BHARATH INSTITUTE OF HIGHER EDUCATION AND RESEARCH (BIHER)

Accredited 'A' Grade by NAAC

(Declared as Deemed -to -be University under section 3 of UGC Act, 1956)

SREE BALAJI COLLEGE OF PHYSIOTHERAPY

Constituent College of BIHER

BACHELOR FOR PHYSIOTHERAPY

Undergraduate Degree Course

BPT CBCS Syllabus 2019

1 Semester = 20 Weeks Teaching/ 1 Week= 36 Hours

MC Main Core, AR Allied Required, GE General Elective, FC Foundation Core, CT Clinical Training, IT Internship

Sem.	Code No.	Courses	Theory		Practical		Total Hours	Total Credits
			H	C	H	C		
I	19BPT1FC01	Human Anatomy I	60	4	75	2	135	6
	19BPT1FC02	Human Physiology I	60	4	60	2	120	6
	19BPT1AR01	Sociology	60	4			60	4
	19BPT1AR02	Basic, Applied Physics for Physiotherapy	30	2	30	1	60	3
	19BPT1AR03	English and Communication Skills	30	2			30	2
	19BPT1GE01	Basic Nursing and First Aid	30	2	30	1	60	3
	19BPT1GE02	Environmental Science						
	19BPT1CT01	Clinical Training					255	3
							720	27
II	19BPT2FC01	Human Anatomy II	60	4	90	3	190	7
	19BPT2FC02	Human Physiology II	60	4	75	2	135	6
	19BPT2AR01	Clinical Psychology	30	2	30	1	60	3
	19BPT2AR02	Biochemistry	30	2	30	1	60	3
	19BPT2GE01	Basic Computer Science	30	2	30	1	60	3
	19BPT2GE02	Artificial Intelligence						
	19BPT2CT02	Clinical Training					255	3
							720	25
III	19BPT3MC01	General Medicine and Pediatrics	60	4	60	2	120	6
	19BPT3MC02	Exercise Therapy I	60	4	45	1	105	5
	19BPT3FC01	Biomechanics	45	3	45	1	90	4
	19BPT3AR01	Pathology	45	3	45	1	90	4
	19BPT3GE01	Sports Physiotherapy	30	2	30	1	60	3
	19BPT3GE02	Yoga Therapy						
	19BPT3CT03	Clinical Training					255	3

							720	25
IV	19BPT4MC01	General Surgery, Geriatric and Pharmacology	60	4	45	1	105	5
	19BPT4MC02	Exercise Therapy II	60	4	60	2	120	6
	19BPT4MC03	Massage Therapy	45	3	60	2	105	5
	19BPT4AR01	Microbiology	45	3	30	1	75	4
	19BPT4GE01	Bioengineering	30	2	30	1	60	3
	19BPT4GE02	Obstetrics and Gynecology						
	19BPT4CT04	Clinical Training					255	3
							720	26
V	19BPT5MC01	Electrotherapy I	60	4	60	2	120	6
	19BPT5MC02	Clinical Orthopedics	60	4	45	1	105	5
	19BPT5MC03	Clinical Neurology and Neurosurgery	45	3	45	1	90	4
	19BPT5FC01	Kinesiology	45	3	45	1	90	4
	19BPT5GE01	Medical Terminology & Record Keeping	30	2	30	1	60	3
	19BPT5GE02	Data Science						
	19BPT5CT05	Clinical Training					255	3
							720	25
VI	19BPT6MC01	Electrotherapy II	60	4	60	2	120	6
	19BPT6MC02	Clinical Cardiovascular conditions for Physiotherapist	60	4	45	1	105	5
	19BPT6MC03	Clinical Reasoning and Evidence Based Physiotherapy	45	3	45	1	90	4
	19BPT6AR01	Community Medicine	45	3	45	1	90	4
	19BPT6GE01	Professionalism and values	30	2	30	1	60	3
	19BPT6GE02	Healthcare Management						
	19BPT6CT06	Clinical Training					255	3
							720	25
VII	19BPT7MC01	Physiotherapy in Orthopedic Conditions	60	4	75	2	135	6
	19BPT7MC02	Physiotherapy in Neurological Conditions	60	4	75	2	135	6
	19BPT7MC03	Clinical Respiratory conditions for Physiotherapist	45	3	19	1	60	4
	19BPT7AR01	Research Methodology & Biostatistics	30	2	45	1	75	3
	19BPT7GE01	Diagnostic Imaging for Physiotherapist	30	2	30	1	60	3

	19BPT7GE02	Dietetics and Nutrition						
	19BPT7AR02	Ethics in Physiotherapy						
	19BPT7GE03	Medico Legal Aspects						
	19BPT7CT07	Clinical Training					255	3
							720	25
VIII	19BPT8MC01	Physiotherapy in Cardiorespiratory Condition	60	4	75	2	135	6
	19BPT8MC02	Rehabilitation Medicine including Geriatric Rehabilitation	60	4	75	2	135	6
	19BPT8MC03	Physiotherapy Law	60	4			60	4
	19BPT8GE01	Administration and Teaching Skill	30	2	30	1	60	3
	19BPT8GE02	Quality and Patient Safety						
	19BPT8PJ01	Research Project and Dissertation	30	2	45	1	75	3
	19BPT8CT08	Clinical Training					255	3
							720	25
IX	19BPTIT01	Internship Training					960	19
		Minimum 960 hours based on 8 hours per day, 120 working days in six month duration						

SEMESTER I - COURSE OUTCOME, CO PO MAPPING

Course Code 19BPT1FC01	Course Name: Human Anatomy I	Theory	Practical	Total Credit
	Total Contact Hours -135	4	2	6
	Prerequisite Course - HSSC			
	Course Coordinator:			
Course Outcomes (CO)				
CO1	Understand the organization of the human body.			
CO2	Understand the topographical anatomy of the brain, thorax, abdomen, pelvis and limbs.			
CO3	Describe the functional anatomy of the brain, thorax, abdomen, pelvis and limbs.			
CO4	Ability to identify and describe anatomical aspects of muscles, bones and joints of the various regions.			
CO5	Demonstrate the application of anatomy in practice of physiotherapy.			

Mapping of Course Outcomes with Program Outcomes
(1/2/3 indicates strength of correlation 3-High, 2 Medium, 1 Low)

CO/ PO/ PSO	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10	PO 11	PO 12	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5
CO1	3	3	3	3	3	3	3	3	3	2	3	3	3	3	3	3	3
CO2	3	3	3	3	3	3	3	3	3	3	3	2	2	3	3	2	3
CO3	3	3	3	3	3	2	3	2	3	3	2	3	3	3	2	3	3
CO4	3	3	3	3	2	3	3	3	3	3	3	3	3	3	3	3	3
CO5	3	3	3	3	3	3	3	2	3	3	3	3	3	2	3	3	2

HUMAN ANATOMY I

Syllabus

Unit I: Anatomy and mention its Course divisions - anatomical positions and anatomical terms- introduction to bones: Joints, muscles, Cell, Nerve, Blood vessel.

Unit II: Classification of tissues - classify and mention the microscopic structure, types of tissues such as epithelial, connective, muscular and nervous tissue -. General embryology theories of development – gestation – gametogenesis – fertilization – implantation – development of skeletal system.

Unit III: Upper extremity

Oesteology- myology –arthrology – Nerves – Blood vessels –- lymphatic drainage-miscellaneous

Unit IV: Lower extremity

Oestology –myology –arthrology – Nerves – blood vessels –- lymphatic drainagemiscellaneous –

Unit V: The pelvis

Muscles of the pelvic wall - sacral plexus - pelvic fascia - urinary bladder - ureters - urethra - uterus – vagina – ovary - rectum - anal canal - vas deference - seminal vesicles - sacro iliac joint - pubic symphysis - sacrum.

Reference

1. Clinical anatomy by regions – RICHARD S SNELL'S 9 th edition 2012 wolter kluwer pubisher

2. Human anatomy – BD CHAURASIA'S VOL 1, 2 , 3, .6 th edition 2013 CBS

3. Human anatomy – T S RANGANATHAN 2000 S Chand and co

4. Clinical neuroanatomy – RICHARD S. SNELL – 7 th edition 2010 wolter kluwer pubisher

Websites

1. AMERICAN ASSOCIATION OF ANATOMISTS

2. HUMAN ANATOMY ONLINE

3. KHAN ACADEMY

Journal

1. INTERNATIONAL JOURNAL OF ANATOMY & RESEARCH.

2. NATIONAL JOURNAL OF CLINICAL ANATOMY SCOPE MED.ORG.

Course Code 19BPT1FC02	Course Name: Human Physiology I	Theory	Practical	Total Credit
	Total Contact Hours -120	4	2	6
	Prerequisite Course - HSSC			
	Course Coordinator:			

Course Outcomes (CO)	
CO1	Understand the general physiology of the body.
CO2	Explain the normal functioning and interaction of all the organ systems.
CO3	Identify the applied physiology of various body systems.
CO4	Analyse the response of various body systems to physiological and pathological stress.
CO5	Explain and correlate the applied physiology of diseases and disorders related to organ systems of the body which are commonly treated by the physiotherapist.

Mapping of Course Outcomes with Program Outcomes
(1/2/3 indicates strength of correlation 3-High, 2 Medium, 1 Low)

CO/ PO/ PSO	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10	PO 11	PO 12	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5
CO1	3	3	3	3	3	3	3	3	3	2	3	3	3	3	3	3	3
CO2	3	3	3	3	2	3	3	3	3	3	3	2	2	3	3	2	3
CO3	3	3	3	3	3	3	3	2	3	3	2	3	3	3	2	3	3
CO4	3	3	3	3	2	3	3	3	3	3	3	3	3	3	3	3	3
CO5	3	3	3	3	3	3	3	2	3	3	3	2	3	2	3	3	3

HUMAN PHYSIOLOGY I

Syllabus

Unit I : Cell introduction outline of basic concept of cell structure - function of components - transport across membranes.- cell biology –membrane biology – molecular biology-skin structure – functions - blood flow - temperature regulation. Blood and cardio vascular system.

Unit II : Outline of components; and their functions; rbc, wbc, platelets, plasma proteins - significance of rbc and wbc counts, esr and other related tests - hemostasis, clotting mechanisms - blood volume and its regulation - .structure and properties of cardiac muscle - cardiac cycle - ecg; heart sounds - cardiac

output and venous return - heart rate and factors regulating the action of the heart - blood pressure; its maintenance and regulation, cardiovascular reflexes.

Unit III : Respiration defense mechanism in the respiratory tree; mucociliary transport and mechanics of respiration - transport of blood gases, acid-base balance - lung function tests (including lung volumes). Artificial ventilation - nervous and chemical regulation of respiration - effects of exercise on respiration - breath sounds.

Unit IV : Digestion &excretion

Digestion in the mouth, stomach and intestine - bile; pancreatic secretion - mechanism of control of secretions and motility - movements of the alimentary tract - gastrointestinal hormones - apud cells - diet and nutrition.

Unit V : Excretory system;structure of the nephron - formation of urine – micturation - renin angiotensin system - renal function test - acid base balance

Reference

1. Textbook of medical physiology - GUYTON .ARTHUR -13th edition 2013 elsevier

2. Concise medical physiology - CHAUDHARI S.K 7th edition 2016 NCBA

3. Human physiology - CHATTERJEE CC – 11th edition 2016 CBS

Websites

1. PHYSIOLOGY WEB

2. AMERICAN PHYSIOLOGY SOCIETY

Journals

1. NATIONAL JOURNAL OF PHYSIOLOGY, PHARMACY & PHARMACOLOGY.

2. THE JOURNAL OF PHYSIOLOGY WILEY ONLINE LIBRARY.

Course Code 19BPT1AR01	Course Name: Sociology	Theory	Practical	Total Credit
	Total Contact Hours -60	4	0	4
	Prerequisite Course - HSSC			
	Course Coordinator:			
Course Outcomes (CO)				
CO1	Understand the role of family and community in the development of behaviours.			
CO2	Develop a holistic outlook towards the structure of society and community resources.			
CO3	Understand the social and economic aspects of community that influence the health of the people.			
CO4	Understand the significance of social interactions in the process of rehabilitation.			
CO5	Demonstrate an understanding of the role of socio cultural factors as determinants of health and behaviours in health and sickness.			

Mapping of Course Outcomes with Program Outcomes
(1/2/3 indicates strength of correlation 3-High, 2 Medium, 1 Low)

CO/ PO/ PSO	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10	PO 11	PO 12	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5
CO1	3	3	3	2	3	3	3	3	3	2	3	3	3	3	3	3	3
CO2	3	3	3	3	2	3	3	3	3	3	3	2	2	3	3	2	3
CO3	3	3	3	3	3	3	3	2	3	3	2	3	3	3	2	3	3
CO4	3	3	3	3	2	3	3	3	3	3	3	3	3	3	3	3	3
CO5	3	3	3	3	3	3	3	2	3	3	3	3	2	2	3	3	2

SOCIOLOGY

Syllabus

Unit I: Introduction Definition of Sociology. Sociology as a science, uses of the study of Sociology, application of knowledge of sociology in Physiotherapy. Sociology and health Social factors affecting the health status, social consciousness and perception of illness, social consciousness and meaning of illness, decision making in taking treatment. Institutions of health, their role in the improvement of

health and the people. Socialization Meaning of socialization, influence of social factors on personality, socialization in hospital and socialization in rehabilitation of patients.

Social control Meaning of social control, role of norms, folkways, customs, morals, religions, laws and other means of social control in the regulation of human behaviour, social deviance and disease.

UNIT II . Social groups Concepts of social groups, influence of formal and informal groups on health and sickness, the role of primary groups and secondary groups in the hospital and rehabilitation settings. Family Influence of family on human personality, discussion of changes in the functions of a family, influence of family on the individual's health, family and nutrition. The effects of sickness on family and psychosomatic disease. Community Concepts of community, role of rural and urban communities public health, role of community in determining beliefs, practices and home remedies in treatment. Culture Components of culture, impact of culture on human behaviours cultural meaning of sickness, response to sickness and choice of treatment (role of culture as social consciousness in moulding the perception of reality). Culture induced symptoms and diseases, Course-culture of medical workers. Caste system Features of the modern caste system and its trends.

UNIT III : Social change Meaning of social changes, factors of social change, human adaptation and social change, social change and stress, social change and deviance, social change and health programmes, the role of social planning in the improvement of health in rehabilitation.

UNIT IV : Social problems of the disabled Consequences of the following social problems in relation to sickness and disability, remedies to prevent these problems.

UNIT V : Population explosion Poverty and unemployment Beggary Juvenile delinquency Prostitution Alcoholism Problems of women in employment Social security Social security and social legislation in relation to the disabled. Social worker The role of a medical social worker.

References

1. Sachdeva. D.R.and Bhshan. V.: An Introduction to Sociology, Allahabad, Kitab Mahal Limited - 1974.

2. Madan, G.R.: Indian Social Problems, Vol-I, Madras. Allied Publications - 1973

Course Code 19BPT1AR02	Course Name: Basic, Applied Physics for Physiotherapy	Theory	Practical	Total Credit
	Total Contact Hours -60	2	1	3
	Prerequisite Course - HSSC			
	Course Coordinator:			
Course Outcomes (CO)				
CO1	Understand the fundamentals of general physics and able to relate its application in physiotherapy.			
CO2	Describe the basic physical principles of mechanics, sound, light and heat with their application in physiotherapy.			
CO3	Understand basic aspects of electricity and electronics as related to its application in electrotherapy instruments.			
CO4	Describe in brief common electrical components and identify such components.			
CO5	Design experiments and acquire data in order to explore physical principles, effectively communicate results, and critically evaluate related scientific studies.			

Mapping of Course Outcomes with Program outcomes (POs) (1/2/3 indicates strength of correlation 3-High, 2 Medium, 1 Low)																	
CO/ PO/ PSO	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10	PO 11	PO 12	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5
CO1	3	3	3	3	3	3	3	3	3	2	3	3	3	3	3	3	3
CO2	3	3	3	3	3	3	3	3	3	3	3	2	2	3	3	2	3
CO3	3	3	3	3	3	3	3	2	3	3	2	3	3	3	2	3	3
CO4	3	3	3	3	2	3	3	3	3	3	3	3	3	3	3	3	3
CO5	3	3	3	3	3	3	3	2	3	3	3	3	3	2	3	3	2

BASIC, APPLIED PHYSICS FOR PHYSIOTHERAPY

Syllabus

Unit I : Mechanics: Definition of mechanics and Biomechanics - Force - Definition, diagrammatic representation, classification of forces, concurrent, coplanar and co-linear forces, composition and resolution of forces, angle of pulls of muscle - Speed, Velocity, Work, Energy, Power, Acceleration, Momentum - principles, and practical application - Newton's Laws – Friction - Elasticity - Definition, stress, strain, HOOKE'S LawGravity - Definition, line of gravity, Centre of gravity - Equilibrium

Unit II : Pulleys - - Levers - Definition, function, classification and application of levers in physiotherapy& order of levers with example of lever in human body - Currents: DC AND A.C Currents -Modern concept of electricity: fundamental electric charges

Unit III : Capacitors: Electric field around a capacitor, charging and discharging a capacitor, types of capacitor with–Rheostat: series and shunt Rheostat with application of each in the Physiotherapy department - Effects of electric Current: Thermal effect, chemical effect (ionization) and magnetic effect, Electric shock, Earth shock, causes and its prevention - Magnetism: Magnetic - non-magnetic substances and their properties, molecular theory, poles of magnet and its properties, magnetic lines of force and their properties, Electromagnetism AND LAWS

Unit IV : Condenser – Potential & capacity, Principles, factors determining capacity, construction. Electric field, charging & discharging and use of condenser in electrotherapy - Cosine law and its implications - Physical effects of heat and radiation. Laws governing radiation -. Units of electricity: farad, volt, ampere, coulomb, watt - resonance: in series & in parallel - potentiometer: - fuse: - transmission of electrical energy through solids, liquids, gases and vacuum - shock, safety precautions and management - burns: electrical & chemical: prevention & management

Unit V : Thermionic valves: thermionic emission, diode and triode valves and their characteristics, construction and application of cathode ray oscilloscope - semiconductor devices: intrinsic and extrinsic semiconductors, light emitting diodes, integrated circuits moving coil millimetre: construction, working and uses. Transformer: definition-types-principle-construction-eddy current-working uses chokes: principle-construction and working-uses. Metal oxide rectifier

Reference

1. R K Gaur – 2011 dhanpat- rai publications (p) ltd new delhi

2. Electrotherapy explained principles and practice – LOW and REED 4 th edition – 2006 – elseiver health – uk

3. Therapeutic exercise – CAROLYN KISNER 6 th edition -2012 – jaypee brothers medical publishers

4. Clayton’s electrotherapy theory and practice – FORSTER & PALASTANGA 8 th edition – 2007 CBS

5. Textbook of medical physiology - GUYTON .ARTHUR -13 th edition 2013 elsevier

Course Code 19BPT1AR03	Course Name: English and Communication Skills	Theory	Practical	Total Credit
	Total Contact Hours -30	2	0	2
	Prerequisite Course - HSSC			
	Course Coordinator:			
Course Outcomes (CO)				
CO1	Demonstrate efficiency to Speak and write grammatically correct sentences in English.			
CO2	Develop effective writing skills.			
CO3	Build fluency in English.			
CO4	Polishing manners to behave appropriately in social and professional circles.			
CO5	Handling difficult situations with grace, style and professionalism.			

Mapping of Course Outcomes with Program Outcomes (1/2/3 indicates strength of correlation 3-High, 2 Medium, 1 Low)																	
CO/ PO/ PSO	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10	PO 11	PO 12	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5
CO1	3	3	3	3	3	3	3	3	3	2	3	3	3	3	3	3	3
CO2	3	3	3	3	2	3	3	3	3	3	3	2	2	3	3	2	3
CO3	3	3	3	3	3	3	3	2	3	3	2	3	3	3	2	3	3
CO4	3	3	3	3	2	3	3	3	3	3	3	3	3	3	3	3	3
CO5	3	3	3	3	3	3	3	2	3	3	3	2	3	2	3	3	2

ENGLISH AND COMMUNICATION SKILLS

Syllabus

UNIT I: Introduction Study Techniques Organisation of effective note taking and logical processes of analysis and synthesis - The use of the dictionary Enlargement of vocabulary Effective diction

UNIT II: Applied Grammar: Correct usage - the structure of sentences - The structure of paragraphs - Enlargements of Vocabulary

UNIT III: Written Composition - Precise writing and summarising - Writing of bibliography - Enlargement of Vocabulary

UNIT IV: Reading and comprehension - Review of selected materials and express oneself in one's words - Enlargement of Vocabulary.

UNIT V: The Study of Various Forms of Composition Paragraph, Essay, Letter, Summary, Practice in writing, Verbal Communication - Discussions and Summarization, Debates, Oral reports, use in teaching.

Reference

1. Wren and Martin - Grammar and Composition, regular edition revised by N.D.V PRASDA RAO Chand .& Co, Delhi

Course Code 19BPT1GE01	Course Name: Basic Nursing and First Aid	Theory	Practical	Total Credit
	Total Contact Hours -60	2	1	3
	Prerequisite Course -HSSC			
	Course Coordinator:			
Course Outcomes (CO)				
CO1	Demonstrate and understand the principles of first aid.			
CO2	Demonstrates skill in giving first aid treatment in emergencies that may be met in the community.			
CO3	Demonstrate and understand the nursing principles.			
CO4	Familiarise various nursing positions and methods of giving nourishment.			
CO5	Demonstrate surgical dressing and transportation of patients.			

Mapping of Course Outcomes with Program Outcomes (1/2/3 indicates strength of correlation 3-High, 2 Medium, 1 Low)																	
CO/ PO/ PSO	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10	PO 11	PO 12	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5
CO1	3	3	3	3	3	3	3	3	3	2	3	3	3	3	3	3	3
CO2	3	3	3	3	2	3	3	3	3	3	3	2	2	3	3	2	3
CO3	3	3	3	3	3	3	3	2	3	3	2	3	3	3	2	3	3
CO4	3	3	3	3	2	3	3	3	3	3	3	3	3	3	3	3	3
CO5	3	3	3	3	3	3	3	2	3	3	3	3	3	2	3	3	2

BASIC NURSING & FIRST AID

Syllabus

UNIT I : Basic Nursing Introduction- Nursing Principles-Inter personal relationship-Bandaging, Basic Turns, Bandaging extremities, Triangular Bandages and their application - Nursing position: Environment safety, Bed making, prone, lateral, dorsal, dorsal recumbent, fowler's positions, comfort measures, aids to rest and sleep - Lifting and Transporting Patients: Lifting patients up in the bed, transferring from bed to wheel chair, transferring from bed to stretcher- Providing For Patients Elevation: Giving and taking Bed Pan, Urinal, Observation of stools, urine observation of sputum, understand use and care of catheters, enema giving

UNIT II: Methods of Giving Nourishment: Feeding, Tube feeding, Drips, Transfusion - Care of Rubber Goods: Observation, Reporting and Recording Temperature, Respiration and Pulse, Simple Aseptic Technique, Sterilization and Disinfection. - Surgical Dressing: Parental Administration of Medicine.

UNIT III : First Aid. General Principles of First Aid – Wounds, Control of Hemorrhage, Epistaxis.

UNIT IV : Shock – Bites – Burns & Scalds – Heat Exhaustion, Heat Stroke and Fainting, Frost Bite – Fractures, Dislocations, Sprains and Strains – Poisoning – Epileptic Fits, Convulsions in children – Aspiration of foreign body.

UNIT V : Artificial Respiration (CPR) – Bandages and Different Types – Unconsciousness and General Principles of Treatment.

Reference

1.First Aid – Red Cross Society

2.First Aid – St. Johns Ambulance Association

3.Basic Nursing by Dr, Mona Megahed

Course Code 19BPT1GE02	Course Name: Environmental Science	Theory	Practical	Total Credit
	Total Contact Hours -60	2	1	3
	Prerequisite Course -HSSC			
	Course Coordinator:			
Course Outcomes (CO)				
CO1	Demonstrate and understand the principles of environmental science.			
CO2	Understand the problems and issues related to the environment.			
CO3	Ability to identify the influence of biohazards in the ecosystem.			
CO4	Demonstrate an integrative approach to environmental issues with a focus on sustainability.			
CO5	Understand the interdependence of individuals, society and environment.			

Mapping of Course Outcomes with Program Outcomes (1/2/3 indicates strength of correlation 3-High, 2 Medium, 1 Low)																	
CO/ PO/ PSO	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10	PO 11	PO 12	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5
CO1	3	3	3	3	3	3	3	3	3	2	3	3	3	3	3	3	3
CO2	3	3	3	3	2	3	3	3	3	3	3	2	2	3	3	2	3
CO3	3	3	3	3	3	3	3	2	3	3	2	3	3	3	2	3	3
CO4	3	3	3	3	2	3	3	3	3	3	3	3	3	3	3	3	3
CO5	3	3	3	3	3	3	3	2	3	3	3	3	3	2	3	3	2

ENVIRONMENTAL SCIENCE

Syllabus

UNIT I: Origin of Earth and System processes Solar system formation and planetary differentiation; formation of the Earth: formation and composition of core, mantle, crust; chemical composition of Earth; geological time scale and major changes on the Earth's surface; Holocene and the emergence of humans.

UNIT II : Concept of plate tectonics and continental drift theory, continental collision and formation of the Himalaya; ocean floor spreading; mantle convection and, major plates;

earthquakes; volcanic activities; orogeny; isostasy; gravitational and magnetic fields of the earth; paleontological evidences of plate tectonics. NJ

UNIT III : Minerals and rocks Minerals and important rock forming minerals; rock cycle: lithification and metamorphism; Three rock laws; rock structure, igneous, sedimentary and metamorphic rocks; weathering: physical, biogeochemical processes; erosion: physical processes of erosion, factors affecting erosion; agents of erosion: rivers and streams, glacial and aeolian transportation and deposition of sediments by running water, wind and glaciers.

UNIT IV : Earth surface processes Atmosphere: evolution of earth's atmosphere, composition of atmosphere, physical and optical properties, circulation; interfaces: atmosphere–ocean interface, atmosphere–land interface, ocean–land interface; land surface processes: fluvial and glacial processes, rivers and geomorphology; types of glaciers, glacier dynamics, erosional and depositional processes and glaciated landscapes; coastal processes.

UNIT V : Importance of being a mountain Formation of Peninsular Indian mountain systems - Western and Eastern Ghats, Vindhyas, Aravallis, etc. Formation of the Himalaya; development of glaciers, perennial river systems and evolution of monsoon in Indian Coursecontinent; formation of Indo-Gangetic Plains, arrival of humans; evolution of Indus Valley civilization; progression of agriculture in the Indian Coursecontinent in Holocene; withdrawing monsoon and lessons to draw.

Reference

1. Keller, E.A. 2011. Introduction to Environmental Geology (5th edition). Pearson Prentice Hall. Krishnan, M. S. 1982. Geology of India and Burma. CBS Publishers & Distributors. Reference Books: Bridge, J. & Demicco, R. 2008.
2. Earth Surface Processes, Landforms and Sediment deposits. Cambridge University Press. Duff, P. M. D. and Duff, D. (Eds.). 1993.
3. Holmes' Principles of Physical Geology. Taylor & Francis. Gupta, A. K., Anderson, D. M., & Overpeck, J. T. 2003.
4. Abrupt changes in the Asian southwest monsoon during the Holocene and their links to the North Atlantic Ocean. Nature 419: 354-357. Gupta, A. K., Anderson, D. M., Pandey, D. N., & Singhvi, A. K. 2006.
5. Adaptation and human migration, and evidence of agriculture coincident with changes in the Indian summer monsoon during the Holocene. Current Science 90: 1082-1090

Course Code 19BPT1CT01	Course Name: Clinical Training	Total Credit
	Total Contact Hours -255	3
	Prerequisite Course - HSSC	
	Course Coordinator:	
Course Outcomes (CO)		
CO1	Explain the components of basic assessment for a patient.	
CO2	List the impairments resulting in functional limitation and participation restriction.	
CO3	Demonstrate clinical observation skills and bedside manners.	
CO4	Understanding of policy of the inpatient service and outpatient services.	
CO5	Understand the role of physiotherapy in various clinical conditions and the documentation of patient service.	

Mapping of Course Outcomes with Program Outcomes
(1/2/3 indicates strength of correlation 3-High, 2 Medium, 1 Low)

CO/ PO/ PSO	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10	PO 11	PO 12	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5
CO1	3	3	3	3	3	3	3	3	3	2	3	3	3	3	3	3	3
CO2	3	3	3	3	2	3	3	3	3	3	3	2	2	3	3	2	3
CO3	3	3	3	3	3	3	3	2	3	3	2	3	3	3	2	3	3
CO4	3	3	3	3	2	3	3	3	3	3	3	3	3	3	3	3	3
CO5	3	3	3	3	3	3	3	2	3	3	3	2	3	2	3	3	2

CLINICAL TRAINING

Syllabus

Unit I : Cadaver Study and Laboratory Study for Anatomy and Physiology.

Unit II : Community Field Visit for Sociology

Unit III : Field visit to SCARF for Psychology

Unit IV : Clinical Observation

Unit V : Co curricular Activities

SEMESTER II - COURSE OUTCOME, CO PO MAPPING

Course Code 19BPT2FC01	Course Name: Human Anatomy II	Theory	Practical	Total Credit
	Total Contact Hours -190	4	3	7
	Prerequisite Course - HSSC			
	Course Coordinator:			
Course Outcomes (CO)				
CO1	Understand the organization of the human body.			
CO2	Understand the topographical anatomy of the brain, thorax, abdomen, pelvis and limbs.			
CO3	Describe the functional anatomy of the brain, thorax, abdomen, pelvis and limbs.			
CO4	Ability to identify and describe anatomical aspects of muscles, bones and joints of the various regions.			
CO5	Demonstrate the application of anatomy in practice of physiotherapy.			

Mapping of Course Outcomes with Program Outcomes
(1/2/3 indicates strength of correlation 3-High, 2 Medium, 1 Low)

CO/ PO/ PSO	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10	PO 11	PO 12	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5
CO1	3	3	3	3	3	3	3	3	3	2	3	3	3	3	3	3	3
CO2	3	3	3	3	2	3	3	3	3	3	3	2	2	3	3	2	3
CO3	3	3	3	3	3	3	3	2	3	3	2	3	3	3	2	3	3
CO4	3	3	3	3	2	3	3	3	3	3	3	3	3	3	3	3	3
CO5	3	3	3	3	3	3	3	2	3	3	3	2	3	2	3	3	2

HUMAN ANATOMY- II

Syllabus

Unit I : THORAX Osteology – thoracic vertebrae - ribs - sternum -Myology – extensors in the thoracic region - abdominals Arthrology – type, articular surface, muscle, ligments, blood supply, nerve supply and movements with applied of - joints of thorax -Thoraxic wall – pericardium – heart, aorta – lungs - pleura – oesophagus – veins as thoracic sysmpathetic chain - thoracic duct - azygos vein - thymus - mechanics of respiration - trachea

Unit II : ABDOMEN Anterior abdominal wall, diaphragm - lumbar region - rectus sheath - inguinal canal - peritoneum - Coursephernic spaces - peritoneal recesses - spleen – stomach – duodenum - liver - pancreas - portal vein - jejunum and ilieum – appendix - colon - kidneys - lumbar vertebral column - perineum - urogenital triangle - anal triangle – scrotum – testes – penis - bilary system.-Arteries – celiac artery - mesenteric artery - renal circulation abdominal aorta

Unit III : HEAD AND NECK -Scalp – fascial muscles – muscles of mastication - lacrimal apparatus – parotid gland- thyroid gland – parathyroid gland – triangles of neck – digastrics triangle - carotid triangle – posterior triangle – muscular triangle – Coursemandibular gland – Courselingual gland – tongue – olfactory system – nasal cavity – sinuses – fascia – carotid artery – Courseclavian artery – Courseclavian vein

Unit IV : BRAIN -Development of brain and spinal cord – spinal – tracts – meninges – arteries of brain and spinal cord – circle of wilis – blood brain barrier – cerebral cortex – fornix – internal capsule – cerebellum – pons – medulla – midbrain – ventricles and CSF – thalamus – hypothalamus- basal ganglia

Unit V : AUTONOMIC NERVOUS SYSTEM- Sympathetic & Parasympathetic control

Reference

1. Clinical anatomy by regions – RICHARD S SNELL'S 9 th edition 2012 wolter kluwer pubisher
2. Human anatomy – BD CHAURASIA'S VOL 1, 2 , 3, .6 th edition 2013 CBS
3. Human anatomy – T S RANGANATHAN 2000 S Chand and co
4. Clinical neuroanatomy – RICHARD S. SNELL – 7 th edition 2010 wolter kluwer pubisher

Websites

1. AMERICAN ASSOCIATION OF ANATOMISTS
2. HUMAN ANATOMY ONLINE
3. KHAN ACADEMY

Journal

1. INTERNATIONAL JOURNAL OF ANATOMY & RESEARCH.
2. NATIONAL JOURNAL OF CLINICAL ANATOMY SCOPE MED.ORG.

Course Code 19BPT2FC02	Course Name: Human Physiology II	Theory	Practical	Total Credit
	Total Contact Hours -135	4	2	6
	Prerequisite Course - HSSC			
	Course Coordinator:			
Course Outcomes (CO)				
CO1	Understand the general physiology of the body.			
CO2	Explain the normal functioning and interaction of all the organ systems.			
CO3	Identify the applied physiology of various body systems.			
CO4	Analyse the response of various body systems to physiological and pathological stress.			
CO5	Explain and correlate the applied physiology of diseases and disorders related to organ systems of the body which are commonly treated by the physiotherapist.			

Mapping of Course Outcomes with Program Outcomes (1/2/3 indicates strength of correlation 3-High, 2 Medium, 1 Low)																	
CO/ PO/ PSO	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10	PO 11	PO 12	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5
CO1	3	3	3	3	3	3	3	3	3	2	3	3	3	3	3	3	3
CO2	3	3	3	3	2	3	3	3	3	3	3	2	2	3	3	2	3
CO3	3	3	3	3	3	3	3	2	3	3	2	3	3	3	2	3	3
CO4	3	3	3	3	2	3	3	3	3	3	3	3	3	3	3	3	3
CO5	3	3	3	3	3	3	3	2	3	3	3	2	3	2	3	3	2

HUMAN PHYSIOLOGY II

Syllabus

Unit I : Endocrine-General metabolism, carbohydrates, protein and fat metabolism - outline of the various hormones and their actions with special emphasis on thyroid gland , parathyroid gland , adrenal cortex, pancreas , pituitary gland and applied

Unit II : Reproduction-Male reproductory system - female reproductory system -Outline of pregnancy; functions of placenta; parturition; lactation, contraceptive measures, menstrual cycle - physiology of fetus; factors that affect fetal growth.

Unit III : Nervous system- CNS, PNS, ANS and connections

Unit IV : Special senses. Vision – audition - olfaction – gustation - vestibular apparatus - test for vision and hearing

Unit V : Muscle-Structure of muscle tissue; gross structure and microscopic structure. Arrangement of myofibrils. Myoneural junction - chemical processes involved in muscle contraction - physiology of muscle contraction, single muscle twitch, effect of exercises

Reference

1. Textbook of medical physiology - GUYTON .ARTHUR -13th edition 2013 elsevier

2. Concise medical physiology - CHAUDHARI S.K 7th edition 2016 NCBA

3. Human physiology - CHATTERJEE CC – 11th edition 2016 CBS

Websites

1. PHYSIOLOGY WEB

2. AMERICAN PHYSIOLOGY SOCIETY

Journals

1. NATIONAL JOURNAL OF PHYSIOLOGY, PHARMACY & PHARMACOLOGY.

2. THE JOURNAL OF PHYSIOLOGY WILEY ONLINE LIBRARY.

Course Code 19BPT2AR01	Course Name: Clinical Psychology	Theory	Practical	Total Credit
	Total Contact Hours -60	2	1	3
	Prerequisite Course - HSSC			
	Course Coordinator:			
Course Outcomes (CO)				
CO1	Evaluate psychiatric history a mental status examination of schizophrenia, anxiety, personality somatoform, childhood & adolescence, organic brain disorder, mood and eating disorders with geriatric psychology.			
CO2	Knowledge about management of various psychiatric disorders with the help of ECT, pharmacotherapy group therapy, psychotherapy, cognitive behavioural therapy & rational emotive therapy.			
CO3	Demonstrate an understanding of the role of socio-cultural factors as determinants of health and behaviour in health and sickness.			
CO4	Understand the role of family and community in the development of behaviours.			
CO5	Develop a holistic outlook toward the structure of society and community resources.			

Mapping of Course Outcomes with Program Outcomes
(1/2/3 indicates strength of correlation 3-High, 2 Medium, 1 Low)

CO/ PO/ PSO	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10	PO 11	PO 12	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5
CO1	3	3	3	2	3	3	3	3	3	2	3	3	3	3	3	3	3
CO2	3	3	3	3	2	3	3	3	3	3	3	2	2	3	3	2	3
CO3	3	3	3	3	3	3	3	2	3	3	2	3	3	3	2	3	3
CO4	3	3	3	3	2	3	3	3	3	3	3	3	3	3	3	3	3
CO5	3	3	3	3	3	3	3	2	3	3	3	3	2	2	3	3	2

CLINICAL PSYCHOLOGY

Syllabus

Unit I : Foundations of Human Behavior- Experiments in Psychology- Child Psychology- Schools of Psychology

Unit II : Cognitive Processes- Physiological Psychology- Measurement in Psychology -Adolescent Psychology

Unit III : Research Methods- Abnormal Psychology- Health Psychology- Basics of Personality

Unit IV : Social Psychology - Statistics in Psychology- Psychology of Intelligence- Industrial Psychology- Gender Studies

Unit V : Psychology of Adulthood and Ageing Psychotherapeutic Interventions Guidance & Counselling- Neuropsychology

Reference

1. Textbook of Clinical Psychology" by M S Bhatia

2. "Clinical Psychology: Topics in Applied Psychology (TAP)" by Professor Graham Davey

3. Dream Psychology: Psychoanalysis for Beginners" by Sigmund Freud

Course Code 19BPT2AR02	Course Name: Biochemistry	Theory	Practical	Total Credit
	Total Contact Hours -60	2	1	3
	Prerequisite Course - HSSC			
	Course Coordinator:			
Course Outcomes (CO)				
CO1	Describe carbohydrate, fat and protein metabolism , classification, digestion, absorption , regulation and clinical application.			
CO2	Understand bio-enzymes, classify, factors affecting enzyme action and therapeutic uses, describe vitamins, minerals , hormones - classify, discuss manifestations of nutritional deficiency.			
CO3	Discuss normal levels in body fluids required for functioning and their abnormal levels to understand the disease process.			
CO4	Demonstrate biochemical mechanisms of muscle contraction and biochemistry of connective tissue.			
CO5	Describe functions of nucleic acids.			

Mapping of Course Outcomes with Program Outcomes
(1/2/3 indicates strength of correlation 3-High, 2 Medium, 1 Low)

CO/ PO/ PSO	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10	PO 11	PO 12	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5
CO1	3	3	3	3	3	3	3	3	3	2	3	3	3	3	3	3	3
CO2	3	3	3	3	2	3	3	3	3	3	3	2	2	3	3	2	3
CO3	3	3	3	3	3	3	3	2	3	3	2	3	3	3	2	3	3
CO4	3	3	3	3	2	3	3	3	3	3	3	3	3	3	3	3	3
CO5	3	3	3	3	3	3	3	2	3	3	3	2	3	2	3	3	2

BIOCHEMISTRY

Syllabus

Unit I : Introduction to Biochemistry as on allied science to medicine, Blood and urine investigations of normal & abnormal urine samples- Carbohydrates – structure and general nature – Biological importance – classifications, polysaccharides & their physiological importance.

Unit II : Lipids – structure and general nature – classification, biological membranes and membrane transport.-Proteins – structure and functional aspect of hemoglobin, myoglobin collagen and cellular proteins (their names only).

Unit III : Enzymes – specificity and factors affecting enzyme activity intra cellular and extra cellular enzymes, isoenzymes – clinical significance of alkaline phosphates, acid phosphates and cholinesterase, creative phosphokinase- Metabolic pathways related to carbohydrate and lipid metabolism, their names and significance only. Disorders of carbohydrate metabolism, hyper and hypoglycemia – glycosuria diabetes mellitus – types – biochemical changes.

Unit IV : Metabolic pathways – related to protein metabolism – their names and significance only – amino aciduria, alkalpatonuria, nuclear acid metabolism gout- Vitamins – fat soluble and water soluble – their source, requirement, special requirements, - biochemical functions & deficiency state

Unit V : Minerals and trace elements & their role in growth and development disorders of calcium. Phosphorus metabolism muscular dystrophies.- Fundamentals of nutrition & dietetics.

Reference:

1. Illustrated biochemistry - MURRAY HARPER – 30th edition 2019 Mc –Graw Hill education
2. Textbook of biochemistry for medical students -VASUDEVAN – 7th edition 2013 jaypee

WEBSITE:

1. WWW.BIOCHEMISTRY .ORG
2. WWW.BIOCH.OX.AC.UK

JOURNALS

1. THE JOURNAL OF BIOCHEMISTRY, OXFORD JOURNALS.
2. THE INTERNATIONAL OF BIOCHEMISTRY AND CELL BIOLOGY – ELSEVIER.Unit I :

Course Code 19BPT2GE01	Course Name: Basic Computer Science	Theory	Practical	Total Credit
	Total Contact Hours -60	2	1	3
	Prerequisite Course - HSSC			
	Course Coordinator:			
Course Outcomes (CO)				
CO1	Familiarise various types of computers and operating systems.			
CO2	Understand the basic knowledge about computer & its language, components, functions and networks.			
CO3	Know and explain about various aspects of looping.			

CO4	Understand the basic operation of the computer and creating the documents, power point presentation and making spreadsheets in excel along with the formulas.
CO5	Able to effectively use computer graphics and other computer applications for better understanding in the field of physiotherapy and clinical studies.

Mapping of Course Outcomes with Program Outcomes (1/2/3 indicates strength of correlation 3-High, 2 Medium, 1 Low)																	
CO/ PO/ PSO	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10	PO 11	PO 12	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5
CO1	3	3	3	3	3	3	3	3	3	2	3	3	3	3	3	3	3
CO2	3	3	3	3	2	3	3	3	3	3	3	2	2	3	3	2	3
CO3	3	3	3	3	3	3	3	2	3	3	2	3	3	3	2	3	3
CO4	3	3	3	3	2	3	3	3	3	3	3	3	3	3	3	3	3
CO5	3	3	3	3	3	3	3	2	3	3	3	2	3	2	3	3	2

BASIC COMPUTER SCIENCE

Syllabus

UNIT I : Basics of computer Introduction to computer- Characteristics of computer, History of Computer, Generation of Computer, Classification of Computers, IT Application- Hardware and software - Input Devices , Output Devices, Central Processing Unit, Components of CPU, Memory Unit, CISC and RISC, Peripheral Devices, Input and output devices , Operating system – DOS, WINDOWS ETC

UNIT II : Internet- Email, social networking, application in medicine, browsing journals and article using internet

UNIT III : BASIC MS OFFICE – MS WORD, EXCEL POWER POINT - Importance of computer in physiotherapy

UNIT IV : Internet and its application- Packet switched networks, what is Internet? ,Types of Information Available on internet ,Internet Address, Organizational Domains, Internet Protocol Address, Getting Connected to Internet, Types of Internet Access, Direct Connections, Internet Services, ISDN (Integrated Services Digital Network), NICNCT, Archie Wide Area Information Server (WAIS), World Wide Web (WWW) , Tele Conferencing, Video Conferencing, UPLOADING AND DOWNLOADING DOCUMENTS.

UNIT V : PROFILE PREPARATION AND APPLIED INTERNSHIP.

Reference

1. Course on Computer Concepts (CCC) – Professor. Sathish Jain- BPB Publications.

Course Code 19BPT2GE02	Course Name: Artificial Intelligence	Theory	Practical	Total Credit
	Total Contact Hours -60	2	1	3
	Prerequisite Course - HSSC			
	Course Coordinator:			
Course Outcomes (CO)				
CO1	Understand the basic concepts of Artificial Intelligence and explore the applications of AI in various fields.			
CO2	Develop competence on understanding of data filtering and explore various data visualization tools.			
CO3	Associate the basics concepts of NLP, working mechanism behind NLP and its importance in education.			
CO4	Understand the basics of robotics and its applications in various fields			
CO5	Use Chatbots as a pedagogical assistance to teach languages.			

Mapping of Course Outcomes with Program Outcomes (1/2/3 indicates strength of correlation 3-High, 2 Medium, 1 Low)																	
CO/ PO/ PSO	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10	PO 11	PO 12	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5
CO1	3	3	3	2	3	3	3	3	3	2	3	3	3	3	3	3	3
CO2	3	3	3	3	2	3	3	3	3	3	3	2	2	3	3	2	3
CO3	3	3	3	3	3	3	3	2	3	3	2	3	3	3	2	3	3
CO4	3	3	3	3	2	3	3	3	3	3	3	3	3	3	3	3	3
CO5	3	3	3	3	3	3	3	2	3	3	3	3	2	2	3	3	2

ARTIFICIAL INTELLIGENCE

Syllabus

UNIT I : Artificial Intelligence- Introduction- Scope- Concepts

UNIT II : Neural networks- Pattern recognition- Speech recognition-Algorithm-_Simulation- Automation-Robotics

UNIT III : Problem solving-Planning and Decision making- Machine learning

UNIT IV :AI based devices- Technologies - Applications

UNIT V : Artificial intelligence in clinical practice- Implications- Evidences

Reference

1. Artificial Intelligence – A Modern Approach (3rd Edition)– By Stuart Russell & Peter Norvig
2. Machine Learning for Dummies– By John Paul Mueller and Luca Massaron

Course. Code 19BPT2CT02	Course Name: Clinical Training	Total Credit
	Total Contact Hours -255	3
	Prerequisite Course - HSSC	
	Course Coordinator:	
Course Outcomes (CO)		
CO1	Explain the components of basic assessment for a patient.	
CO2	List the impairments resulting in functional limitation and participation restriction.	
CO3	Demonstrate clinical observation skill and the bedside manners.	
CO4	Understanding of policy of the inpatient service and outpatient services.	
CO5	Understand the role of physiotherapy in various clinical conditions and the documentation of patient service.	

Mapping of Course Outcomes with Program Outcomes
(1/2/3 indicates strength of correlation 3-High, 2 Medium, 1 Low)

CO/ PO/ PSO	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10	PO 11	PO 12	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5
CO1	3	3	3	3	3	3	3	3	3	2	3	3	3	3	3	3	3
CO2	3	3	3	3	2	3	3	3	3	3	3	2	2	3	3	2	3
CO3	3	3	3	3	3	3	3	2	3	3	2	3	3	3	2	3	3
CO4	3	3	3	3	2	3	3	3	3	3	3	3	3	3	3	3	3
CO5	3	3	3	3	3	3	3	2	3	3	3	2	3	2	3	3	2

CLINICAL TRAINING

Syllabus

Unit I : Cadaver Study and Laboratory Study for Anatomy and Physiology.

Unit II : Community Field Visit for Sociology

Unit III : Field visit to SCARF for Psychology

Unit IV : Clinical Observation

Unit V : Co curricular Activities

SEMESTER III - COURSE OUTCOME, CO PO MAPPING

Course Code 19BPT3MC01	Course Name: General Medicine and Pediatrics	Theory	Practical	Total Credit
	Total Contact Hours -120	4	2	6
	Prerequisite Course - HSSC			
	Course Coordinator:			
Course Outcomes (CO)				
CO1	Demonstrate a general understanding of the diseases that therapists would encounter in their practice.			
CO2	Understand the etiology and pathology.			
CO3	Understand the patient's symptoms and the resultant functional disability.			
CO4	Understand the limitations imposed by the diseases on any therapy.			
CO5	Elaborate broad outline of goals of pharmacological and surgical therapy imparted in those diseases in which physical therapy will be an important component of overall management.			

Mapping of Course Outcomes with Program Outcomes
(1/2/3 indicates strength of correlation 3-High, 2 Medium, 1 Low)

CO/ PO/ PSO	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10	PO 11	PO 12	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5
CO1	3	3	3	3	3	3	3	3	3	2	3	3	3	3	3	3	3
CO2	3	3	3	3	2	3	3	3	3	3	3	2	2	3	3	2	3
CO3	3	3	3	3	3	3	3	2	3	3	2	3	3	3	2	3	3
CO4	3	3	3	3	2	3	3	3	3	3	3	3	3	3	3	3	3
CO5	3	3	3	3	3	3	3	2	3	3	3	3	3	2	3	3	2

GENERAL MEDICINE & PAEDIATRICS

Syllabus

Unit I: Infections - bacterial, viral, filarial, protozoal, communicable diseases. Hematological conditions and bleeding disorders & genetic disorders

Unit II: a) Respiratory system disorders b)cardiovascular disorders c) renal diseases. Bone and connective tissue disorders, renal and metabolic disorders, neurological diseases affecting CNS, PNS and ANS.

Unit III : Geriatric disorders age related changes in musculoskeletal system neurological dysfunctions

Unit IV : Growth and development of a child from birth to 12 years- high risk pregnancies and its complications. Immunization schedule - community programmes.

Unit V: Cerebral palsy Clinical aspects, CP with MR, muscular dystrophy, spina bifida, hydrocephalus. Malnutrition and its deficiencies. Lung infections in childhood.

Reference

Textbook

1. DAVIDSON – principles of practice of medicine 22nd edition 2014
2. Kumar & Clerks – Clinical Medicine 7th edition 2009
3. Geriatric Medicine – Evidence Based Approach – Christine K. Cassel, 4th edition 2003

Website

1. www.medscafe.com
2. www.medicinenet.com
3. www.generalpediatrics.com
4. www.healthychildren.org

Journal

1. Journal of internal medicine
2. European journal of general medicine
3. GHAI Essential paediatrics– Vinod K Paul 8TH edition 2013
4. International journals of paediatrics

Course Code 19BPT3MC02	Course Name: Exercise Therapy I	Theory	Practical	Total Credit
	Total Contact Hours -105	4	1	5
	Prerequisite Course - HSSC			
	Course Coordinator:			

Course Outcomes (CO)	
CO1	Understand the basics of mechanics involved in exercise therapy.
CO2	Describe and demonstrate fundamental and derived positions.
CO3	Describe ribs and demonstrate active, passive, resisted movements. Describe the skills involved in benefits of various equipment used in therapeutic gymnasium.
CO4	Describe relaxation techniques and positions and perform various assessment techniques.
CO5	Patient assessment and examination like goniometry and Manual muscle testing.

Mapping of Course Outcomes with Program Outcomes
(1/2/3 indicates strength of correlation 3-High, 2 Medium, 1 Low)

CO/ PO/ PSO	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10	PO 11	PO 12	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5
CO1	3	3	3	3	3	3	3	3	3	2	3	3	3	3	3	3	3
CO2	3	3	3	3	2	3	3	3	3	3	3	2	2	3	3	2	3
CO3	3	3	3	3	3	3	3	2	3	3	2	3	3	3	2	3	3
CO4	3	3	3	3	2	3	3	3	3	3	3	3	3	3	3	3	3
CO5	3	3	3	3	3	3	3	2	3	3	3	2	3	2	3	3	2

EXERCISE THERAPY -I

Syllabus

Unit I: Introduction to exercise therapy -types of muscle fibres- types of skeletal muscle contraction- range of muscle work

Unit II : Mechanical principles of exercise therapy - Axes and Planes, Kinetic chains, acceleration, friction, pelvic tilt - types of motion

Unit III : Starting position - derived Positions. Active and passive movements principles- passive stretching, passive joint mobilization and its principles

Unit IV : Coordination exercises its indications principles and application. Breathing exercises and relaxation exercises. Gait - phases of gait-Mobility Aids its types recent advancement in wheelchairs and frames

Unit V : Muscle re education -MRC grading - principles of motor re-education PNF Proprioceptive Neuromuscular Facilitation -key points principles and basics. Hydrotherapy - basics, physics of water, hydrostatic pressure, indications, biological effects in in various systems of human body and contraindications for Hydrotherapy. Progressive Resisted Exercises - principles, RM and types of PRE.

Reference

1. Principles of Exercise Therapy - DENA GARDINER 4th edition2007
2. Therapeutic Exercises - CAROLYN KISHNER 6th edition2012
3. Margaret Hollis - Practical Exercise Therapy 4th edition 1999
4. Facilitated stretching – Robert E.McAtee, Jeff charland 4th edition 2013
5. PNF in practice - susan s. adler, dominiekbeckers math buck 3rd edition 2008

Website

1. www.apta.org
2. ptjournal.apta.org

Journals

1. Journal of orthopaedic and sports physical therapy
2. Journal of exercise therapy and rehabilitation

Course Code 19BPT3FC01	Course Name: Biomechanics	Theory	Practical	Total Credit
	Total Contact Hours -90	3	1	4
	Prerequisite Course - HSSC			
	Course Coordinator:			
Course Outcomes (CO)				
CO1	Able to describe the understanding of basics of mechanics, muscle structure and contraction, factors effecting muscle contraction and recruitment			
CO2	Experience quantitative methods of movement analysis using various methods.			
CO3	Apply the analytic methods to specific example of normal human motor performance.			
CO4	Evaluation and treatment of disorders of the musculoskeletal system.			
CO5	Analyze normal mechanics of posture and gait in various planes and axis and path mechanics associated with abnormal posture and gait.			

Mapping of Course Outcomes with Program Outcomes (1/2/3 indicates strength of correlation 3-High, 2 Medium, 1 Low)																	
CO/ PO/ PSO	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10	PO 11	PO 12	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5
CO1	3	3	3	3	3	3	3	3	3	2	3	3	3	3	3	3	3
CO2	3	3	3	3	2	3	3	3	3	3	3	2	2	3	3	2	3
CO3	3	3	3	3	3	3	3	2	3	3	2	3	3	3	2	3	3
CO4	3	3	3	3	2	3	3	3	3	3	3	3	3	3	3	3	3
CO5	3	3	3	3	3	3	3	2	3	3	3	2	3	2	3	3	2

BIOMECHANICS

Syllabus

Unit I: Mechanics - types of motion and its planes forces gravity Newton's laws of motion concurrent and parallel force system moment arm. Anatomical Pulleys - equilibrium of a lever

Unit II : Joint structure and function -classification of joints -kinematic chain - general effects of injury and diseases

Unit III : Muscle structure and its function - mobility and stability functions of the muscle - types of muscle contraction - speed and angular velocity -torque - isokinetic exercise - Tonic & phasic muscles - factors affecting muscle function - active and passive insufficiency

Unit IV: Biomechanics of the joints in appendicular skeleton - Shoulder complex, Elbow complex, Wrist joint and Joints of hand complex in detail. Biomechanics of joints in the axial skeleton - kinetics and kinematics of joints in the vertebral column, sacroiliac joint and costovertebral joints.

Unit V : Posture -Effects of gravity, line of gravity and analyse the posture with respect to alignm*ent of joints in in AP view and lateral view.

Reference

Joint Structure And Function - Pamela K Levange , Cynthia C. Norkin 5th edition 2011

2. Basic biomechanics – susan J.hall 7th edition 2014

3. Gait analysis normal and pathological function – Jacqualin perry Judith M.buenfield 2nd edition 2010

Websites

1. www.biomech.ethz.ch
2. www.asbweb.org

Journals

1. Journal of Biomechanics (Elsevier)
2. American Kinesiology Association.

Course Code 19BPT3AR01	Course Name: Pathology	Theory	Practical	Total Credit
	Total Contact Hours -90	3	1	4
	Prerequisite Course - HSSC			
	Course Coordinator:			

Course Outcomes (CO)	
CO1	Acquire the knowledge of concepts of cell injury and changes produced thereby in different tissues and organs; capacity of the body in healing process.
CO2	Recall the etiopathological effects and the clinical pathological correlation of common infection and noninfectious diseases.
CO3	Acquire the knowledge of concepts of Neoplasia with reference to the etiology, gross and microscopic features diagnosis and prognosis in different tissues and organs of the body.
CO4	Correlate normal and altered morphology of different organ systems in different diseases needed for understanding disease process and their clinical significance.
CO5	Acquire knowledge of common immunological disorders and their resultant effects on the human body and brief the hematological diseases and their resultant effects on the human body

Mapping of Course Outcomes with Program Outcomes
(1/2/3 indicates strength of correlation 3-High, 2 Medium, 1 Low)

CO/ PO/ PSO	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10	PO 11	PO 12	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5
CO1	3	3	3	3	3	3	3	3	3	2	3	3	3	3	3	3	3
CO2	3	3	3	3	2	3	3	3	3	3	3	2	2	3	3	2	3
CO3	3	3	3	3	3	3	3	2	3	3	2	3	3	3	2	3	3
CO4	3	3	3	3	2	3	3	3	3	3	3	3	3	3	3	3	3
CO5	3	3	3	3	3	3	3	2	3	3	3	2	3	2	3	3	2

PATHOLOGY

Syllabus

Unit I : Introduction- General pathology – cell injury, causes , Reversible injury – Types, morphology, swelling, hyaline, fatty change , Irreversible injury – Types of necrosis, apoptosis, calcification, dystrophic,Metastasis - Concepts of disease

Unit II : Inflammation and repair- Acute inflammation – causes, features, examples, Inflammatory cell and mediators, Chronic inflammation – causes, features, examples , wound healing , Regeneration and repair.

Unit III : Circulatory disturbance -Edema - Chronic venous congestion – Thrombosis-. Embolism - Infarction –Gangrene - Shock

Unit IV : Growth disturbance- Atrophy - Neoplasia(benign& malignant)

Unit V : Specific pathology CVS – atherosclerosis, IHD, MI, HT, CCF, RHD, peripheral vascular diseases- RS – COPD, pneumonia – lobar, broncho, viral, acquired, TB – prim & sec,Atelectasis, asthma- Skin – leprosy -NS – CVA, coma, polio, Parkinsonism, myasthenia gravis- Bone and joint – arthritis, osteomyelitis, autoimmune disease, spondylosis,Osteomalacia, GOUT,-Tenosynovitis, AS Muscle – MD, polio, myopathies

Reference

1. Text Book of Pathology -HARSHMOHAN 6th edition2010.

2. Basic Pathology –ROBBINS 9th edition2013.

3. Textbook of pathology for BPT students-Ramadassnayak 1st edition 2016.

Website

1. ajp.amjpathol.org

2. www.ijpmonline.org

Journals

1.American journal of pathology

2. Journal of clinical pathology –BMJ Journals

Course Code 19BPT3GE01	Course Name: Sports Physiotherapy	Theory	Practical	Total Credit
	Total Contact Hours -60	2	1	3
	Prerequisite Course - HSSC			
	Course Coordinator:			

Course Outcomes (CO)	
CO1	Assessment of physical fitness of the population in the society.
CO2	Implement an awareness program regarding the importance of fitness and physical activities in prevention of various diseases.
CO3	Identify critical elements of motor skill performance and combine motor skills into appropriate sequences for the purpose of improving skill learning and competent motor skill performance in a variety of physical activities.
CO4	Describe performance concepts and strategies related to skillful movement and physical activity.
CO5	Describe and apply bioscience concepts and psychological concepts to skillful movement, physical activity, and fitness and debate current physical activity issues and laws based on historical, philosophical, and sociological perspectives.

Mapping of Course Outcomes with Program Outcomes
(1/2/3 indicates strength of correlation 3-High, 2 Medium, 1 Low)

CO/ PO/ PSO	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10	PO 11	PO 12	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5
CO1	3	3	3	3	3	3	3	3	3	2	3	3	3	3	3	3	3
CO2	3	3	3	3	2	3	3	3	3	3	3	2	2	3	3	2	3
CO3	3	3	3	3	3	3	3	2	3	3	2	3	3	3	2	3	3
CO4	3	3	3	3	2	3	3	3	3	3	3	3	3	3	3	3	3
CO5	3	3	3	3	3	3	3	2	3	3	3	2	3	2	3	3	2

SPORTS PHYSIOTHERAPY

Syllabus

Unit I : Motor control: cortical to peripheral control of human movement; motor units; neuromuscular basis of human movement; sensory feedback and proprioception; theories of motor learning and performance.

Unit II : Physiological adaptation: cellular, endocrine, connective tissue, neural and cardiovascular adaptations to: (1) endurance training; (2) strength and power training; (3) inactivity / detraining and (4) environmental conditions (heat, humidity, hypoxia).

Unit III : Concepts of motion: describing motion, movement forces, forces within the body, running jumping and throwing.

Unit IV : Adaptability of the motor system: warm up effects, flexibility, muscle damage, motor recovery from injury, adaptations with age and reduced use.

Unit V :Measurement and analysis of human muscle, vascular and cardiopulmonary physiology.Measurement and analysis of the kinetics and kinematics of human movement in sport, exercise and rehabilitation.

Reference

1. Sports medicine. Rouzier (2010)
2. Sports Medicine Patient Advisor, Rosenbloom (2012)
3. Sports Nutrition Brukner (2011)
4. Brukner & Khan's Clinical Sports Medicine, Madden (2009) Netter's Sports Medicine

Course Code 19BPT3GE02	Course Name: Yoga Therapy	Theory	Practical	Total Credit
	Total Contact Hours -60	2	1	3
	Prerequisite Course - HSSC			
	Course Coordinator:			

Course Outcomes (CO)	
CO1	Demonstrate the introduction and principles of yoga.
CO2	Knowledge of history of yoga and yoga in modern India.
CO3	Outline of yoga background and importance of yoga in modern world.
CO4	Learning the types and forms of asanas and description of physiological effect of yoga.
CO5	Understanding the role of yoga in physiotherapy.

Mapping of Course Outcomes with Program Outcomes
(1/2/3 indicates strength of correlation 3-High, 2 Medium, 1 Low)

CO/ PO/ PSO	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10	PO 11	PO 12	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5
CO1	3	3	3	3	3	3	3	3	3	2	3	3	3	3	3	3	3
CO2	3	3	3	3	2	3	3	3	3	3	3	2	2	3	3	2	3
CO3	3	3	3	3	3	3	3	2	3	3	2	3	3	3	2	3	3
CO4	3	3	3	3	2	3	3	3	3	3	3	3	3	3	3	3	3
CO5	3	3	3	3	3	3	3	2	3	3	3	3	3	2	3	3	2

YOGA THERAPY

Syllabus

Unit I : Yoga postures and its types - pranayama its effects limitations care points and indications integration of yoga with physiotherapy for self and patient care

Unit II: History of yoga philosophy and fundamentals of yoga

Unit III : Application of yoga its therapeutic effects Surya namaskar breathing practices four paths of yoga-Hatha yoga Patanjali yoga pastures and body alignment supine sitting prone lying understanding

Unit IV : Evaluation prognosis care points - limitations -clinical indication-Therapeutic effects contraindications of of various yogasanas

Unit V: Bandha - Mudras -Kriyas -pranayama- meditation

Reference

Text Books

1. Sing S.P and Yogi Mukesh: Foundation of Yoga, Standard Publication, New Delhi, 2010.

2. Dr. Nagendra H.R: Asana, Pranayama, Mudra, Bandha, Swami Vivekananda yoga Prakashan; Bangalore, 2002.

Websites

1. www. Sivananda.org.in/Chennai

2. Essential Yoga Therapy. Com

3. www. AndiappanYoga.Com

Journals

1. Journal of Yoga & Physical Therapy.

2. International Journal of Yoga Therapy.

Course Code 19BPT3CT03	Course Name: Clinical Training	Total Credit
	Total Contact Hours -255	3
	Prerequisite Course - HSSC	
	Course Coordinator:	
Course Outcomes (CO)		
CO1	Explain the components of basic assessment for a patient.	
CO2	List the impairments resulting in functional limitation and participation restriction.	
CO3	Demonstrate clinical observatory skill and the bedside manners.	
CO4	Understanding of policy of the inpatient service and outpatient services.	
CO5	Understand the role of physiotherapy in various clinical conditions and the documentation of patient service.	

Mapping of Course Outcomes with Program Outcomes
(1/2/3 indicates strength of correlation 3-High, 2 Medium, 1 Low)

CO/ PO/ PSO	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10	PO 11	PO 12	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5
CO1	3	3	3	3	3	3	3	3	3	2	3	3	3	3	3	3	3
CO2	3	3	3	3	2	3	3	3	3	3	3	2	2	3	3	2	3
CO3	3	3	3	3	3	3	3	2	3	3	2	3	3	3	2	3	3
CO4	3	3	3	3	2	3	3	3	3	3	3	3	3	3	3	3	3
CO5	3	3	3	3	3	3	3	2	3	3	3	3	3	2	3	3	2

CLINICAL TRAINING

Syllabus

Unit I : Clinical Observation for General Medicine, General Surgery Department

Unit II : Labaratory posting for Pathology and Microbiology

Unit III : Field visit for Fitness, Exercise therapy,Masssage

Unit IV : Community Health Camp

Unit V : Co Curricular Activities

SEMESTER IV - COURSE OUTCOME, CO PO MAPPING

Course Code 19BPT4MC01	Course Name: General Surgery, Geriatric and Pharmacology	Theory	Practical	Total Credit
	Total Contact Hours -105	4	1	5
	Prerequisite Course - HSSC			
	Course Coordinator:			
Course Outcomes (CO)				
CO1	List the indications for surgery, etiology, clinical features and surgical methods for various conditions.			
CO2	Plan a better rehabilitation care for the patients pre and post surgically			
CO3	Understand the common conditions affecting the geriatric population and strategies to correct them.			
CO4	Implement the Physiotherapy rehabilitation program in Geriatric population according to the needs of the patients.			
CO5	Demonstrate the types of drug and their mechanisms of actions, basic concepts, theories of pharmacology and the knowledge of pharmacology as an adjunct, limitation, contraindication for physiotherapy.			

Mapping of Course Outcomes with Program Outcomes
(1/2/3 indicates strength of correlation 3-High, 2 Medium, 1 Low)

CO/ PO/ PSO	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10	PO 11	PO 12	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5
CO1	3	3	3	3	3	3	3	3	3	2	3	3	3	3	3	3	3
CO2	3	3	3	3	2	3	3	3	3	3	3	2	2	3	3	2	3
CO3	3	3	3	3	3	3	3	2	3	3	2	3	3	3	2	3	3
CO4	3	3	3	3	2	3	3	3	3	3	3	3	3	3	3	3	3
CO5	3	3	3	3	3	3	3	2	3	3	3	2	3	2	3	3	2

GENERAL SURGERY, GERIATRICS, PHARMACOLOGY

Syllabus

Unit I :Outline the incisions of abdomen- mastectomy - herniorrhaphy - thyroidectomy - Cholecystectomy -chest wall incisions- Thoracotomy-

Unit II : Burns - classification rule of nine types of burn injuries based on depth - deformities due to burns- wound care. Plastic surgery - skin grafting- Partial & Full thickness burns

Unit III : Inflammatory diseases -Endocrine disorders - diabetes mellitus and insulin therapy - arthritic conditions -Chemotherapy bacterial infections -drugs- microorganism- sulfonamides antibiotics floxacins - parasitic infestation malaria,amoeba, filariasis - flagellates

Unit IV : Respiratory pharmacology e use of bronchodilator - Air way clearance - cancers - antimitotics - antimetabolites - irradiation radioactive materials -Cancers

Unit V: Aging-Theories of aging physiological and environmental factors influencing aging-cardiorespiratory system, nervous system autonomic functions metabolic changes and mental functions- Diet -lifestyle modification and fitness exercises- complications.

References

Text Book

1. S.DAS – A concise text book of surgery 8th edition 2014
2. Bailey & Love's – Short Practice of Surgery 26th edition 2013
3. PADMAJA UDHAYAKUMAR – pharmacology for physiotherapy
4. Brocklehurst's textbook of geriatric medicine and gerontology 8th ed. by Fillit, Howard M., editor
5. Ethnogeriatrics : Healthcare Needs of Diverse Populations by Cummings-Vaughn, Lenise, editor.2017

Website

1. www.medscape .com
2. www.absurgery.org
3. www.pharmacology.com
4. www.clinicalpharmaology.com

Journals

1. Journal of surgical research
2. International Research Journal of Pharmacy

Course Code 19BPT4MC02	Course Name: Exercise therapy II	Theory	Practical	Total Credit
	Total Contact Hours -120	4	2	6
	Prerequisite Course - HSSC			
	Course Coordinator:			

Course Outcomes (CO)	
CO1	Learn the principles, technique and effects of exercise as a therapeutic modality in the restoration of physical function and the various types of therapeutic exercises, movements and demonstrate different techniques and their effects.
CO2	Practice different exercise therapy techniques and gain confidence in performing these skills before implementing the same on the patients so that high quality patient care is ensured.
CO3	Provide high quality, ethical, effective, and cost efficient practices by students and gain expertise in the exercise prescription to patients and practice various assessment strategies like Goniometer, tone assessment, muscle power assessment.
CO4	Understand principles and procedures, indications, contraindications and precautions, appropriate methods of application of each of the assessment strategy and treatment techniques hands on and on models.
CO5	Communicate with the patient in a professional and ethical manner.

Mapping of Course Outcomes with Program Outcomes
(1/2/3 indicates strength of correlation 3-High, 2 Medium, 1 Low)

CO/ PO/ PSO	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10	PO 11	PO 12	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5
CO1	3	3	3	3	3	3	3	3	3	2	3	3	3	3	3	3	3
CO2	3	3	3	3	2	3	3	3	3	3	3	2	2	3	3	2	3
CO3	3	3	3	3	3	3	3	2	3	3	2	3	3	3	2	3	3
CO4	3	3	3	3	2	3	3	3	3	3	3	3	3	3	3	3	3
CO5	3	3	3	3	3	3	3	2	3	3	3	3	3	2	3	3	2

EXERCISE THERAPY II

Syllabus

Unit I: Proprioceptive neuromuscular facilitation - principles methods indications and its effects in musculoskeletal and nervous system. Hold relax, rhythmic stabilization and repeated contraction

Unit II: Aerobic exercises its principle,types ,effects in cardiovascular system and musculoskeletal system. Methods to fix the protocol based on heart rate maximum- karvonen's formula

Unit III : Principles of Resisted exercises types and advantages in increasing muscle strength and power in all age groups.- calculation of RM its progression and types namely Delorme's, Zinovieff and watkin's method of PRE

Unit IV : Isometric exercises and its types its advantages and application for knee extensors and flexors cervical extensors and spinal extensors- Principles of isokinetic exercise Cybex device and it's advantages in improving muscle strength- Hydrotherapy- Principles, Practice, Indication, Contra-Indication

Unit V : Recent advancement in rehabilitation following joint replacement and arthroscopic surgeries of weight-bearing joints. Role of exercise therapy in regaining normal muscle function and ROM.

Reference

1. Principles of Exercise Therapy - DENA GARDINER 4th edition2007
2. Therapeutic Exercises - CAROLYN KISHNER 6th edition2012
3. Margaret Hollis - Practical Exercise Therapy 4th edition 1999
4. Facilitated stretching – Robert E.McAtee, Jeff charland 4th edition 2013
5. PNF in practice - susan s. adler, dominiekbeckers math buck 3rd edition 2008

Website

1. www.apta.org
2. ptjournal.apta.org

Journals

1. Journal of orthopaedic and sports physical therapy
2. Journal of exercise therapy and rehabilitation

Course Code 19BPT4MC03	Course Name: Massage Therapy	Theory	Practical	Total Credit
	Total Contact Hours -105	3	2	5
	Prerequisite Course - HSSC			
	Course Coordinator:			

Course Outcomes (CO)	
CO1	Provide high quality, cost effective soft tissue mobilization in order to promote health.
CO2	Manage patients with proper ethical codes and respect when treating with soft tissue mobilization.
CO3	Expertise in proper positioning and contact and continuity principles.
CO4	Explore advanced methods in massage to improve health outcomes.
CO5	Maintain professional manners and communication with the patient throughout the treatment session.

Mapping of Course Outcomes with Program Outcomes
(1/2/3 indicates strength of correlation 3-High, 2 Medium, 1 Low)

CO/ PO/ PSO	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10	PO 11	PO 12	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5
CO1	3	3	3	3	3	3	3	3	3	2	3	3	3	3	3	3	3
CO2	3	3	3	3	2	3	3	3	3	3	3	2	2	3	3	2	3
CO3	3	3	3	3	3	3	3	2	3	3	2	3	3	3	2	3	3
CO4	3	3	3	3	2	3	3	3	3	3	3	3	3	3	3	3	3
CO5	3	3	3	3	3	3	3	2	3	3	3	2	3	2	3	3	2

MASSAGE

Syllabus

Unit I : History of massage- Definition of massage - Mechanical points to be considered (Manipulation, time of day for treatment, comfort and support of patient-positioning, draping, bolstering, position of operator, using body weight, contact and continuity)- Technique –indication and contraindication- Classification of massage- Based on character of Technique- Stroking manipulation-Pressure manipulation- Vibratory manipulation -Tapotment or Percussion manipulation -Based on depth of tissue reached- (Light massage -Deep massage)- Based on parts of body massaged- (General massage-

local massage)-- Based on means of application of pressure-(Manual massage- Mechanical massage)- Physiological effects of massage- various body systems (Effect on-circulatory system, excretory system, muscular system, nervous system, metabolic system, respiratory system, skin, foot massage)

Unit II : MASSAGE TECHNIQUE - Stroking manipulation- Superficial stroking, deep stroking or Effleurage -Pressure manipulation- Kneading-palmar & digital kneading, ironing -Petrissage-picking up,Wringing, skin rolling -Friction-circular & transverse friction- Percussion manipulation-Clapping, hacking, beating, pounding, tenting- Contact heel percussion- Vibratory manipulation-vibratory& shaking

Unit III : TECHNIQUES USED FOR VARIOUS PARTS OF BODY - Massage for upper limb-scapular region, shoulder joint, upper arm, elbow joint,Forearm, wrist joint, hand- Massage for lower limb-thigh, knee joint, leg, foot (ankle & toes)- Massage for back-neck and upper back, middle and lower back, gluteal region- Massage for face - Massage for abdomen

Unit IV : SPORTS MASSAGE -Introduction-role of massage in sports -Massage manipulations stroking, effleurage, petrissage, acupressure,tapotement,Vibration, shaking - Ice massage- Categories of sports massage-pre event massage, intermediate massage, post Event massage

Unit V : THERAPEUTIC APPLICATION OF MASSAGE -Relaxation -Oedema -Radical mastectomy-Venous ulcer - Painful neuroma - Bells palsy -Sprain and Strain –Fibrositis- TECHNIQUE – EFFECTS ON ORGANS- SWEDISH MASSAGE – AYURVEDIC MASSAGE –AROMA THERAPY

Reference

1. Principles and practice of therapeutic massage –akhourggourangsinha 2nd edition 2010
2. Evidence based therapeutic massage - elizabeth holey, eileen cook 3rd edition 2011
3. Beards massage. -wood &becker 5th edition 2007
4. Massage for therapist- margaretthollis 3rd edition2099
5. Massage for the Beauty Therapist.- audreygitagoldber 3rd edition 1977

Website

www. Massagetherapyworld.com

www.ijtmb.org

Journals

International journal of therapeutic massage and body work research education and practice

Course Code 19BPT4AR01	Course Name: Microbiology	Theory	Practical	Total Credit
	Total Contact Hours -75	3	1	4
	Prerequisite Course - HSSC			
	Course Coordinator:			
Course Outcomes (CO)				
CO1	Learn the basics of microbiology and their classification.			
CO2	Learn about the Principles and construction of microscopy and its importance in microbial world.			
CO3	Explore the microbial nutrition and growth and understanding of different techniques to get pure culture.			
CO4	Understanding about host pathogen interaction, normal microflora in human body, different sample collection & diagnosis.			
CO5	Learn about the different aseptic techniques used to control the microorganisms.			

Mapping of Course Outcomes with Program Outcomes (1/2/3 indicates strength of correlation 3-High, 2 Medium, 1 Low)																	
CO/ PO/ PSO	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10	PO 11	PO 12	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5
CO1	3	3	3	3	3	3	3	3	3	2	3	3	3	3	3	3	3
CO2	3	3	3	3	2	3	3	3	3	3	3	2	2	3	3	2	3
CO3	3	3	3	3	3	3	3	2	3	3	2	3	3	3	2	3	3
CO4	3	3	3	3	2	3	3	3	3	3	3	3	3	3	3	3	3
CO5	3	3	3	3	3	3	3	2	3	3	3	2	3	2	3	3	2

MICROBIOLOGY

Syllabus

Unit I : Introduction-Classification- shape and arrangement-Disinfection and antiseptic - Sterilization and asepsis.- Allergy and hypersensitivity.

Unit II : Immunology – Definition, antigen, antibody reaction, autoimmunity, natural andAcquired immunity.

Unit III : Infection – Definition, source of infection, portal of entry, spread of infection, type.

Unit IV : Bacteriology – Infection caused byGram positive bacteria – clostridium tetani&coryne bacterium diphtheria - Gram negative bacteria – klebsiella, pseudomonas, salmonella, v.cholera-

Mycobacterium – M.tuberculosis, M.leprae, atypical mycobacteria - RTI - Meningitis - Enteric infection - Anaerobic infection - UTI - Leprosy, TB-STD - Wound infection- Hospital acquired infection

Unit V : .Viruses – Definition, size, shape, structure, classification, cultivation, diagnosis of viral infection- HIV – Hepatitis-. Polio -Measles -Rubella -Herpes

Reference

Text book

1. Text book of microbiology -paniker , ananthanarayanan9th edition 2005
2. Medical microbiology -parrickR.murraykens.Rosenthal Michael A.pfaller 5th edition 2012.
3. Textbook of microbiology - Surinderkumar 1st edition 2019

Website

www.microbiologyonline.org.uk

Journals

American society for microbiology

Course Code 19BPT4GE01	Course Name: Bioengineering	Theory	Practical	Total Credit
	Total Contact Hours -60	2	1	3
	Prerequisite Course - HSSC			
	Course Coordinator:			
Course Outcomes (CO)				
CO1	Understand the Psychological aspects of orthotic and prosthetic application.			
CO2	Acquire in brief knowledge about various materials used for splints/Orthosis & Prostheses.			
CO3	Acquire in brief knowledge about various selection criteria for splints/Orthosis & Prostheses.			
CO4	Acquire knowledge about biomechanical principles of application of variety of aids & appliances used for ambulation, protection & prevention.			
CO5	Acquire the skill of fabrication of simple splints made out of low cost material.			

Mapping of Course Outcomes with Program Outcomes (1/2/3 indicates strength of correlation 3-High, 2 Medium, 1 Low)																	
CO/ PO/ PSO	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10	PO 11	PO 12	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5
CO1	3	3	3	3	3	3	3	3	3	2	3	3	3	3	3	3	3
CO2	3	3	3	3	2	3	3	3	3	3	3	2	2	3	3	2	3
CO3	3	3	3	3	3	3	3	2	3	3	2	3	3	3	2	3	3
CO4	3	3	3	3	2	3	3	3	3	3	3	3	3	3	3	3	3
CO5	3	3	3	3	3	3	3	2	3	3	3	2	3	2	3	3	2

BIOENGINEERING

Syllabus

UNIT I : Introduction & Concepts in Bioengineering- Classification of bio engineering

UNIT II : Bio Engineering Concepts- Principles-Aids & Application in Bio Engineering

UNIT III: Biosensors -Bioreactor - Processing Units- Machine Design & Handling

UNIT IV : Computation- Laboratory- Instrumentation- Bioinformatics -Interpretation of biological data

UNIT V: Role of Bioengineering in rehabilitation and clinical practice- Evidences.

Reference

1.Biomedical Engineering Handbook by Robert C. Weast; Joseph D. Bronzino
2.Encyclopedia of Biomaterials and Biomedical Engineering by Gary L. Bowlin (Editor); Gary E. Wnek

Course Code 19BPT4GE02	Course Name: Obstetrics and Gynecology	Theory	Practical	Total Credit
	Total Contact Hours -60	2	1	3
	Prerequisite Course - HSSC			
	Course Coordinator:			

Course Outcomes (CO)	
CO1	Identify the Legal and safety issues associated with antenatal exercise classes.
CO2	Assess and handle mothers with specific physical needs and appreciation of a team approach to learning.
CO3	Analyse, interpret and evaluate appropriate exercise programs for women with specific needs.
CO4	Rationalize the treatment approaches according to the management needed and handle patients effectively.
CO5	Create awareness and carry out research in Obstetrics and Gynecology.

Mapping of Course Outcomes with Program Outcomes
(1/2/3 indicates strength of correlation 3-High, 2 Medium, 1 Low)

CO/ PO/ PSO	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10	PO 11	PO 12	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5
CO1	3	3	3	3	3	3	3	3	3	2	3	3	3	3	3	3	3
CO2	3	3	3	3	2	3	3	3	3	3	3	2	2	3	3	2	3
CO3	3	3	3	3	3	3	3	2	3	3	2	3	3	3	2	3	3
CO4	3	3	3	3	2	3	3	3	3	3	3	3	3	3	3	3	3
CO5	3	3	3	3	3	3	3	2	3	3	3	2	3	2	3	3	2

OBSTETRICS AND GYNECOLOGY

Syllabus

Unit I : Review the anatomy of the female pelvis and embryonic and foetal development.

Unit II : Hormones involved in female reproductive system and applied

Unit III : Outline the physiological skeletal changes during pregnancy, delivery and post-partum period.

Unit IV : High risk pregnancy and delayed labour

Unit V : Post partum complication and fitness

Reference

1. PHILIP BENNET CATHERINE WILLIAMSON – basic science in obstetrics and gynecology 4th edition 2010

Website:

1. www.ajog.org

Journals

1.International journal of OBG

2.American journal of OBG

Course Code 19BPT4CT04	Course Name: Clinical Training	Total Credit
	Total Contact Hours -255	3
	Prerequisite Course - HSSC	
	Course Coordinator:	
Course Outcomes (CO)		
CO1	Explain the components of basic assessment for a patient.	
CO2	List the impairments resulting in functional limitation and participation restriction.	
CO3	Demonstrate clinical observatory skill and the bedside manners.	
CO4	Understanding of policy of the inpatient service and outpatient services.	
CO5	Understand the role of physiotherapy in various clinical conditions and the documentation of patient service.	

Mapping of Course Outcomes with Program Outcomes
(1/2/3 indicates strength of correlation 3-High, 2 Medium, 1 Low)

CO/ PO/ PSO	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10	PO 11	PO 12	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5
CO1	3	3	3	3	3	3	3	3	3	2	3	3	3	3	3	3	3
CO2	3	3	3	3	2	3	3	3	3	3	3	2	2	3	3	2	3
CO3	3	3	3	3	3	3	3	2	3	3	2	3	3	3	2	3	3
CO4	3	3	3	3	2	3	3	3	3	3	3	3	3	3	3	3	3
CO5	3	3	3	3	3	3	3	2	3	3	3	2	3	2	3	3	2

CLINICAL TRAINING

Syllabus

Unit I : Clinical Observation for General Medicine, General Surgery Department

Unit II : Laboratory posting for Pathology and Microbiology

Unit III : Field visit for Fitness, Exercise therapy,Massage

Unit IV : Community Health Camp

Unit V : Co Curricular Activities

SEMESTER V - COURSE OUTCOME, CO PO MAPPING

Course Code 19BPT5MC01	Course Name: Electrotherapy I	Theory	Practical	Total Credit
	Total Contact Hours -120	4	2	6
	Prerequisite Course - HSSC			
	Course Coordinator:			
Course Outcomes (CO)				
CO1	Understand the physics related to electrotherapy application and operation of instruments related to electrotherapy application.			
CO2	Understand the physiology of Pain modulation and pain relief by Low and Medium frequency currents.			
CO3	Comprehend the different types of nerve lesions and plan electrotherapy.			
CO4	Demonstrate application of low and medium frequency application to stimulate muscles, pain modulation, electrodiagnosis using SD curve and FG testing			
CO5	Demonstrate the application of direct current for therapeutic indication.			

Mapping of Course Outcomes with Program Outcomes
(1/2/3 indicates strength of correlation 3-High, 2 Medium, 1 Low)

CO/ PO/ PSO	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10	PO 11	PO 12	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5
CO1	3	3	3	3	3	3	3	3	3	2	3	3	3	3	3	3	3
CO2	3	3	3	3	2	3	3	3	3	3	3	2	2	3	3	2	3
CO3	3	3	3	3	3	3	3	2	3	3	2	3	3	3	2	3	3
CO4	3	3	3	3	2	3	3	3	3	3	3	3	3	3	3	3	3
CO5	3	3	3	3	3	3	3	2	3	3	3	1	3	2	3	3	2

ELECTROTHERAPY I

Syllabus

Unit I : LF currents -IG, SF Currents, Parameters, Clinical indications- Therapeutic effects.

UNit II : SD curve- Selection of current- Intensity- Care of equipment- Patients

Unit III : Pain Gate theories

Unit IV : IFT , TENS- Dangers- Techniques- Therapeutic -Physiological uses.

Unit V : Russian currents, Sinusoidal currents.

Reference :

1. Clayton's Principles And Practice Of Electrotherapy - Forster And Palastanga - 8th Ed, 2005
2. Textbook Of Electrotherapy - Jagmohan Singh - 2nd Edition 2012
3. Electrotherapy Evidence Based Practices - Sheila Kitchen – 11th edition 2002.
4. Electrotherapy Explained Principles & Practices – Low & Reed – 4th Edition 2006.

Website

www.electrtherapy .org

https://books.google .co.in

www.physiostuff.com

Journals

1. AMERICAN PHYSICAL THERAPY ASSOCIATION
2. JOURNAL OF ORTHOPAEDIC & SPORTS PHYSICAL THERAPY

Course Code 19BPT5MC02	Course Name: Clinical Orthopedics	Theory	Practical	Total Credit
	Total Contact Hours -105	4	1	5
	Prerequisite Course - HSSC			
	Course Coordinator:			

Course Outcomes (CO)	
CO1	Knowledge about fractures of various bones, types, mechanism, clinical features, complications and management of fractures gained.
CO2	Dislocation of major joints and prevention are understood and major surgical procedures in orthopaedics including amputations gained.
CO3	Knowledge about bone and joint infectious diseases gained and tumors in bones and joints gained.
CO4	Knowledge about arthritis and other degenerative disorders of bones and joints gained and various musculo-skeletal problems its clinical diagnosis and management gained.
CO5	Knowledge about congenital and postural deformities, Sports injury mechanism, treatment and prevention, peripheral nerve injuries and deformities are gained.

Mapping of Course Outcomes with Program Outcomes
(1/2/3 indicates strength of correlation 3-High, 2 Medium, 1 Low)

CO/ PO/ PSO	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10	PO 11	PO 12	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5
CO1	3	3	3	3	3	3	3	3	3	2	3	3	3	3	3	3	3
CO2	3	3	3	3	2	3	3	3	3	3	3	2	2	3	3	2	3
CO3	3	3	3	3	3	3	3	2	3	3	2	3	3	3	2	3	3
CO4	3	3	3	3	2	3	3	3	3	3	3	3	3	3	3	3	3
CO5	3	3	3	3	3	3	3	2	3	3	3	1	3	2	3	3	2

CLINICAL ORTHOPEDICS

Syllabus

1. Indication- Contraindications- Arthroplasty- Arthrodesis- Tendon transfer- Soft tissue lesion
2. Fracture and Dislocation of spine -Extremities- Skull -Conservative care -Surgery -Investigations
3. Arthritis -Infections of bone- Joint Tumours -Poliomyelitis- Spinal deformities -Congenital deformities
4. Amputations- Pre and post operative care- Leprosy -Peripheral nerve injuries.

5. Keyhole Surgeries- Stem cell therapy- Spinal surgeries - Low back ache.

Reference

1. Textbook Of Orthpaedics And Traumatology- Prof. Mayailavahanan Natarajan – 7th Ed, 2011
2. Essential Orthopaedics -J. Maheswari –4th Edition2011
3. Text Book Of Orthopaedics – John Ebenazer – 2nd Edition 2010

Websites

1. Orthoinfo.aaos.org
2. www.orthogate.org

Journals

1. JOURNAL OF CLINICAL ORTHOPAEDICS & TRAUMA
2. JOURNAL OF CLINICAL & EXPERIMENTAL ORTHOPAEDICS

Course Code 19BPT5MC03	Course Name: Clinical Neurology and Neurosurgery	Theory	Practical	Total Credit
	Total Contact Hours -90	3	1	4
	Prerequisite Course - HSSC			
	Course Coordinator:			

Course Outcomes (CO)	
CO1	Acquisition of the clinical application of basic knowledge of the nervous system.
CO2	Development of communication skills that will facilitate the clinical interaction with patients with neurologic disorders and their families and thus ensure that complete, accurate data are obtained.
CO3	Development of competency in the single system neurological examination and acquisition of the knowledge necessary for the diagnosis and initial management of common acute and chronic neurological conditions.
CO4	Development of clinical problem-solving skills and strategies for health promotion and prevention of neurological damage.
CO5	Development of the attitudes and professional behaviours appropriate for clinical practice.

Mapping of Course Outcomes with Program Outcomes
(1/2/3 indicates strength of correlation 3-High, 2 Medium, 1 Low)

CO/ PO/ PSO	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10	PO 11	PO 12	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5
CO1	3	3	3	3	3	3	3	3	3	2	3	3	3	3	3	3	3
CO2	3	3	3	3	2	3	3	3	3	3	3	2	2	3	3	2	3
CO3	3	3	3	3	3	3	3	2	3	3	2	3	3	3	2	3	3
CO4	3	3	3	3	2	3	3	3	3	3	3	3	3	3	3	3	3
CO5	3	3	3	3	3	3	3	2	3	3	3	2	3	2	3	3	2

CLINICAL NEUROLOGY AND NEUROSURGERY

Syllabus

Unit I : Neuroanatomy -Brain and Spinal cord- Neurophysiology -Tone- Posture -Balance -Movement - Pain.

Unit II : Clinical features and Management of Cerebral palsy, Spina Bifida, Hydrocephalus- Trauma of Head and Spine, Cerebrovascular Accident.

Unit III : Demyelinating diseases of spinal cord -clinical features- Investigation Management -Cerebellar lesions- Tumours.

Unit IV: Infection of Brain and Spinal cord- Diseases of muscle -Peripheral nerve disorders- Degenerative disorders- Epilepsy- Motor neurone disease.

Unit V : Cranial Nerve Assessment- Higher mental function- Surgeries of Head and Spine.

Reference

Text Book

1. Neurology And Neurosurgery Illustrated- Kenneth W. Lindsay. Ian Bone - 5th Edition-2011
2. Clinical Neuro Anatomy - Richard .S.Snell`S – 7th Edition 2009
3. Brain & Bannister Clinical Neurology- Sir Roger Bannister – 7th Edition 1992
4. Principles & Practices Of Medicine - Davidson`S – 22nd Edition 2014

Website

1. www.brainfacts .org
2. www.neurology.org

Journals

1. JOURNAL OF CLINICAL NEUROSCIENCE
2. JOURNAL OF CLINICAL NEUROPHYSIOLOGY

Course Code 19BPT5FC01	Course Name: Kinesiology	Theory	Practical	Total Credit
	Total Contact Hours -90	3	1	4
	Prerequisite Course - HSSC			
	Course Coordinator:			
Course Outcomes (CO)				
CO1	Describe the terminology and describe the normal biomechanics and pathomechanics of joints of the human body.			
CO2	Demonstrate the mechanical analysis of human motion.			
CO3	Describe the anatomical and physiological aspects of human motion.			
CO4	Experience quantitative methods of movement analysis in the laboratory sessions.			
CO5	Apply analytic methods to specific example of normal human motor performance.			

Mapping of Course Outcomes with Program Outcomes (1/2/3 indicates strength of correlation 3-High, 2 Medium, 1 Low)																	
CO/ PO/ PSO	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10	PO 11	PO 12	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5
CO1	3	3	3	3	3	3	3	3	3	2	3	3	3	3	3	3	3
CO2	3	3	3	3	2	3	3	3	3	3	3	2	2	3	3	2	3
CO3	3	3	3	3	3	3	3	2	3	3	2	3	3	3	2	3	3
CO4	3	3	3	3	2	3	3	3	3	3	3	3	3	3	3	3	3
CO5	3	3	3	3	3	3	3	2	3	3	3	2	3	2	3	3	2

KINESIOLOGY

Syllabus

UNIT I : Fundamentals of Structure and Motion of the Human Body - Basics

UNIT II : Kinesiology of the Upper Extremity: Shoulder Unit - The shoulder complex - Structure and function of the bone and joints of the shoulder joint - Mechanics and Pathomechanics of Muscle activity at the shoulder complex - Analysis of forces on the shoulder elbow, wrist, hand during activity - Mechanics and Pathomechanics of the special connective tissues in the hand - Mechanics and Pathomechanics of intrinsic of the muscles of the hand

UNIT III : Structure and function of the articular structure of the TMJ - Analysis of the forces on the TMJ during activity. Spine unit: Structure & function of the bone and joints of Cervical spine, Thoracic spine & Lumbar spine and Pelvis.

UNIT IV : Structure and function of Bones and Non Contractile Elements of hip, Knee, Ankle & Foot complex and its analysis of forces.

UNIT V :Posture & Gait: Characteristics of Normal posture and common postural abnormalities - Characteristics of Normal Gait and factors influencing it - Characteristics of Normal Running/jogging, Normal sprinting and factors influencing it.

Reference

1.Robert Frost Ph.D. Applied Kinesiology, Revised Edition: A Training Manual and Reference Book of Basic Principles and Practices

2..Harvard (18th ed.) FROST, R. (2013). Applied kinesiology: a training manual

Course Code 19BPT5GE01	Course Name: Medical Terminology and Record Keeping	Theory	Practical	Total Credit
	Total Contact Hours -60	2	1	3
	Prerequisite Course - HSSC			
	Course Coordinator:			
Course Outcomes (CO)				
CO1	Demonstrate ability to apply new knowledge to understanding medical terms in their proper contexts.			
CO2	Differentiate among the various classes of drugs and learn their actions and side effects.			
CO3	Differentiate among various laboratory tests, clinical procedures, and clinical healthcare professionals.			
CO4	Apply logical, critical and analytical processes in identifying problems and alternate solutions related to records management in the healthcare environment.			
CO5	Recognize and use different types of EMR and EHR management systems for medical office management.			

Mapping of Course Outcomes with Program Outcomes
(1/2/3 indicates strength of correlation 3-High, 2 Medium, 1 Low)

CO/ PO/ PSO	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10	PO 11	PO 12	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5
CO1	3	3	3	3	3	3	3	3	3	2	3	3	3	3	3	3	3
CO2	3	3	3	3	2	3	3	3	3	3	3	2	2	3	3	2	3
CO3	3	3	3	3	3	3	3	2	3	3	2	3	3	3	2	3	3
CO4	3	3	3	3	2	3	3	3	3	3	3	3	3	3	3	3	3
CO5	3	3	3	3	3	3	3	2	3	3	3	2	3	2	3	3	2

MEDICAL TERMINOLOGY AND RECORD KEEPING

Syllabus

Unit I : Anatomy and Physiology- How body system relates- Application of anatomical knowledge to coding records and information- Diseases & Coding

Unit II : Medical Terminology- Medium of communication- Knowledge- Various terms- Shorthand- Prefixes and Suffixes used in medicine.

Unit III : Medical Coding- diagnostic coding- Classification of disease- Awareness about Medicare centre- medical service guidelines- Application read procedural statement

Unit IV : Healthcare Delivery- Collect and collate data training

Unit V : Use coding manuals- Interpret records- Medical billing- Review patients record. Compiling patient health information records/files- Complete and updated records of patients with every minute details- Communicating with other health professionals or researchers when requested as per the facility's laid down protocols- Maintaining digital records

Reference

1.Buck's Step-by-Step Medical Coding, 2019 Edition

2.Betsy J. Shiland MS RHIA CCS CPC CPHQ CTR CHDA CPB

3. Medical Terminology & Anatomy for Coding

Course Code 19BPT5GE02	Course Name: Data Science	Theory	Practical	Total Credit
	Total Contact Hours -60	2	1	3
	Prerequisite Course - HSSC			
	Course Coordinator:			

Course Outcomes (CO)	
CO1	Demonstrate proficiency with statistical analysis of Data.
CO2	Execute statistical analyses with professional statistical software.
CO3	Demonstrate skill in Data management.
CO4	Develop the ability to build and assess Databased models.
CO5	Apply data science concepts and methods to solve problems in real-world contexts and will communicate these solutions effectively.

Mapping of Course Outcomes with Program Outcomes
(1/2/3 indicates strength of correlation 3-High, 2 Medium, 1 Low)

CO/ PO/ PSO	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10	PO 11	PO 12	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5
CO1	3	3	3	3	3	3	3	3	3	2	3	3	3	3	3	3	3
CO2	3	3	3	3	2	3	3	3	3	3	3	2	2	3	3	2	3
CO3	3	3	3	3	3	3	3	2	3	3	2	3	3	3	2	3	3
CO4	3	3	3	3	2	3	3	3	3	3	3	3	3	3	3	3	3
CO5	3	3	3	3	3	3	3	2	3	3	3	2	3	2	3	3	2

DATA SCIENCE

Syllabus

Unit I: Introduction to Data Science,Understanding Exploratory Data Analysis

Unit II : Machine Learn going, Model selection and evaluation

Unit III : Data Warehousing, DataMining,DataVisualization

Unit IV : Cloud Computing, Business Intelligence, Storytelling with Data

Unit V : Communication and Presentation

Reference

1. Introduction to Data Science by Canvas WPI Hub
2. Introduction to Data Science in Python by Coursera

3. Introduction to Data Science by Paul G. Allen School of Computer Science & Engineering, University of Washington
4. Introduction to Data Science by High School of Economics, National Research University

Course Code 19BPT5CT05	Course Name: Clinical Training	Total Credit
	Total Contact Hours -255	3
	Prerequisite Course - HSSC	
	Course Coordinator:	
Course Outcomes (CO)		
CO1	Explain the components of basic assessment for a patient.	
CO2	List the impairments resulting in functional limitation and participation restriction.	
CO3	Demonstrate clinical observatory skill and the bed side manners.	
CO4	Understanding of policy of the inpatient service and outpatient services.	
CO5	Understand the role of physiotherapy in various clinical conditions and the documentation of patient service.	

Mapping of Course Outcomes with Program Outcomes (1/2/3 indicates strength of correlation 3-High, 2 Medium, 1 Low)																	
CO/ PO/ PSO	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10	PO 11	PO 12	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5
CO1	3	3	3	3	3	3	3	3	3	2	3	3	3	3	3	3	3
CO2	3	3	3	3	2	3	3	3	3	3	3	2	2	3	3	2	3
CO3	3	3	3	3	3	3	3	2	3	3	2	3	3	3	2	3	3
CO4	3	3	3	3	2	3	3	3	3	3	3	3	3	3	3	3	3
CO5	3	3	3	3	3	3	3	2	3	3	3	1	3	2	3	3	2

CLINICAL TRAINING

Syllabus

Unit I : Field visit to Ortho, Neuro, Cardio, Respiratory Department

Unit II : Visit to Technomed for Electrotherapy

Unit III : Clinical Training Physiotherapy Department

Unit IV : Community Health Camps for Community Medicine

Unit V : Co Curricular Activities

SEMESTER VI - COURSE OUTCOME, CO PO MAPPING

Course Code 19BPT6MC01	Course Name: Electrotherapy II	Theory	Practical	Total Credit
	Total Contact Hours -120	4	3	6
	Prerequisite Course - HSSC			
	Course Coordinator:			

Course Outcomes (CO)	
CO1	Understands the physics background for the use of heat, sound and soft LASER as therapeutic modality.
CO2	Explain the parameters, indications, contraindications, methods of application for high frequency current applications.
CO3	Explain the parameters, indications, contraindications, methods of application for wax therapy, ultrasound and LASER.
CO4	Explain the parameters, indications, contraindications, methods of application for ultraviolet and infrared radiations.
CO5	Select and apply the highfrequency and actinotherapy modalities, LASER. Waxbath and cryotherapy under supervision.

Mapping of Course Outcomes with Program Outcomes
(1/2/3 indicates strength of correlation 3-High, 2 Medium, 1 Low)

CO/ PO/ PSO	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10	PO 11	PO 12	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5
CO1	3	3	3	3	3	3	3	3	3	2	3	3	3	3	3	3	3
CO2	3	3	3	3	2	3	3	3	3	3	3	2	2	3	3	2	3
CO3	3	3	3	3	3	3	3	2	3	3	2	3	3	3	2	3	3
CO4	3	3	3	3	2	3	3	3	3	3	3	3	3	3	3	3	3
CO5	3	3	3	3	3	3	3	2	3	3	3	1	3	2	3	3	2

ELECTROTHERAPY II

Syllabus

Unit I : High frequency modalities- Treatment- Care- Dangers- Precautions- Technique

Unit II : Physiologic and Therapeutic effects, Practice of SWD- MWD, LASER-Ultrasound.

Unit III : Superficial Heat modalities -Care- Technique -Physiological, Therpeutic effects of IRR, UVR, Paraffin Wax, Moist heat

Unit IV : Cryotherapy, Traction, Shockwave Therapy

Unit V : EMG- NCV- Biofeedback- Principles -Uses -Applications

Reference

1. Clayton's Principles And Practice Of Electrotherapy - Forster And Palastanga - 8th Edition 2005

2. Textbook Of Electrotherapy - Jagmohan Singh - 2nd Edition 2012

3. Electrotherapy Evidence Based Practices - Sheila Kitchen – 11th edition 2002.

4. Electrotherapy Explained Principles & Practices – Low & Reed – 4th Edition 2006.

Website

www.electrtherapy .org

https://books.google .co.in

www.physiostuff.com

Journals

1. AMERICAN PHYSICAL THERAPY ASSOCIATION
2. JOURNAL OF ORTHOPAEDIC & SPORTS PHYSICAL THERAPY

Course Code 19BPT6MC02	Course Name: Clinical Cardiovascular Conditions for Physiotherapist	Theory	Practical	Total Credit
	Total Contact Hours -105	4	1	5
	Prerequisite Course - HSSC			
	Course Coordinator:			
Course Outcomes (CO)				
CO1	Interpretation of different invasive and non invasive diagnostic investigation to make proper assessment in various cardiorespiratory dysfunction.			
CO2	Develops the skills to execute different Physiotherapy techniques used in treatment of Cardio-respiratory dysfunctions.			
CO3	Select strategies for cure, care & prevention; adopt restorative & rehabilitative measures for maximum possible functional independence of a patient at home, workplace & in community			
CO4	Able to execute the effective Physiotherapeutic measures with appropriate clinical reasoning to improve pulmonary function.			
CO5	Design & execute an effective tailored cardiopulmonary rehabilitation program and learn and execute the principle of care of patients at the Intensive care area.			

Mapping of Course Outcomes with Program Outcomes
(1/2/3 indicates strength of correlation 3-High, 2 Medium, 1 Low)

CO/ PO/ PSO	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10	PO 11	PO 12	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5
CO1	3	3	3	3	3	3	3	3	3	2	3	3	3	3	3	3	3
CO2	3	3	3	3	2	3	3	3	3	3	3	2	2	3	3	2	3
CO3	3	3	3	3	3	3	3	2	3	3	2	3	3	3	2	3	3
CO4	3	3	3	3	2	3	3	3	3	3	3	3	3	3	3	3	3
CO5	3	3	3	3	3	3	3	2	3	3	3	1	3	2	3	3	2

CLINICAL CARDIO VACULAR CONDITIONS FOR PHYSIOTHERAPIST

Syllabus

Unit I : Anatomy -Physiology of Cardiovascular -Blood pressure.

Unit II : ECG, EchoCardigraphy, Angiogram - Energy expenditure of daily activities- Cardiovascular stress testing.

Unit III : Clinical features and Management of Carcinoma, Myocardial ischemia, Cyanotic and Acyanotic heart conditions.congenital and acquired heart diseases.

Unit IV : Thoracic surgery -Cardiac surgery -Open -closed Preoperative evaluation -care.

Unit V : ICU management care in Ventilator -Suctioning Oxygen therapy.

Reference

1. Cash's Textbook Of Chest , Heart And Vascular Disorders For Physiotherapist - Patricia A. Downie – 4th Edition 1987

2. Tidy's Physiotherapy – Stuart Porter – 19th Edition 2013

3. Text Book Of Physiotherapy For Cardio Respiration , Cardiac Surgery & Thoracic Surgery Condition –G.S. Madhuri 2008

Website

www.ajcoline.org

www.cardiologyonline.com

Journals

1. INTERNATIONAL JOURNAL OF CLINICAL CARDIOLOGY

Course Code 19BPT6MC03	Course Name: Clinical Reasoning and Evidence Based Physiotherapy	Theory	Practical	Total Credit
	Total Contact Hours -90	3	1	4
	Prerequisite Course - HSSC			
	Course Coordinator:			

Course Outcomes (CO)	
CO1	Define evidence based practice & make decisions based on prescriptive, descriptive and artificially added approach & categorize the Courses and objects of knowledge
CO2	Differentiate between screening and diagnosis & understand the importance of history taking and physical examination.
CO3	Differentiate types of research methods, modification and justification of physiotherapy treatment approaches & identify and manage ambiguity and ambiguous patient problem.
CO4	Identify and appreciate ethical principles in physiotherapy, emphasize the importance of patient consent, & Identify situations beyond the scope of physiotherapists.
CO5	Apply the evidence in to clinical decision making.

Mapping of Course Outcomes with Program Outcomes
(1/2/3 indicates strength of correlation 3-High, 2 Medium, 1 Low)

CO/ PO/ PSO	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10	PO 11	PO 12	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5
CO1	3	3	3	3	3	3	3	3	3	2	3	3	3	3	3	3	3
CO2	3	3	3	3	2	3	3	3	3	3	3	2	2	3	3	2	3
CO3	3	3	3	3	3	3	3	2	3	3	2	3	3	3	2	3	3
CO4	3	3	3	3	2	3	3	3	3	3	3	3	3	3	3	3	3
CO5	3	3	3	3	3	3	3	2	3	3	3	1	3	2	3	3	2

CLINICAL REASONING AND EVIDENCE BASED PHYSIOTHERAPY

Syllabus

Unit I : The physiotherapy process and ICF concerning disability, functioning and contextual factors including behavioural medical aspects in rehabilitation in different rehabilitation contexts

Unit II : The role of the physiotherapist as caregiver, educationalist, consultant and team member

Unit III : Evidence-based working method -published knowledge, best practice, the patient's wishes and available resources -Contraindications for different examination and treatment methods

Unit IV : Gender, culture, diversity, laws and regulations and ethical rules

Unit V : Physical activity in rehabilitation

Reference

1.Clinical Reasoning in the Health Professions 3rd Edition

Authors: Joy Higgs Mark Jones Stephen Loftus Nicole Christensen

2.Clinical reasoning and evidence-based practice Merrill Turpin, Joy Higgs

Course Code 19BPT6AR01	Course Name: Community Medicine	Theory	Practical	Total Credit
	Total Contact Hours -90	3	1	4
	Prerequisite Course - HSSC			
	Course Coordinator:			
Course Outcomes (CO)				
CO1	Epidemiological implications of impairment and handicap and disability, health statistics. National health schemes and its benefits.			
CO2	Immunization programmes – malnutrition and early detection of disabling conditions and Intervention.			
CO3	Categorizes various rehabilitations and describes its advantages and disadvantages.			
CO4	Explains about communicable and non-communicable diseases and its implications.			
CO5	Influence of nutritional factors on disability and role of community leaders and health professionals in health education.			

Mapping of Course Outcomes with Program Outcomes (1/2/3 indicates strength of correlation 3-High, 2 Medium, 1 Low)																	
CO/ PO/ PSO	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10	PO 11	PO 12	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5
CO1	3	3	3	3	3	3	3	3	3	2	3	3	3	3	3	3	3
CO2	3	3	3	3	2	3	3	3	3	3	3	2	2	3	3	2	3
CO3	3	3	3	3	3	3	3	2	3	3	2	3	3	3	2	3	3
CO4	3	3	3	3	2	3	3	3	3	3	3	3	3	3	3	3	3
CO5	3	3	3	3	3	3	3	2	3	3	3	1	3	2	3	3	2

COMMUNITY MEDICINE

Syllabus

Unit I : Health and disease- Factors influencing - Prevention- Diseases with disability.

Unit II : National Health Scheme- Health Care delivery- ESI- Social Security measures- Occupational Hazards- Prevention -Treatment -Workmen Compensation Act.

Unit III : Community based-Institution based Rehabilitation- Communicable diseases- Mode of Transmission -Prevention -Non communicable diseases -Epidemiology.

Unit IV : Health education -Leaders- Methods -Role in rehabilitation

Unit V : Health agency National International Environmental Health

Reference

1.Park's Textbook Pf Preventive Medicine And Social Medicine - K.Park – 23rd 2014

2.Textbook Of Community Medicine Preventive And Social Medicine -Sunder Lal Adarsh Pankaj – 2nd Edition 2013

3.TEXT BOOK OF ENVIRONMENTAL STUDIES BY ERACH BHARUCHA 2nd edition

4.TEXTBOOK ON ENVIRONMENTAL STUDIES BY S. KANAGASABAHI

Website

http://www.world .org/weo/environment

http://www.cengage.com/biology /discipline_content/es_weblinks.htm

Journal

1. INDIAN JOURNAL OF COMMUNITY MEDICINE
2. INTERNATIONAL JOURNAL OF COMMUNITY MEDICINE & PUBLIC HEALTH

Course Code 190BPT6GE01	Course Name: Professionalism and Values	Theory	Practical	Total Credit
	Total Contact Hours -60	2	1	3
	Prerequisite Course - HSSC			
	Course Coordinator:			
Course Outcomes (CO)				
CO1	Demonstrate respect and compassionate use of medical skills for cardiac patients. This includes the treatment of patients and families dealing with life-threatening illnesses.			
CO2	Demonstrate respect and compassionate use of medical skills severely-ill patients.			
CO3	Develop and demonstrate an increasing commitment to carrying out professional responsibilities and adherence to ethical principles.			
CO4	Effective therapeutic relationship with patients and families will be demonstrated through listening, narrative and nonverbal skills; education.			
CO5	Counselling of the patients and families.			

Mapping of Course Outcomes with Program Outcomes
(1/2/3 indicates strength of correlation 3-High, 2 Medium, 1 Low)

CO/ PO/ PSO	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10	PO 11	PO 12	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5
CO1	3	3	3	3	3	3	3	3	3	2	3	3	3	3	3	3	3
CO2	3	3	3	3	2	3	3	3	3	3	3	2	2	3	3	2	3
CO3	3	3	3	3	3	3	3	2	3	3	2	3	3	3	2	3	3
CO4	3	3	3	3	2	3	3	3	3	3	3	3	3	3	3	3	3
CO5	3	3	3	3	3	3	3	2	3	3	3	1	3	2	3	3	2

PROFESSIONALISM AND VALUES

Syllabus

Unit I : Universal human value.love,truth, right conduct,peace and non violence

Unit II : Scholl circle,home circle, social circle, occupational circle,-Adaptation of behavior,values of good life

Unit III : Professionalism in medical field

Unit IV : Professionalism as physiotherapist- Integration,honesty, transparency etc

Unit V : Code of professionalism

Reference

1.Professional Ethics and Human Values by Govindarajan M

2.A Foundation Course in Human Values and Professional Ethics by R.R. Gaur,R. Sangal,G.P. Bagaria

3.A Textbook on Professional Ethics and Human Values by R.S.

Course Code 19BPT6GE02	Course Name: Healthcare Management	Theory	Practical	Total Credit
	Total Contact Hours -60	2	1	3
	Prerequisite Course - HSSC			
	Course Coordinator:			
Course Outcomes (CO)				
CO1	Demonstrate knowledge of healthcare system including delivery, finances, quality, regulatory policies and practices and compliance, organization effectiveness and clinical and support services.			
CO2	Demonstrate competencies in communication, interpersonal relations, management and leadership.			
CO3	Demonstrate knowledge of resources, advocacy and cultural competence with individuals, groups, communities, and populations across the lifespan.			
CO4	Apply and evaluate the efficacy of information technology in improving patient care, patient outcomes and a creating a safe patient care environment.			
CO5	Analyze the impact of social policy, finance, regulations, and legislation on healthcare for individuals, groups, communities, and populations across the lifespan, and for the professional practice of healthcare management, through an ethical-legal framework.			

Mapping of Course Outcomes with Program Outcomes
(1/2/3 indicates strength of correlation 3-High, 2 Medium, 1 Low)

CO/ PO/ PSO	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10	PO 11	PO 12	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5
CO1	3	3	3	3	3	3	3	3	3	2	3	3	3	3	3	3	3
CO2	3	3	3	3	2	3	3	3	3	3	3	2	2	3	3	2	3
CO3	3	3	3	3	3	3	3	2	3	3	2	3	3	3	2	3	3
CO4	3	3	3	3	2	3	3	3	3	3	3	3	3	3	3	3	3
CO5	3	3	3	3	3	3	3	2	3	3	3	1	3	2	3	3	2

HEALTH CARE MANAGEMENT

Syllabus

Unit I : Structuring of Health Care sector as per the service provider(Government hospitals, Private hospitals, hospitals run by NGOs). -- as per the services being provided (Primary,

Secondary, Tertiary & Preventive). as per the size of Hospitals (Course Centre, Primary health care centre, community health care, district hospitals and teaching institutions)

Unit II : Health Care Scenario-- statistics of industry Present opportunities and Challenges in Health Care Management; worldwide scenario.

Unit III : Overview of HR in Health Care, Manpower in Health Care Management

Unit IV : Quality and regulations in Health Care: Quality in Health Care Management, Regulation in Health Care Management

Unit V : Financing in Health Care: Accounts, Stores, Purchases, Fund raising and Analysis

References

1.Sharon B. Buchbinde, Healthcare Management –with access, 3rs ed, Jones & Bartlett Publishers, 2017.

2.Sandra Buttigieg , International Best Practices in Health Care Management , Emerald Group Publishing Ltd, 2019

Course Code 19BPT6CT06	Course Name: Clinical Training	Total Credit
	Total Contact Hours : 255	3
	Prerequisite Course - HSSC	
	Course Coordinator:	
Course Outcomes (CO)		
CO1	Explain the components of basic assessment for a patient.	
CO2	List the impairments resulting in functional limitation and participation restriction.	
CO3	Demonstrate clinical observatory skill and the bed side manners.	
CO4	Understanding of policy of the inpatient service and outpatient services.	
CO5	Understand the role of physiotherapy in various clinical conditions and the documentation of patient service.	

Mapping of Course Outcomes with Program Outcomes
(1/2/3 indicates strength of correlation 3-High, 2 Medium, 1 Low)

CO/ PO/ PSO	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10	PO 11	PO 12	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5
CO1	3	3	3	3	3	3	3	3	3	2	3	3	3	3	3	3	3
CO2	3	3	3	3	2	3	3	3	3	3	3	2	2	3	3	2	3
CO3	3	3	3	3	3	3	3	2	3	3	2	3	3	3	2	3	3
CO4	3	3	3	3	2	3	3	3	3	3	3	3	3	3	3	3	3
CO5	3	3	3	3	3	3	3	2	3	3	3	1	3	2	3	3	2

CLINICAL TRAINING

Syllabus

Unit I : Field visit to Ortho, Neuro, Cardio, Respiratory Department

Unit II : Visit to Technomed for Electrotherapy

Unit III : Clinical Training Physiotherapy Department

Unit IV : Community Health Camps for Community Medicine

Unit V : Co Curricular Activities

SEMESTER VII - COURSE OUTCOME, CO PO MAPPING

Course Code 19BPT7MC01	Course Name: Physiotherapy in Orthopedic Conditions	Theory	Practical	Total Credit
	Total Contact Hours -135	4	2	6
	Prerequisite Course - HSSC			
	Course Coordinator:			
Course Outcomes (CO)				
CO1	Understand relevant investigation techniques to diagnose various orthopaedic conditions.			
CO2	Able to discuss etiology, clinical symptoms and management of various musculoskeletal conditions.			
CO3	Illustrate the clinical examination, special test and interpretation of pre & post operative cases.			
CO4	Able to read and interpret features of X-ray and correlate with the clinical findings.			
CO5	Understand the treatment started according with upgradation need to be match with patient condition.			

Mapping of Course Outcomes with Program Outcomes
(1/2/3 indicates strength of correlation 3-High, 2 Medium, 1 Low)

CO/ PO/ PSO	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10	PO 11	PO 12	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5
CO1	3	3	3	3	3	3	3	3	3	2	3	3	3	3	3	3	3
CO2	3	3	3	3	2	3	3	3	3	3	3	2	2	3	3	2	3
CO3	3	3	3	3	3	3	3	2	3	3	2	3	3	3	2	3	3
CO4	3	3	3	3	2	3	3	3	3	3	3	3	3	3	3	3	3
CO5	3	3	3	3	3	3	3	2	3	3	3	1	3	2	3	3	2

PHYSIOTHERAPY IN ORTHOPAEDIC CONDITIONS

Syllabus

Unit I : Physiotherapy Assessment, Evaluation, Treatment, Orthoses and prostheses in upper Limb fractures dislocations soft tissue injuries soft tissue lesion deformities and amputation.

Unit II : Physiotherapy Assessment, Evaluation, Treatment, Orthoses, Prostheses & Assistive devices in lower Limb fractures and Dislocations, Soft tissue injuries, Soft tissue lesions, Deformities and Amputation.

Unit III : Physiotherapy Assessment, Evaluation, Treatment, Orthoses, Prostheses & Assistive devices in Vertebral Column fractures and Dislocations, Soft tissue injuries, Soft tissue lesions, Deformities and Amputation, Spondylosis, Spondylisthesis, IVDP.

Unit IV: Physiotherapy Assessment, Evaluation, Treatment, Orthoses, Prostheses & Assistive devices in Congenital and Acquired Infectious diseases, Congenital and Acquired Deformities, Autoimmune diseases.

Unit V : Physiotherapy Assessment, Evaluation, Treatment, Orthoses, Prostheses & Assistive devices in Neuro Musculo Skeletal disorders.

Reference

1. Essentials of orthopaedics and applied physiotherapy - Jayant Joshi, Prakash Kotwal, 2nd edition, Elsevier, 2011.
2. Essentials of orthopeadics for physiotherapist, John Ebnezer, 2nd edition, 2011.
3. Principles and Their Applications - Turek's Orthopaedics, 6th revised edition, Lippincott Williams and Wilkins, 2005.
4. Orthopaedic Physical Therapy - Robert A. Donatelli, Churchill livingstone Elsevier, 4 edition 2009.
5. Tidy's physiotherapy – Stuart Porter, 19th edition, Churchill Livingstone Elsevier, 2013.

Journals

1. JOURNAL OF ORTHOPAEDIC & SPORTS PHYSICAL THERAPY (JOSPT)
2. JOURNAL OF THE AMERICAN PHYSICAL THERAPY ASSOCIATION (APTA)
3. JOURNAL OF PHYSIOTHERAPY AUSTRALIAN PHYSIOTHERAPY ASSOCIATION.
4. JOURNAL OF PHYSIOTHERAPY & PHYSICAL REHABILITATION
5. ELSEVIER

Website

1. https://www.orthopt.org
2. www.orthophysio.com
3. Sportsandortho.net

Course Code 19BPT7MC02	Course Name: Physiotherapy in Neurological Conditions	Theory	Practical	Total Credit
	Total Contact Hours -135	4	2	6
	Prerequisite Course - HSSC			
	Course Coordinator:			
Course Outcomes (CO)				
CO1	Learn the physical assessment in neurological conditions of the central nervous system and peripheral nervous system.			
CO2	Identify the disability due to neurological dysfunction.			
CO3	Understand the various Physiotherapy techniques used in management of Neurological conditions of the central nervous system and peripheral nervous system.			
CO4	Understand the basic principles of Physiotherapy assessment and functional assessment.			
CO5	Application of Physiotherapy in various Cranial & Spinal surgeries.			

Mapping of Course Outcomes with Program Outcomes
(1/2/3 indicates strength of correlation 3-High, 2 Medium, 1 Low)

CO/ PO/ PSO	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10	PO 11	PO 12	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5
CO1	3	3	3	3	3	3	3	3	3	2	3	3	3	3	3	3	3
CO2	3	3	3	3	2	3	3	3	3	3	3	2	2	3	3	2	3
CO3	3	3	3	3	3	3	3	2	3	3	2	3	3	3	2	3	3
CO4	3	3	3	3	2	3	3	3	3	3	3	3	3	3	3	3	3
CO5	3	3	3	3	3	3	3	2	3	3	3	1	3	2	3	3	2

PHYSIOTHERAPY IN NEUROLOGICAL CONDITIONS

Syllabus

Unit I : Physiotherapy Assessment, Evaluation, Treatment, Orthoses, Prostheses & Assistive devices in Central nervous system diseases.

Unit II : Physiotherapy Assessment, Evaluation, Treatment, Orthoses, Prostheses & Assistive devices in Peripheral Nervous System diseases.

Unit III : Physiotherapy Assessment, Evaluation, Treatment, Orthoses, Prostheses & Assistive devices in congenital and acquired neurological diseases.

Unit IV : Physiotherapy Assessment, Evaluation, Treatment, Orthoses, Prostheses & Assistive devices in Auto Immune diseases, Neuropathies, Myopathies

Unit V : Physiotherapy Assessment, Evaluation, Treatment, Orthoses, Prostheses & Assistive devices in Congenital, Genetic, Paediatric, Geriatric Neurological conditions.

Reference

1. Cash's Textbook of Neurology for Physiotherapists - Patricia Downie, 4th edition, Jaypee Brothers Publishers, 1993.
2. Adult Hemiplegia: Evaluation & Treatment- Bobath, 3rd edition, Oxford: Butterworth Heinemann, 1990.
3. Neurological Rehabilitation - Carr and Shepherd, 2nd edition, Oxford: Butterworth Heinemann Elsevier, 2010.
4. Tetraplegia and Paraplegia: A guide for Physiotherapist – Ida Bromley, 6th edition, Churchill Livingstone,2006.
5. Neurological Physiotherapy: A Problem Solving Approach - Susan Edwards, 2nd edition, Elsevier Churchill Livingstone, 2001.
6. Umphreds Neurological Rehabilitation – Darcy A. Umphred, 6th edition, Elsevier Mosby, 2012.
7. Geriatric Physical Therapy – Andrew A. Guccione, 3rd edition, Elsevier Mosby, 2012.
8. Paediatric Physical Therapy – Jan S. Tecklin, 5th edition, Lippincott Williams & Wilkins, 2014.
9. Treatment of Cerebral Palsy and Motor Delay – Sophie Levitt, 5th edition, Wiley – Blackwell, 2010.
10. Textbook of Physical Rehabilitation - Susan ‘B’. O Sulivan, 6th edition, F.A.Davis Company, 2013.
11. Tidy’s Physiotherapy, Stuart Porter, Churchill Livingstone, 2013.

Course Code 19BPT7MC03	Course Name: Clinical Respiratory Conditions for Physiotherapists	Theory	Practical	Total Credit
	Total Contact Hours -60	3	1	4
	Prerequisite Course - HSSC			
	Course Coordinator:			
Course Outcomes (CO)				
CO1	Describe surgical treatment, ECMO therapy, clinical indications and physiotherapy interventions to promote optimal outcomes.			
CO2	Describe the significance of palliative care team involvement in patients with respiratory disease and the role of the physiotherapist.			
CO3	Describe the current strategies to treat copd,infectious and restrictive lung diseases, interventions, barriers to treatment, and application to physiotherapy practice.			
CO4	Describe the risk factors for DVT and pulmonary embolism, diagnostics, standard and innovative treatments for pulmonary embolism.			
CO5	Describe the current electrophysiology updates, application to Physiotherapy practice, and Physiotherapy interventions to promote optimal outcomes.			

Mapping of Course Outcomes with Program Outcomes
(1/2/3 indicates strength of correlation 3-High, 2 Medium, 1 Low)

CO/ PO/ PSO	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10	PO 11	PO 12	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5
CO1	3	3	3	3	3	3	3	3	3	2	3	3	3	3	3	3	3
CO2	3	3	3	3	2	3	3	3	3	3	3	2	2	3	3	2	3
CO3	3	3	3	3	3	3	3	2	3	3	2	3	3	3	2	3	3
CO4	3	3	3	3	2	3	3	3	3	3	3	3	3	3	3	3	3
CO5	3	3	3	3	3	3	3	2	3	3	3	1	3	2	3	3	2

CLINICAL RESPIRATORY CONDITIONS FOR PHYSIOTHERAPIST

Syllabus

Unit I : Anatomy -Physiology of respiratory -Bronchopulmonary segments -Conditions of Bony cage- Respiration

Unit II : Pulmonary function test- Energy expenditure of daily activities- Pulmonary endurance

Unit III : Clinical features and Management of COPD, Empyema, Asthma, Carcinoma, Infections

Unit IV : Thoracic surgery- Pneumothorax- Hemothorax- Hydrothorax-Injury of chest wall - Preoperative evaluation -care.

Unit V : ICU management care in Ventilator -Suctioning Oxygen therapy.

Reference

Text book

1. Cash's Textbook Of Chest , Heart And Vascular Disorders For Physiotherapist - Patricia A. Downie – 4th Edition 1987

2. Tidy's Physiotherapy – Stuart Porter – 19th Edition 2013

3. Text Book Of Physiotherapy For Cardio Respiration , Cardiac Surgery & Thoracic Surgery Condition –G.S. Madhuri 2008

Website

www.ajcoline.org

www.cardiologyonline.com

Journals

1. INTERNATIONAL JOURNAL OF CLINICAL CARDIOLOGY

Course Code 19BPT7AR01	Course Name: Research Methodology & Biostatistics	Theory	Practical	Total Credit
	Total Contact Hours -75	2	1	3
	Prerequisite Course - HSSC			
	Course Coordinator:			
Course Outcomes (CO)				
CO1	Understand the basic knowledge on research methodology and biostatistics.			
CO2	Differentiate and establish a relationship between various research methods and sampling techniques.			
CO3	Develop the appropriate research design, research hypothesis, tools and techniques of gathering data.			
CO4	Apply the theoretical knowledge into research works and clinical trials.			
CO5	Apply bio-statistical analysis for qualitative and quantitative data, using computers and software and prepare reports.			

Mapping of Course Outcomes with Program Outcomes
(1/2/3 indicates strength of correlation 3-High, 2 Medium, 1 Low)

CO/ PO/ PSO	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10	PO 11	PO 12	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5
CO1	3	3	3	3	3	3	3	3	3	2	3	3	3	3	3	3	3
CO2	3	3	3	3	2	3	3	3	3	3	3	2	2	3	3	2	3
CO3	3	3	3	3	3	3	3	2	3	3	2	3	3	3	2	3	3
CO4	3	3	3	3	2	3	3	3	3	3	3	3	3	3	3	3	3
CO5	3	3	3	3	3	3	3	2	3	3	3	3	3	2	3	3	2

RESEARCH METHODOLOGY & BIOSTATISTICS

Syllabus

Unit I : Ethics in physiotherapy research – phases of research – conceptual phase – concepts – variables – hypothesis – literature review

Unit II : Emperical phase – design – survey – validity – data collection – observationsl method- data collection –

Unit III : Observational method- biophysiologic measures – data analysis – descriptive statistics – inferential statistics

Unit IV: Interpretative phase – critiquing research – guidelines Guidelines for research publication – APA style – plagarism –

UNIT V : Physiotherapy Research

Reference

1. Research Methodology and Techniques- C.R. Kothari
2. Research Methods for Clinical Therapist- Carolyn M Hicks

Course Code 19BPT7GE01	Course Name: Diagnostic Imaging for Physiotherapist	Theory	Practical	Total Credit
	Total Contact Hours -60	2	1	3
	Prerequisite Course - HSSC			
	Course Coordinator:			
Course Outcomes (CO)				
CO1	Understand the clinical impact of common imaging technologies and image-guided interventional procedures used in musculoskeletal, neurological, cardiovascular & pulmonary imaging			
CO2	Compare and contrast the clinical capabilities, and limitations of radiographs, computerized tomography (CT), magnetic resonance imaging (MRI), diagnostic ultrasound (echocardiogram or ultrasonaugraphy) and various forms of radioisotope imaging (V/Q scan, MUGA).			
CO3	Discuss the critical role of PT's in the diagnostic imaging system through their correlation of clinical findings with imaging information. Analyze the impact that components of the radiological written report have on physical therapy.			
CO4	Discuss the radiological evaluation, including pertinent radiologic observations, indications of trauma, common injury patterns, degenerative disease processes, and anomalies, of the various regions of the body, fractures and the unique patterns of fracture and fracture healing, especially in children.			
CO5	Integrate radiographic information with clinical presentation and therapeutic intervention. Apply medical imaging information to physical therapy intervention planning.			

Mapping of Course Outcomes with Program Outcomes (1/2/3 indicates strength of correlation 3-High, 2 Medium, 1 Low)																	
CO/ PO/ PSO	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10	PO 11	PO 12	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5
CO1	3	3	3	3	3	3	3	3	3	2	3	3	3	3	3	3	3
CO2	3	3	3	3	2	3	3	3	3	3	3	2	2	3	3	2	3
CO3	3	3	3	3	3	3	3	2	3	3	2	3	3	3	2	3	3
CO4	3	3	3	3	2	3	3	3	3	3	3	3	3	3	3	3	3
CO5	3	3	3	3	3	3	3	2	3	3	3	1	3	2	3	3	2

DIAGNOSTIC IMAGING FOR PHYSIOTHERAPIST

Syllabus

Unit I : Radiographic Technique of Bone & Joints

Unit II : Special Radiographic Techniques

Unit III: Recent Advances in Imaging & Contrast Media

Unit IV: Radiation Hazards, Protection & Planning of the Department

Unit V : MRI,CT, Functional MRI, Ultrasonic scan

Reference

1. Books (latest edition) Basic books of anatomy, applied anatomy, physiology and basic pathology
2. Medical Physics by Selman Medical Physics by FM Khan
3. Radiation Pathology by Rubin & Cassaret
4. Radiobiology by Eric J Hall

Course Code 19BPT7GE02	Course Name: Dietetics and Nutrition	Theory	Practical	Total Credit
	Total Contact Hours -60	2	1	3
	Prerequisite Course - HSSC			
	Course Coordinator:			
Course Outcomes (CO)				
CO1	Understand the importance of interdisciplinary approaches to the management of nutritional problems and the promotion of nutritional health and well -being.			
CO2	Assess the nutritional status of critically ill patients.			
CO3	Determine the dietary essentials for recovery and maintenance of various systems.			
CO4	Describe the etiology, symptoms and dietary management of deficiency diseases and febrile conditions.			
CO5	Explain, analyze and diagnose the causes of allergy.			

Mapping of Course Outcomes with Program Outcomes (1/2/3 indicates strength of correlation 3-High, 2 Medium, 1 Low)																	
CO/ PO/ PSO	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10	PO 11	PO 12	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5
CO1	3	3	3	3	3	3	3	3	3	2	3	3	3	3	3	3	3
CO2	3	3	3	3	2	3	3	3	3	3	3	2	2	3	3	2	3
CO3	3	3	3	3	3	3	3	2	3	3	2	3	3	3	2	3	3
CO4	3	3	3	3	2	3	3	3	3	3	3	3	3	3	3	3	3
CO5	3	3	3	3	3	3	3	2	3	3	3	1	3	2	3	3	2

DIETETICS AND NUTRITION

Syllabus

Unit I : Principles of Nutrition and Nutritional Biochemistry. ...

Unit II : Medical Nutrition Therapy/Clinical Nutrition/Dietetics/Nutrition in Health and Disease.

Unit III : Food Science and Food Microbiology. ...

Unit IV : Nutritional Epidemiology. ...

Unit V : Public Health Nutrition.

Reference

1. The Atlas of Food by Erik Millstone; Tim Lang; Marion Nestle
2. Dietary Reference Intakes by Jennifer J. ...
3. Handbook of Nutrition and Food, Third Edition by Carolyn D. ...
4. Manual of Nutritional Therapeutics by David H

Course Code 19BPT7AR02	Course Name: Ethics in Physiotherapy	Theory	Practical	Total Credit
	Total Contact Hours - 50	2	1	3
	Prerequisite Course - HSSC			
	Course Coordinator:			
Course Outcomes (CO)				
CO1	Define ethics in Physiotherapy & make decisions based on prescriptive, descriptive and artificially added approach & categorize the subjects and objects of knowledge			
CO2	Minimize the effect of personal, religious, political, philosophical or other convictions.			
CO3	Respect for patients rights to dignity, autonomy, privacy and information.			
CO4	Identify and appreciate ethical principles in physiotherapy, emphasize the importance of patient consent, & Identify situations beyond the scope of physiotherapists.			
CO5	Adopt ethical behaviour, appropriate record keeping and data handling.			

Mapping of Course Outcomes with Program Outcomes (1/2/3 indicates strength of correlation 3-High, 2 Medium, 1 Low)																	
CO/ PO/ PSO	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10	PO 11	PO 12	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5
CO1	3	3	3	3	3	3	3	3	3	2	3	3	3	3	3	3	3
CO2	3	3	3	3	2	3	3	3	3	3	3	2	2	3	3	2	3
CO3	3	3	3	3	3	3	3	2	3	3	2	3	3	3	2	3	3
CO4	3	3	3	3	2	3	3	3	3	3	3	3	3	3	3	3	3

CO5	3	3	3	3	3	3	3	2	3	3	3	1	3	2	3	3	2

ETHICS IN PHYSIOTHERAPY

Syllabus

Unit I : History of physiotherapy, ethical principles in health care , ethical principles related to physiotherapy , scope of practice , enforcing standards in health profession – promoting quality care

Unit II : Professional ethics in research , education and patient care delivery , informed consent issues , medical ethics and economics in clinical decision – making .Rules of profession conduct-

Unit III : Physiotherapy as profession-Relationship with patients -Relationship with health care institutions- Relationship with colleagues and peers- Relationship with medical and other professional

Unit IV : Confidentiality and responsibility , malpractice and negligence , provision of service and advertising

Unit V: Legal aspects , consumer protection act, legal responsibility of physiotherapist for their action in professional context and understanding liability and obligations in case of medico- legal action

References :

Medical education principles and practice – Ananthakrishnan- 2nd edition

Legal ethical Issues for Health Professions - III Edition- Wiley Blackwell

Course Code 19BPT7GE03	Course Name: Medico Legal Aspects	Theory	Practical	Total Credit
	Total Contact Hours - 40	2	0	2
	Prerequisite Course - HSSC			
	Course Coordinator:			
Course Outcomes (CO)				
CO1	Understand the importance of Medico legal Aspects in physiotherapy and the basic concepts.			
CO2	Examine the concept of Medico legal issues, Clinical Practice and importance of Complaints from patients in the Clinical settings.			
CO3	Examine various forms of medico legal issues and precautionary measures.			
CO4	Understand the medico legal law related to physiotherapy and law of			

	negligence in the context of the provision of healthcare.
CO5	Legal issues surrounding and maintenance of professional standards in the healthcare profession and role of policy in the formation of law as it relates to health care system.

Mapping of Course Outcomes with Program Outcomes (1/2/3 indicates strength of correlation 3-High, 2 Medium, 1 Low)																	
CO/ PO/ PSO	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10	PO 11	PO 12	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5
CO1	3	3	3	3	3	3	3	3	3	2	3	3	3	3	3	3	3
CO2	3	3	3	3	2	3	3	3	3	3	3	2	2	3	3	2	3
CO3	3	3	3	3	3	3	3	2	3	3	2	3	3	3	2	3	3
CO4	3	3	3	3	2	3	3	3	3	3	3	3	3	3	3	3	3
CO5	3	3	3	3	3	3	3	2	3	3	3	1	3	2	3	3	2

MEDICO LEGAL ASPECTS

Syllabus :

Unit I : Medico-legal application in the standard operating procedures - Ensuring confidentiality in the practice -Patient consent and medical records -Factors to consider in order to ensure patient confidentiality.

Unit II : Consent to Medical Treatment. Refusal of Medical Treatment

Unit III : Withholding and Withdrawing Care

Unit IV : Medical Negligence- Patient Confidentiality-

Unit V : Human Rights and Medical Practice- Research and Ethical Approval-Necessary documents in a practice.

References :

1. LEGAL& ETHICAL ISSUES FOR HEALTH PROFRSSIONS - 3rd Edition 2014

2. ABC OF MEDICAL LAW – WILEY BLACKWELL 2009

WEBSITES:

www.portalspesnet.co.za

Course Code 19BPT7CT07	Course Name: Clinical Training	Total Credit
	Total Contact Hours -255	3
	Prerequisite Course - HSSC	
	Course Coordinator:	
Course Outcomes (CO)		
CO1	Explain the components of basic assessment for a patient.	
CO2	List the impairments resulting in functional limitation and participation restriction.	
CO3	Demonstrate clinical observatory skill and the bed side manners.	
CO4	Understanding of policy of the inpatient service and outpatient services.	
CO5	Understand the role of physiotherapy in various clinical conditions and the documentation of patient service.	

Mapping of Course Outcomes with Program Outcomes
(1/2/3 indicates strength of correlation 3-High, 2 Medium, 1 Low)

CO/ PO/ PSO	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10	PO 11	PO 12	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5
CO1	3	3	3	3	3	3	3	3	3	2	3	3	3	3	3	3	3
CO2	3	3	3	3	2	3	3	3	3	3	3	2	2	3	3	2	3
CO3	3	3	3	3	3	3	3	2	3	3	2	3	3	3	2	3	3
CO4	3	3	3	3	2	3	3	3	3	3	3	3	3	3	3	3	3
CO5	3	3	3	3	3	3	3	2	3	3	3	2	3	2	3	3	2

CLINICAL TRAINING

Syllabus

Unit I : Assessment, Writing SOAP notes in Physiotherapy

Unit II : Clinical training g in Physiotherapy Department

Unit III : Post -operative Physiotherapy training

Unit IV : ICU posting & Training

Unit V : Postings for Dissertation Work

SEMESTER VIII - COURSE OUTCOME, CO PO MAPPING

Course Code 19BPT8MC01	Course Name: Physiotherapy in Cardiorespiratory Conditions	Theory	Practical	Total Credit
	Total Contact Hours -135	4	2	6
	Prerequisite Course - HSSC			
	Course Coordinator:			
Course Outcomes (CO)				
CO1	Understand the clinical aspects of respiratory conditions and chest physiotherapy techniques.			
CO2	Enlist the impairments and plan therapy accordingly.			
CO3	Explain physiotherapeutic techniques in the management of respiratory conditions and critical care			
CO4	Demonstrate the chest physiotherapy techniques in various clinical conditions .			
CO5	Demonstrate the skills of evaluation and management in various respiratory conditions and critical care unit.			

Mapping of Course Outcomes with Program Outcomes
(1/2/3 indicates strength of correlation 3-High, 2 Medium, 1 Low)

CO/ PO/ PSO	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10	PO 11	PO 12	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5
CO1	3	3	3	3	3	3	3	3	3	2	3	3	3	3	3	3	3
CO2	3	3	3	3	2	3	3	3	3	3	3	2	2	3	3	2	3
CO3	3	3	3	3	3	3	3	2	3	3	2	3	3	3	2	3	3
CO4	3	3	3	3	2	3	3	3	3	3	3	3	3	3	3	3	3
CO5	3	3	3	3	3	3	3	2	3	3	3	3	3	2	3	3	2

PHYSIOTHERAPY IN CARDIO RESPIRATORY CONDITIONS

Syllabus

1. Conservative and Post-operative Physiotherapy Assessment, Evaluation, Treatment in Respiratory conditions- Obstructive, Restrictive and Infectious diseases.

2. Conservative and Post-operative Physiotherapy Assessment, Evaluation, Treatment in Cyanotic and Acyanotic Heart diseases.

3. Conservative and Post-operative Physiotherapy Assessment, Evaluation, Treatment in Intensive Care Units- ICU, CCU, NICU, PICU. Physiotherapy Assessment, Evaluation, Treatment in Respiratory Muscle Paralysis in Neuro & Myopathies/ Spinal Cord lesions.

4. Ventilator-Basics, Types, Criteria, Weaning, Physiotherapy Assessment, Evaluation, Treatment for Ventilator assisted patients.

5. Physiotherapy in special conditions like heart lung transplantation Surgery, etc.

Reference

1. Principles and practice of medicine - Davidson's, 22nd edition, Elsevier, 2014.
2. Cash's textbook of Chest, Heart & Vascular Disorders for Physiotherapist, Patricia A. Downie , 4th edition, Jaypee Brothers Publishers, 1987.
3. Cardiovascular and Pulmonary Physical Therapy- Donna Frownfelter and Elizabeth Dean, 5th edition, Elsevier, 2012.
4. Tidy's Physiotherapy, Stuart Porter, churchill livingstone, 2013.

Journals:

1. JOURNAL OF PHYSIOTHERAPY & PHYSICAL REHABILITATION.
2. CARDIOPULMONARY PHYSICAL THERAPY JOURNAL (APTA)

Website:

1. www.escardio.org
2. Wiley online library

Course Code 19BPT8SE02	Course Name: Rehabilitation Medicine including Geriatric Rehabilitation	Theory	Practical	Total Credit
	Total Contact Hours -135	4	2	6
	Prerequisite Course - HSSC			
	Course Coordinator:			
Course Outcomes (CO)				
CO1	Understand the team approach in rehabilitation of disability and role of community and other institutions for rehabilitation.			
CO2	Identification of residual potentials in patients with partial or total disability (temporary or permanent).			
CO3	Formulation of long term and short term goals in rehabilitation treatment.			
CO4	Application of various orthosis, prosthesis, wheelchairs and other assistive devices for different medical and physical conditions.			
CO5	Understand the importance of administration and organizational structure of a department or an organization and concepts of ethics.			

Mapping of Course Outcomes with Program Outcomes
(1/2/3 indicates strength of correlation 3-High, 2 Medium, 1 Low)

CO/ PO/ PSO	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10	PO 11	PO 12	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5
CO1	3	3	3	3	3	3	3	3	3	2	3	3	3	3	3	3	3
CO2	3	3	3	3	2	3	3	3	3	3	3	2	2	3	3	2	3
CO3	3	3	3	3	3	3	3	2	3	3	2	3	3	3	2	3	3
CO4	3	3	3	3	2	3	3	3	3	3	3	3	3	3	3	3	3
CO5	3	3	3	3	3	3	3	2	3	3	3	1	3	2	3	3	2

REHABILITATION MEDICINE INCLUDING GERIATRIC REHABILITATION

Syllabus

Unit I :Therapeutic techniques, Communication problems, Behavioral problems, Treatment of Pain.

Unit II :Disability evaluation, Evaluation of Physical dysfunction, Pre vocational Evaluation and Placement, Vocational training.

Unit III : Orthosis, Prosthesis, Mobility AIDS

Unit IV :Post surgical rehabilitation, Paediatric and Geriatric rehabilitation, Community based Rehabilitation.

Unit V : Architectural Barrier, Social implication, Legal aspects. Alternative therapy, Audiology, Reiki, Environmental control system.

Reference:

1. Textbook Of Rehabilitation - S.Sunder, 2nd edition, Jaypee Brothers Publishers, 2004.
2. Physical Rehabilitation - Susan 'B'. O Sulivan, 6th edition, F.A.Davis Company, 2013.

Journals:

1. JOURNAL OF REHABILITATION MEDICINE.
2. AMERICAN JOURNAL OF PHYSICAL MEDICINE AND REHABILITATION.

Website:

1. www.naric.com
2. www.royalrehab.com.au

Course Code 19BPT8MC03	Course Name: Physiotherapy Law	Theory	Practical	Total Credit
	Total Contact Hours -60	4	0	4
	Prerequisite Course - HSSC			
	Course Coordinator:			
Course Outcomes (CO)				
CO1	Ethical underpinnings of the law as it relates to physiotherapy.			
CO2	Application of various law of negligence in the context of the provision of healthcare.			
CO3	Understand the legal and ethical issues surrounding end and beginning of life decisions.			
CO4	Understand the maintenance of professional standards in the healthcare profession.			
CO5	Understand the role of policy in the formation of law as it relates to physiotherapy.			

Mapping of Course Outcomes with Program Outcomes
(1/2/3 indicates strength of correlation 3-High, 2 Medium, 1 Low)

CO/ PO/ PSO	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10	PO 11	PO 12	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5
CO1	3	3	3	3	3	3	3	3	3	2	3	3	3	3	3	3	3
CO2	3	3	3	3	2	3	3	3	3	3	3	2	2	3	3	2	3
CO3	3	3	3	3	3	3	3	2	3	3	2	3	3	3	2	3	3
CO4	3	3	3	3	2	3	3	3	3	3	3	3	3	3	3	3	3
CO5	3	3	3	3	3	3	3	2	3	3	3	1	3	2	3	3	2

PHYSIOTHERAPY LAW

Syllabus

Unit I : Introduction to Laws- General issues

Unit II : Providing Good care- Decision Making- Working with Clients & Other Practitioner- Minimising risk- Maintaining Professional performance

Unit III : Clinical Establishment Act Standard for Physiotherapy Centre.-The Physiotherapy Central Council Bill, 2017- POSCO Act- Good Samaritan Law

Unit IV : The Consumer Protection Act, 1986.- Bio-Medical Waste (Management & Handling) Rules, 1998.- Labor Law Pertaining to Physiotherapist Practitioner- Sexual harassment policy.

Unit V : Quality of patient service -Patient centric care-Consumer Protection Act

Reference :

1. ABC OF MEDICAL LAW – WILEY BLACKWELL 2009

WEBSITES:

www.portalspesnet.co.za

www.law.edu.ac.uk

Course Code 19BPT8GE01	Course Name: Administration and Teaching Skill	Theory	Practical	Total Credit
	Total Contact Hours -60	2	1	3
	Prerequisite Course - HSSC			
	Course Coordinator:			
Course Outcomes (CO)				
CO1	Develop an understanding of technicality of teaching roles.			
CO2	Describe institutional design and familiarize with the content organization and various activities.			
CO3	Explain the models of instructional design and develop Pedagogical and Productive competencies			
CO4	Critically examine the contributory role of teachers.			
CO5	Understand the importance of administration in setting of department and enrich administrative ability and entrepreneurship.			

Mapping of Course Outcomes with Program Outcomes
(1/2/3 indicates strength of correlation 3-High, 2 Medium, 1 Low)

CO/ PO/ PSO	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10	PO 11	PO 12	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5
CO1	3	3	3	3	3	3	3	3	3	2	3	3	3	3	3	3	3
CO2	3	3	3	3	2	3	3	3	3	3	3	2	2	3	3	2	3
CO3	3	3	3	3	3	3	3	2	3	3	2	3	3	3	2	3	3
CO4	3	3	3	3	2	3	3	3	3	3	3	3	3	3	3	3	3
CO5	3	3	3	3	3	3	3	2	3	3	3	1	3	2	3	3	2

ADMINISTRATION AND TEACHING SKILL

Syllabus

Unit I : Introduction to Educational Administration Introduction to Educational Administration: Meaning, types, principles, functions and scope of Educational Administration - Educational Management– Meaning, Principles, Functions and importance, Institutional building, POSDCORB, CPM, PERT, Management as a system, SWOT analysis, Taylorism, Administration as a process, Administration as a bureaucracy, Human relations approach to Administration, Organizational compliance, Organizational development, Organizational climate.

Unit II : Comparative issues in Educational Administration Comparative issues in Educational Administration: International Comparison of Educational Administration of India with US, UK, USSR, Japan and South Asian countries (China, Singapore etc):Interstate Comparison of Educational Administration in India, Comparison at School and Higher educational level. Unit,3

Unit III : Model ideal behavior. Make a habit of demonstrating behavior you want to see, as many studies show that modeling effectively teaches students how to act in different situations.

Unit IV :Different programmes of teacher education through autonomous body like NUEPA, NCTE, NCERT, RIEs. Secretary is the highest powering officer under whom Additional secretary, Director, under secretary and section officers works.

Unit V : Developing teaching skills and professionalism The effective organisation of the classroom Classroom presence and control Teacher and learner language The use of teaching materials and resources Practical skills for teaching at a range of levels The monitoring and evaluation of learning Evaluation of the teaching/learning process Professional development: responsibilities Professional development: support systems

References

1. Bhat, B.D and Sharma S.R., (1992). Education Administration: Emerging Trends. New Delhi: Kaniskha Publishing House.

2. Halpin, A.W (Ed) (1985). Administrative Theory in Education. New York: Mac Millan Company. 3. Hanson, E. Mark (1991). Educational Administration and Organisational Behaviour. Boston: Allyn and Bacon.

3. V.Rajasekaran (2010), Life Skills, Personality and leadership, Rajiv Gandhi National Institute of Youth Development, Sri Perumbudur, Tamil Nadu.

4. UNESCO (2005), Quality Education and Life Skills, Darkar Goals, UNESCO, Paris. WHO (1999), Partners in Life Skills Education: Conclusions from a United Nations Inter-Agency Meeting, WHO, Geneva.

Course Code 19BPT8GE02	Course Name: Quality and Patient Safety	Theory	Practical	Total Credit
	Total Contact Hours -60	2	1	3
	Prerequisite Course - HSSC			
	Course Coordinator:			
Course Outcomes (CO)				
CO1	Apply quality management principles to develop policies related to measurement and improvement of healthcare quality and patient safety.			
CO2	Formulation of appropriate tools and approaches required for systematic evaluation, measurement and quality system improvements.			
CO3	Design and implement continuous quality improvement strategies at the healthcare system level.			
CO4	Use healthcare data and analytics to measure healthcare quality and patient safety and plan improvement measures.			
CO5	Participate in research projects that can lead to quality improvement, risk reduction and enhanced patient safety within the healthcare system.			

Mapping of Course Outcomes with Program Outcomes (1/2/3 indicates strength of correlation 3-High, 2 Medium, 1 Low)																	
CO/ PO/ PSO	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10	PO 11	PO 12	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5
CO1	3	3	3	3	3	3	3	3	3	2	3	3	3	3	3	3	3
CO2	3	3	3	3	2	3	3	3	3	3	3	2	2	3	3	2	3
CO3	3	3	3	3	3	3	3	2	3	3	2	3	3	3	2	3	3
CO4	3	3	3	3	2	3	3	3	3	3	3	3	3	3	3	3	3
CO5	3	3	3	3	3	3	3	2	3	3	3	1	3	2	3	3	2

QUALITY AND PATIENT SAFETY

Syllabus

Unit I : PATIENT SAFETY Medical Harm: A Brief History Causes of Medical Errors and Harm The Emergence of Patient Safety Integrating Safety and Quality

Unit II : MEASURING PATIENT SAFETY Measuring Patient Safety ,Reporting Patient Safety

Unit III : MANAGING SAFETY INCIDENTS Managing Patients Affected by Medical Harm ,Supporting Staff after Serious Incidents

Unit IV : PREVENTING SAFETY INCIDENTS Clinical Interventions and Process Improvements Designing for Patient Safety Using IT to Improve Patient Safety Creating a Culture of Safety Patient Involvement in Safety

Unit V : BUILDING A SAFE ORGANIZATION Building Safety Skills Team Approach . Leadership for Safety safe Healthcare Organizations Patient-friendly Hospitals .High Performing Healthcare System

Reference

1. Berwick, DM. Escape Fire: Lessons for the future of health care. The Commonwealth Fund, 2003.

2. Kohn LT, Corrigan JM, Donaldson MS, eds. To err is human. Building a safer health system. Washington DC: National Academis Press 1999, Executive Summary.

3. Leape L. Error In Medicine. JAMA 1994 272(23), 1851-1857Reason J. The contribution of latent human failures to the breakdown of complex systems. Phil Trans R Soc Lond 1990;327:475-484

Course Code 19BPT8PJ01	Course Name: Research Project and Dissertation	Theory	Practical	Total Credit
	Total Contact Hours -135	2	1	3
	Prerequisite Course - HSSC			
	Course Coordinator:			

Course Outcomes (CO)	
CO1	Develop the skills of doing research.
CO2	Develop the skills of reviewing the literature.
CO3	Develop critical thinking and research attitude.
CO4	Formulate the collection and analysis of the research data.
CO5	Develop an insight to solve patients problems in scientific manner.

Mapping of Course Outcomes with Program Outcomes
(1/2/3 indicates strength of correlation 3-High, 2 Medium, 1 Low)

CO/ PO/ PSO	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10	PO 11	PO 12	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5
CO1	3	3	3	3	3	3	3	3	3	2	3	3	3	3	3	3	3
CO2	3	3	3	3	2	3	3	3	3	3	3	2	2	3	3	2	3
CO3	3	3	3	3	3	3	3	2	3	3	2	3	3	3	2	3	3
CO4	3	3	3	3	2	3	3	3	3	3	3	3	3	3	3	3	3
CO5	3	3	3	3	3	3	3	2	3	3	3	1	3	2	3	3	2

Course Code 19BPT8CT08	Course Name: Clinical Training	Total Credit
	Total Contact Hours -255	3
	Prerequisite Course - HSSC	
	Course Coordinator:	
Course Outcomes (CO)		
CO1	Explain the components of basic assessment for a patient.	
CO2	List the impairments resulting in functional limitation and participation restriction.	
CO3	Demonstrate clinical observatory skill and the bed side manners.	
CO4	Understanding of policy of the inpatient service and outpatient services.	
CO5	Understand the role of physiotherapy in various clinical conditions and the documentation of patient service.	

Mapping of Course Outcomes with Program Outcomes
(1/2/3 indicates strength of correlation 3-High, 2 Medium, 1 Low)

CO/ PO/ PSO	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10	PO 11	PO 12	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5
CO1	3	3	3	3	3	3	3	3	3	2	3	3	3	3	3	3	3
CO2	3	3	3	3	2	3	3	3	3	3	3	2	2	3	3	2	3
CO3	3	3	3	3	3	3	3	2	3	3	2	3	3	3	2	3	3
CO4	3	3	3	3	2	3	3	3	3	3	3	3	3	3	3	3	3
CO5	3	3	3	3	3	3	3	2	3	3	3	1	3	2	3	3	2

CLINICAL TRAINING

Syllabus

Unit I : Assessment, Writing SOAP notes in Physiotherapy

Unit II : Clinical training g in Physiotherapy Department

Unit III : Post -operative Physiotherapy training

Unit IV : ICU posting & Training

Unit V : Postings for Dissertation Work