuro surgery by Kenneth Lindsay and Ian Bone (Churchill Livingston,2004)7.BasicneurologybyJohnGilroy(Elsevier)
21) Hand book of neurologic rating scales by Robert M.Herndon, 2nd edition , (Demos publications 2005) 2. Bickerstaff's neurological examination in clinical practice by John Spillane,6thedition(Blackwellsciencelimited1996)
22) Physicalrehabilitationlaboratorymanual:FocusonfunctionaltrainingbySusanBOSullivan and Thomas J Schmitz.(F.A.DavisCompany)
23) ThedevelopmentoftheinfantyoungchildNormalandAbnormalbyR.S.Illingworth,9th edition (Churchill Livingstone1996)
24) FunctionalMovementReeducation–Acontemporarymodelforstrokerehabilitationby Susan Ryerson and KatHrynLevit(ChurchillLivingstonandElsevier,1997)
25) Pediatric Physical Therapy, Jan Stephen Tecklin, 3rd (1999) and 4th (2008) editions, Lippincott Williams &Wilkins.
26) Physical Therapy for Children, Suzann K.Campbell, 3rd edition, 2006,Saunders Elsevier.
27) Physiotherapy for Children, Teresa Pountney, 2007, Butterworth Heinemann Elsevier.
28) Meeting the Physical Therapy Needs of Children, SusanK.Effgen,2005,F.A.Davis Company, Philadelphia.
29) Physiotherapy in Pediatrics, Roberta B. Shepherd, 3rd edition, 1995, Butterworth Heinemann.
30) Neurologic Intervention for Physical Therapist Assistant, Martin Kessler, 1st &2nd Edition, 2008, W.B.Saunders CompanyLtd.
31) Physiotherapy and the growing child, Yvonne R Borns & Julie MacDonald, 1996, W.B.Saunders CompanyLtd.
32) Pediatric Rehabilitation, GabriellaE.Molnar, 3rdedition, 1999.Hanly&Belfus, Philadelphia.
33) Treatment of Cerebral Palsy & Motor Delay, Sophie Levett, 4thedition,2004.Blackwell Publishing.10.PediatricTherapy,ASystemsApproach,SusanMillerPorr,1999,F.A.Davis Company.
34) Reflex and Vestibular Aspects of Motor Control, Motor Development and Motor

Learning, R.Barnes, Carolyn ACrutchfield,1990,StokesvillePublishingCompany.
35) Neurological Rehabilitation, Darcy A. UmpHred, 4th & 5th edition,2007,2001, MOSBY Elsevier.
36) Physical Rehabilitation,SusanB.O Sullivan,4th&5theditions,2007,JaypeeBrothers.
37) Cash's Textbook of Neurology for Physiotherapists, Patricia A.Downie,4th edition,1992, Jaypee Brothers.
38) Cardiovascular&PulmonaryPhysicalTherapyevidence&practice,Elizabeth(Dean&Donna frownfelter,3th(1996)&4th(2006)editions, MOSBY Elsevier.
39) Pediatric Physical Examination, Karen G.DunderStadt,2006,MOSBYElsevier.
40) Clinics in Physical Therapy Assessment in Early Infancy, Edited by Irmaj.Wilhelm,1993, Churchill Livingstone.
41) MotorAssessmentoftheDevelopingInfant,MarthaCopier,1994,Saunders
42) Neurological rehabilitation by Darcy A.Umphred, 5th Edition, 2007 (Mosby Elsevier Publication.)
43) Physical management in neurological rehabilitation by Maria Stokes(Elsevier Mosby publication2004)
44) PhysiotherapyinneuroconditionsbyGladysamualraj(Jaypeebrothers2006)
45) SpinalcordinjuryfunctionalrehabilitationbyMarthaFreemanSomers,2ndedition(Prentice Hall publication)
46) Physiotherapy in disorders of the brain: A clinical guide by JanetH.Carrand Roberta B. Shepherd(William Heinemann medical books limited)
47) CashtextbookofNeurologyforphysiotherapistsbyPatriciaDownie,4thedition(Jaypee Wolf1992)7.NeurologicinterventionsforphysicaltherapybySuzanneTinkMartinand Mary Kessler, 2nd edition (Saunders Elsevier)
48) FunctionalneurorehabilitationtHroughthelifespanbyDoloresB.Bertoti(F.A. Davis Company2004)
49) Brunnstrom'smovementtherapyinhemiplegia:AneurophysiologicalapproachbyKatHryn A. SawnerandJeanneM.LaVigne,2ndedition(LippincottCompany1992)
50) Motorcontrol:TranslatingresearchintoclinicalpracticebyAnneShumway-CookAnd MarjorieWoollacott,3edition(Lippincott Williams and Wilkins)
51) Neurodevelopmental treatment approach: theoretical foundations and principles of clinical practice by Janet M. Howle(NDTA2002)
52) PNF in practice: SusanAdler
53) VestibularrehabilitationbySusanJ.Herdman,2ndedition(F.A.DavisCompany2000)
54) MobilizationofthenervoussystembyDavidS.Butler(ChurchillLivingstone1996)
55) Myofascial Release Manual

56) Stroke Rehabilitation: Guidelines for exercise and training to optimize motor skill By Janet Carrand R.Shepherd(Elsevier,2003)
57) Neurological Rehabilitation, Optimizing motor performance by Janet Carr and R. Shepherd (ButterworthandHeinemannLtd,2004)
58) FunctionalMovementReeducation–AcontemporarymodelforstrokeRehabilitationby SusanRyersonandKatHrynLevitt(ChurchillLivingstonandElsevier,1997)
59) AMotorRelearningProgrammeforStrokebyJanetCarrandR.Shepherd(Butterworthand Heinemann Ltd,Oxford Publication)
60) Recent advance in clinical neurology by Kennard,Churchilllivingstone
61) Stroke,by WadeD.T.& Others,ChampanHalt
62) NeurologysecretsbyRolakL.A.,Jaypee Brothers
63) Physiological Approach to Clinical Neurology by Lance&Mcleod,Butterworths
64) Stem cell therapy in neurological disorders by SharmaAlok,Neuroinstitute
65) Illustratedmanualofneurologydiagnosisby Douglas,JBLipincoetcompany
66) NeurologicalexaminationmadeeasybyFullerGrant,ChurchillLivingstone
67) Principles of Neurology by Maurice Victor & Allan H Rapper, Mcgrawhill
68) Nerve and nerve injury by Sydney Sunderland, Churchilllivingstone
69) Neruological physiology by Edwards Susan,Elsevier
70) Neurological differential diagnosis by JohnPatten,Springler
71) Electromyography & Neuromuscular disorders by Preston David,Elsevier
72) Right in the middle by Davis Patricia, Springler
73) Steps to follow by Davis Patricia,Springler