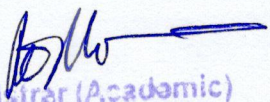
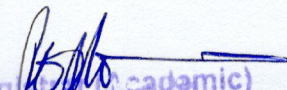


SRIMANTA SANKARADEVA UNIVERSITY OF HEALTH SCIENCES

**COURSE OF STUDY AND CURRICULUM
MASTERS OF PHYSIOTHERAPY
ACADEMIC SESSION 2022-23**


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OF HEALTH SCIENCES, ASSAM, INDIA

SUBJECT		TEACHING & LEARNING METHODS	WEEKLY CLASS	TOTAL HOURS
Sl no	FIRST SEMESTER	Lectures	2	180
		Seminars	2	180
1.	Professional practice (History, Laws, Ethics, Administration, Education)	Practical and Demonstration	4	360
		Clinical discussions	2	180
		Clinical Case Presentation	2	180
2.	Research Methodology and Biostatistics	Journal club	2	180
		Classroom teaching	1	90
		Library	3	270
3.	Biomechanics and clinical kinesiology	Clinical training	15	1350
		Synopsis & Dissertation work	3	270
		Community Camps, Field Visits, Participation in Workshops & Conferences	----	60
	SECOND SEMESTER			
4.	Exercise Physiology & nutrition			
5.	Electrophysiology & Electro-diagnosis			
6.	Physiotherapy Diagnosis & clinical decision making			
	THIRD SEMESTER			
7.	Advanced Physiotherapeutic			
8.	Speciality Paper-I *Musculoskeletal Disorders and Sport/ *Neurological and Psychosomatic disorders/			
	FOURTH SEMESTER			
9.	Speciality Paper-II *Musculoskeletal Disorders and Sport/ *Neurological and Psychosomatic disorders/			
		Total hours	36	3240

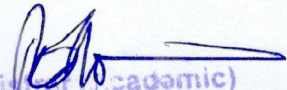

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FIRST SEMESTER					
Sl no.	Subject	Theory	Practical		Total
		External	Internal	External	
01	Professional practice (History, Laws, Ethics, Administration, Education)	100	----	----	100
02	Research Methodology and Biostatistics	100	----	----	100
03	Biomechanics and clinical kinesiology	100	-----	-----	100
04	Practical (Paper-I)	-----	30	70	100
Total					400

SECOND SEMESTER					
Sl no.	Subject	Theory	Practical		Total
		External	Internal	External	
01	Exercise Physiology & nutrition	100	----	----	100
02	Electrophysiology & Electro-diagnosis	100	----	----	100
03	Physiotherapy Diagnosis & clinical decision making	100	-----	-----	100
04	Practical (Paper-II)	-----	30	70	100
Total					400

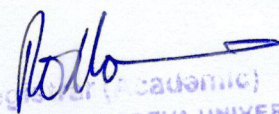
THIRD SEMESTER					
Sl no.	Subject	Theory	Practical		Total
		External	Internal	External	
01	Advanced Physiotherapeutic	100	----	----	100
02	Speciality Paper-I	100	-----	-----	100
03	Practical (Paper-III)	-----	30	70	100
Total					300

FOURTH SEMESTER					
Sl no.	Subject	Theory	Practical		Total
		External	Internal	External	
01	Speciality Paper-II	100	-----	-----	100
02	Practical (Paper-IV)	-----	30	70	100
03	Dissertation		50	100	150
Total					350


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PROFESSIONAL PRACTICE
(HISTORY, LAWS, ETHICS, ADMINISTRATION, EDUCATION)
THEORY PAPER

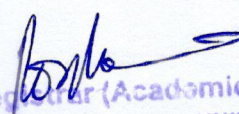
1. Development of Physiotherapy Profession
2. Laws governing physiotherapy practice
3. Ethical issues in practice of physiotherapy-Clinical, Research and Academics. Administration, legislation, rules and regulations governing physiotherapy practice- National & International. Scope of Physiotherapy in Hospital, Community & Industry
4. Roles of the physiotherapist
5. Standards for practice for physiotherapist and the criteria
6. History taking, assessment, tests, Patient communication, documentation of findings, treatment organization and planning/execution for intervention.
7. Documentation of rehabilitation assessment and management using International Classification of Functioning Disability and Health (ICF)
8. Standardized tests and scales used in various types of cases for assessment and interpretation in Physiotherapy practice.
9. Future challenges in physiotherapy.


K. Sankaradeva (Academic)
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RESEARCH METHODOLOGY AND BIostatISTICS THEORY PAPER

RESEARCH METHODOLOGY

1. Introduction to research
2. Types of research
3. Defining a research question
4. Qualitative study designs
5. Use of Delphi process
6. Quantitative study
7. Type I and type II bias
8. Study design: types
 - a. Case study, Case series, longitudinal cohort, Pre post design, Time series design, repeated measures design, Randomized control design.
9. Sampling design, calculating minimum sample size based on design
10. Measurement: Properties of measurement: reliability, validity, responsiveness, MCID.
11. Outcome measures: Use of outcome measures in rehabilitation research
12. Research Methods: Designing methodology, Reporting results, Type I and Type II bias.
13. Communicating research.
14. Evaluating published research: looking at the evidence
15. Introduction to evidence-based practice, evaluating evidence,
16. Asking clinical questions
17. Translating of evidence into practice: strategies
18. Use of clinical practice guidelines, clinical pathways, prediction rules to inform practice.


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APPLIED BIOSTATISTICS

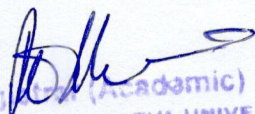
1. Descriptive Statistics and measurement variability
2. Statistical inference
3. Comparison of group means: T-test
4. Analysis of variance
5. Multiple comparison tests
6. Non parametric tests
7. Correlations
8. Regression
9. Analysis of frequencies: Chi square
10. Statistical measure of reliability
11. Power analysis – Determining sample size
12. Epidemiological Measures – Rate, Ratio, Proportion, Incidence and prevalence, Relative risk, Risk ratio, Odds ratio

SCIENTIFIC WRITING

1. Definition and kinds of scientific documents – Research paper, Review paper, Book, Reviews, Thesis, Conference and project reports (for the scientific community and for funding agencies).
2. Publication – Role of author, Guide, Co-authors.
3. Structure, Style and contents; Style manuals (APA, MLA); Citation styles: Footnotes, References; Evaluation of research
4. Significance of Report writing; Different steps in Report writing; Mechanics and precautions of writing research reports Oral and poster presentation of research papers in conferences/symposia; Preparation of abstracts.
5. Structure of Thesis and Content – Preparing Abstracts.

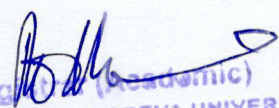
BIOMECHANICS & CLINICAL KINESIOLOGY THEORY PAPER

1. Biomechanics of Tissues and structures of the musculoskeletal system and clinical application.
2. Normal and applied Biomechanics of Spine, Upper extremity and Lower extremity.
3. Clinical kinesiology of posture.
4. Biomechanics and patho mechanics of respiration, circulation, hand function and gait.
5. Methods of kinetics and kinematics investigation
6. Patient Positioning, Body Mechanics and Transfer Techniques
7. Ergonomic Approach to lifting and handling, workspace and Environment


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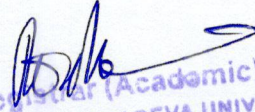
EXERCISE PHYSIOLOGY & NUTRITION THEORY PAPER

1. Sources of Energy, Energy Transfer and Energy Expenditure at rest and various physical activities.
2. Physiology of Movement
3. Responses and Adaptations of various systems to Exercise and training.
4. Environmental influence on Performance.
5. Special aids to performance and conditioning.
6. Body consumption, nutrition and caloric balance and performance
7. Considerations of age and sex in exercise and training.
8. Exercise prescription for health and fitness with special emphasis to cardiovascular disease, Obesity and Diabetes.
9. Fatigue assessment and scientific organization of work-rest regimes to control fatigue.


ROGAY (Academic)
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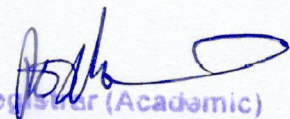
ELECTROPHYSIOLOGY & ELECTRO DIAGNOSIS THEORY PAPER

1. Characteristics and components of Electro therapeutic stimulation systems and Electro physiological assessment devices.
2. Instrumentation for neuromuscular electrical stimulation.
3. Anatomy and physiology of peripheral nerve, muscle and neuromuscular junction.
4. Electrical properties of muscle and nerve.
5. Muscles plasticity in response to electrical stimulation.
6. Electrical stimulation and its effects on various systems.
7. Clinical Electro physiological testing.
8. Safety considerations in electrotherapy


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PHYSIOTHERAPY DIAGNOSIS AND CLINICAL DECISION MAKING THEORY PAPER

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. Developmental screening, motor learning –motor control assessment.
4. Anthropometric measurements.
5. Physical fitness assessment by Range of motion, Muscle strength, endurance and skills, Body consumption, Fitness test for sports.
6. Evaluation Methods, Special tests and Scales used in Musculoskeletal, Neurological and Cardiopulmonary disorders.
7. EMG and Biofeedback.
8. Biophysical measurements, physiotherapy modalities, techniques and approaches.
9. Evaluation of aging.
10. Aids and appliances, adaptive functional devices to improve movement dysfunction.
11. Exercise ECG testing and monitoring.
12. Pulmonary function tests and Spirometry.
13. Physical disability evaluation and disability diagnosis.
14. Gait analysis and diagnosis.
15. Clinical decision making in electrotherapeutics


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ADVANCED PHYSIOTHERAPEUTICS

THEORY PAPER

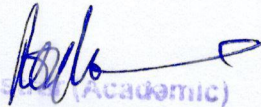
1. Pain (neurobiology, various theories, modulation and management of pain)
2. Maternal and child care in general physiotherapy.
3. Theories of motor control and motor learning.
4. Theories of aging.
5. Cardiopulmonary medications and their effect on activity performance.
6. Exercise planning and prescription.
7. Use of Exercise therapy techniques and application on various types of cases.
8. Application of electrotherapy techniques on patients, monitoring of dosages and winding up procedure.
9. Ergonomic aspects of exercise on oxygen, energy consumption MET value of various exercises and activity.
10. Effect of aerobic, anaerobic as well as Isometric and Isokinetic exercises on cardiac function.
11. Physiotherapy in psychiatric conditions.
12. Massage, Mobilization and Manipulation
13. Manual therapy – different schools of thought
14. Principles of Neurological approaches.
15. Facilitation and inhibition techniques.
16. General Guidelines to be followed in Cardiac Rehabilitation, Pulmonary Rehabilitation, Burns Rehabilitation and Cancer Rehabilitation Protocol.
17. CPR, monitoring systems and defibrillators and artificial respirators.
18. Physiotherapy in common conditions of skin.
19. Physiotherapy following Plastic Surgery.
20. Physiotherapy following Obstetric and Gynaecological Disorders.

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**ELECTIVE SUBJECTS (SPECIALITY PAPER-I)
MUSCULOSKELETAL DISORDERS AND SPORTS
THEORY PAPER**

1. Applied anatomy with emphasis on Biomechanics & Kinesiology of Human motion and Work Physiology
2. Clinical assessment and rationale of Laboratory investigations along with differential diagnoses.
3. Clinical Symptomatology, Pathophysiology and Patho-mechanics of musculoskeletal conditions
4. Physiotherapy management following fractures, dislocations and their complications, Amputations, cumulative trauma disorders and Burns.
5. Physiotherapy management in degenerative disorders and allied conditions.
6. Physiotherapy in post-operative management of metabolic, hormonal, neoplastic and infective conditions of bones and joints.
7. Physiotherapy following arthroplasty, implants and soft tissue repairs.
8. Pre & post-operative physiotherapy in tendon transfer. Electrical stimulation and biofeedback procedures.
9. Kinetic and kinematics analysis for various functional activities.
10. Functional assessment (Hand function, Gait, Posture A.D.L; occupational work).
11. Hand Rehabilitation.
12. Assessment of locomotor impairments, disabilities and disability evaluation.



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ELECTIVE SUBJECTS (SPECIALITY PAPER-I) NEUROLOGICAL AND PSYCHOSOMATIC DISORDERS THEORY PAPER

1. Anatomy and Physiology of Nervous System.
2. Normal sequential behavioural and Physiological changes throughout the developmental arc.
3. Neurophysiology of balance, coordination and locomotion.
4. Clinical symptomatology and Pathophysiology of the neurological disorders
5. Principles of clinical neuro diagnosis and investigation.
6. Various Evaluation Scales and Assessment methods used in neurological rehabilitation.
7. Electro-diagnosis:
 - a. Neurophysiology of Nerve conduction studies and Electromyography.
 - b. Instrumentation of Electrical stimulator, EMG, SFEMG, NCS (Nerve Conduction Studies).
 - c. Electrical study of reflexes (H- reflex, Axon reflex, F-response, Blink reflex, Jaw jerk, Tonic Vibration Reflex).
 - d. Repetitive nerve stimulation.
 - e. Evoked potentials (SSEP, MEP, BAERA, and VER).
 - f. Interpretation of neurophysiologic responses in Neuropathy, myopathy and neuromuscular disorders.
8. Evaluation of A.N.S dysfunction with reference to psycho-physiological testing. Biofeedback training
9. Neuro-psychological functions. Perception testing and training.
10. Theories of motor control and theories of motor learning, its application in physiotherapy.
11. Common facilitatory and inhibitory techniques.
12. Treatment approaches in neurological rehabilitation: Bobath, NDT, SI, Brunnstrom, Roods, PNF, Vojta, MRP, MFR
13. Musculoskeletal treatment concept applied to neurology: Adverse neural tissue tension tests in upper limb and lower limb.
14. Pathophysiology and Management of tonal abnormalities (Spasticity, Rigidity, Hypotonia, and Dystonia)
15. Medical and Physiotherapy management following Cerebrovascular accidents.
16. Traumatic Brain Injury. (ICU management, Coma stimulation, Restoration of motor control, Rehabilitation and community integration)
17. Traumatic spinal cord injuries. (ICU management, Coma stimulation, Restoration of motor control, Rehabilitation and community integration)

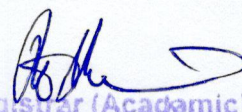
**ELECTIVE SUBJECTS
(SPECIALITY PAPER-II)
MUSCULOSKELETAL DISORDERS AND SPORTS
THEORY PAPER**

1. Physiotherapy management of locomotor disorder, principles of medical and surgical aspects, sports psychology and retraining.
2. Neurological complications of locomotor disorders.
3. Analysis and classification of sports and sports specific injuries and its management.
4. Management of sport injuries, sports fitness
5. Principles of Injury Prevention
6. Medico legal issues in sports, Sports Psychology, Sports Nutrition and Sports pharmacology.
7. Rehabilitation of paediatric musculoskeletal disorders.
8. Orthopaedic implants-designs, materials, indications, post-operative assessment and training.
9. External aids, appliances, adaptive self-help devices; prescription, biomechanical compatibility, check-out and training.
10. Manual therapy: soft tissue manipulations and mobilization, neural mobilization, acupressure. (Cyriax, Maitland, Butler, McKenzie, Kaltenborn, Mulligan)
11. Pilates-school of thought, Chiropractic school of thought, Osteopathic school of thought
12. Myofascial Release technique and Muscle Energy technique
13. Joint manipulation – peripheral joints and vertebral joints.
14. Neuromuscular Taping Techniques
15. Electro diagnosis: Electromyography and evoked potential studies
16. . Recent Advances in Musculoskeletal Disorders and Sports Physiotherapy.


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**ELECTIVE SUBJECTS
(SPECIALITY PAPER-II)
NEUROLOGICAL AND PSYCHOSOMATIC
DISORDERSTHEORY PAPER**

1. Physiotherapy management of demyelinating, inflammatory, infectious, degenerative and metabolic diseases of the nervous system.
2. Physiotherapy management of Motor neuron diseases, neuromuscular junction disorders, Braintumor, and Neuro cutaneous disorders.
3. Diseases of spinal cord, peripheral nerves and cranial nerves
4. Physiotherapy management for neuromuscular disorders.
5. Paediatric neurology (Cerebral Palsy, Developmental disorders, Neuropsychiatric disorders, Cerebral & Craniovertebral anomalies & metabolic disorders of nervous system).
6. Cognitive disorders and its rehabilitation.
7. Oromotor rehabilitation.
8. Vestibular disorders and its rehabilitation.
9. Bladder and Bowel dysfunction and its rehabilitation.
10. Assessment and management of various neurological gaits.
11. Rehabilitation following disorders of Special Senses, Speech. Language and Perception.
12. Associated functional disturbances of higher functions and their testing and training.
13. Application of Functional electrical stimulation and Bio-feedback in neurological rehabilitation.
14. Learning skills, A.D.L and functional activities.
15. Aids and appliances in neurological disorders. Prescriptions, testing and training.
16. Basic knowledge of drugs used for neurological conditions.
17. Assessment of fitness and exercise prescription for special neurological population – Stroke, Paraplegia, TBI, Multiple Sclerosis, MND, Parkinsonism, & Ataxia.
18. Community based rehabilitation for neurological dysfunction. Disability evaluation and management.
19. Stem cell therapy in neurological disorders
20. Recent Advances in Neurological Rehabilitation.



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