ROYAL GLOBAL UNIVERSITY

GUWAHATI

(ROYAL SCHOOL OF MEDICAL & ALLIED SCIENCES)

(RSMAS)

DEPARTMENT OF PHYSIOTHERAPY

Learning Outcomes-based Curriculum Framework (LOCF)

Bachelor of Physiotherapy

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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.

Royal School of Medical and Allied Sciences imbibes a **Learning Outcome-based Curriculum Framework (LOCF)** for its Master of Physiotherapy (MPT) program from the new academic session which will make learning more student centric, interactive and outcome oriented with well defined aims, objectives and goals. The LOCF approach is envisioned to provide a focused, outcome-based syllabus at the program level with an agenda to structure the teaching-learning process in such a way that the students obtain the much needed 21st Century skills like critical thinking, problem solving, analytical reasoning, cognitive skills, self directed learning's among other such skills. In short, the main focus of the Program is to prepare the graduate level students in the best possible way for both, academia and employability.

The new curriculum will offer students with relevant core papers that help build their foundation in the area of management. The choice of generic electives and skill enhancement courses will enable students to pursue an area

of their interest in the field of management & its allied fields . The contents of each course have been carefully designed to prepare students with knowledge and skill sets that will not only make them industry ready but also foster entrepreneurial and innovative thinking.

In order to achieve the program goals following measures would be adopted:

(i) Regulatory curriculum reform based on a Learning Outcomes-based Curriculum Framework (LOCF);

(ii) Enriching the quality of teaching and research;

(iii) Enlightening learning environment through ICT based hands-on approach to students;

(iv) Involving students in discussions, problem-solving, and out of the box thinking;

(v) Motivating the learners to understand various concepts of management and apply them in real life situations.

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.

1.2 Learning Outcomes-based Approach to Curricular Planning

The LOCF program in MPT provides an opportunity for the students to choose courses from the prescribed courses comprising Core, Discipline Specific Elective, Generic Elective and Skill Enhancement Courses. The courses will be evaluated following the grading system, which is considered to be better than the conventional marks system. This will benefit the students to move across institutions within India to begin with and across countries. The uniform grading system will also enable potential employers in assessing the performance of the candidates. In order to bring uniformity in evaluation system and computation of the Cumulative Grade Point Average (CGPA) based on student's performance in examinations, the UGC guidelines will be followed.

An outcome-based approach moves away from the emphasis on *what is to be taught* to *what is actually learnt*. This approach provides greater flexibility to the teachers to develop and the students to adopt different pedagogical strategies in an interactive and participatory ecosystem. The idea is to integrate social needs and teaching practices in a manner that is responsive to the need of the community. The Assam Royal Global University has addressed this aspect since its inception through the CBCS curricula adopted by the university in 2017. This approach is further consolidated through identifying further relevant and common outcomes beneficial to the student community and by developing such outcomes that not only match the specific needs of the students but also expands their outlook and values. Moreover, this curriculum keeps into perspective the fact that the focus is not just on domain knowledge or outcomes only but on processes and approaches to be employed in pedagogical transactions. This is important in order to ensure the efficacy of the curriculum adopted.

The Outline of Learning Based Curriculum Framework (LOCF) shall be:

- **Core Course**: This course is compulsorily to be studied by a candidate as a core requirement in pursuit of a bachelor degree in Physiotherapy.
- **Ability Enhancement Compulsory Courses :** These are the courses based upon the content that leads to Knowledge enhancement. They are :

(a) Environmental science

(b) English Communication & Public speaking

(c) Behavioural Science

Ability Enhancement Elective Courses: These are value- based and/or skill-based and are aimed at providing hands-on-training, competencies & desired skills. These courses may be chosen from a pool of courses offered in BPT Program.

1.2.1 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	51
2	2nd	51
Total Credits		**102**

1.2.2 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 is 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

MPT 1st SEMESTER							
Sl. No.	**SUBJECT CODE**	**NAME OF SUBJECT**	**L**	**T**	**P**	**C**	**TCP**
CORE SUBJECTS							
1	**PHT244C101**	**PRINCIPLES OF PHYSIOTHERAPY PRACTICE**	**3**	**1**	**0**	**4**	**4**
2	**PHT244C102**	**RESEARCH METHODOLOGY AND BIOSTATISTICS**	**3**	**1**	**0**	**4**	**4**
3	**PHT244C103**	**BIOMECHANICS & KINESIOLOGY**	**3**	**1**	**0**	**4**	**4**
4	**PHT244C111**	**LAB-I**	**0**	**0**	**2**	**1**	**2**
5	**PHT244C112**	**CLINICAL EDUCATION – I**	**0**	**0**	**3**	**6**	**12**
ABILITY ENHANCEMENT COMPULSORY COURSES							
6	**CEN984A101**	**COMMUNICATIVE ENGLISH-I**	**1**	**0**	**0**	**1**	**1**
7	**BHS984A103**	**BEHAVIOURAL SCIENCE-I**	**1**	**0**	**0**	**1**	**1**
DISCIPLINE SPECIFIC-DSE(ANY ONE)							
8	**PHT244D101**	**NUTRITION**	**4**	**0**	**0**	**4**	**4**
9	**PHT244D102**	**YOGA AND NATUROPATHY**	**4**	**0**	**0**	**4**	**4**
		Total				**25**	

MPT 2nd SEMESTER							
Sl. No.	**SUBJECT CODE**	**NAME OF SUBJECT**	**L**	**T**	**P**	**C**	**TCP**
CORE SUBJECTS							
1	**PHT244C201**	**EXERCISE PHYSIOLOGY**	**3**	**1**	**0**	**4**	**4**
2	**PHT244C202**	**ELECTRO PHYSIOLOGY**	**3**	**1**	**0**	**4**	**4**
3	**PHT244C203**	**PHYSICAL AND FUNCTIONAL DIAGNOSIS-I**	**2**	**1**	**0**	**3**	**3**
4	**PHT244C211**	**LAB – II**	**0**	**0**	**2**	**1**	**2**
5	**PHT244C212**	**CLINICAL EDUCATION – II**	**0**	**0**	**12**	**6**	**12**
ABILITY ENHANCEMENT COMPULSORY COURSES							
6	**CEN984A201**	**COMMUNICATIVE ENGLISH-II**	**1**	**0**	**0**	**1**	**1**
7	**BHS984A203**	**BEHAVIOURAL SCIENCE-II**	**1**	**0**	**0**	**1**	**1**
ABILITY ENHANCEMENT ELECTIVE COURSES (AEEC) (ANY ONE)							
8	**PHT244S201**	**ILD-I**	**2**	**0**	**0**	**2**	**2**
9	**PHT244S202**	**FRENCH-I**	**2**	**0**	**0**	**2**	**2**
10	**PHT244S203**	**C++**	**2**	**0**	**0**	**2**	**2**
11	**PHT244S204**	**SCILAB**	**2**	**0**	**0**	**2**	**2**
12	**PHT244S205**	**MATLAB**	**2**	**0**	**0**	**2**	**2**
13	**PHT244S206**	**ANY OTHER SKILL BASED COURSE OFFERED BY OTHER SCHOOLS OF RGU AND OPTED BY STUDENT**	**2**	**0**	**0**	**2**	**2**
DISCIPLINE SPECIFIC-DSE (ANY ONE)							
14	**PHT244D101**	**OPERATIONAL RESEARCH**	**4**	**0**	**0**	**4**	**4**
15	**PHT244D102**	**WOMENS HEALTH-INTRODUCTION TO PELVIC FLOOR REHABILITATION**	**4**	**0**	**0**	**4**	**4**
		Total				**26**	

MPT 3rd SEMESTER							
Sl. No.	**SUBJECT CODE**	**NAME OF SUBJECT**	**L**	**T**	**P**	**C**	**TCP**
CORE SUBJECTS							
1	**PHT244C301**	**PHYSICAL AND FUNCTIONAL DIAGNOSIS-II**	**2**	**1**	**0**	**3**	**3**
2	**PHT244C302**	**PHYSIOTHERAPEUTICS**	**3**	**1**	**0**	**4**	**4**
3	**PHT244C321**	**DISSERTATION**	**0**	**0**	**6**	**3**	**6**
4	**PHT244C311**	**LAB – III**	**0**	**0**	**2**	**1**	**2**
5	**PHT244C312**	**CLINICAL POSTING – III**	**0**	**0**	**12**	**6**	**12**
ABILITY ENHANCEMENT COMPULSORY COURSES							
5	**CEN984A301**	**COMMUNICATIVE ENGLISH-III**	**1**	**0**	**0**	**1**	**1**
ABILITY ENHANCEMENT ELECTIVE COURSES (AEEC) (ANY ONE)							
6	**PHT242S301**	**ILD-2**	**2**	**0**	**0**	**2**	**2**
7	**PHT244S302**	**FRENCH-2**	**2**	**0**	**0**	**2**	**2**
8	**PHT244S303**	**LATEX**	**2**	**0**	**0**	**2**	**2**
9	**PHT244S304**	**ANY OTHER SKILL BASED COURSE OFFERED BY OTHER SCHOOLS OF RGU AND OPTED BY STUDENT**	**2**	**0**	**0**	**2**	**2**
DISCIPLINE SPECIFIC-DSE (ANY TWO)							
10	**PHT244D301**	**MUSCULOSKELETAL DISORDERS & SPORTS-I**	**4**	**0**	**0**	**4**	**4**
11	**PHT244D302**	**ADULT NEUROLOGY-I**	**4**	**0**	**0**	**4**	**4**
12	**PHT244D303**	**CARDIORESPIRATORY DISORDERS AND REHABILITATION-I**	**4**	**0**	**0**	**4**	**4**
13	**PHT244D304**	**ORTHOTICS & PROSTHETICS**	**4**	**0**	**0**	**4**	**4**
14	**PHT244D305**	**ALLIED THERAPEUTICS**	**4**	**0**	**0**	**4**	**4**
		Total				**28**	

	MPT 4th SEMESTER						
SL NO	SUBJECT CODE	NAME OF SUBJECT	L	T	P	C	TCP
	CORE SUBJECTS						
1	PHT244C401	ADVANCED PHYSIOTHERAPEUTICS	3	1	0	4	4
2	PHT244C421	DISSERTATION	0	0	6	3	6
3	PHT244C411	LAB – IV	0	0	2	1	4
4	PHT244C412	CLINICAL EDUCATION – IV	0	0	12	6	12
	ABILITY ENHANCEMENT COMPULSORY COURSES						
5	CEN984A301	COMMUNICATIVE ENGLISH-III	1	0	0	1	1
	DISCIPLINE SPECIFIC-DSE (ANY TWO)						
6	PHT242D401	MUSCULOSKELETAL DISORDERS & SPORTS-I	4	0	0	4	4
7	PHT242D402	ADULT NEUROLOGY-I	4	0	0	4	4
	PHT244D303	CARDIORESPIRATORY DISORDERS AND REHABILITATION-I	4	0	0	4	4
8	PHT242D404	COMMUNITY MEDICINE	4	0	0	4	4
9	PHT242D405	EXERCISE PRESCRIPTION AND PLANING IN VARIOUS CONDITIONS	4	0	0	4	4
		Total				23	

Master Degree in Physiotherapy (MPT)

Programme Structure

MPT 1st SEMESTER							
Sl. No.	**SUBJECT CODE**	**NAME OF SUBJECT**	**L**	**T**	**P**	**C**	**TCP**
CORE SUBJECTS							
1	**PHT244C101**	**PRINCIPLES OF PHYSIOTHERAPY PRACTICE**	**3**	**1**	**0**	**4**	**4**
2	**PHT244C102**	**RESEARCH METHODOLOGY AND BIOSTATISTICS**	**3**	**1**	**0**	**4**	**5**
3	**PHT244C103**	**BIOMECHANICS & KINESIOLOGY**	**3**	**1**	**0**	**4**	**4**
4	**PHT244C111**	**LAB-I**	**0**	**0**	**3**	**3**	**6**
5	**PHT244C112**	**CLINICAL EDUCATION – I**	**0**	**0**	**3**	**3**	**6**
ABILITY ENHANCEMENT COMPULSORY COURSES							
6	**CEN984A101**	**COMMUNICATIVE ENGLISH-I**	**1**	**0**	**0**	**1**	**1**
7	**BHS984A103**	**BEHAVIOURAL SCIENCE-I**	**1**	**0**	**0**	**1**	**1**
DISCIPLINE SPECIFIC-DSE(ANY ONE)							
8	**PHT244D101**	**NUTRITION**	**4**	**0**	**0**	**4**	**4**
9	**PHT244D102**	**YOGA AND NATUROPATHY**	**4**	**0**	**0**	**4**	**4**

Level -Semester I

Course: Core C1

Title of the Paper: PRINCIPLES OF PHYSIOTHERAPY PRACTICE
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 principles of physiotherapy profession, should be able to understand 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 using	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 Book:

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

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

References: 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.

Level: Semester I

Course: Core (C2)

Subject: 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
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	15

	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.	
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. B.L Agarwal, Basic statistics , New Age International Publication.
3. Research Methodology - a step by step guide for beginners (Third Edition) - Ranjit Kumar

Level: Semester I

Course: Core (C3)

Subject: 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 pathomechanics 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**

Text Book:

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
3. Smith et al., Brunstrom's Clinical Kinesiology —F.A Davis, 6th Edition

Reference Books:

4. Low & Reed, Basic Biomechanics explained –Butterworth Heinmann, 5th Edition
5. SoderbergLippineou,Kinesiology Applied to Pathological Motion, 6th Edition

Level : Semester I

Course: C (4)

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

Marks/ Credits: 100/3

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

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.	10
IV.	Training for balance and co-ordination exercises.	10
TOTAL		**40**

Text Book:

1. Principles of Exercise Therapy – Dena Gardiner

2 Massage, manipulation & traction- Sydney Litch

2 Therapeutic Exercise Colby Kisner

Level: Semester I

Course: Core (C5)

Subject: Clinical Education- I

Subject Code: **PHT244C112**

Total marks/ credits: 100 /4

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

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 I

Course: DSE (D2)

Title of the Paper: DSE (YOGA & NATUROPATHY)

Subject Code: PHT244D102

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

Course Objectives

Introduction of Yoga & important streams, history, basis of different yoga. Elaborate type of treatment related to disease with Asanas & Pranayamas. Introduction to the importance & process of Naturopathy.

Course outcomes

On successful completion of the course the students will be able to:		
Sl No	**Course Outcome**	**Blooms Taxonomy Level**
CO 1	**Learn** about the various definitions of Yoga, history of Yoga & branches of Yoga.	**BT 1**
CO 2	**Describe** various kinds of Yoga, Asanas & Pranayamas its importance, methods. Rules, regulations & limitations.	**BT 2**
CO 3	**Demonstrate** the various types of Yoga techniques in daily life.	**BT 3**
CO 4	**Apply** the knowledge of naturopathy in managing various diseases, by balance diet, therapeutic baths, power of colours.	**BT 3**

Course Outline :

MODULE	TOPICS & COURSE CONTENT	PERIODS
I	1. Yoga Definition, Aims & objectives, Classification 2. The stages of yoga 3. History of development of yoga 4. Yogic physiology 5. Anatomy & physiology for the Yoga learner	20 hours
II	1. Introduction to asanas 2. Methods and benefits of Asanas 3. Various asanas that helps to cure disease & symptoms. 4. Techniques & importance of tadasana, vrksasana, trikonasana, virabhadrasana, virasana, padmasana, halasana, bhujangasana, matsyasana, dhanuasana 5. Yoga in physiotherapy.	25 hours
III	1. Pranayama – introduction, techniques & benefits. 2. Methods & benefits of savasana. 3. Suryanamaskar – introduction, technique, limitations & benefits 4. Importance of Yoga in daily life. 5. Knowledge of Bandha, Mudra and Kriya.	5 hours
IV	1. Stress – Definition, Factors that produce stress, Common disorders caused by stress & Management of stress 2. Naturopathy – Introduction, methods of nature cure 3. Mud packs, mud bath, power of colours.	10 hours

Text Book:

1. Alternative Therapies by Swati Bhagat

References:

1. Yoga & rehabilitation by Nilima Patel

Master Degree in Physiotherapy (MPT)

Programme Structure

MPT2nd SEMESTER							
Sl. No.	**SUBJECT CODE**	**NAME OF SUBJECT**	**L**	**T**	**P**	**C**	**TCP**
CORE SUBJECTS							
1	**PHT244C201**	**EXERCISE PHYSIOLOGY**	**3**	**1**	**0**	**4**	**4**
2	**PHT244C202**	**ELECTRO PHYSIOLOGY**	**3**	**1**	**0**	**4**	**4**
3	**PHT244C203**	**PHYSICAL AND FUNCTIONAL DIAGNOSIS-I**	**2**	**1**	**0**	**3**	**3**
4	**PHT244C211**	**LAB – II**	**0**	**0**	**3**	**3**	**6**
5	**PHT244C212**	**CLINICAL EDUCATION – II**	**0**	**0**	**3**	**3**	**6**
ABILITY ENHANCEMENT COMPULSORY COURSES							
6	**CEN984A201**	**COMMUNICATIVE ENGLISH-II**	**1**	**0**	**0**	**1**	**1**
7	**BHS984A203**	**BEHAVIOURAL SCIENCE-II**	**1**	**0**	**0**	**1**	**1**
ABILITY ENHANCEMENT ELECTIVE COURSES (AEEC) (ANY ONE)							
8	**PHT244S201**	**ILD-I**	**2**	**0**	**0**	**2**	**2**
9	**PHT244S202**	**FRENCH-I**	**2**	**0**	**0**	**2**	**2**
10	**PHT244S203**	**C++**	**2**	**0**	**0**	**2**	**2**
11	**PHT244S204**	**SCILAB**	**2**	**0**	**0**	**2**	**2**
12	**PHT244S205**	**MATLAB**	**2**	**0**	**0**	**2**	**2**
13	**PHT244S206**	**ANY OTHER SKILL BASED COURSE OFFERED BY OTHER SCHOOLS OF RGU AND OPTED BY STUDENT**	**2**	**0**	**0**	**2**	**2**
DISCIPLINE SPECIFIC-DSE (ANY ONE)							
14	**PHT244D101**	**OPERATIONAL RESEARCH**	**4**	**0**	**0**	**4**	**4**
15	**PHT244D102**	**WOMENS HEALTH-INTRODUCTION TO PELVIC FLOOR REHABILITATION**	**4**	**0**	**0**	**4**	**4**

Level: Semester -II

Course: C 1

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: 1. Mary Beth Allan, Sports, Exercise, and Fitness: A Guide to Reference and Information Sources, Libraries unlimited publishers, 1st Ed, 2005

Level: Semester II

Course: C-2

Title of the Paper: ELETRO 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 & pediatric patients.

Course outcomes

On successful completion of the course the students will be able to:		
Sl 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

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 Read
2. Electrodiagnosis in diseases of nerve & muscle - Jun Kimura

Level: Semester -II

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.	15
II.	3. Developmental screening, motor learning –motor control assessment. 4. Anthropometric measurements.	15
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 Musculoskeletal, Neurological and Cardiopulmonary disorders.	15
IV.	7. EMG and Biofeedback. 8. Biophysical measurements, physiotherapy modalities, techniques and approaches.	15
TOTAL		**60**

Text Book:

1. William A Mcardle, Exercise Physiology, ELBS, 5th Ed, 2011.
2. William larry ,Physiology of sport and exercise5th Ed.
3. Principles of Exercise Therapy – Dena Gardiner
4. Therapeutic Exercise Colby Kisner
5. Physical rehabilitation by Susan O Sullivan

Reference Books:

1. Mary Beth Allan, Sports, Exercise, and Fitness: A Guide to Reference and Information Sources, Libraries unlimited publishers, 1st Ed, 2005

Level: Semester II

Course: C-4

Title of the Paper: LAB II

Subject Code: **PHT244C211**

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

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:		
Sl 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.	15
II	Relearning how to perform MMT	15
III	Clinical application of techniques applied for paediatric rehabilitation with evidence based practice.	15
IV	Relearning of various mobilization techniques.	**15**
TOTAL		60

Level: Semester II

Course: Core (C5)

Subject: Clinical Education- II

Subject Code: **PHT244C212**

Total marks/ credits: 100 /4

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

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.

Master Degree in Physiotherapy (MPT)

Programme Structure

MPT 3rd SEMESTER							
Sl. No.	**SUBJECT CODE**	**NAME OF SUBJECT**	**L**	**T**	**P**	**C**	**TCP**
CORE SUBJECTS							
1	**PHT244C301**	**PHYSICAL AND FUNCTIONAL DIAGNOSIS-II**	**2**	**1**	**0**	**3**	**3**
2	**PHT244C302**	**PHYSIOTHERAPEUTICS**	**3**	**1**	**0**	**4**	**4**
3	**PHT244C321**	**DISSERTATION**	**0**	**0**	**3**	**3**	**6**
4	**PHT244C311**	**LAB – III**	**0**	**0**	**2**	**2**	**4**
5	**PHT244C312**	**CLINICAL EDUCATION – III**	**0**	**0**	**3**	**3**	**6**
ABILITY ENHANCEMENT COMPULSORY COURSES							
5	**CEN984A301**	**COMMUNICATIVE ENGLISH-III**	**1**	**0**	**0**	**1**	**1**
ABILITY ENHANCEMENT ELECTIVE COURSES (AEEC) (ANY ONE)							
6	**PHT242S301**	**ILD-2**	**2**	**0**	**0**	**2**	**2**
7	**PHT244S302**	**FRENCH-2**	**2**	**0**	**0**	**2**	**2**
8	**PHT244S303**	**LATEX**	**2**	**0**	**0**	**2**	**2**
9	**PHT244S304**	**ANY OTHER SKILL BASED COURSE OFFERED BY OTHER SCHOOLS OF RGU AND OPTED BY STUDENT**	**2**	**0**	**0**	**2**	**2**
DISCIPLINE SPECIFIC-DSE (ANY TWO)							
10	**PHT244D301**	**MUSCULOSKELETAL DISORDERS & SPORTS-I**	**4**	**0**	**0**	**4**	**4**
11	**PHT244D302**	**ADULT NEUROLOGY-I**	**4**	**0**	**0**	**4**	**4**
12	**PHT244D303**	**CARDIORESPIRATORY DISORDERS AND REHABILITATION-I**	**4**	**0**	**0**	**4**	**4**
13	**PHT244D304**	**ORTHOTICS & PROSTHETICS**	**4**	**0**	**0**	**4**	**4**
14	**PHT244D305**	**ALLIED THERAPEUTICS**	**4**	**0**	**0**	**4**	**4**

Level :Semester III

Course: C 1

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.	15
II.	3. Exercise ECG testing and monitoring. 4. Pulmonary function tests and Spirometry.	15
III.	5. Physical disability evaluation and disability diagnosis. 6. Gait analysis and diagnosis.	15
IV.	7. Clinical decision making in electrotherapeutics	15
TOTAL		**60**

Text Book:

1. William A Mcardle, Exercise Physiology, ELBS, 5th Ed, 2011.
2. William larry ,Physiology of sport and exercise5th Ed.
3. Principles of Exercise Therapy – Dena Gardiner
4. Therapeutic Exercise Colby Kisner
5. Physical rehabilitation by Susan O Sullivan

Reference: 1. Mary Beth Allan, Sports, Exercise, and Fitness: A Guide to Reference and Information Sources, Libraries unlimited publishers, 1st Ed, 2005

Level :Semester III

Course: C 2

Title of the Paper: Physiotherapeutics

Subject Code: PHT244C303

Marks/ Credits: 100/3

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

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:		
Sl 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

Level :Semester III

Course: C 3

Title of the Paper: Dissertation
Subject Code: PHT244C321

Marks/ Credits: 100/3

L-T-P-C: **2-1-0-3** **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: 3rd SEMESTER

Course: C 4

Title of the Paper: LAB-III
Subject Code: PHT244C311

Marks/ Credits: 100/3

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

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:		
Sl No	**Course Outcome**	**Blooms Taxonomy Level**
CO 1	**Understand** the assessment of	**BT 2**
CO 2	**Demonstrate**	**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	10
IV.	Mobilization & manipulation techniques, MFR	10
TOTAL		**40**

Text Book:

1. Principles of Exercise Therapy – Dena Gardiner

2 Massage, manipulation & traction- Sydney Litch

3 Therapeutic Exercise Colby Kisner

4.Physiotherapy in respiratory care –Alexandra hough .

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

Level: Semester III

Course: Core (C5)

Subject: Clinical Education- III

Subject Code: **PHT244C312**

Total marks/ credits: 100 /4

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

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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Level: Semester 3

Course: DSE(D 1)

Title of the Paper: MUSCULOSKELETAL DISORDERS & SPORTS-I

Subject Code: **PHT244D301**

L-T-P-C:4-0-0-4 **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:		
Sl No	**Course Outcome**	**Blooms Taxonomy Level**
CO 1	**Explain** the terms	**BT 1**
CO 2	**Demonstrate** skill in Physical & Functional diagnosis of cases.	**BT 2**
CO 3	**Apply** techniques ertaining 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

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.

3 Outline of Orthopedics.— John Crawford Adams.

Level: Semester III

Course: DSE(D2)

Subject: Adult Neurology I

Subject Code: **PHT244D302**

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:		
Sl 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.	20
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.	10
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:

- Neurological Assessment: Bickerstaff
- Clinical disorders of balance, posture and gait: Adolfo M Bronstein, Thomas Brandt and Marjorie Wollacot
- Clinical neurology: Victor Adams
- Motor Relearning Program: Carr and Shephard
- Mobilization of Nervous System: David Butler

References Books:

- Brain's textbook of clinical neurology
- Proprioceptive Neuromuscular Facilitation: Knott and Voss
- Adult Hemiplegia: Evaluation and treatment: Brunnstorm
- Neurological Investigations: RAC Hughe

Level Semester -III

Course : DSE(D3)

Title of the Paper: CARDIO RESPIRATORY DISORDERS AND REHABILLITATION-I

Subject Code: PHT244D403

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:		
Sl 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	Examination of Cardiovascular System ECG – Normal & Variations due to ischemia &infarction Stress Test	**10**
II	DISEASES OF THE CARDIO-VASULAR SYSTEM Definition, Etiology, Clinical Features, Complications, Management of the following Cardio-vascular diseases: I.H.D.–Myocardial infarction Valvular Heart Disease – i) Congenital ii) Acquired Infective endocarditis ,Myocarditis ,cardiomyopathy Rheumatic Fever & Rheumatic Heart Disease Infective Endocarditis	**20**
III	Examination of Respiratory System Introduction of clinical examination–Breath sounds, X ray chest, ABG, PFT	**15**
IV	DISEASES OF THE RESPIRATORY SYSTEM Patterns of Respiratory Diseases: Obstructive & Restrictive Definition, Aetiology, 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, Hydro pneumothorax, Empyema. Respiratory Failure: Definition, Types, Causes, Clinical Features, Diagnosis and Management Interstitial Lung Diseases Occupational lung diseases like Silicosis Asbestosis, Pneumoconiosis	15
TOTAL		60

Text Book:

- Clinical & Operative surgery by S. Das
- Text book of Gynecology – by Dutta – New Central Book Agency
- Text book of Obstetrics - by Dutta – New Central Book Agency
- Cash`s Text book for Physiotherapists in Chest, Heart & Vascular diseases- Jaypee bros. Publication
- Cash`s text book in General Medical & Surgical conditions for Physio therapists

- Chest Physical therapy &Pulmonary rehabilitation-by Donna Frownfilter
- Brompton`s hospital guide 5 Physical Rehabilitation - O'sullivan

Reference Books:

- Bailey & Love's short practice of Surgery-21st edn.
- Cardiopulmonary Physical therapy by Irwin Scott.
- Physiotherapy in respiratory care – Alexandra Hough

Level: Semester 3

Course: DSE (D4)

Title of the Paper: ORTHOTICS AND PROSTHETICS

Subject Code: **PHT244D303**

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

Course Objectives

Designed to assess the students to acquire the understanding of the normal physiology of human body and understand the alteration in the physiology for the fabrication of the prosthesis and orthosis.

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 and the physiology for the fabrication of the prosthesis and orthosis.	**BT 1**
CO 2	**Understand** the nomenclature—the naming of orthoses and prostheses in relation to the joint they support or replace.	**BT 2**
CO 3	**Apply and obtain basic understanding of materials**.	**BT 3**
CO 4	**Analyzing** Understanding primarily with the **rehabilitation of people with locomotive or neuromuscular disorders.**	**BT 3**

COURSE OUTLINE:

Modules	Topics (if applicable) & Course Contents	Periods
I.	**Introduction**: Introduction to Prosthetics, definitions of various terminologies, Historical development in Lower Extremity Prosthetics in India and abroad. **Prosthetic Feet**: Various types of Prosthetic feet. Conventional foot. Rocker, SACH foot, modified SACH Foot. Jaipur Foot, Seattle foot, Flex foot, Quantum foot, Peg Roelite foot, Carbon copy foot. **Partial Foot**: Various types of Partial foot prosthesis. Biomechanics of Partial foot prosthesis, uses of Partial foot prosthesis, Fabrication Technique for partial foot prosthesis. **Syme's**: Various types of Symes Prosthesis, Prosthetic Components, Prescription criteria, Principles. Materials used for Symes prosthesis, casting techniques. Cast modification. **Trans Tibial**: Various types of trans-tibial prostheses including Jaipur limb & ICRC technology, Prosthetics Components – both conventional and modular. Trans-tibial Prosthetic Prescription Criteria and principles. Materials used in Trans-tibial Prosthesis. Measurement and casting techniques for Trans-tibial prosthesis. Cast modification.	20
II	**Knee Joints:** Different types of Endoskeletal and exoskeletal knee joints - Single axis knee joints, Polycentric knee joints, Free knee, Constant friction knee joints, Variable friction Knee joint, microchip control knee, hydraulic knee joint, swing Phase control knee joints, Stance Phase control knee joints etc. **Hip Joints:** For above knee as well as for hip disarticulation/ hemi-pelvictomy – all types of hip joints especially single axis and Swivel type. **Through Knee Prosthesis:** Various types of through knee prosthesis - Through knee prosthetic Components. Materials used for through knee prosthesis. Casting techniques for through knee prosthesis, Cast modification, Fabrication Techniques of through hip prosthesis,	20
III	**General**: Introduction to Orthotics, types, definitions of various terminologies, History of Orthoses in India and abroad. Various materials used in Orthotics. **AFO (Ankle foot orthosis):** Conventional AFO-, Plastic AFO (custom moulded), Articulated A.F.O & various types of ankle joints **Club foot Orthosis**: Orthotic management of CTEV, Ankle support Orthotic management of Anesthetic Foot. Orthosis for the management of fracture below knee.	20
IV	**Above knee Orthotics:** Types of knee & Hip joints **Orthotics Components:** Prescription principles of various types of Knee Orthoses (KO), Knee Ankle foot Orthoses (KAFO), Hip Knee Ankle foot Orthoses (HKAFO). RGO & ARGO Orthoses	**20**

	All types of K.A.F.O., H.K.A.F.O. FRO, RGO & ARGO etc. and also Orthoses for management of C.D.H., C.P., Paraplegics, Legg Calve perthes diseases, Spina Bifida, Leprosy and Hemiplegia etc.	
TOTAL		60

Text Book:

1. Prosthetics & Orthotics by Shurr. G. Donald & J.W.Michel
2. Prosthetics & Orthotics of Lower Limb & Spine by Seymour, Ron

MASTER OF PHYSIOTHERAPY

Programme Structure

MPT 4th SEMESTER

	4th SEMESTER						
SL NO	**SUBJECT CODE**	**NAME OF SUBJECT**	**L**	**T**	**P**	**C**	**TCP**
	CORE SUBJECTS						
1	**PHT244C401**	**ADVANCED PHYSIOTHERAPEUTICS**	**3**	**1**	**0**	**4**	**4**
2	**PHT244C421**	**DISSERTATION**	**0**	**0**	**3**	**3**	**6**
3	**PHT244C411**	**LAB – IV**	**0**	**0**	**2**	**2**	**4**
4	**PHT244C412**	**CLINICAL EDUCATION – IV**	**0**	**0**	**3**	**3**	**6**
	ABILITY ENHANCEMENT COMPULSORY COURSES						
5	**CEN984A301**	**COMMUNICATIVE ENGLISH-III**	**1**	**0**	**0**	**1**	**1**
	DISCIPLINE SPECIFIC-DSE (ANY TWO)						
6	**PHT242D401**	**MUSCULOSKELETAL DISORDERS & SPORTS-I**	**4**	**0**	**0**	**4**	**4**
7	**PHT242D402**	**ADULT NEUROLOGY-I**	**4**	**0**	**0**	**4**	**4**
	PHT244D303	**CARDIORESPIRATORY DISORDERS AND REHABILITATION-I**	**4**	**0**	**0**	**4**	**4**
8	**PHT242D404**	**COMMUNITY MEDICINE**	**4**	**0**	**0**	**4**	**4**
9	**PHT242D405**	**EXERCISE PRESCRIPTION AND PLANING IN VARIOUS CONDITIONS**	**4**	**0**	**0**	**4**	**4**

Level :Semester IV

Course: C 1

Title of the Paper: Advanced Therapeutics

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:		
Sl 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

Text Books:

- Physical Rehabilitation: Sullivan
- Clinical neurology: Victor Adams
- Neurological rehabilitation: Darcy Umphred

References Books:

- Proprioceptive Neuromuscular Facilitation: Knott and Voss
- Adult Hemiplegia: Evaluation and treatment: Brunnstorm
- Neurological Investigations: RAC Hughes

Level :Semester IV

Course: C 2

Title of the Paper: Dissertation

Subject Code: PHT244C421

Marks/ Credits: 100/3

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

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
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 Masters 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.

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).

Level :Semester IV

Course: C 3

Title of the Paper: Lab IV

Subject Code: PHT244C411

Marks/ Credits: 100/3

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

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:		
Sl 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	10
IV	Advanced physiotherapy techniques with evidenced based practice	10

Level: Semester IV

Course: Core (C4)

Subject: Clinical Education- IV

Subject Code: **PHT244C412**

Total marks/ credits: 100 /4

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

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 IV

Course: DSE(D1)

Subject: Musculoskeletal Disorders and Sports II

Subject Code: **PHT244D401**

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 joints.	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

Level: Semester IV

Course: DSE(D2)

Subject: Adult Neurology II

Subject Code: **PHT244D402**

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:

- Physical Rehabilitation: Sullivan
- Clinical neurology: Victor Adams
- Neurological rehabilitation: Darcy Umphred

References Books:

- Proprioceptive Neuromuscular Facilitation: Knott and Voss
- Adult Hemiplegia: Evaluation and treatment: Brunnstorm
- Neurological Investigations: RAC Hughes

LEVEL: 4TH SEMESTER

Course : DSE(D3)

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

Subject Code: PHT244D403

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:		
Sl 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	Thoracic Surgery Pre and post-operative management by physiotherapy of the following conditions:- 1. Lobectomy, Pneumonectomy, Thoracotomy, thoracoplasty. Management of General, Gynecology and Obstetrics surgery 1. Common abdominal surgeries 2. Common operation of reproductive system, including surgical intervention for child delivery. Ante natal &post natal, physiotherapy. 3. Common organ transplant surgeries- heart ,lung	15
II	Wounds, Burns &Plastic surgery Review of pathological changes and principle of pre and post-operative management by physiotherapy of the following conditions: 1. Wounds, ulcers, pressure sores. 2. Burns & their complications. 3. Common reconstructive surgical proceeding of the management of wounds, ulcers, burns & consequent contractures & deformities. Management of peripheral vascular diseases.	**10**

III	1. Anatomical and Physiological differences between the Adult and Pediatric lungs 2. Interpretation of radiological & Biochemical Investigations & correlate the same with clinical findings. 3. Functional diagnosis of cardio respiratory dysfunction (ECG, PFT, serum enzymes, ABG, ABI) 4. Physiotherapy techniques to increase lung volume □ Positioning and Mobilization □ Breathing exercises □ Neurophysiological Facilitation of Respiration □ Mechanical aids –Incentive Spirometer, CPAP, IPPB 5.Physiotherapy techniques to decrease work of breathing □ Energy Conservation and Positioning □ Breathing re-education – Breathing control techniques □ Mechanical aids – IPPB, CPAP, BiPAP 6.Physiotherapy techniques to clear secretions □ Hydration, Humidification & Nebulisation, □ Mobilization and Breathing exercises □ Postural Drainage □ Manual techniques – Percussion, Vibration and Shaking, Rib Springing, □ ACBT, Autogenic Drainage □ Mechanical Aids – PEP, Flutter, Acapella, RC Cornet, IPPB □ Facilitation of Cough and Huff & Suctioning 7.Drug Therapy	20
IV	1.Pulmonary Rehabilitation 2. Oxygen therapy and Mechanical Ventilation 3. Physiotherapy management for cardiac disorders 4. Cardiac Rehabilitation 5. Cardio-pulmonary resuscitation	15
TOTAL		60

Text Book:

- Clinical & Operative surgery by S. Das
- Cash`s Text book for Physiotherapists in Chest, Heart & Vascular diseases- Jaypee bros. Publication
- Cash`s text book in General Medical & Surgical conditions for Physio therapists
- Chest Physical therapy &Pulmonary rehabilitation-by Donna Frownfilter
- Brompton`s hospital guide 5 Physical Rehabilitation - O'sullivan

Reference Books:

- Bailey & Love's short practice of Surgery-21st edn.
- Cardiopulmonary Physical therapy by Irwin Scott.
- Physiotherapy in respiratory care – Alexandra Hough

Level: Semester IV

Course: DSE D4

Title of the Paper: DSE (COMMUNITY MEDICINE)

Subject Code: PHT244D404

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

Course Objectives

The objective of the course is to understand the influence of social and environmental factors of individual and society. Various aspects of health & disease list the methods of health administration, health education & disease preventive measures.

Course outcomes

On successful completion of the course the students will be able to:		
Sl No	**Course Outcome**	**Blooms Taxonomy Level**
CO 1	**Understand** the effects of the environment and the community dynamics on the health of the individual.	**BT 1**
CO 2	**Categorize** the various national health schemes and its benefits.	**BT 2**
CO 3	**Explain** about communicable and non communicable diseases and its implications.	**BT 3**
CO 4	**Apply** the knowledge to recognize the common health problems including their physical, emotional and social aspects at the individual, family and community levels and deal with public health emergencies.	**BT 3**

Course Outline :

MODULE	TOPICS & COURSE CONTENT	PERIODS
I	**Health & Disease** Definitions: National & International, Concepts, Dimensions and Indicators of Health, Concept of well-being, Spectrum and Determinants of Health Concept and natural history of Disease, Concepts of disease control and prevention, Modes of Intervention Population Medicine The role of socio-economic and cultural environment in health and disease **Epidemiology** Definition and scope. Principles of Epidemiology and Epidemiological methods, Uses of Epidemiology **Socio-Economical &Cultural Issues related to Morbidity owing to the Physical** Disability & Handicaps of Structural /Neuro-motor &Psycho-somatic origin: Health problem in vulnerable groups Pregnant & lactating women, Pelvic floor Dysfunction, Urinaryincontinence, Pre-term babies with high risk, Infants &Pre-School Children-Brain Damage, during birth injury	20 hours
II	**Demography and Family Planning** Family planning-objectives of national family planning programme Family planning methods: A general idea of advantage and disadvantages of the methods. **Immunization programmes –** children & hospital staff. **Occupational Health:** Occupational hazards, Occupational diseases Prevention of occupational diseases. Social security and other measures for the protection from occupational hazard accidents and diseases, Compensation acts.	15 hours
III	**Hospital waste management** Sources of hospital waste, Health hazards, Waste Management **Disaster Management** Natural and man-made disasters Disaster impact and response Relief phase Epidemiologic surveillance and disease control, Nutrition, Rehabilitation, Disaster preparedness **Health Education** Concepts, aims and objectives Approaches to health education	5 hours

	□ Models of health education □ Contents of health education □ Principles of health education □ Practice of health education	
IV	**Addiction** – Alcoholism, Neuromotor, Psychosomatic disorders and Smoking **Mental Health** □ Characteristics of a mentally healthy person □ Types of mental illness □ Causes of mental ill health □ Preventive aspects □ Mental health services □ Alcohol and drug dependence **Nutrition and Health** □ Nutritional problems in public health □ Community nutrition programmes	20 hours

Text Book:

1.K. Park – Park ’s Textbook of Preventive & Social Medicine

Reference Books:

1.P. K. Mahajan & M. C. Gupta – Textbook of Preventive & Social Medicine

Level : Semester IV

Course: DSE D5

Title of the Paper: Exercise Planning and Prescription in various conditions

Subject Code: PHT242D405

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 fitness assessment and prescribe exercises considering the baseline condition 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	**Understand** the principles of exercise prescription.	**BT 2**
CO 2	**Application** of the various protocols to assess the cardiorespiratory endurance.	**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. Introduction to fitness and its importance . 2. Gymnesium set up and various equipment's required for fitness assessment and training .	15
II.	1. Methods of assessment of different components of fitness . 2.Strength training and Mobilty exercises Active and passive .	**15**
III.	1.Preparticipation health screening and risk stratification 2.Health related fitness testing and interpretation of clinical exercise testing .	15
IV.	1.Exercise prescription for healthy population and special considerations 2. Exercise prescription for clinical population	15
TOTAL		**60**

Text Book:

1. Mcardal, Exercise Physiology, ELBS, 5th Ed, 2011.

Reference Books:

1. Mary Beth Allan, Sports, Exercise, and Fitness: A Guide to Reference and Information Sources, Libraries unlimited publishers, 1st Ed, 2005.