MGM INSTITUTE OF HEALTH SCIENCES
(Deemed University u/s 3 of UGC Act, 1956)
Grade 'A' Accredited by NAAC
Sector-01, Kamothe, Navi Mumbai - 410 209
Tel 022-27432471, 022-27432994, Fax 022 - 27431094
E-mail : registrar@mgmuhs.com | Website : www.mgmuhs.com

I. Physiotherapy Graduate Attributes

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:

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.
2. **Pyschomotor 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.

3. **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.
4. **Critical thinking :** Student should be able to apply analytical thought to a body of knowledge , analyze 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.
5. **Problem Solving:** Students must demonstrate capacity to extrapolate theoretical knowledge and apply competencies gained to solve non- familiar problems and real life situations.
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.
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.

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.
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.
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.
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.
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.

II. Qualification Descriptors for Bachelor of Physiotherapy (BPT) program

Students who complete the four and half years Bachelor of Physiotherapy program will be awarded a bachelor's degree. Expected outcomes that a student must demonstrate include:

1. Systematic, extensive and coherent knowledge and skill in Physiotherapy and its applications including critical understanding of established theories, principles and concepts, knowledge of advanced and emerging issues in Physiotherapy, skills in musculoskeletal, neurological, cardio-respiratory Physiotherapy, recent advances and research in Physiotherapy evaluation and treatment procedures.
2. Comprehensive information about electrotherapy modalities, exercise equipment, advanced learning material, skills and techniques.
3. Skill in collecting quantitative and qualitative data, analysis and interpretation of data using appropriate methodology and communicating results to scientific community and beneficiaries for formulating appropriate evidence based health

care solutions.

4. Address self-learning needs related to current and emerging areas of study, use research and professional material, apply knowledge to new concepts and unfamiliar areas and seek solutions in real life situations.
5. Demonstrate profession related transferable skills relevant to patient care and employment opportunities.

III. Program Outcomes for Bachelor of Physiotherapy Program

Students who complete four and half year's undergraduate program in Physiotherapy would earn a Bachelor of Physiotherapy (BPT) degree. The learning outcomes that a student should be able to demonstrate on completion of a degree level program include academic, personal, behavioral, entrepreneurial and social competencies. It is expected that a student completing a particular course must have a level of understanding of the subject and its sub-areas in consonance with the learning outcomes mentioned at the end of that course. Program learning outcomes include Physiotherapy specific skills, generic skills, transferable global skills and competencies that prepare the student for employment, higher education, and research thereby developing students as contributing members for overall benefit to the society.

The program learning outcomes relating to BPT degree program are summarized below:

PO 1	To demonstrate behavioral 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 Orthopedics, General Surgery, Medicine, Neurology, Pediatrics, Dermatology & Gynecology & 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 analyze 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.

IV. Program Specific Outcomes for Bachelor of Physiotherapy Program

Physiotherapist as a Professional

Reflect, learn and teach others

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.

Learn and work effectively within a multi-professional team

PSO 7	Analyze the roles and expertise of health and social care professionals in the context of working and functioning as a multi-professional team to the delivery of safe and high-quality care.
PSO 8	Demonstrate ability to work with colleagues in ways that best serve the interests of patients, passing on information and handing over care, demonstrating flexibility, adaptability and a problem-solving approach.
PSO 9	Demonstrate ability to build team capacity and positive working relationships and undertake various team roles including leadership and the ability to accept leadership by others.

Physiotherapist as a Scholar and a Scientist

Physiotherapy graduate will be able to apply biomedical scientific principles, method and knowledge relating to: anatomy, physiology, biochemistry, cell biology, pathology, and psychology to Physiotherapy clinical practice.

The graduate will be able to:

PSO 10	Explain normal human structure and functions, examine the correlation between structural and functional impairment.
PSO 11	Explain the scientific basis for common musculoskeletal, neurological, cardio-respiratory, women's health related, geriatric and sports related disorders, compare and contrast Physiotherapy treatment techniques applicable in relevant case scenarios.
PSO 12	Justify selection of appropriate clinical examination and investigation for common clinical conditions and critically analyze clinical findings
PSO 13	Plan appropriate rehabilitation goals for common disorders and design management protocols.
PSO 14	Examine the role of environmental and occupational hazards in ill-health and discuss ways to mitigate their effects.

Apply scientific method and approaches to Physiotherapy research

PSO 15	Plan, and conduct research experiments to evaluate current practices and design innovative physiotherapy interventions, based on evidence, to provide highest level of healthcare.
PSO 16	Critically appraise the results of relevant qualitative and quantitative studies as reported in scientific literature.
PSO 17	Outline the ethical issues involved in clinical research.

Physiotherapist as a Practitioner

The graduate will be able to

PSO 18	Record a patient's medical history, including family and social history; communicate with relatives or other caretakers where ever appropriate.
PSO 19	List patients' questions, their understanding of condition and treatment options, their views, concerns, values, preferences and extent to which patients want to be involved in decision-making regarding their care and treatment.
PSO 20	Assess structural, functional impairments, compare performance and capacity through clinical examination and risk evaluation, prioritize goals, recommend Physiotherapy treatment and carry out independent consultation with a patient.
PSO 21	Examine ethical and legal issues in patient care, obtain informed consent, demonstrating community responsibility, good communication skills and socio-cultural competency
PSO 22	Respond to patients concerns and preferences, and respect the rights of patients to reach decisions with their doctor about their treatment and care and to refuse or limit treatment.

Communicate effectively with patients and colleagues in a health context

PSO 23	Communicate clearly, sensitively and effectively with patients, caregivers, and colleagues from the medical and other professions, by listening, sharing and responding.

PSO 24	Communicate clearly, sensitively and effectively with individuals and groups regardless of their age, social, cultural or ethnic backgrounds or their disabilities including when English is not the patient's first language.
PSO 25	Communicate by spoken, written and electronic methods (including medical records), and be aware of other methods of communication used by patients.
PSO 26	Communicate appropriately in difficult circumstances, such as when breaking bad news, and when discussing sensitive issues, such as alcohol consumption, smoking or obesity, with difficult or violent patients, people with mental illness and with vulnerable population

Provide immediate care in medical emergencies

PSO 27	Assess and recognize the severity of a clinical presentation and a need for immediate emergency care.
PSO 28	Apply basic first aid and cardio-pulmonary resuscitation or direct other team members to carry out resuscitation.

.

Use information effectively in a health context

PSO 29	Write accurate, legible and complete clinical records, use computers and other information systems for data storage, retrieval , prepare health promotion material for patients, research and education.
PSO 30	Demonstrate confidentiality, use data protection legislation and codes of practice in all dealings with information.

Semester I
Course Outcomes (CO)

Name of the Programme	**Bachelor of Physiotherapy (BPT)**
Name of the Course	**Human Anatomy- I** **Theory**
Course Code	**BPT-001**
Course Description	**Core Theory**
Credit per Semester	**3 credits**
Hours per Semester	**60 hours**

Course Learning Outcomes: The student will be able to	
CO 1	describe anatomical aspects of muscles, bones, joints, their attachments of thorax and upper quadrant & to understand and discuss analysis of movements with respect to bones, joints and soft tissues related to musculoskeletal system of thorax, & upper extremity.
CO 2	describe structures of the cardio vascular & respiratory system, mechanism of respiration and the course of blood vessels, structure of rib cage & its contents with special emphasis to lungs, tracheo-bronchial tree, respiratory muscles & heart
CO 3	describe source & course of major arterial, venous & lymphatic system, related to upper quadrant, thorax and heart.
CO 4	describe various structures of the genitor-urinary system, abdomen, pelvic organs and sense organs and apply knowledge to living anatomy

Name of the Programme	**Bachelor of Physiotherapy (BPT)**
Name of the Course	**Human Anatomy- I** **Practical**
Course Code	**BPT-002**
Course Description	**Core Practical**
Credit per Semester	**2 credits**
Hours per Semester	**80 hours**

Course Learning Outcomes: The student will be able to	
CO 1	identify anatomical aspects of muscles, bones, joints, their attachments of thorax and upper quadrant & to understand and discuss analysis of movements with respect to bones, joints and soft tissues related to musculoskeletal system of thorax, & upper extremity.
CO 2	identify structures of the cardio vascular & respiratory system, mechanism of respiration and the course of blood vessels, structure of rib cage & its contents with special emphasis to lungs, tracheo-bronchial tree, respiratory muscles & heart
CO 3	Identify source & course of major arterial, venous & lymphatic system, related to upper quadrant, thorax and heart.
CO 4	identify various structures of the genitor-urinary system, abdomen and pelvic organs and apply knowledge to living anatomy
CO 5	demonstrate the movements of various joints , name and identify the origin/insertion, nerve /blood supply, root value & function of various skeletal muscles (upper extremity, abdominal wall & pelvic floor) with special emphasis to extremities, find various surface land-marks.

Name of the Programme	**Bachelor of Physiotherapy (BPT)**
Name of the Course	**Human Physiology I** **Theory**
Course Code	**BPT-003**
Course Description	**Core Theory and Practical**
Credit per Semester	**4 credits**
Hours per Semester	**100 hours**

Course Learning Outcomes: The student will be able to	
CO 1	Describe relative contribution of each organ system in maintenance of the Milieu Interior (Homeostasis)
CO 2	Describe physiological functions of various systems, with special reference to Musculo-skeletal, Neuro-motor, Cardio-respiratory, Excretory, & relate alterations in function with aging
CO 3	Acquire the skill of basic clinical examination, with special emphasis to Cardiovascular & Respiratory system

Name of the Programme	**Bachelor of Physiotherapy**
Name of the Course	**Kinesiotherapy– I**
Course Code	**BPT004**
Course Description	**Core Theory and Practical**
Credit per Semester	**4 credits**
Hours per Semester	**120 hours**

Course Learning Outcomes	
Cognitive	
At the end of the course, the candidate will be able to:	
CO 1	define the various terms used in mechanics, biomechanics & kinesiology
CO 2	explain the basic principles of biophysics related to mechanics of movement / motion & apply these principles to simple equipment designs along with their efficacy in Therapeutic Gymnasium & various starting positions used in therapeutics.

CO 3	explain the concepts of physical, social and mental health, differentiate between physical activity and fitness, describe factors affecting physical fitness, and importance of regular monitoring of fitness for prevention of non communicable diseases
Psychomotor	
At the end of the course, the candidate will be able to:	
CO 4	demonstrate use of various equipments of the Therapeutic Gymnasium
CO 5	demonstrate movements in terms of anatomical planes and axes, demonstrate various starting & derived positions used in therapeutics.
CO 6	apply therapeutic skills of massage
CO 7	Demonstrate assessment of basic evaluation like sensations, reflexes & vital parameters
CO 8	Acquire the diagnostic skill of objective assessment of Range of Motion of the upper quadrant, head and neck by Goniometry

BPT 005 – Kinesiotherapy- I (Practical)

Course Learning Outcomes	
At the end of the course, the candidate will be able to:	
CO 1	name different types of muscles, palpate the muscles and able to recognize different types of muscle action
CO 2	demonstrate assisted, resisted and passive movements
CO 3	apply concept of base of support and gravity, starting positions & derived positions. Identify muscle work in various position
CO 4	demonstrate use of different equipments of therapeutic gymnasium
CO 5	assess BP, HR, chest expansion, limb girth, reflex testing
CO 6	use goniometry for assessment of upper limb range of motion, identify joint fulcrum ,position of movable and fixed arms, identify factors affecting joint motion
CO 7	perform different types of soft tissue maneuvers with understanding of indications and contraindications of each technique on upper limb, face, scalp and neck.

Name of the Programme	**Bachelor of Physiotherapy**
Name of the Course	**Biophysics and medical electronics**
Course Code	**AECC001**
Course Description	**Ability Enhancement Compulsory Course - Theory and Practical**
Semester	**Semester I**
Credit per Semester	**3 credits**
Hours per Semester	**80 hours**

Course Learning Outcomes	
At the end of the course, the candidate will be able to:	
CO 1	Explain various terms used in relation to biophysics, mechanics, biomechanics & kinesiology. Explain the physics principles & Laws of Electricity, & Electro magnetic spectrum
CO 2	Discuss effects of environmental & man made electromagnetic field at the cellular level & outline risk factors on prolonged exposure.
CO 3	Describe the Main electrical supply, Electric shock, examine precautions to be taken for prevention of electric shock
CO 4	Identify and describe in brief, certain common electrical components such as transistors, valves, capacitors, transformers etc & the simple instruments used to test / calibrate these components (such as potentiometer, oscilloscope , multimeter) of the circuit ; & identify such components.

Ability Enhancement Compulsory Course (AECC)	
Name of the Programme	**Bachelor of Physiotherapy**
Name of the Course	**Environmental Sciences**
Course Code	**AECC002**
Credit per Semester	**1 credit**
Hours per Semester	**20 hours**

Course Learning Outcomes	
CO1	describe ecosystem and its structural and functional aspects, dynamic nature of ecological processes in maintaining equilibrium in nature.
CO2	List Earth's resources, their generation, extraction and impact of human activities on earth's environment, to examine effective management strategies, and critical insight on major sustainability issues.

Ability Enhancement Compulsory Course	
Name of the Programme	**Bachelor of Physiotherapy**
Name of the Course	**English and Communication Skills**
Course Code	**AECC003**
Course Description	**Ability Enhancement Compulsory Course – Theory**
Semester	**Semester I**
Credits per semester	**3 credit**
Hours per semester	**60 hours**

Course Learning Outcomes: The student will be able to	
CO 1	apply basics of grammar and writing skills
CO 1	apply and communicate ideas orally and in writing with a high level of proficiency
CO 2	use appropriate expressions in varied situations and topics of interest
CO 3	demonstrate independence in using basic language structure in oral and written
CO 4	apply correct usage of English grammar in writing and speaking
CO 5	speak in English both in terms of fluency and comprehensibility

Semester II

Course Outcomes (CO)

Name of the Programme	**Bachelor of Physiotherapy (BPT)**
Name of the Course	**Human Anatomy- II** **Theory**
Course Code	**BPT-005**
Course Description	**Core Theory**
Credit per Semester	**3 credits**
Hours per Semester	**60 hours**

Course Learning Outcomes: The student will be able to	
CO 1	describe anatomy of lower quadrant including spine, pelvis and lower extremities : list bones, joints, soft tissues, muscles related to musculoskeletal system of spine & lower extremities and to localize various surface land-marks, apply related radiological and living anatomy
CO 2	describe anatomy of structures of head, face and neck
CO 3	describe and outline various parts of nervous system: Source, course & components of various trans-sections of spinal tracts and C.N.S; Source, course & components of various trans-sections of brain, cranial nerves (Special emphasis to III, IV, V, VI & VII) & peripheral nerves.
CO 4	describe blood circulation of C.N.S. & spinal cord.
CO 5	describe the course of peripheral nerves.
CO 6	discuss anatomical basis of clinical conditions of nervous system.
CO 7	demonstrate movements of lower extremity joints – Identify & describe the origin/insertion, nerve /blood supply, root value & function of various skeletal muscles (including lower extremity and spine)

Name of the Programme	**Bachelor of Physiotherapy (BPT)**
Name of the Course	**Human Anatomy- II** **Practical**
Course Code	**BPT-006**
Course Description	**Core Practical**
Credit per Semester	**2 credits**
Hours per Semester	**80 hours**

Course Learning Outcomes: The student will be able to	
CO 1	Identify and list bones, joints, soft tissues, muscles related to musculoskeletal system of spine & lower extremities and to localize various surface land-marks, apply related radiological and living anatomy
CO 2	Identify structures of head, face and neck
CO 3	Identify source, course & components of various trans-sections of spinal tracts and C.N.S; Source, course & components of various trans-sections of brain, cranial nerves (Special emphasis to III, IV, V, VI & VII) & peripheral nerves.
CO 4	demonstrate movements of lower extremity joints – Identify & describe the origin/insertion, nerve /blood supply, root value & function of various skeletal muscles (including lower extremity and spine) , course of peripheral nerves

Name of the Programme	**Bachelor of Physiotherapy (BPT)**
Name of the Course	**Human Physiology II**
Course Code	**BPT-007**
Course Description	**Core Theory and Practical**
Credit per Semester	**4 credits**
Hours per Semester	**100 hours**

Course Learning Outcomes: The student will be able to	
CO 1	describe of various systems, with special reference to Nervous system, & neuro- motor alterations in function with aging
CO 2	analyze physiological response & adaptation to environmental stresses-with special emphasis on physical activity, altitude, temperature
CO 3	demonstrate basic clinical examination, with special emphasis to special senses, sensations, reflex testing, Exercise tolerance / Ergography.
CO 4	describe physiological functions of reproductive system, gastro intestinal system

Name of the Programme	**Bachelor of Physiotherapy**
Name of the Course	**Kinesiotherapy – II**
Course Code	**BPT008**
Course Description	**Core Theory and Practical**
Credit per Semester	**4 credits**
Hours per Semester	**120 hours**

Course Learning Outcomes	
At the end of the course, the candidate will be able to:	
CO 1	describe the physiological effects, therapeutic use, merits / demerits of soft tissue manipulations (massage), & demonstrate the skill of application of various manipulations & the limbs, face, back & abdomen
CO 2	describe types of Goniometry, methods of assessment of joint range of motion, measure range of motion of joints of lower extremity and spine by using Goniometry
CO 3	discuss physiological basis , principles, therapeutic use of relaxation & demonstrate various methods of relaxation
CO 4	demonstrate group & recreational activities, examining advantages and disadvantages of group exercises, general fitness exercises used in physical training, describe physiological responses and principles of aerobic exercises for general fitness & demonstrate fitness skills on self/healthy people.

BPT 008 – Kinesiotherapy II (Practical)

Course Learning Outcomes	
At the end of the course, the candidate will be able to:	
CO 1	demonstrate techniques for measurement of range of motion of individual joints with application of biomechanical principles – Lower quadrant and assessment of Spinal mobility, identify bony fulcrum, fixed arm and movable arm of goniometer for testing joint movement, identify structures affecting joint mobility
CO 2	demonstrate and apply different types of soft tissue maneuvers on lower limb, abdomen and back with understanding of indications and contraindications of each.
CO 3	design general fitness program inclusive of warm up, conditioning phase and cool down.
CO 4	demonstrate group & recreational activities focusing on special groups of people,
CO 5	Demonstrating relaxation techniques: General – Jacobson's, Shavasana & Reciprocal (Laura Mitchell) Local- Heat, Massage, Gentle/Rhythmic passive movements, with understand of principles, techniques, effects & uses

Name of the Programme	**Bachelor of Physiotherapy**
Name of the Course	**Thermal Agents**
Course Code	**BPT009**
Credit per Semester	**3 credits**
Hours per Semester	**80 hours**

Course Learning Outcomes	
At the end of the course the candidate will be able to –	
CO 1	Test the working of the various superficial thermal agents
CO 2	State and explain physical principles of Thermal Energy , Cryotherapy and equipment used to deliver cryotherapy- assess physiological effects, therapeutic effects/uses, compare and contrast merits/demerits, Indications/contra- indications, demonstrate skills of application, discuss dosage
CO 3	Describe & identify various equipments used to deliver superficial heat therapy - radiant energy techniques like Infrared, Ultraviolet and LASER therapy (production, physiological, therapeutic effects, techniques of application, indications & contraindications, dangers, precautions and dosage) ; superficial thermal agents such as Paraffin wax bath, Hydrocollator packs, IRR, UVR, Laser, home remedies, their physiological & therapeutic effects, Merits / demerits & acquire the skill of application.
CO 4	Distinguish between Cryotherapy and Thermotherapy

Ability Enhancement Compulsory Course (AECC)	
Name of the Programme	**Bachelor of Physiotherapy**
Name of the Course	**Environmental Sciences**
Course Code	**AECC002**
Credit per Semester	**2 credit**
Hours per Semester	**40 hours**
Course continued from Semester I	

Course Learning Outcomes	
CO1	Categorize different aspects of environmental contamination, which adversely affect human health, mechanisms of pollutants impacting human health, different types of pollutants, their sources and mitigation measures
CO2	Outline the legal structure of India and fundamentals of environmental legislation and policy making.
CO3	Identify environmental hazards, their causes, classifications, and impacts, management strategies and governmental action plan to mitigate and prepare for such hazards, global changes on human communities and initiatives taken at global and regional levels to combat them.
CO4	Describe the multidisciplinary nature, components of environment, concept of sustainable development and structure and function of ecosystem.
CO5	Plan strategies to conserve and protect the natural resources such as fuel, food, water, electricity at home and in the community and social environment
CO6	Assess the impact of significant global environmental issues such as acid rain, climate change, and resource depletion; historical developments in cultural, social and economic issues related to land, forest, and water management in a global context; interface between environment and society.

Name of the Programme	**Bachelor of Physiotherapy**
Name of the Course	**Biochemistry**
Course Code	**AECC004**
Course Description	**Ability Enhancement Compulsory Course - Theory**
Semester	**Semester II**
Credit per Semester	**3 credits**
Hours per Semester	**60 hours**

Course Outcomes	
CO 1	describe carbohydrate, fat and protein metabolism , classification, digestion, absorption , regulation and clinical application
CO 2	define bio-enzymes, classify, factors affecting enzyme action and therapeutic uses
	describe vitamins, minerals , hormones - classify, discuss manifestations of nutritional deficiency
CO 3	discuss normal levels in body fluids required for functioning and their abnormal levels to understand the disease process
CO 4	discuss biochemical mechanisms of muscle contraction and biochemistry of connective tissue
CO 5	describe functions of nucleic acids

Dr. Rajesh B. Goel
Registrar
MGM INSTITUTE OF HELATH SCIENCES
(DEEMED UNIVERSITY u/s 3 of UGC Act,1956)
NAVI MUMBAI- 410 209