ROYAL GLOBAL UNIVERSITY

GUWAHATI

(ROYAL SCHOOL OF MEDICAL & ALLIED SCIENCES)

(RSMAS)

DEPARTMENT OF PHYSIOTHERAPY

Masters of Physiotherapy

W.E.F 2025 - 26

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I Preamble

Physical Therapy (PT) /Physiotherapy is a movement science with an established theoretical and scientific base and widespread clinical applications in the Prevention, Restoration & Rehabilitation, Maintenance and Promotion of optimal physical function. Physiotherapists diagnose and manage movement dysfunction and enhance physical and functional abilities. This physical dysfunction may be the sequelae of involvement of any of the systems like Musculoskeletal, Neurological, Cardiovascular, Respiratory or other body systems.

These practitioners contribute to society and the profession through practice, teaching, administration, and the discovery and application of new knowledge about physiotherapy experiences of sufficient excellence and breadth by research to allow the acquisition and application of essential knowledge, skills, and behaviours as applied to the practice of physiotherapy. Physiotherapist (PT) are autonomous, effective and compassionate professionals, who practice collaboratively in a variety of healthcare set ups such as neonatal to geriatric, from critical care to community fitness to sports training. Emerging graduate and post graduate students are required to demonstrate a substantial knowledge base, possess skills related to Physiotherapy practices, possess high emotional quotient to address family health and meet community responsibilities, demonstrate gender sensitivity and socio-culturally relevant competence. They should be aware of legal issues governing professional practice and follow evidence based clinical practices.

The National Education Policy (NEP) 2020 conceives a new vision for India's higher education system. It recognizes that higher education plays an extremely important role in promoting equity, human as well as societal well-being and in developing India as envisioned in its Constitution. It is desired that higher education will significantly contribute towards sustainable livelihoods and economic development of the nation as India moves towards becoming a knowledge economy and society.

If we focus on the 21st century requirements, the higher education framework of the nation must aim to develop good, thoughtful, well-rounded, and creative individuals and must enable an individual to study one or more specialized areas of interest at a deep level, and also develop character, ethical and Constitutional values, intellectual curiosity, scientific

temper, creativity, spirit of service, and twenty-first-century capabilities across a range of disciplines including sciences, social sciences, arts, humanities, languages, as well as professional, technical, and vocational subjects.

Towards the attainment of holistic and multidisciplinary education, the flexible curricula of the University will include credit-based courses, projects in the areas of community engagement and service, environmental education, and value-based education. As part of holistic education, students will also be provided with opportunities for internships with local industries, businesses, artists, crafts persons, and so on, as well as research internships with faculty and researchers at the University, so that students may actively engage with the practical aspects of their learning and thereby improve their employability.

At RGU, we are committed that at the societal level, higher education will enable each student to develop themselves to be an enlightened, socially conscious, knowledgeable, and skilled citizen who can find and implement robust solutions to its own problems.

1.Introduction

Physiotherapy is a branch of modern medical science which includes assessment ,examination, interpretation, physical diagnosis, planning and application of treatment and advice to any person for the purpose of preventing, correcting, alleviating and limiting dysfunction, acute and chronic bodily malfunction including life saving measures via chest physiotherapy in the intensive care unit, curing physical disorders or disability, promoting physical fitness, facilitating healing and pain relief and treatment of physical and psychological disorders through modulating psychological and physical response using physical agents, activities and devices including exercise, mobilization, manipulations, therapeutic ultrasound, electrical and thermal agents and electrotherapy for diagnosis, treatment and prevention.

Physiotherapist is a qualified professional who has acquired all the above mentioned knowledge and skills for entry into practice after being awarded a bachelor degree in the subject of " Physiotherapy" from a recognized institute affiliated to the University conducting a fulltime course not less than four years and six months of internship.

The National Education Policy (NEP) 2020 clearly indicates that higher education plays an extremely important role in promoting human as well as societal well-being in India. As envisioned in the 21st-century requirements, quality higher education must aim to develop good, thoughtful, well-rounded, and creative individuals. According to the new education policy, assessments of educational approaches in undergraduate education will integrate the humanities and arts with Science, Technology, Engineering and Mathematics (STEM) that will lead to positive learning outcomes. This will lead to develop creativity and innovation, critical thinking and higher-order thinking capacities, problem-solving abilities, teamwork, communication skills, more in-depth learning, and mastery of curricula across fields, increases in social and moral awareness, etc., besides general engagement and enjoyment of learning. and more in-depth learning.

The NEP highlights that the following fundamental principles that have a direct bearing on the curricula would guide the education system at large, viz.

i. Recognizing, identifying, and fostering the unique capabilities of each student to promote her/his holistic development.

ii. Flexibility, so that learners can select their learning trajectories and programmes, and thereby choose their own paths in life according to their talents and interests.

iii. Multidisciplinary and holistic education across the sciences, social sciences, arts, humanities, and sports for a multidisciplinary world.

iv. Emphasis on conceptual understanding rather than rote learning, critical thinking to encourage logical decision-making and innovation; ethics and human & constitutional values, and life skills such as communication, teamwork, leadership, and resilience.

v. Extensive use of technology in teaching and learning, removing language barriers, increasing access for Divyang students, and educational planning and management.

vi. Respect for diversity and respect for the local context in all curricula, pedagogy, and policy. Equity and inclusion as the cornerstone of all educational decisions to ensure that all students can thrive in the education system and the institutional environment are responsive to differences to ensure that high-quality education is available for all. Rootedness and pride in India, and its rich, diverse, ancient, and modern culture, languages, knowledge systems, and traditions.

1.1 Nature and Extent of Master's Degree Programme in Physiotherapy

A Master's degree in Physiotherapy is a **2 year post graduate degree** course divided into 4 semesters with submission of research work.

Sl. No.	**Year**	**Mandatory Credits to be Secured for the Award**
1	1st	45
2	2nd	53
Total Credits		**98**

1.2 Aims of Master's Degree Programme in Physiotherapy (MPT)

The curriculum of MPT is planned to have the following aims & objectives:

- The progression of the program and structure will enable students to build on their learning in a systematic manner leading to critical evaluation and application of the concepts to the real world;
- Build fundamentals in core areas of Anatomy, Physiology, Biomechanics, Orthopaedics, Neurology, Sports injuries, Cardiovascular disorders, Paediatrics, Geriatrics and exposure to diagnosis and treatment of various cases;
- Enabling students to gain advanced exposure in area of their choice through Elective Courses offered;
- Provide a conducive environment inside the campus that holistically engages students through an all- encompassing knowledge impartation;

- Widen the scope and depth of the course enabling them to undertake further studies in health and its allied areas on multiple disciplines

concerned mainly with the field of Physiotherapy;

- Encourage the learners to advance a range of generic skills helpful in employment, internships, and social activities;
- Sensitize students towards environment through courses on Environmental Science.
- Develop ability to use software for data extractions and analysis through statistical and econometric tools under Skill Enhancement course papers.
- The program encourages students to undertake internship to gain practical insight from hospitals which makes their understanding of courses taught more meaningful.
- Through academic exposure, practical training, skill enhancement activities develop students in to becoming successful practitioners/ researchers/ academicians/ entrepreneurs.

1.3 Graduate Attributes (GA)

The following graduate attributes are considered as "essential requirements" to strengthen abilities of a Physiotherapist for widening knowledge, skills and abilities through meaningful learning experiences, and critical thinking. These attributes are necessary for completing the professional education enabling each graduate to subsequently enter clinical practice. The purpose of this curriculum is to delineate the cognitive, affective and psychomotor skills deemed essential for completion of this program and to perform as a competent physiotherapist who will be able to evaluate, plan & execute physiotherapy treatment independently. Some of the characteristic attributes that a graduate should demonstrate are as follows:

GA 1 Disciplinary knowledge: The student must demonstrate comprehensive knowledge and understanding of curricular content that form the program**.** The student must demonstrate cognitive learning skills, ability to receive, interpret, remember, reproduce and use information in the cognitive, psychomotor, and affective domains of learning to solve problems, evaluate work, and generate new ways of processing or categorizing similar information listed in course objectives.

GA 2 Psychomotor Skills: Physiotherapy students must demonstrate psychomotor skills of locomotor ability to access lecture halls, practical laboratory and clinics.

a. They must possess ability to move with reasonable swiftness in emergency situations to protect the patient (e.g. from falling).

b. They should be competent to perform physical tasks such as positioning patients to effectively perform evaluation, manipulate assessment tools used for evaluation of joint mobility, muscle strength, testing musculoskeletal, neurological and cardiorespiratory systems.

c. Students should be competent to perform risk assessment, safely and effectively guide, facilitate, inhibit, and resist movement and motor patterns through physical facilitation and inhibition techniques (including ability to give timely urgent verbal feedback),perform transfers, positioning, exercise, mobilization techniques and use assistive devices and perform cardiopulmonary resuscitation.

d. Students must possess fine motor skills to legibly record thoughts for written assignments (including diagrams) and tests, document evaluations, patient care notes, referrals, etc. in

standard medical charts in hospital/clinical settings in a timely manner and consistent with the acceptable norms of clinical settings and safely use electrotherapy modalities and fine mobilisation techniques.

e. Students must possess visual acuity to read patient's treatment chart, observe demonstrations, visual training, receive visual information from patients, treatment environment and clues of treatment tolerance. Auditory acuity to distinguish between normal and abnormal sounds, engage in conversation with patients and retrieve meaningful information relevant to patient care.

GA3 Communication skills : The student must be able to express thoughts and ideas effectively in writing and verbally, communicate with others using appropriate media, share views, demonstrate ability to listen carefully, write analytically, present complex information in a clear, and concise manner. Student must be able to effectively communicate information and safety concerns with other students, teachers, patients, peers, staff and personnel by asking questions, giving information, explaining conditions and procedures, or teaching home programs. They should be able to receive and send verbal communication in life threatening situations in a timely manner within the acceptable norms of clinical settings. Physiotherapy education presents exceptional challenges in the volume and breadth of required reading and the necessity to impart information to others. Students must be able to communicate quickly, effectively and efficiently in oral and written English with all members of the health care team.

GA 4 Critical thinking : Student should be able to apply analytical thought to a body of knowledge , analyse based on empirical evidence, draw relevant assumptions or implications , formulate arguments, critically evaluate policies and theoretical framework and formulate a scientific approach to knowledge development. They should be able to identify structural and functional impairments, identify contextual factors influencing function, critically appraise treatment options and implement care that is socio-culturally relevant to each patient.

GA5 Problem Solving: Students must demonstrate capacity to extrapolate theoretical knowledge and apply competencies gained to solve non- familiar problems and real life situations.

GA 6 Analytical reasoning: To a certain extent, students should be able to evaluate reliability and relevance of evidence, synthesize data, draw valid conclusions and support them with evidence.

GA 7 Research Related Skills: Students should be able to define research problem, formulate hypothesis, manage resources, analyze and interpret data, explore cause – effect

relationships, plan and execute a report, present results of the experiment and demonstrate a sense of scientific enquiry, reflective thinking, self directed learning and creativity.

GA 8 Co-operation /Team Work: Students should demonstrate the ability to work effectively and respectfully with a multi disciplinary team, facilitate co-operative and co-ordinated effort for the common cause in various clinical settings.

GA 9 Socio-cultural and multicultural competency: Knowledge of socio-cultural values, attitudes and beliefs relevant to a particular society, nation and global perspectives must be present to effectively engage and identify with diverse groups.

GA 10 Awareness of moral, ethical and legal issues: Students must demonstrate moral /ethical values in conduct, awareness of ethical issues related to patient care, work practices, refraining from malpractice, unethical behaviour, falsification, plagiarism, misinterpretation of data, non adherence to intellectual property rights, adhering to truthful, unbiased actions in all aspects of work without discrimination based on age, race, gender, sexual preference, disease, mental status, lifestyle, opinions or personal values.

GA 11 Leadership qualities: Students must demonstrate ability for task allocation, organization of task elements, setting direction, formulating an inspiring vision, team building, to achieve a vision, engaging, knowledge and respect individual values and opinions in order to foster harmonious working relationships with colleagues, peers, and patients.

GA 12 Ongoing Learning: Students must demonstrate ability to acquire knowledge and skills through ongoing learning, participation in continuous education programs, engaging in self-paced, self- directed learning aimed at personal development, meeting social and cultural objectives, skill development, adapting to changing environment and workplace requirements and challenges.

1.4 Qualification Descriptors for Post Graduates Master of Physiotherapy:

The qualification descriptors suggest that generic outcomes and attributes are to be obtained by the students while obtaining the MPT Degree. These parameters are expected to be attained and demonstrated by the learners after becoming graduate in this program. The learning experiences and assessment procedures thereby are so designed that every graduate in physiotherapy may achieve the program learning outcomes with equal opportunity irrespective of class, gender, community, and regions.

Each **Post graduate** in physiotherapy shall be able to:

- Gain knowledge and understanding regarding various structures, histological appearance of various organs of the human body.
- Acquire knowledge of the normal physiology of various human body systems and understand the alterations in physiology in diseases and practice of physiotherapy.
- Demonstrate educational skills in areas of Biomechanics, biochemistry, psychology, pathology, microbiology and pharmaceutics and able to practice its application in human body treatment.
- Formulate the concepts of electrotherapy, exercise therapy, mobilization and soft tissue techniques in treating patients.
- Acquire various soft skills (like business communication, public speaking etc.) required to manage patient to doctor relationship as well as life situations;
- Apply knowledge, understanding, and skills to identify the difficult/unsolved problems in rapidly changing environment and to collect the required information from possible range of sources and try to analyse and assess these problems using appropriate methodologies;
- Fulfil one's learning requirements to provide an insight of research in management and allied fields and interdisciplinary areas while seeking research pursuits;
- Apply one's disciplinary knowledge and transferable skills to new/unfamiliar contexts, rather than replicate curriculum content knowledge, to identify and analyse problems and issues and solve complex problems with well-defined solutions;
- Good value systems leading to high ethical and moral conduct in society at large;
- Competencies and attitudes.

1.5 Program Learning Outcomes for Master of Physiotherapy (POs):

PO 1 To demonstrate behavioural skills and humanitarian approach while communicating with patients, relatives, society at large and co-professionals

PO 2 To develop healthy Physiotherapist – Patient relationship

PO 3 To demonstrate and relate moral, ethical values and legal aspects concerned with Physiotherapy management

PO 4 To demonstrate academic skills and knowledge related to understanding the structural and functional of human body and applied anatomy, physiology in physiotherapy practice.

PO 5 To apply and outline pathology of medical conditions in context with Physiotherapy, interpret& use medical communication.

PO 6 To apply knowledge of biomechanics of human movement in musculoskeletal, neurological and cardio-respiratory conditions in planning, recommending, and executing Physiotherapy management.

PO 7 To outline and implement Physiotherapy management by co-relating assessment and examination skills of clinical subjects like Orthopaedics, General Surgery, Medicine, Neurology, Paediatrics, Dermatology & Gynaecology & Obstetrics, Community Medicine and Sociology

PO 8 To demonstrate skill in maneuvers of passive movements, massage, stretching, strengthening, and various manual therapy techniques. Students will integrate Physiotherapy evaluation skills including electro diagnosis on patients to arrive at a Functional/ Physical Diagnosis in musculoskeletal, neurological, cardiovascular and pulmonary conditions.

PO 9 To describe and analyse concepts of energy conservation, global warming and pollution and justify optimal use of available resources.

PO 10 To demonstrate ability of critical thinking, scientific enquiry, experiential learning, personal finance, entrepreneurship and managerial skills related to task in day-to-day work for personal & societal growth.

PO 11 To demonstrate and apply basic computer applications for data management, data storage, generating data bases and for research purposes.

1.6 MPT Programme Specific Outcomes (PSOs)

PSO 1 Acquire, assess, apply and integrate new knowledge, learn to adapt to changing circumstances and ensure that patients receive the highest level of professional care.

PSO 2 Establish the foundations for lifelong learning and continuing professional development, including a professional development portfolio containing reflections, achievements and learning needs.

PSO 3 Continually and systematically reflect on practice and, whenever necessary, integrate that reflection into action, using improvement techniques and audit.

PSO 4 Manage time and prioritize tasks, and work autonomously when necessary and

appropriate.

PSO 5 Recognize own personal and professional limits and seek help from colleagues and supervisors when necessary.

PSO 6 Function effectively as a mentor and teacher including contributing to the appraisal, assessment and review of colleagues, providing effective feedback, and taking advantage of opportunities to develop these skills.

1.7 Teaching Learning Process

Teaching and learning in this programme involves classroom lectures as well as tutorial and remedial classes.

Tutorial classes: Tutorials allow closer interaction between students and teacher as each student gets individual attention. The tutorials are conducted for students who are unable to achieve average grades in their weekly assessments. Tutorials are divided into three categories, viz. discussion-based tutorials (focusing on deeper exploration of course content through discussions and debates), problem-solving tutorials (focusing on problem solving processes and quantitative reasoning), and Q&A tutorials (students ask questions about course content and assignments and consolidate their learning in the guiding presence of the tutor).

Remedial classes: The remedial classes are conducted for students who achieve average and above average grades in their weekly assessments. The focus is laid to equip the students to perform better in the exams/assessments. The students are divided into small groups to provide dedicated learning support. Tutors are assigned to provide extra time and resources to help them understand concepts with advanced nuances. Small groups allow tutors to address their specific needs and monitor them. Following methods are adopted for tutorial and remedial classes:

- Written assignments and projects submitted by students
- Project-based learning
- Group discussions
- Home assignments
- Class tests, quizzes, debates organised in the department
- Seminars and conferences
- Extra-curricular activities like cultural activities, community outreach programmes etc.
- Field trip, excursions, study tour, interacting with eminent authors, etc.

1.8 Assessment Methods

	Component of Evaluation	Marks	Frequency	Code	Weightage (%)
A	**Continuous Evaluation**				
I	Analysis/Class test	Combination of any three from (i) to (v) with 5 marks each	1-3	C	25%
Ii	Home Assignment		1-3	H	
Iii	Project		1	P	
Iv	Seminar		1-2	S	
V	Viva-Voce/Presentation		1-2	V	
Vi	MSE	MSE shall be of 10 marks	1-3	Q/CT	
Vii	Attendance	Attendance shall be of 5 marks	100%	A	5%
B	Semester End Examination		1	SEE	70%
	Project				**100%**

MASTER OF PHYSIOTHERAPY (MPT)

PROGRAMME STRUCTURE

	1st SEMESTER				
SL. NO.	**COURSE CODE**	**COURSE TITLE**	**LEVEL**	**CREDIT**	**L-T-P**
	MAJOR SUBJECTS				
1	PHT244C101	PRINCIPLES OF PHYSIOTHERAPY PRACTICE		4	3-1-0
2	PHT244C102	RESEARCH METHODOLOGY AND BIOSTATISTICS		4	3-1-0
3	PHT244C103	ADVANCED BIOMECHANICS AND KINESIOLOGY		4	3-1-0
4	PHT244C111	LAB-I		1	0-0-2
5	PHT244C112	CLINICAL EDUCATION -I		6	0-0-12
6		SWAYAM COURSE		4	
	TOTAL CREDIT FOR 1st SEMESTER			**23**	
	2nd SEMESTER				
	COURSE CODE	**COURSE TITLE**	**LEVEL**	**CREDIT**	**L-T-P**
	MAJOR SUBJECTS				
1	PHT244C201	EXERCISE PHYSIOLOGY		4	3-1-0
2	PHT244C202	ELECTROPHYSIOLOGY		4	3-1-0
3	PHT244C203	PHYSICAL AND FUNCTIONAL DIAGNOSIS-I		3	2-1-0
4	PHT244C211	LAB-II		1	0-0-2
5	PHT244C212	CLINICAL EDUCATION-II		6	0-0-12
6		SWAYAM COURSE		4	
	TOTAL CREDIT FOR 2nd SEMESTER			**22**	
	TOTAL CREDIT FOR 1st YEAR = 45				
	3rd SEMESTER(MUSCULOSKELETAL DISORDERS & SPORTS)				
	COURSE CODE	**COURSE TITLE**	**LEVEL**	**CREDIT**	**L-T-P**
	MAJOR SUBJECTS				
1	PHT244C301	PHYSICAL AND FUNCTIONAL DIAGNOSIS-II		3	2-1-0
2	PHT244C302	PHYSIOTHERAPEUTICS		4	3-1-0
3	PHT244C303A	MUSCULOSKELETAL DISORDERS AND SPORTS –I		4	3-1-0
4	PHT244C311	LAB-III		1	0-0-2
5	PHT244C312	CLINICAL EDUCATION -III		6	0-0-12
6	PHT244C321	DISSERTATION -I		8	
	TOTAL CREDIT FOR 3rd SEMESTER			**26**	

3rd SEMESTER (ADULT NEUROLOGY)					
MAJOR SUBJECTS					
1	PHT244C301	PHYSICAL AND FUNCTIONAL DIAGNOSIS-II		3	2-1-0
2	PHT244C302	PHYSIOTHERAPEUTICS		4	3-1-0
3	PHT244C303B	ADULT NEUROLOGY-I		4	3-1-0
4	PHT244C311	LAB-III		1	0-0-2
5	PHT244C312	CLINICAL EDUCATION -III		6	0-0-12
6	PHT244C321	DISSERTATION -I		8	
			TOTAL	**26**	
3rd SEMESTER (CARDIORESPIRATORY DISORDERS & REHABILITATION)					
MAJOR SUBJECTS					
1	PHT244C301	PHYSICAL AND FUNCTIONAL DIAGNOSIS-II		3	2-1-0
2	PHT244C302	PHYSIOTHERAPEUTICS		4	3-1-0
3	PHT244C303C	CARDIORESPIRATORY DISORDERS AND REHABILITATION-I		4	3-1-0
4	PHT244C311	LAB-III		1	0-0-2
5	PHT244C312	CLINICAL EDUCATION -III		6	0-0-12
6	PHT244C321	DISSERTATION -I		8	
			TOTAL	**26**	
3rd SEMESTER (COMMUNITY BASED REHABILITATION)					
MAJOR SUBJECTS					
1	PHT244C301	PHYSICAL AND FUNCTIONAL DIAGNOSIS-II		3	2-1-0
2	PHT244C302	PHYSIOTHERAPEUTICS		4	3-1-0
3	PHT244C303D	COMMUNITY BASED REHABILITATION-I		4	3-1-0
4	PHT244C311	LAB-III		1	0-0-2
5	PHT244C312	CLINICAL EDUCATION -III		6	0-0-12
6	PHT244C321	DISSERTATION -I		8	
			TOTAL CREDIT FOR 3rd SEMESTER	**26**	
	4th SEMESTER (MUSCULOSKELETAL DISORDERS & SPORTS)				
	COURSE CODE	**COURSE TITLE**	**LEVEL**	**CREDIT**	**L-T-P**
	MAJOR SUBJECTS				
1	PHT244C401	ADVANCED PHYSIOTHERAPEUTICS		4	3-1-0
2	PHT244C403A	MUSCULOSKELETAL DISORDERS & SPORTS-II		4	3-1-0
3	PHT244C421	DISSERTATION II		12	
4	PHT244C411	LAB – IV		1	0-0-2
5	PHT244C412	CLINICAL EDUCATION – IV		6	0-0-12
			TOTAL	**27**	
4th SEMESTER (ADULT NEUROLOGY)					
MAJOR SUBJECTS					
1	PHT244C401	ADVANCED		4	3-1-0

		PHYSIOTHERAPEUTICS			
2	PHT244C403B	ADULT NEUROLOGY-II		4	3-1-0
3	PHT244C421	DISSERTATION II		12	
4	PHT244C411	LAB – IV		1	0-0-2
5	PHT244C412	CLINICAL EDUCATION – IV		6	0-0-12
			TOTAL	**27**	
4th SEMESTER (CARDIORESPIRATORY DISORDERS & REHABILITATION)					
MAJOR SUBJECTS					
1	PHT244C401	ADVANCED PHYSIOTHERAPEUTICS		4	3-1-0
2	PHT244C403C	CARDIORESPIRATORY DISORDERS AND REHABILITATION-II		4	3-1-0
3	PHT244C421	DISSERTATION II		12	
4	PHT244C411	LAB – IV		1	0-0-2
5	PHT244C412	CLINICAL EDUCATION – IV		6	0-0-12
			TOTAL	**27**	
4th SEMESTER (COMMUNITY BASED REHABILITATION)					
MAJOR SUBJECTS					
1	PHT244C401	ADVANCED PHYSIOTHERAPEUTICS		4	3-1-0
2	PHT244C403D	COMMUNITY BASED REHABILITATION-II		4	3-1-0
3	PHT244C421	DISSERTATION II		12	
4	PHT244C411	LAB – IV		1	0-0-2
5	PHT244C412	CLINICAL EDUCATION – IV		6	0-0-12
		TOTAL CREDIT FOR 4th SEMESTER		**27**	
	TOTAL CREDIT FOR 2nd YEAR = 53				

Level -Semester I

Title of the Paper: PRINCIPLES OF PHYSIOTHERAPY PRACTICE
Subject Code: PHT244C101

Marks/ Credits: 100/4

L-T-P-C: **3-1-0-4** **Total credits: 4**

Course Objectives:

The objective of the course is to help students to understand the principles of physiotherapy profession, principles of management in personal management, time management and administration including budgeting and focuses on documentation.

Course Outcomes:

On successful completion of the course the students will be able to:		
SI No	**Course Outcome**	**Blooms Taxonomy Level**
CO 1	**Understand** the legal responsibility and professional culture	**BT 2**
CO 2	**Understand** the organization of principles and budget planning, Management and Administration	**BT 2**
CO 3	**Application**. Of Rules and Regulations of governing bodies while handling patients .	**BT 3**
CO 4	**Application** of scales according to condition and use of various assessment techniques'	**BT 4**

COURSE OUTLINE:

Modules	Course Content	Periods
I.	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.	15
II.	4. Roles of the physiotherapist 5. Standards for practice for physiotherapist and the criteria	15
III.	6. History taking, assessment, tests, Patient communication, documentation of findings, treatment organization and planning/execution for intervention. 7. Documentation of rehabilitation assessment and management	15
IV.	8. Standardized tests and scales used in various types of cases for assessment and interpretation in Physiotherapy practice. 9. Future challenges in physiotherapy	15
TOTAL		60

Text Books:

1. Larry J Nosse, Management Principles for Physical therapist, Lippincott Williams, 2nd Ed, 2005

2. Chris croft, Time Management, International Thomson Business press, 1996.

Reference Books:

1. Elaine Lynne ,Management in Health Care, Macmillan Publisher,4th Ed,1994.

2. Willam A. Reinke, Health Planning for Effective Management, Oxford University Press,3rd Ed,1988.

Title of the Paper: Research Methodology & Biostatistics

Subject Code: **PHT244C102**

Total marks/ credits: 100 /4

L-T-P-C: **3-1-0-4** **Total credits: 4**

Course Objective:

The course objective is that after completion of this course the students will be able to perform independent research within the department and help the department and the team for treatment planning of the patient.

Course Outcomes:

On successful completion of the course the students will be able to:		
SI No	**Course Outcome**	**Blooms Taxonomy Level**
CO 1	**Define** the principles of research and biostatistics to health practice including the design and implementation of health-related research studies.	**BT 1**
CO 2	**Outline** processing and analysis of data.	**BT 2**
CO 3	**Plan and execute** a research study, including clinical trials.	**BT 3**
CO 4	**Undertake** independent research in the field of physiotherapy.	**BT 4**

COURSE OUTLINE:

MODULE	TOPICS & COURSE CONTENT	PERIODS
I	**RESEARCH METHODOLOGY:** 1. Introduction to research 2. Types of research 3. Defining a research question 4. Study design: types a. Case study, Case series, longitudinal cohort, Pre post design, Time series design, repeated measures design, Randomized control design. 5. Sampling design, calculating minimum sample size based on design 6. Measurement: Properties of measurement: reliability, validity, responsiveness, MCID.	15
II	7. Outcome measures: Use of outcome measures in rehabilitation research 8. Data collection 9. Hypothesis- Type I & II bias 10. Asking clinical questions 11. Translating of evidence into practice: strategies 12. Use of clinical practice guidelines, clinical pathways, prediction rules to inform practice.	15
III	**BIOSTATISTICS:** 1. Measures of central tendency 2. Normal distribution & normal curve 3. Descriptive Statistics and measurement variability 4.. Statistical inference 5.. Comparison of group means: T-test 6. Analysis of variance 7. Multiple comparison tests 8. Non parametric tests 9. Correlations 10. Regression 11. Analysis of frequencies: Chi square 12. Statistical measure of reliability 13. Power analysis – Determining sample size 14. Epidemiological Measures – Rate, Ratio, Proportion, Incidence and prevalence, Relative risk, Risk ratio, Odds ratio.	15

IV	**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 Abstract	15
	TOTAL	**60**

Text books:

1.Research Methodology, Methods & Techniques (3rd Edition) - C R Kothari
2. Research for Physiotherapist: Project Design & Analysis- (2nd edition)- Carolyn M. Hicks

Reference Books:

1. Sundarrao, Introduction to biostatistics and Research Methodology, CBS, 1Ed, 2002.
2. Research Methodology - a step by step guide for beginners (Third Edition) - Ranjit Kumar

Title of the Paper: Advanced Biomechanics and Kinesiology

Subject Code: **PHT244C103**

Total marks/ credits: 100 /4

L-T-P-C: **3-1-0-4** **Total credits: 4**

Course Objective: The course aims to allow the student to be able become prominent member of the multidisciplinary physiotherapy team and treat all the conditions which need physiotherapeutic procedures with an understanding of normal biomechanics and related patho-mechanics and provide adequate knowledge about the treatment procedures and its benefit.

Course Outcomes:

On successful completion of the course the students will be able to:		
SI No	**Course Outcome**	**Blooms Taxonomy Level**
CO 1	**Define** biomechanical terms , basic concepts of Physics incorporated to human motion.	**BT 1**
CO 2	**Apply** exercise physiology & principles of physiotherapy practice in planning various rehabilitation protocol.	**BT 3**
CO 3	**Plan and execute** treatment planning protocol, management, administration of physiotherapy treatment and provision of patient support.	**BT 3**
CO 4	**Undertake** independent research in the field of biomechanical analysis of normal and pathological motion for various activities of daily living and during sports.	**BT 4**

Course Outline:

MODULE	TOPICS & COURSE CONTENT	PERIODS
I	• Biomechanics of Tissues and structures of the musculoskeletal system and clinical application. • Normal and applied Biomechanics of Spine, Upper extremity and Lower extremity.	**15**
II	• Clinical kinesiology of posture. • Biomechanics and patho-mechanics of hand function and gait.	**15**
III	• Methods of kinetics and kinematics investigation • Patient Positioning, Body Mechanics and Transfer Techniques.	**15**
IV	• Ergonomic Approach to lifting and handling, workspace and Environment • Biomechanics of throwing and other ADL activities. • Biomechanics of nervous system.	**15**
	TOTAL	**60**

Text Books:

1. Norkins & Levengie, Joint Structure and Function- A Comprehensive Analysis –F.ADavis, 5th Edition
2. Norkins & White, Measurement of Joint Motion–Aguideto Goniometry, F. A Davis, 5th Edition

Reference Books:

1.Low & Reed, Basic Biomechanics explained –Butterworth Heinmann, 5th Edition

2.SoderbergLippineou,Kinesiology Applied to Pathological Motion, 6th Edition

Title of the Paper: LAB-I
Subject Code: PHT244C111

Marks/ Credits: 100/3

L-T-P-C: 0-0-2-1 **Total credits: 1**

Course Objectives:

- The objective of the course is to help students to understand how to identify the cause of movement dysfunction and focuses on assessment of balance and coordination, goniometry and exercise therapy principles .

Course Outcomes:

On successful completion of the course the students will be able to:		
SI No	**Course Outcome**	**Blooms Taxonomy Level**
CO 1	**Understand** the fundamentals of muscle and joint function and describe the use of various equipment's and techniques.	**BT 2**
CO 2	**Demonstrate** how to grade the strength of muscle and how to measure the joint range of motion.	**BT 3**
CO 3	**Demonstrate** the technique of different types of movements, massage therapy muscle training and fitness training concepts.	**BT 3**
CO 4	**Analyse** the problem of the patient and plan the treatment required based on problem of the patient.	**BT 4**

COURSE OUTLINE:

Modules	**Course Content**	**Periods**
I	Clinical Application of all the electrotherapy equipment's with evidence based practice.	10
II	Clinical Application of all the exercise therapy equipment's with evidence based practice.	10
III	Goniometry and its principles.	5
IV	Training for balance and co-ordination exercises.	5

TOTAL	30

Text Book:

1. Principles of Exercise Therapy – Dena Gardiner

2 Massage, manipulation & traction- Sydney Litch

Reference books:

1.Helpline Electrotherapy for Physiotherapist- Virendra Kr. Khokar

2.Norkins & White, Measurement of Joint Motion–Aguideto Goniometry, F. A Davis, 5th Edition

Title of the Paper: Clinical Education- I

Subject Code: **PHT244C112**

Total marks/ credits: 100 /4

L-T-P-C: **0-0-12-6** **Total credits: 6**

Course Objective:

- Every enrolled student has to carry out clinical posting in various clinical establishment in and around Guwahati.
- To enable each student the practical exposure of the various clinical subjects taught and their applications in terms of patient communication and treatment.

Course Outcomes:

On successful completion of the course the students will be able to:		
SI No	**Course Outcome**	**Blooms Taxonomy Level**
CO 1	**Explain** various orthopaedic conditions and their symptomology to patients and management.	**BT 2**
CO 2	**Apply** the their skills to assess, evaluate, diagnose and manage different patients from different departments like orthopaedics, neurology, paediatrics.	**BT 3**
CO 3	**Construct** the framework for exercise therapy and electrotherapy protocols.	**BT 3**
CO 4	**Analyse** the pathology of the traumatic and non-traumatic orthopaedic conditions and their various treatment protocols both medical and surgical aspects.	**BT 4**

Description:

Every enrolled student has to carry out clinical posting in various clinical establishment in and around Guwahati. In the clinical posting all the students will learn to assess, evaluate, diagnose and manage different patients from different department. The students will learn the expertise to frame exercise therapy and electrotherapy protocols. The students will be able to provide evidence based practice.

Level: Semester -II

Title of the Paper: EXERCISE PHYSIOLOGY
Subject Code: PHT244C201

Marks/ Credits: 100/4

L-T-P-C: **3-1-0-4** **Total credits: 4**

Course Objectives:

The objective of the course is to help students to understand the acute and chronic physiological changes that takes place with exercise in various systems of the body and also focuses on fitness assessment, formation of exercise prescription considering various factors.

Course Outcomes:

On successful completion of the course the students will be able to:		
SI No	**Course Outcome**	**Blooms Taxonomy Level**
CO 1	**Understand** the acute and chronic physiological changes that happen with exercise on various systems.	**BT 2**
CO 2	**Application** of the various protocols to assess the cardiorespiratory endurance and the principles of exercise prescription.	**BT 3**
CO 3	**Demonstrate** different methods of strength training, flexibility training and training of cardiorespiratory endurance.	**BT 3**
CO 4	**Analyse** the interpretation obtained from the tests and accordingly plan the exercise sessions.	**BT 4**

COURSE OUTLINE:

Modules	Course Content	Periods
I	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.	15
II	4. Environmental influence on Performance. 5. Special aids to performance and conditioning. 6. Body consumption, nutrition and caloric balance and performance	15
III	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.	15
IV	9. Fatigue assessment and scientific organization of work-rest regimes to control fatigue. 10. Supplementary nutrition.	15
	TOTAL	60

Text Book:

1. William A Mcardle, Exercise Physiology, ELBS, 5th Ed, 2011.
2. William Larry ,Physiology of sport and exercise5th Ed.

Reference Books:

1. Mary Beth Allan, Sports, Exercise, and Fitness: A Guide to Reference and Information Sources, 1st Ed, 2005
2. Exercise Physiology : Nutrition, Energy & Human Performance. Katch & Katch, 9th edition.

Title of the Paper: ELECTRO PHYSIOLOGY

Subject Code: PHT244C202

L-T-P-C: 3-1-0-4 **Total credits: 4**

Course Objectives

The objective of the course is to learn the physiological basis of EEG, EMG activity & able to describe the pattern & also able to identify normal, normal variants & abnormal patterns in adult & paediatric patients.

Course outcomes

On successful completion of the course the students will be able to:		
SI No	**Course Outcome**	**Blooms Taxonomy Level**
CO 1	**Understanding** anatomy and physiology of peripheral nerve, muscle and neuromuscular junction & electrical properties of muscle and nerve.	**BT 1**
CO 2	**Explain** factors influencing learning including the learner & the environment, how these factors can be applied in clinical practice.	**BT 2**
CO 3	**Demonstrate** various electrophysiological tests & its application.	**BT 3**
CO 4	**Analyze** & synthesis research relating to a chosen topic to interpret electro diagnostic procedures.	**BT 4**

Course Outline :

MODULE	TOPICS & COURSE CONTENT	PERIODS
1	1. Characteristics and components of Electro therapeutic stimulation systems and Electro physiological assessment devices. 2. Instrumentation for neuromuscular electrical stimulation.	15
2	3. Anatomy and physiology of peripheral nerve, muscle and neuromuscular junction. 4. Electrical properties of muscle and nerve.	15
3	5. Muscles plasticity in response to electrical stimulation. 6. Electrical stimulation and its effects on various systems.	15
4	7. Clinical Electro physiological testing. 8. Safety considerations in electrotherapy	15
	TOTAL	**60**

Text book –

1. Clinical Neurophysiology – UK Mishra & J Kalita
2. Clayton's Electrotherapy – Foster & Palastanga

Reference book -

1. Electrotherapy Explained Principles & Practice – John Low & Ann Reed
2. Electrodiagnosis in diseases of nerve & muscle - Jun Kimura

Course: C 3

Title of the Paper: PHYSICAL AND FUNCTIONAL DIAGNOSIS-I
Subject Code: PHT244C203

Marks/ Credits: 100/3

L-T-P-C: **2-1-0-3** **Total credits: 3**

Course Objectives:

The objective of the course is to help students to understand the examination of musculoskeletal, neurological, cardiac and pulmonary disorders, pathological investigations, screening methods ,fitness assessments and treatment techniques .

Course Outcomes:

On successful completion of the course the students will be able to:		
SI No	**Course Outcome**	**Blooms Taxonomy Level**
CO 1	**Understand** the acute and chronic physiological changes that happen with exercise on various systems.	**BT 2**
CO 2	**Application** of the various protocols to assess the cardiorespiratory endurance and the principles of exercise prescription.	**BT 3**
CO 3	**Demonstrate** different methods of strength training, flexibility training and training of cardiorespiratory endurance.	**BT 3**
CO 4	**Analyse** the interpretation obtained from the tests and accordingly plan the exercise sessions.	**BT 4**

COURSE OUTLINE:

Modules	Course Content	Periods
I	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.	12
II	3. Developmental screening, motor learning –motor control assessment. 4. Anthropometric measurements.	12
III	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	12
IV	7. EMG and Biofeedback. 8. Biophysical measurements, physiotherapy modalities, techniques and approaches.	9
TOTAL		45

Text Books:

1. William A Mcardle, Exercise Physiology, ELBS, 5th Ed, 2011.
2. Therapeutic Exercise Colby Kisner

Reference Books:

1. Mary Beth Allan, Sports, Exercise, and Fitness: A Guide to Reference and Information Sources, Libraries unlimited publishers, 1st Ed, 2005
2. William Larry , Physiology of Sport and exercise,5th Ed.

Title of the Paper: LAB II

Subject Code: **PHT244C211**

L-T-P-C:0-0-2-1 **Total credits: 1**

Course Objectives

The course is designed with an objective to give the students to acquire the in-depth knowledge of movement dysfunction of human body, cause thereof principles underlying the use of physiotherapeutic interventions for restoring movement dysfunction towards normalcy.

Course Outcomes

On successful completion of the course the students will be able to:		
SI No	**Course Outcome**	**Blooms Taxonomy Level**
CO 1	**Explain and understand the** proficiency in creating awareness using newer technology, at various levels in community for healthcare & professional awareness.	**BT 1**
CO 2	**Understand the** planning and implementation of treatment programme adequately	**BT 2**
CO 3	**Demonstration** of theoretical knowledge in independent practice, on fields of sports and community and during disaster situation.	**BT 3**
CO 4	**Analyzing the** planning and implementation of treatment programme adequately and appropriately for all clinical conditions common as well as rare related to respective specialty in acute and chronic stage, in intensive care, indoor, outdoor and institutional care.	**BT 3**

COURSE OUTLINE:

Modules	Topics (if applicable) & Course Contents	Periods
I	Clinical application of various soft tissue manipulation techniques with evidence based practice.	10
II	Relearning how to perform MMT	10
III	Clinical application of techniques applied for paediatric rehabilitation with evidence based practice.	5
IV	Relearning of various mobilization techniques.	5
TOTAL		**30**

Text Books:

1. Positional release techniques ,Deig, D
2. Muscle Energy Techniques ,Chaitow L

Reference Books:

1. Electrotherapy explained: Principles and practice/ by John Low, Ann Reed and Mary Dyson. / low, John
2. Clayton's electrotherapy/ edited by Sheila Kitchen and Sarah Bazin / Kitchen, Sheila

Title of the Paper: Clinical Education- II

Subject Code: **PHT244C212**

Total marks/ credits: 100 /4

L-T-P-C: **0-0-12-6** **Total credits: 6**

Course Objective:

- Every enrolled student has to carry out clinical posting in various clinical establishment in and around Guwahati.
- To enable each student the practical exposure of the various clinical subjects taught and their applications in terms of patient communication and treatment.

Course Outcomes:

On successful completion of the course the students will be able to:		
SI No	**Course Outcome**	**Blooms Taxonomy Level**
CO 1	**Explain** various orthopaedic conditions and their symptomology to patients and management.	**BT 2**
CO 2	**Apply** the their skills to assess, evaluate, diagnose and manage different patients from different departments like orthopaedics, neurology, paediatrics.	**BT 3**
CO 3	**Construct** the framework for exercise therapy and electrotherapy protocols.	**BT 3**
CO 4	**Analyse** the pathology of the traumatic and non traumatic orthopaedic conditions and their various treatment protocols both medical and surgical aspects.	**BT 4**

Description:

Every enrolled student has to carry out clinical posting in various clinical establishment in and around Guwahati. In the clinical posting all the students will learn to assess, evaluate, diagnose and manage different patients from different department. The students will learn the expertise to frame exercise therapy and electrotherapy protocols. The students will be enable to provide evidence based practice.

Level: Semester III

Title of the Paper: PHYSICAL AND FUNCTIONAL DIAGNOSIS-II

Subject Code: PHT244C301

Marks/ Credits: 100/3

L-T-P-C: 2-1-0-3 **Total credits: 3**

Course Objectives:

The objective of the course is to help students to understand the examination of musculoskeletal, neurological, cardiac and pulmonary disorders, pathological investigations, screening methods ,fitness assessments and treatment techniques .

Course Outcomes:

On successful completion of the course the students will be able to:		
SI No	**Course Outcome**	**Blooms Taxonomy Level**
CO 1	**Understand** the acute and chronic physiological changes that happen with exercise on various systems.	**BT 2**
CO 2	**Application** of the various protocols to assess the cardiorespiratory endurance and the principles of exercise prescription.	**BT 3**
CO 3	**Demonstrate** different methods of strength training, flexibility training and training of cardiorespiratory endurance.	**BT 3**
CO 4	**Analyse** the interpretation obtained from the tests and accordingly plan the exercise sessions.	**BT 4**

COURSE OUTLINE:

Modules	Course Content	Periods
I.	1. Evaluation of aging. 2. Aids and appliances, adaptive functional devices to improve movement dysfunction.	12
II.	3. Exercise ECG testing and monitoring. 4. Pulmonary function tests and Spirometry.	12
III.	5. Physical disability evaluation and disability diagnosis. 6. Gait analysis and diagnosis.	12
IV.	7. Clinical decision making in electrotherapeutics	9
TOTAL		45

Text Books:

1. William A Mcardle, Exercise Physiology, ELBS, 5th Ed, 2011.
2. Physical rehabilitation by Susan O Sullivan

Reference Books:

1. Mary Beth Allan, Sports, Exercise, and Fitness: A Guide to Reference and Information Sources, 1st Ed, 2005
2. William Larry , Physiology of Sport and Exercise

Title of the Paper: Physiotherapeutics

Subject Code: PHT244C302

Marks/ Credits: 100/3

L-T-P-C: **3-1-0-4** **Total credits: 4**

Course Objectives:

Course is designed with the following major objectives, student should be able to execute all routine physiotherapeutic procedures with evidence based practice and perform independent physiotherapy assessment and treatment for patients.

Course Outcomes:

On successful completion of the course the students will be able to:		
SI No	**Course Outcome**	**Blooms Taxonomy Level**
CO 1	**Understand** the pathophysiology of various cardio respiratory disorders	**BT 2**
CO 2	**Understand** importance of various investigations to differentially diagnose	**BT 2**
CO 3	**Application** of the different techniques to assess the cardio respiratory dysfunction	**BT 3**
CO 4	**Analyse** and plan the treatment goals based on presentation of the condition.	**BT 4**

Course Outcome :

MODULE	TOPICS & COURSE CONTENT	PERIODS
I	• Pain (neurobiology , various theories , modulation and management of pain) • Maternal and child care in general physiotherapy.	**15**
II	• Theories of motor control and motor learning. • Theories of aging.	**15**
III	• Cardiopulmonary medications and their effect on activity performance. • Exercise planning and prescription.	**15**
IV	• Use of Exercise therapy techniques and application on various types of cases. • Application of electrotherapy techniques on patients, monitoring of dosages and winding up procedure.	**15**
	TOTAL	**60**

Textbooks:

1. Therapeutic Exercise: Treatment Planning for Progression by Francis E. Huber, Christly. Wells (W.B. Saunders Company, 2006)

2. Therapeutic Exercise: Foundations and Techniques by Carolyn Kisner and Lynn Allen Colby (W.B. Saunders Company, 2007)

Reference Books:

1.Therapeutic Exercise, Moving Towards Function by Carrie M. Hall and Lori Thein Brody (Lippincott Williams & Wilkins, 2004

2. Physical Rehabilitation- Susan B O' Sullivan , Thomas J Schmitz

Title of the Paper: LAB-III

Subject Code: PHT244C311

Marks/ Credits: 100/3

L-T-P-C: 0-0-2-1 **Total credits: 1**

Course Objectives:

- The objective of the course is to help students to understand how to identify the cause of movement dysfunction and focuses on assessment techniques and treatment techniques.

Course Outcomes:

On successful completion of the course the students will be able to:		
SI No	**Course Outcome**	**Blooms Taxonomy Level**
CO 1	**Understand** the assessment of musculoskeletal ,neurological and cardiorespiratory disorders .	**BT 2**
CO 2	**Demonstrate** various techniques of musculoskeletal ,neurological and cardiorespiratory disorders .	**BT 3**
CO 3	**Demonstrate** the technique of different types of movements, massage therapy muscle training and fitness training concepts.	**BT 3**
CO 4	**Analyse** the problem of the patient and plan the treatment required based on problem of the patient.	**BT 4**

COURSE OUTLINE:

Modules	Course Content	Periods
I	Revision of assessment skills of musculoskeletal ,neurological and cardiorespiratory disorders .	10
II	Common facilitatory & inhibitory techniques, NDT, PNF techniques	10
III	Cardio : oral and endotracheal suctioning ,Cough facilitatory techniques, PNF respiration, breathing techniques	5
IV	Mobilization & manipulation techniques, MFR	5
TOTAL		30

Text Books:

1.Physiotherapy in respiratory care –Alexandra Hough .

2.Orthopedic physical Assessment – 7th edition ,David .J .Magee.

Reference books:

1.Principles of Exercise Therapy – Dena Gardiner

2.Massage, manipulation & traction- Sydney Litch Therapeutic Exercise Colby Kisner

Title of the Paper: Clinical Education- III

Subject Code: **PHT244C312**

Total marks/ credits: 100 /4

L-T-P-C: **0-0-12-6** **Total credits: 6**

Course Objective:

- Every enrolled student has to carry out clinical posting in various clinical establishment in and around Guwahati.
- To enable each student the practical exposure of the various clinical subjects taught and their applications in terms of patient communication and treatment.

Course Outcomes:

On successful completion of the course the students will be able to:		
SI No	**Course Outcome**	**Blooms Taxonomy Level**
CO 1	**Explain** various orthopaedic conditions and their symptomology to patients and management.	**BT 2**
CO 2	**Apply** the their skills to assess, evaluate, diagnose and manage different patients from different departments like orthopaedics, neurology, paediatrics.	**BT 3**
CO 3	**Construct** the framework for exercise therapy and electrotherapy protocols.	**BT 3**
CO 4	**Analyse** the pathology of the traumatic and non traumatic orthopaedic conditions and their various treatment protocols both medical and surgical aspects.	**BT 4**

Description:

Every enrolled student has to carry out clinical posting in various clinical establishment in and around Guwahati. In the clinical posting all the students will learn to assess, evaluate, diagnose and manage different patients from different department. The students will learn the expertise to frame exercise therapy and electrotherapy protocols. The students will be enable to provide evidence based practice.

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Title of the Paper: MUSCULOSKELETAL DISORDERS & SPORTS-I

Subject Code: **PHT244C303A**

L-T-P-C:3-1-0-4 **Total credits: 4**

Course Objectives: Student should be able to be a prominent member of the multidisciplinary physiotherapy team and treat all the conditions which need physiotherapeutic procedures, able to provide adequate knowledge about the treatment procedures and its benefit and perform independent physiotherapy assessment and treatment for patients.

Course Outcomes:

On successful completion of the course the students will be able to:		
SI No	**Course Outcome**	**Blooms Taxonomy Level**
CO 1	**Explain** the terms with detailed knowledge related to Orthopedic condition	**BT 1**
CO 2	**Demonstrate** skill in Physical & Functional diagnosis of cases.	**BT 2**
CO 3	**Apply** techniques pertaining to patient under his/her care and demonstrate the ability to critically appraise recent physiotherapeutic and related literature from journals.	**BT 3**
CO 4	**Adopt** diagnostic & therapeutic procedures based on recent advancement in the field of rehabilitation	**BT 3**

COURSE OUTLINE:

MODULE	TOPICS & COURSE CONTENT	PERIODS
I	• Applied anatomy with emphasis on Biomechanics & Kinesiology of Human motion and Work Physiology. • Clinical assessment and rationale of Laboratory investigations along with differential diagnoses. • Clinical Symptomatology, Pathophysiology and Patho-mechanics of musculoskeletal conditions.	15
II	• Physiotherapy management following fractures, dislocations and their complications, Amputations, cumulative trauma disorders and Burns. • Physiotherapy management in degenerative disorders and allied conditions. • Physiotherapy in post-operative management of metabolic, hormonal, neoplastic and infective conditions of bones and joints.	15
III	• Physiotherapy following arthroplasty, implants and soft tissue repairs. • Pre & post-operative physiotherapy in tendon transfer. Electrical stimulation and biofeedback procedures. • Kinetic and kinematics analysis for various functional activities.	15
IV	• Functional assessment (Hand function, Gait, Posture A.D.L; occupational work). • Hand Rehabilitation. • Assessment of locomotor impairments, disabilities and disability evaluation.	15
	TOTAL	**60**

Text Book:

1.Text book of Orthopedics.—Maheswari.
2 Textbook of Orthopedics and Traumatology— M.N.Natarajan

Reference Books:

1. Apley`s textbook of Orthopaedics
2. Outline of Fractures - John Crawford Adams.

Title of the Paper: Adult Neurology I

Subject Code: **PHT244C303B**

Total marks/ credits: 100 /4

L-T-P-C: **3-1-0-4** **Total credits: 4**

Course Objective:

The course objective is that after completion of this course the students will be able to acquire skill in physical & functional diagnosis pertaining to patient with neurological disorders under his/her care & able to provide adequate knowledge about the treatment procedures and its benefit and perform independent physiotherapy assessment and treatment for patients.

Course Outcomes:

On successful completion of the course the students will be able to:		
SI No	**Course Outcome**	**Blooms Taxonomy Level**
CO 1	**Recall** anatomical & physiological basis of nervous system & **outlin**e the signs, symptoms and co-existing problems of patients with neurological dysfunction	**BT 1 & 2**
CO 2	**Apply** knowledge of biomechanics and patho- mechanics of joints in gait and posture in neurological condition	**BT 3**
CO 3	**Utilize** theories of Motor Control and Motor Learning in Neurorehabilitation.	**BT 3**
CO 4	**Analyze** various treatment approaches & advanced electro diagnosis and its applicability to various pediatric and adult neurological conditions	**BT 4**

COURSE OUTLINE:

MODULE	TOPICS & COURSE CONTENT	PERIODS
I	1. Anatomy and Physiology of Nervous System. 2. Normal sequential behavioral and Physiological changes throughout the developmental arc. 3. Neurophysiology of balance, coordination and locomotion. 4.Clinical symptomatology and Pathophysiology of the neurological disorders	15
II	5. Principles of clinical neuro diagnosis and investigation. 6. Various Evaluation Scales and Assessment methods used in neurological rehabilitation. 7. Aids and appliances in neurological disorders. Prescriptions, testing and training. 8. Associated functional disturbances of higher functions and their testing and training. 9. Evaluation of A.N.S dysfunction with reference to psycho-physiological testing. Biofeedback training 10. Neuro-psychological functions. Perception testing and training. 11. Assessment and management of various neurological gaits.	15
III	12. 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.	15
IV	13. Theories of motor control and theories of motor learning, its application in Physiotherapy 14. Common facilitatory and inhibitory techniques. 15. Treatment approaches in neurological rehabilitation: Bobath, NDT, SI, Brunnstrom, Roods, PNF, Vojta, MRP, MFR 16. Musculoskeletal treatment concept applied to neurology: Adverse neural tissue tension tests in upper limb and lower limb. 17. Pathophysiology and Management of tonal abnormalities (Spasticity, Rigidity, Hypotonia, and Dystonia)	15
	Total	**60**

Text Books:

1. Neurological Assessment: Bickerstaff
2. Clinical disorders of balance, posture and gait: Adolfo M Bronstein, Thomas Brandt and Marjorie Wollacot

Reference Books:

1. Brain's textbook of clinical neurology
2 Clinical neurology: Victor Adams

Title of the Paper: CARDIORESPIRATORY DISORDERS AND REHABILLITATION-I

Subject Code: PHT244C303C

Marks/ Credits: 100/4

L-T-P-C: **3-1-0-4** **Total credits: 4**

Course Objectives:

- The objective of the course is to help students to identify cardio respiratory dysfunction through assessment and investigations and demonstrate all the techniques required to restore the cardio respiratory function.

Course Outcomes:

On successful completion of the course the students will be able to:		
SI No	**Course Outcome**	**Blooms Taxonomy Level**
CO 1	**Understand** the pathophysiology of various cardio respiratory disorders	**BT 2**
CO 2	**Understand** importance of various investigations to differentially diagnose	**BT 2**
CO 3	**Application** of the different techniques to assess the cardio respiratory dysfunction	**BT 3**
CO 4	**Analyse** and plan the treatment goals based on presentation of the condition.	**BT 4**

COURSE OUTLINE:

Modules	Course Content	Periods
I	Developmental Anatomy and Physiology of cardio respiratory system across Life span. Biomechanics and pathomechanics of thorax . Examination of Cardiovascular System • ECG – Normal & Variations due to ischemia &infarction • Stress Test Investigations of cardiovascular disease	**15**
II	DISEASES OF THE CARDIO-VASULAR SYSTEM • Definition, Etiology, Clinical Features, Complications, Management of the following : • Coronary Artery disease • Diseases of the heart valves • Congenital Heart Diseases • Diseases of myocardium • Diseases of aorta	**15**
III	Examination of Respiratory System • Introduction of clinical examination–Breath sounds, X ray chest, ABG, PFT	10
IV	DISEASES OF THE RESPIRATORY SYSTEM Patterns of Respiratory Diseases: Obstructive & Restrictive • Definition, Etiology, Clinical Features, Complications, Management of Diseases of the respiratory system : □ Common Infectious diseases like Tuberculosis, Pneumonia, Lung Abscess, Bronchiectasis. □ Obstructive Lung Diseases like Bronchitis, Emphysema, Bronchial Asthma, Cystic Fibrosis. □ Diseases of Pleura like Pleural Effusion, Pneumothorax, Hydropneumothorax, Empyema. □ Respiratory Failure: Definition, Types, Causes, Clinical Features, Diagnosis and Management □ Interstitial Lung Diseases □ Occupational lung diseases like Silicosis Asbestosis, Pneumoconiosis	**20**
TOTAL		**60**

Text Book:

1. Davidson's Principles & Practice of Medicine, 24th edition
2. Clinical Assessment in Respiratory Care, Robert L. Wilkins.

Reference Books:

1. Medicine Prep Manual – K. George Mathew
2. Cardiopulmonary Physical therapy by Irwin Scott.

Title of the Paper: COMMUNITY BASED REHABILITATION- I

Subject Code: PHT244C303D

Marks/ Credits: 100/4

L-T-P-C: 3-1-0-4 **Total credits: 4**

Course objective:

The course objective is that after the completion of the course the student will understand about the importance of rehabilitation and their role in community level. Students will able to evaluate the disability in various condition and their rehabilitation. Also they will provide adequate knowledge on women's health and geriatric population.

Course Outcomes:

On successful completion of the course the students will be able to:		
SI No	**Course Outcome**	**Blooms Taxonomy Level**
CO 1	Explain the terms with detailed knowledge related to community based rehabilitation	**BT 1**
CO 2	Outline the theories of aging and co-existing disorders along with the rehabilitation of geriatric patients	**BT 2**
CO 3	Apply the knowledge of physiological changes in women's health and assessing the dysfunction along with the rehabilitation of the patient.	**BT 3**
CO 4	Analyze the various scales and outcomes measures along with the disability of child.	**BT 4**

Course outline:

Unit	Topics	Hours
1	• Introduction to community based rehabilitation- a. History of CBR, ICF. b. Community based rehabilitation programs c. WHO matrix and Physiotherapy role in IEC (information, education and communication) d. CBR and IBR e. Health care delivery system f. Disability – introduction and Act g. Evaluation of disability h. Scope of Community physiotherapy	15
2	Geriatrics – a. Epidemiology of aging b. Assessment c. Theories of aging and changes due to aging d. Holistic physiotherapy for aged e. Psychosomatic disorders in elderly and early detection and intervention (dementia, depression etc) f. Posture, balance and falls in elderly g. Gait in older adults	15
3	Women's health a. Introduction to women's health and anatomy of pelvic floor b. Menstrual and peri-menstrual problems c. Physiological changes during pregnancy d. Antenatal and postnatal care and exercise training consideration e. Musculoskeletal pain and dysfunction in childbearing mothers- physiotherapy evaluation and management	15

	f. Postmenopausal changes – complication and management g. Pelvic floor dysfunction and management of incontinence h. Exercise prescription in gynaecological conditions, obesity, PCOD	
4	Various neurological, orthopaedic and cardiorespiratory condition /dysfunction along with the various scales related to children, working adults and rehabilitation.	15
	TOTAL	60

Textbooks:

Textbook of Rehabilitation – S Sunder

Physiotherapy in Community Health and Rehabilitation – Waqar Naqvi

Physical Rehabilitation – susan o' sullivan

Reference books:

Principles of Geriatric Rehabilitation – Narinder Kaur , Multani Satish Kumar Verma

Physiotherapy in Obstetrics & Gynaecology – Polden & mantle

Title of the Paper: Dissertation-I

Subject Code: PHT244C221

Marks/ Credits: 100/3

Total credits: 3

Course Objectives:

Every candidate shall submit to the Registrar (Academic) of the university in the prescribed proforma, a synopsis containing particulars of proposed dissertation work within 6 months from the date of commencement of the course on or before the dates notified by the university after approval received from Institutional Ethical Clearance committee for Human Research.

Course Outline :

Every candidate shall submit to the Registrar (Academic) of the university in the prescribed proforma, a synopsis containing particulars of proposed dissertation work within 4 months from the date of commencement of the course on or before the dates notified by the university. The synopsis shall be sent through the proper channel (Duly approved by the guide, HOD, Principal and Ethical committee with in the first semester) such synopsis will be reviewed and the university will register the dissertation topic (in the second semester). The dissertation is aimed to train a postgraduate student in research methods and techniques. It includes identification of a problem, formulation of a hypothesis, search and review of literature getting acquainted with recent advances, designing of a research study, collection of data, critical analysis, and comparison of results and drawing conclusions. Every candidate pursuing MPT degree course is required to carry out work on a selected research project under the guidance of a recognized postgraduate teacher. The result of such a work shall be submitted in the form of dissertation (in the fourth semester). Any change in the dissertation topic or guide should be informed to the authorities of this university for its approval. No change in the dissertation topic or guide shall be made after the approval of the Research & Recognition Committee of the university.

The dissertation should be written under the following headings.

1. Introduction
2. Aims or objectives of study
3. Review of literature
4. Material and methods
5. Results
6. Discussion
7. Conclusion
8. Summary
9. References
10. Tables
11. Annexure.

The printed text of dissertation should not be less than 50 pages/2500 words and shall not exceed 75 pages excluding references, tables, questionnaires and other annexure. It should be neatly typed in double line spacing (Font 12, Times New Roman) on one side of paper (A4 Size, 8.27" X 11.69") and Hard bound properly (No Spiral binding). Four copies of dissertation thus prepared shall be submitted to the Registrar (Evaluation), three months before final examination on or before the dates notified by the university duly certified by the guide, head of the department and head of the institution. In the Dissertation the Candidate should not disclose his Identity or of the Guide or Institution in anyway. The examiners appointed by the university shall value the dissertation. Approval of dissertation work is an essential precondition for a candidate to appear in the university examination. Three evaluators (examiners) apart from the guide shall value the dissertation from outside The Assam Royal Global University. Acceptance from any two evaluators is necessary for a candidate to be eligible to take up the examination. A candidate who has submitted his/her dissertation once is not required to submit a fresh dissertation if he/she reappears for the examination in the same branch on the subsequent occasion, provided the dissertation has been accepted by the examiners. If the student has submitted his/her examination form & also his/her dissertation previously, he/she will be permitted to give the examination within a period of 4 years anytime in future provided the dissertation has been accepted. The terms satisfactorily kept by him will be valid for a period of 4 years subsequent to submission of the

dissertation after which he/she will have to undergo Post-graduate training again for terms to be eligible for appearing for theory & Practical examination

POST-GRADUATE GUIDE:

A PG guide must have a Post-Graduate Degree in Physiotherapy with at-least 5 years of full time teaching in the core subject area after post-graduation. To withstanding the above clause, in a case of acute shortage of qualified Post-Graduate guides, A PG teacher with 3 years full time teaching experience after Master's Degree can be considered. This clause is subject to review. The age of teacher /guide shall not exceed 63 years and the guide student ratio shall be 1: 3.

Change of Guide:

In the event of a recognized guide leaving the college for any reason or in the event of death of guide, another recognized guide may take over the duties of the guide with prior permission from the university subject to withstanding to the Guide Student ratio.

Level :Semester IV

Title of the Paper: Advanced Physiotherapeutics

Subject Code: PHT244C401

Marks/ Credits: 100/3

L-T-P-C: **3-1-0-4** **Total credits: 4**

Course Objective:
At the completion of this course, the student should be able to execute all routine physiotherapeutic procedures with evidence based practice and perform independent physiotherapy assessment and treatment for patients.

Course Outcomes:

On successful completion of the course the students will be able to:		
SI No	**Course Outcome**	**Blooms Taxonomy Level**
CO 1	**Understand** the basic concepts of rehabilitation following multiple which includes orthopaedic, neurological , cardiorespiratory conditions and postsurgical cases.	**BT 2**
CO 2	**Demonstrate** planning and implementation of treatment programme adequately and appropriately for all clinical conditions.	**BT 2**
CO 3	**Application** of the various advanced physiotherapy techniques and modalities in different conditions.	**BT 3**
CO 4	**Analyse** the recovery process of various conditions through applications of advanced physiotherapy techniques.	**BT 4**

Course Outline :

MODULE	TOPICS & COURSE CONTENT	PERIODS
I	1. Ergonomic aspects of exercise on oxygen, energy consumption MET value of various exercises and activity. 2. Effect of aerobic, anaerobic as well as Isometric and Isokinetic exercises on cardiac function. 3. Physiotherapy in psychiatric conditions.	15
II	4. Massage, Mobilization and Manipulation 5. Manual therapy – different schools of thought 6. Principles of Neurological approaches.	15
III	7. Facilitation and inhibition techniques. 8. General Guidelines to be followed in Cardiac Rehabilitation, Pulmonary Rehabilitation, Burns Rehabilitation and Cancer Rehabilitation Protocol. 9. CPR, monitoring systems and defibrillators and artificial respirators.	15
IV	10. Physiotherapy in common conditions of skin. 11. Physiotherapy following Plastic Surgery. 12. Physiotherapy following Obstetric and Gynecological Disorders.	15
	TOTAL	**60**

Text Books:

1. Physical Rehabilitation by Susan Sullivan
2. Cardiovascular and respiratory Physical Therapy, Donna Frownfelter
3. Mobilization and Manipulation by Susan L Edmond
4. Exercise Physiology by Katch and McArdle

Reference Books:

1. Massage for therapists by Margaret Hollis
2. Bobath Concept: Theory and Clinical Practice in Neurological Rehabilitation
3. Leon Chaitow Muscle Energy Techniques

Title of the Paper: Dissertation-II

Subject Code: PHT244C421

Marks/ Credits: 100/3

Total credits: 12

Course Objective :

Every candidate shall submit to the Registrar (Academic) of the university in the prescribed dissertation work on or before the dates notified by the university.

Course Outline :

Every candidate shall submit to the Registrar (Academic) of the university in the prescribed proforma, a synopsis containing particulars of proposed dissertation work within 4 months from the date of commencement of the course on or before the dates notified by the university. The synopsis shall be sent through the proper channel (Duly approved by the guide, HOD/HOI/Coordinator and Ethical committee with in the first semester) such synopsis will be reviewed and the university will register the dissertation topic (in the second semester). The dissertation is aimed to train a postgraduate student in research methods and techniques. It includes identification of a problem, formulation of a hypothesis, search and review of literature getting acquainted with recent advances, designing of a research study, collection of data, critical analysis, and comparison of results and drawing conclusions. Every candidate pursuing MPT degree course is required to carry out work on a selected research project under the guidance of a recognized postgraduate teacher. The result of such a work shall be submitted in the form of dissertation (in the fourth semester). Any change in the dissertation topic or guide should be informed to the authorities of this university for its approval. No change in the dissertation topic or guide shall be made after the approval of the Research & Recognition Committee of the university.

The dissertation should be written under the following headings.

1. Introduction
2. Aims or objectives of study
3. Review of literature
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5. Results
6. Discussion
7. Conclusion
8. Summary
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10. Tables
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The printed text of dissertation should not be less than 50 pages/2500 words and shall not exceed 75 pages excluding references, tables, questionnaires and other annexure. It should be neatly typed in double line spacing (Font 12, Times New Roman) on one side of paper (A4 Size, 8.27" X 11.69") and Hard bound properly (No Spiral binding). Four copies of dissertation thus prepared shall be submitted to the Registrar (Evaluation), three months before final examination on or before the dates notified by the university duly certified by the guide, head of the department and head of the institution. In the Dissertation the Candidate should not disclose his Identity or of the Guide or Institution in anyway. The examiners appointed by the university shall value the dissertation. Approval of dissertation work is an essential precondition for a candidate to appear in the university examination. Three evaluators (examiners) apart from the guide shall value the dissertation from outside The Assam Royal Global University. Acceptance from any two evaluators is necessary for a candidate to be eligible to take up the examination. A candidate who has submitted his/her dissertation once is not required to submit a fresh dissertation if he/she reappears for the examination in the same branch on the subsequent occasion, provided the dissertation has been accepted by the examiners. If the student has submitted his/her examination form & also his/her dissertation previously, he/she will be permitted to give the examination within a period of 4 years anytime in future provided the dissertation has been accepted. The terms satisfactorily kept by him will be valid for a period of 4 years subsequent to submission of the

dissertation after which he/she will have to undergo Post-graduate training again for terms to be eligible for appearing for theory & Practical examination

POST-GRADUATE GUIDE:

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Change of Guide:

In the event of a recognized guide leaving the college for any reason or in the event of death of guide, another recognized guide may take over the duties of the guide with prior permission from the university subject to withstanding to the Guide Student ratio.

Course Outcome:

After completion of the course, the students are expected that:

- Every candidate pursuing MPT course is required to carry out work on a selected research project under the guidance of a recognized postgraduate teacher with relevant speciality.
- The result of such a work shall be submitted in the form of dissertation (in the fourth semester).

Title of the Paper: Lab IV

Subject Code: PHT244C411

Marks/ Credits: 100/3

L-T-P-C: **0-0-2-1** **Total credits: 1**

Course Objective:

- The course is designed with an objective to give the student acquiring skill and the in-depth knowledge of movement dysfunction of human body.
- Principles underlying the use of physiotherapeutic interventions for restoring movement dysfunction towards normalcy .

Course Outcomes:

On successful completion of the course the students will be able to:		
SI No	**Course Outcome**	**Blooms Taxonomy Level**
CO 1	**Understand** the basic concepts of rehabilitation following orthopaedic conditions and postsurgical cases.	**BT 2**
CO 2	**Demonstrate** neuro physiotherapeutic techniques pertaining to the condition.	**BT 2**
CO 3	**Application** of the various cardiorespiratory techniques in different medical set ups.	**BT 3**
CO 4	**Analyse** the recovery process of various conditions through applications of advanced physiotherapy techniques.	**BT 4**

Course Outline :

MODULE	TOPICS & COURSE CONTENT	PERIODS
I	Clinical application of techniques applied for orthopaedic rehabilitation with evidence based practice	10
II	Clinical application of techniques applied for neurological rehabilitation with evidence based practice.	10
III	Clinical application of techniques applied for Cardiopulmonary rehabilitation with evidence based practice	5
IV	Advanced physiotherapy techniques with evidenced based practice	5
	TOTAL	**30**

Textbooks:

Physiotherapy in respiratory care –Alexandra Hough .

Reference Books:

2. Orthopaedic physical Assessment – 7th edition ,David .J .Magee.

Title of the Paper: Clinical Education- IV

Subject Code: **PHT244C412**

Total marks/ credits: 100 /4

L-T-P-C: **0-0-12-6** **Total credits: 6**

Course Objective:

- Every enrolled student has to carry out clinical posting in various clinical establishment in and around Guwahati.
- To enable each student the practical exposure of the various clinical subjects taught and their applications in terms of patient communication and treatment.

Course Outcomes:

On successful completion of the course the students will be able to:		
SI No	**Course Outcome**	**Blooms Taxonomy Level**
CO 1	**Explain** various orthopaedic conditions and their symptomology to patients and management.	**BT 2**
CO 2	**Apply** the their skills to assess, evaluate, diagnose and manage different patients from different departments like orthopaedics, neurology, paediatrics.	**BT 3**
CO 3	**Construct** the framework for exercise therapy and electrotherapy protocols.	**BT 3**
CO 4	**Analyse** the pathology of the traumatic and non traumatic orthopaedic conditions and their various treatment protocols both medical and surgical aspects.	**BT 4**

Description:

Every enrolled student has to carry out clinical posting in various clinical establishment in and around Guwahati. In the clinical posting all the students will learn to assess, evaluate, diagnose and manage different patients from different department. The students will learn the expertise to frame exercise therapy and electrotherapy protocols. The students will be able to provide evidence based practice.

Title of the Paper: Musculoskeletal Disorders and Sports II

Subject Code: **PHT244C403A**

Total marks/ credits: 100 /4

L-T-P-C: **3-1-0-4** **Total credits: 4**

Course Objective:

This subject aims to enable student to become a prominent member of the multidisciplinary physiotherapy team and treat all the conditions which need physiotherapeutic procedures, able to provide adequate knowledge about the treatment procedures and its benefit and perform independent physiotherapy assessment and treatment for patients.

Course Outcomes:

On successful completion of the course the students will be able to:		
SI No	**Course Outcome**	**Blooms Taxonomy Level**
CO 1	**Label** a client with Orthopedic condition with detailed knowledge regarding approaches for various Musculoskeletal injury assessment and management.	**BT 1**
CO 2	**Explain** the concepts related to outcome measures & disability evaluation in musculoskeletal disorders	**BT 2**
CO 3	**Plan** short- and long-term goals for Physiotherapy treatment to enhance functional abilities, improve mobility, posture, strengthen muscles, enhance wound/operative scar healing, relieve pain, musculoskeletal facilitation, re-education and training of muscle strength, endurance & motor control, posture and gait through skillful use of various therapeutic exercise technique	**BT 3**
CO 4	**Test for** clinical skills relevant to recent advances in Physiotherapy treatment techniques pertinent to musculoskeletal disorders and sports injuries.	**BT 4**

Course Outline :

MODULE	TOPICS & COURSE CONTENT	PERIODS
I	1. Physiotherapy management of locomotor disorder, principles of medical and surgical aspects, sports psychology and retraining. 2. Neurological complications of locomotor disorders. 3. Rehabilitation of paediatric musculoskeletal disorders. 4. Orthopaedic implants-designs, materials, indications, post-operative assessment and training. 5. External aids, appliances, adaptive self-help devices; prescription, biomechanical compatibility, check-out and training.	15
II	6. Analysis and classification of sports and sports specific injuries and its management. 7. Management of sport injuries, sports fitness 8. Principles of Injury Prevention 9. Medico legal issues in sports, Sports Psychology, Sports Nutrition and Sports pharmacology.	15
III	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 joint	15
IV	14. Neuromuscular Taping Techniques 15. Electro diagnosis: Electromyography and evoked potential studies. 16. Community based rehabilitation in musculoskeletal disorders. 17. Recent Advances in Musculoskeletal Disorders and Sports Physiotherapy.	15
	TOTAL	**60**

Title of the Paper: Adult Neurology II

Subject Code: **PHT244C403B**

Total marks/ credits: 100 /4

L-T-P-C: **3-1-0-4** **Total credits: 4**

Course Objective:

The course objective is that after completion of this course the students will be able to treat all the neurological conditions which need physiotherapeutic procedures & critically appraise recent physiotherapeutic and related literature from journals & adopt diagnostic & therapeutic procedures based on it.

Course Outcomes:

On successful completion of the course the students will be able to:		
SI No	**Course Outcome**	**Blooms Taxonomy Level**
CO 1	**Label** a client with Neurological condition with detailed knowledge regarding approaches for various adult neurological assessment and management	**BT 1**
CO 2	**Explain** the concepts related to outcome measures & disability evaluation	**BT 2**
CO 3	**Plan** short- and long-term goals for Physiotherapy treatment to enhance functional abilities, improve mobility, posture, strengthen muscles, enhance wound/operative scar healing, relieve pain, musculoskeletal facilitation, re-education and training of muscle strength, endurance & motor control, posture and gait through skillful use of various therapeutic exercise technique	**BT 3**
CO 4	**Test for** clinical skills relevant to recent advances in Physiotherapy treatment techniques pertinent to adult & pediatric neurological disorders.	**BT 4**

COURSE OUTLINE:

MODULE	TOPICS & COURSE CONTENT	PERIODS
I	1.Medical and Physiotherapy management following Cerebrovascular accidents. 2. Traumatic Brain Injury. (ICU management, Coma stimulation, Restoration of motor control, Rehabilitation and community integration) 3. Traumatic spinal cord injuries. (ICU management, Coma stimulation, Restoration of motor control, Rehabilitation and community integration)	15
II	4. Physical therapy management of demyelinating, inflammatory, infectious, degenerative and metabolic diseases of the nervous system. 5. Physical therapy management of Motor neuron diseases, neuromuscular junction disorders, Brain tumour, and Neuro cutaneous disorders 6. Physical therapy management of diseases of spinal cord, peripheral nerves and cranial nerves 7. Physiotherapy management for neuromuscular disorders	15
III	8. Paediatric neurology (Cerebral Palsy, Developmental disorders, Neuropsychiatric disorders, Cerebral & Craniovertebral anomalies & metabolic disorders of nervous system). 9. Cognitive disorders and its rehabilitation. 10. Oro motor rehabilitation. 11. Vestibular disorders and its rehabilitation. 12. Bladder and Bowel dysfunction and its rehabilitation. 13. Rehabilitation following disorders of Special Senses, Speech. Language and Perception.	15
IV	14. Application of Functional electrical stimulation and Bio-feedback in neurological rehabilitation. 15. Learning skills, A.D.L and functional activities. 16. Assessment of fitness and exercise prescription for special neurological population – Stroke, Paraplegia, TBI, Multiple Sclerosis, MND, Parkinsonism, & Ataxia. 17. Community based rehabilitation for neurological dysfunction. Disability evaluation and management. 18. Recent Advances in Neurological Rehabilitation.	15
	TOTAL	**60**

Text Books:

1. Physical Rehabilitation: Sullivan
2. Neurological rehabilitation: Darcy Umphred

References Books:

1. Proprioceptive Neuromuscular Facilitation: Knott and Voss
2. Adult Hemiplegia: Evaluation and treatment: Brunnstorm

Title of the Paper: CARDIO RESPIRATORY DISORDERS AND REHABILITATION-II

Subject Code: PHT244C403C

Marks/ Credits: 100/4

L-T-P-C:3-1-0-4 **Total credits: 4**

Course Objectives:

- The objective of the course is to help students to identify cardio respiratory dysfunction through assessment and investigations and demonstrate all the techniques required to restore the cardio respiratory function.

Course Outcomes:

On successful completion of the course the students will be able to:		
SI No	**Course Outcome**	**Blooms Taxonomy Level**
CO 1	**Understand** the pathophysiology of various cardio respiratory disorders and importance of various investigations to differentially diagnose	**BT 2**
CO 2	**Application** of the different techniques to assess the cardio respiratory dysfunction.	**BT 2**
CO 3	**Application** of the different techniques for treatment of the cardio respiratory dysfunction.	**BT 3**
CO 4	**Analyse** and plan the treatment goals based on presentation of the condition.	**BT 4**

COURSE OUTLINE:

Modules	Course Content	Periods
I	• Physiotherapy techniques to increase lung volume – controlled mobilization, positioning, breathing exercises, Neurophysiological Facilitation of Respiration, Mechanical aids - Incentive Spirometry • Physiotherapy techniques to decrease the work of breathing – Measures to optimize the balance between energy supply and demand, positioning, Breathing re-education – Breathing control techniques • Physiotherapy techniques to clear secretions – Hydration, Humidification & Nebulisation, Mobilisation and Breathing exercises, Postural Drainage, Manual techniques – Percussion, Vibration and Shaking, Rib Springing, ACBT, Autogenic Drainage, Mechanical Aids – PEP, Flutter Facilitation of Cough and Huff, Nasopharyngeal Suctioning	15
II	• Introduction to ICU : ICU monitoring –Apparatus, Airways and Tubes used in the ICU - Physiotherapy in the ICU – Common conditions in the ICU – Tetanus, Head Injury, Lung Disease, Pulmonary Oedema, Multiple Organ Failure, Neuromuscular Disease, Smoke Inhalation, Poisoning, Aspiration, Near Drowning, ARDS, Shock; Dealing with an Emergency Situation in the ICU • Neonatal and Pediatric Physiotherapy . Neonatal and Pediatric Physiotherapy – Chest physiotherapy for children, The neonatal unit, Modifications of chest physiotherapy for specific neonatal disorders, Emergencies in the neonatal unit. • Cardiac Rehabilitation • Pulmonary Rehabilitation • CPR	15
III	•Physiotherapy following Lung surgeries •Physiotherapy management following cardiac surgeries •Abdominal Surgeries - Management of Pulmonary Restorative Dysfunction following Surgical procedures on Abdomen and Thorax •Physiotherapy in Obstetrics – Antenatal Care, Antenatal Education, Postnatal Care. Electrotherapy and Exercise Therapy measures for the re-education of Ano-Urethral sphincters. •Burns management - Role of physiotherapy in the management of burns •Physiotherapy management following PVD	15

IV	•Heart rate variability -Introduction ,measurement and clinical use •Respiratory failure •Oxygen therapy •Mechanical Ventilators Drug therapy – Drugs to prevent and treat inflammation, Drugs to treat Bronchospasm, Drugs to treat Breathlessness, Drugs to help sputum clearance,	15
TOTAL		**60**

Text Books:

1. Cash`s Text book for Physiotherapists in Chest, Heart & Vascular diseases- Jaypee bros. Publication

2. Chest Physical therapy &Pulmonary rehabilitation-by Donna Frownfilter

Reference Books:

1. Cardiorespiratory Physiotherapy by Jennifor Pryor

2. Physiotherapy in respiratory care – Alexandra Hough

Title of the Paper: Community Based Rehabilitation-II

Subject code: PHT244C403D

Total marks/ credits:100/4

L-T-P-C: 3-1-0-4

Course objective:

The course objective is that after the completion of the course the student will understand about the importance of rehabilitation and their role in community level. Students will able to evaluate the disability in various condition and their rehabilitation. They will identify the environmental and occupational hazards in workplace and various the aid and appliances that can be used by disable people.

Course outcomes:

On successful completion of the course the student will be able to:		
Sl.no	Course outcome	Blooms taxonomy level
1	Explain the terms related to occupational health and assessment of the work-related injuries in the workplace along with the prevention of the injuries.	BT 1
2	Outline the co-existing disorders along with the rehabilitation in orthopedic , neurological and cardiorespiratory conditions.	BT 2
3	Apply the knowledge of aids and appliances used in disability and advice for the same to the patient.	BT 3
4	Utilize the recent advances in various condition.	BT 4

Course outline:

Unit	Topics	Hours
1	Industrial and occupational health a. Labour law related to workers health and compensation b. Occupational hazards- biological, chemical, mechanical, psychological. c. Occupational stress- etiology, pathophysiology and measures. d. Ergonomics – introduction, principles, evaluation e. Prevention of work-related injuries and redesigning workspace. f. Rehabilitation of injuried workers. g. Ergonomics for sedentary workers, health care professional and manual workers. h. Physiotherapy role in industry.	15
2	Paediatric rehabilitation a. Paediatric assessment (gross and fine motor) b. Normal child development c. Various evaluation scales and outcomes measures d. Various congenital and childhood disorders- early detection and management e. Role of physiotherapy in fitness of normal school children	15
3.	Various aids and appliances used in disability a. Basic and instrumental ADL. b. Various ambulatory aids. c. Orthotic and prosthetic	15
4	Recents advances related to rehabilitation in various fields.	15
	Total	60

Textbook :

Textbook of Rehabilitation – S Sunder

Physiotherapy in Community Health and Rehabilitation – Waqar Naqvi

Physical Rehabilitation – Susan o' Sullivan

Reference book:

Elements of Pediatrics Physiotherapy – Pamela M Eckersley

Industrial therapy – Coyne L. Key